

The background features a blue field with intricate white circuit patterns. A central, glowing blue square chip is depicted with a grid of smaller squares on its surface. Two thick orange diagonal lines intersect the blue field, creating a dynamic geometric design.

User's manual

SIN-3095-N95

Dongtintech[®]

Disclaimer

This manual is for reference only and is subject to change without prior notice. The company shall not be liable for direct, indirect, special, incidental or consequential damages arising from the use of the product or document, or for any infringement of third-party rights. When the equipment is in operation, the equipment can generate, use and radiate radio frequency energy, which may cause harmful interference to wireless communications if not installed and used in accordance with the regulations. In this case, the user needs to consult the company's after-sales service hotline to solve the problem. The company/product names mentioned in this document are for identification purposes only and are trademarks or registered trademarks of their respective companies.

Warnings and Notes

Warning! During operation, users must pay special attention to the warning information in this manual to avoid personal injury.



CAUTION! The cautions in this manual help you avoid hardware damage or data loss, for example: There is a risk of explosion if the battery is replaced incorrectly.



NOTE! This item provides additional information.



Packing list

Before installing the system, the user needs to confirm that the package contains the device and the following items, and that the device is in good condition:

- 1xSIN-3095-N95
- 1xWarranty card
- 1xPower adapter(DC24V, 60W)
- 1xPower cable
- 1xHDMI cable
- 2xWall mount
- 2xWiFi antenna

Ordering Information

Configuration 1	Intel N95 onboard CPU, 4GB DDR4 Memory, 128GB SSD, 24V 60W adapter
Configuration 2	Intel N95 onboard CPU, 8GB DDR4 Memory, 256GB SSD, 24V 60W adapter
Configuration 3	Intel N95 onboard CPU, 16GB DDR4 Memory, 512GB SSD, 24V 60W adapter

Optional accessories

2018203BBSZ000	Removable baffle (blank)
2018204BBSZ000	Removable baffle A (extending 4 DB9 ports)

Safety Instructions

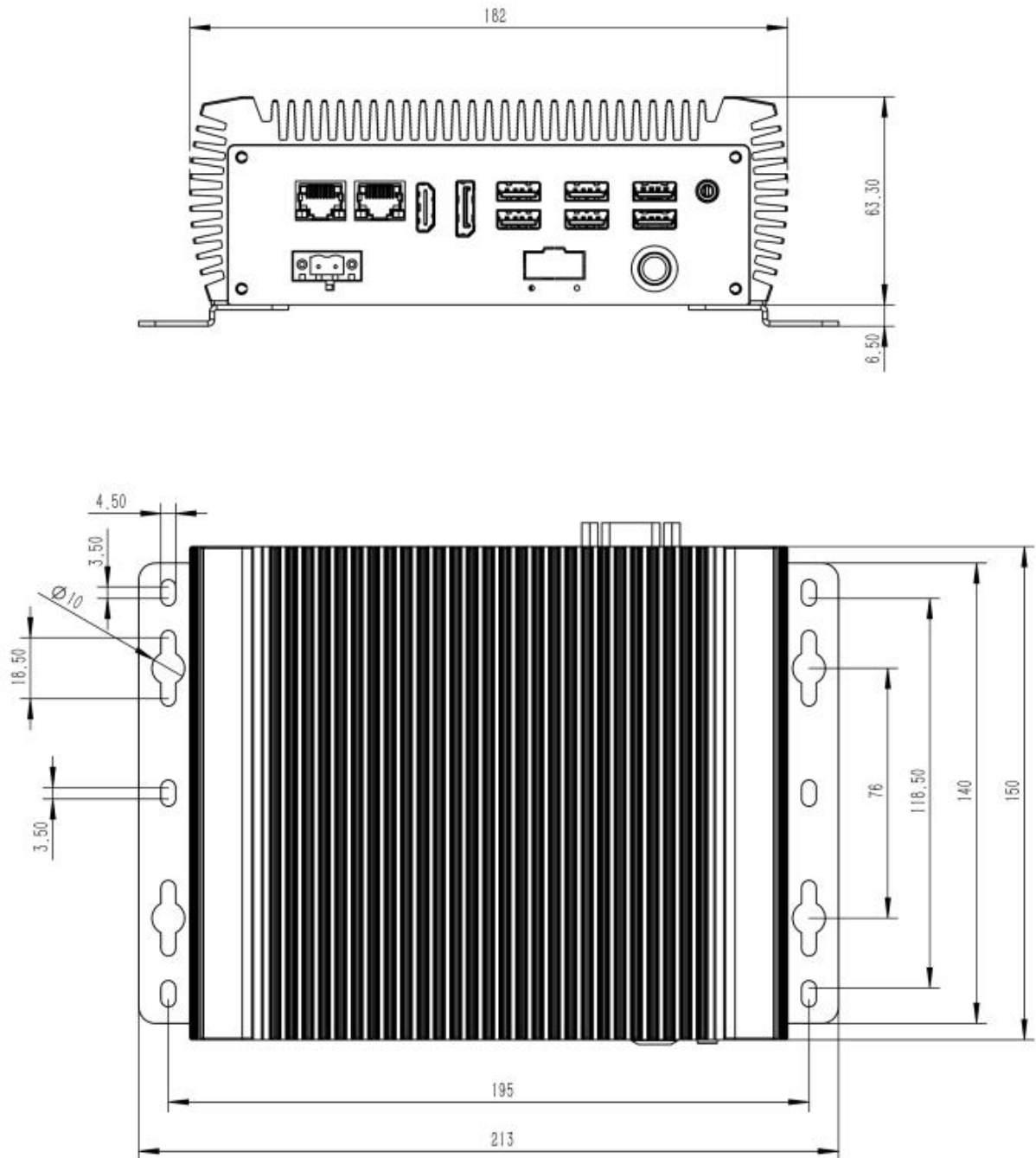
1. Please read these safety instructions carefully.
2. Please keep this user manual for future reference.
3. Before cleaning the device with a wet cloth, please unplug the power cord from the socket. Please do not use liquids or detergent sprays to clean the device.
4. For devices that use power cords, there must be easily accessible power sockets around the device.
5. Do not use the device in a humid environment.
6. Please make sure that the device is placed on a reliable surface before installation. Accidental falls may cause damage to the device.
7. The openings in the device housing are used for air convection to prevent the device from overheating. Please do not cover these openings.
8. Before you connect the device to the power socket, please confirm that the voltage of the power socket meets the requirements.
9. Please place the power cord in a position where people are not likely to trip and do not cover the power cord with any debris.
10. Pay attention to all warning signs on the device.
11. If the device is not used for a long time, please disconnect it from the power socket to prevent the device from being damaged by excessive voltage fluctuations.
12. Do not let any liquid flow into the vents to avoid fire or short circuit.
13. Please do not open the device by yourself. To ensure your safety, please have a certified engineer open the device.
14. If you encounter the following situations, please have a professional repair:
 - The power cord or plug is damaged.
 - Liquid has flowed into the device.
 - The device has been exposed to excessive humidity.
 - The device does not work properly, or you cannot make it work properly according to the user manual.
 - The device has been dropped or damaged.
 - The device has obvious external damage.
15. Please do not place the device in an environment that exceeds our recommended storage temperature range, that is, not below -10°C or above 60°C, otherwise the device may be damaged.
16. Note: The computer is equipped with a battery-powered real-time clock circuit. If the battery is not replaced correctly, there is a risk of explosion. Therefore, only use the same or equivalent type of battery recommended by the manufacturer for replacement. Please dispose of old batteries according to the manufacturer's instructions.
17. Restricted access area: The device can only be installed in a restricted access area.

Table of contents

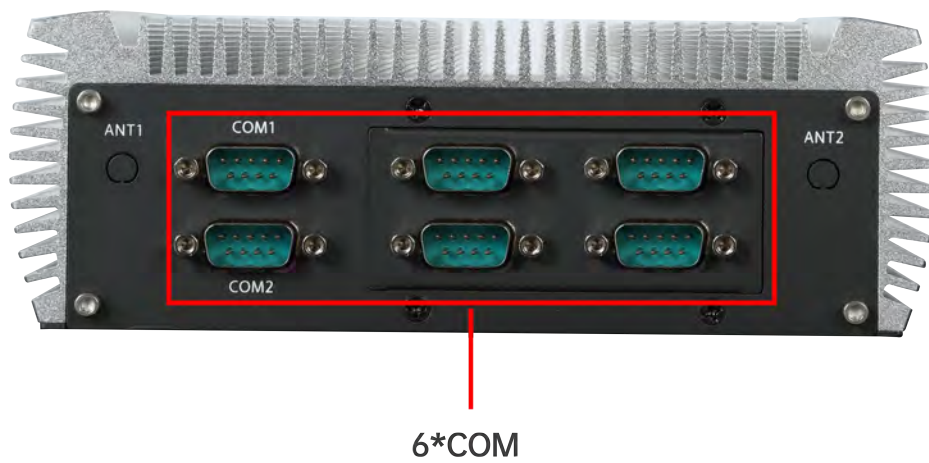
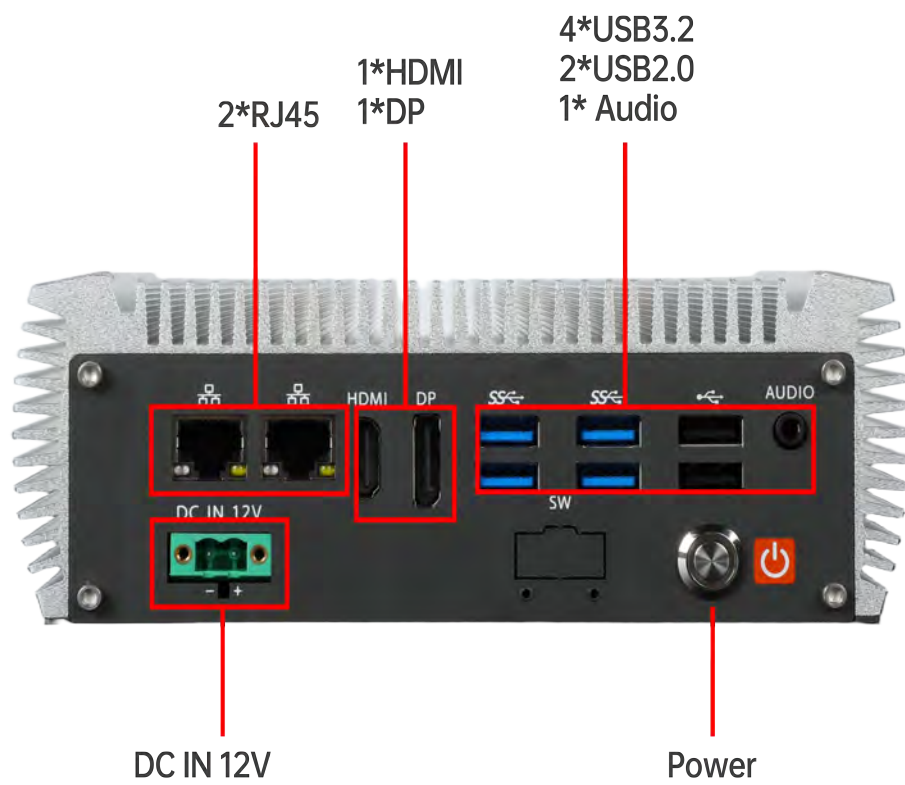
Disclaimer	2
Warnings and Notes	2
Packing list	2
Ordering Information	3
Optional accessories	3
Safety Instructions	4
1 Device Port Description	6
1.1 、Product appearance dimensions	6
1.2 Front panel I/O interface	8
1.3 Rear panel I/O interface	8
1.4 Machine weight	8
1.5 Overall size	8
1.6 power supply	8
1.7 Ambient temperature	8
2 Models and Attentions	9
1.1 Model	9
1.2 Attentions	9
3 Specification	10
4 Block Diagram	14
5 Mechanical Drawing	15
6 Headers / Wafers and Connectors	16
7 Definition of Connectors	19
7.1 DC Power Input 24V: Terminal Block, 2*1P, 3.50mm (Mark No.3, DC_IN2)	19
7.2 eDP/LVDS Backlight Control: Wafer, 6*1P, 2.00mm (Mark No.7, LVDS_P1)	19
7.3 LVDS VDD Select: Jumper, 3*2P, 2.54mm (Mark No.8, JV_LVDS1)	19
7.4 eDP/LVDS Signal: Wafer, 20*2P, 1.25mm (Mark No.9, LVDS1)	19
7.5 Amplifier: Wafer, 2*1P, 1.25mm (Mark No.10, J_SPK1)	20
7.6 SATA Power: Wafer, 4*1P, 2.00mm (Mark No.12, P_SATA1)	20
7.7 SIM Card: Wafer, 6*1P, 1.25mm (Mark No.16, J_SIM1)	20
7.8 GbE LAN: RJ45 Connector (Mark No.17, LAN1)	21
7.9 GbE LAN: RJ45 Connector (Mark No.18, LAN2)	21
7.10 Front USB2.0: Wafer, 5*2P, 2.00mm (Mark No.22, F_USB1)	21
7.11 Front USB2.0: Wafer, 4*1P, 2.00mm (Mark No.23, F_USB2)	21
7.12 Front USB2.0: Wafer, 4*1P, 2.00mm (Mark No.24, F_USB3)	22
7.13 COM1: Wafer, 9*1P, 1.25mm (Mark No.25, J_COM1)	22
7.14 COM2: Wafer, 9*1P, 1.25mm (Mark No.26, J_COM2)	22
7.15 COM3: Wafer, 9*1P, 1.25mm (Mark No.27, J_COM3)	22
7.16 COM4: Wafer, 3*1P, 2.00mm (Mark No.28, J_COM4)	23
7.17 COM5: Wafer, 3*1P, 2.00mm (Mark No.29, J_COM5)	23
7.18 COM6 RS485: Wafer, 3*1P, 2.00mm (Mark No.30, J_COM6_RS1)	23
7.19 COM6: Wafer, 3*1P, 2.00mm (Mark No.31, J_COM6)	23
7.20 Front Panel: Wafer, 4*2P, 2.00mm (Mark No.32, F_PANEL1)	23
7.21 GPIO: Wafer, 5*2P, 2.00mm (Mark No.33, J_GPIO1)	24
7.22 I2C: Wafer, 6*1P, 1.25mm (Mark No.34, J_I2C1)	24
7.23 CPU FAN: Wafer, 4*1P, 1.25mm (Mark No.35, CPU_FAN1)	24
7.24 Power Debug: Wafer, 4*1P, 1.25mm (Mark No.36, J_PRM1)	24
7.25 ESPI Debug: Header, 6*2P, 2.00mm (Mark No.37, J_ESPI1)	25
7.26 CMOS Battery: Wafer, 2*1P, 1.25mm (Mark No.38, J_BAT1)	25
7.27 CMOS Clear: Jumper, 3*1P, 2.54mm (Mark No.39, CLR_CMOS1)	25
8 BIOS Setup	26
8.1 Entering Setup	26
8.2 BIOS Menu Screen	27
8.3 Function Keys	27
8.4 Getting Help	27
8.5 Menu Bars	28
8.6 Main Menu	28
8.7 Advanced Menu	29
8.8 Chipset Menu	33
8.9 Security Menu	34
8.10 Boot Menu	35
8.11 Save & Exit Menu	36
9 Driver Installation	36
9.1 Download Driver:	36
9.2 Unzip the file:	37
9.3 Run the installer:	37
9.4 Restart your computer:	39
9.5 Check the driver:	39
10 Network and WiFi connections	40
10.1 Network connection:	40
10.2 WiFi connection:	41

1、 Device Port Description

1.1、 Product appearance dimensions



(Dimensions)



(Interface Description)

1.2 Front panel I/O interface

Host Switch:

The host switch is a tactile switch for ATX mode on/off operation. To power on the controller, open the front panel cover and press the "POWER" button; the POWER LED will illuminate. To shut down the controller, issue a shutdown command in the operating system or press the "POWER" button. If the system is stopped, press and hold the power button for 5 seconds to shut it down. It's important to note that after shutting down the industrial computer, wait at least 5 seconds before restarting it (i.e., once shutting down the system, wait 5 seconds before pressing the power button to restart).

USB3.2*4/USB2.0*2:

High-speed USB data transmission port for connecting USB storage devices and plug-and-play USB devices.

RJ45*2:

This network port is a high-speed Gigabit Ethernet port, providing connectivity to the Internet. One of the ports can transmit data at up to 2.5 Gbps.

HDMI*1:

You can connect an HDMI-enabled monitor to this port. HDMI technology supports resolutions up to 4096x2160@30Hz; the actual supported resolution may vary depending on the monitor.

DP*1:

You can connect a DP-enabled monitor to this port. DP technology supports resolutions up to 4096x2160@60Hz; the actual supported resolution may vary depending on the monitor.

Audio*1:

This port is a 3.5mm two-in-one audio jack (Line Out + Mic In).

Power In:

Power the device via an adapter.

1.3 Rear panel I/O interface

Serial Ports*6:

Used for connecting computer serial interface peripherals. Connecting cables and mechanical, electrical characteristics, signal functions, and transmission.

1.4 Machine weight

Net weight about 1.8KG

1.5 Overall size

182*150*63.3mm (width*depth*height)

1.6 power supply

Power Input: 24VDC

60W adapter 24V/2.5A (included in accessory box)

1.7 Ambient temperature

Operating Temperature:

-10~60°C (-10~60°C), with airflow at 0.7m/s

Relative Humidity:

5~95% @ 40°C (non-condensing)

Storage Temperature:

-20~75°C

2 Models and Attentions

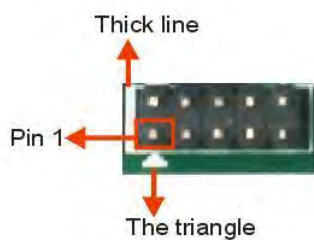
1.1 Model

This manual is applied to following models:

Model	CPU	COM	LAN	USB	DP	HDMI	LVDS /eDP	M.2 Key-B	M.2 Key-E	M.2 Key-M	SATA 3.0
DTB - 3095 - N95L2	N95	7	2	9	1	1	LVDS	USB3.0+ USB2.0	PCIe+ USB2.0	NVMe /SATA SSD	0
DTB - 3095 - N97L2	N97	7	2	9	1	1	LVDS	USB3.0+ USB2.0	PCIe+ USB2.0	NVMe /SATA SSD	0
DTB - 3095 - N100L2	N100	7	2	9	1	1	LVDS	USB3.0+ USB2.0	PCIe+ USB2.0	NVMe /SATA SSD	0
DTB - 3095 - N305L2	i3- N305	7	2	9	1	1	LVDS	USB3.0+ USB2.0	PCIe+ USB2.0	NVMe /SATA SSD	0

1.2 Attentions

- Notes under a table or figure indicate the difference of models, or alternative definition of specific pin of the header (jumper/connector).
- How to identify the first pin of a header or jumper
 - Usually, there is a thick line or a triangle near the header's or jumper's pin 1.



- Square pad, which you can find on the back of the motherboard, is usually used for pin 1.

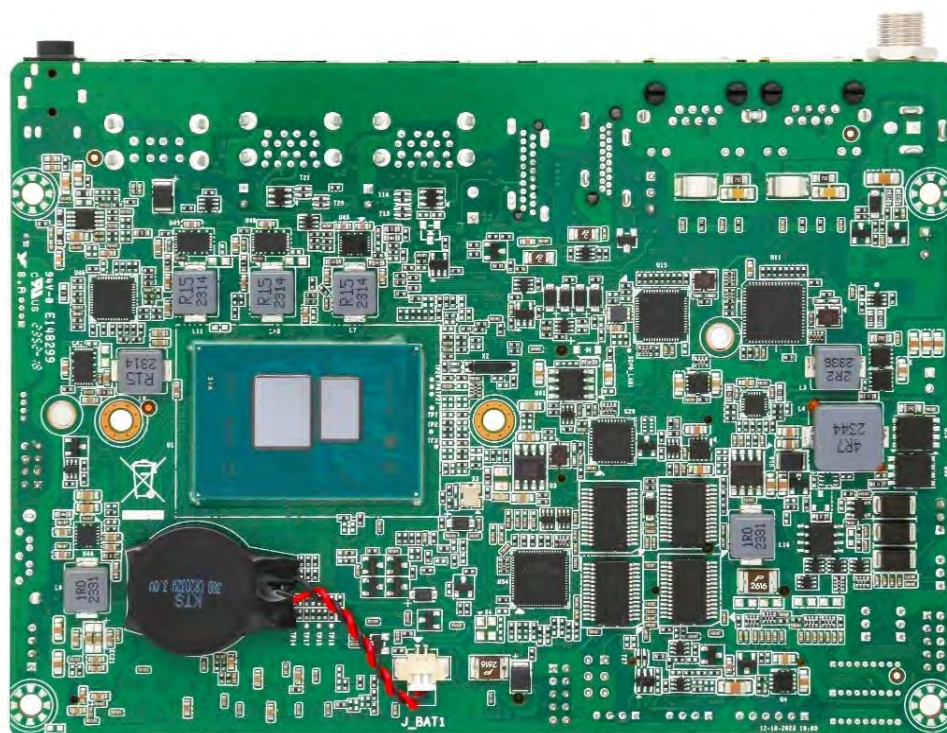
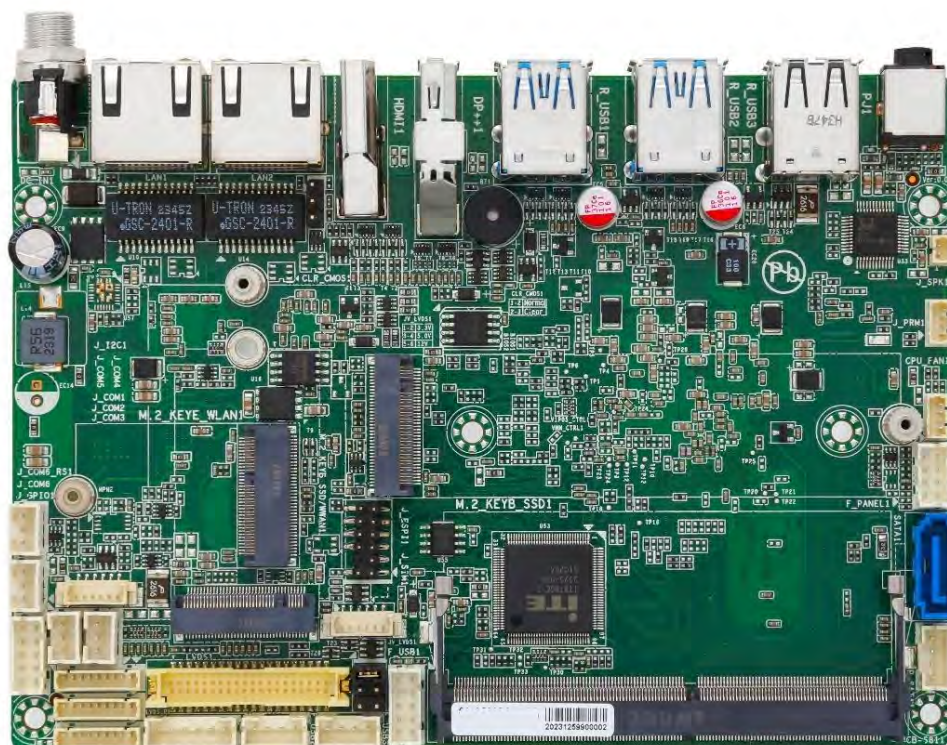


3 Specification

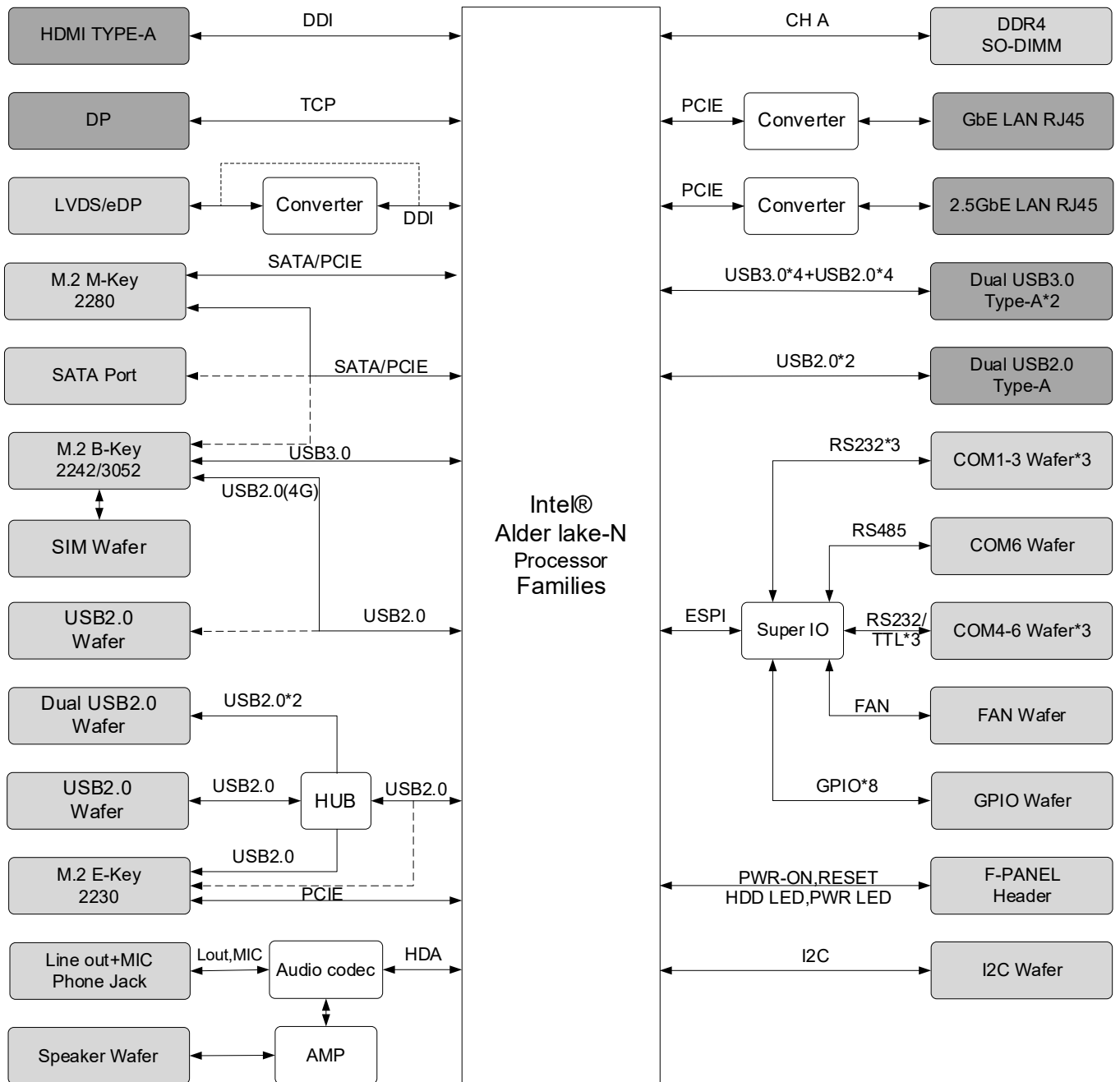
Specifications					
Model		DTX-BN95ME	DTX-BN97ME	DTX-BN100ME	DTX-BN305ME
Processor System	Processor	Intel® Alder Lake-N Series Processor			
		N95	N97	N100	i3-N305
	Clock Speed	up to 3.40GHz	up to 3.60GHz	up to 3.40GHz	up to 3.80GHz
	Multi-Core	4E-Core	4E-Core	4E-Core	8E-Core
	TDP	15W	12W	6W	15W
	BIOS	AMI UEFI BIOS (Support Watchdog Timer)			
Memory	Slot Type	1, DDR4 Non-ECC SO-DIMM			
	Memory Type	DDR4 3200MHz			
	Max Memory	16GB			
	Channels	Single			
Display	Graphics	Intel® UHD Graphics			
		up to 16 EUs, 1.20 GHz	up to 24 EUs, 1.20 GHz	up to 24 EUs, 750 MHz	up to 32 EUs, 1.25 GHz
	HDMI	1, HDMI, max 4096*2160@30Hz			
	eDP/LVDS	1, LVDS, max 1920*1200@60Hz			
		Notes: *: BOM optional support eDP, max 4096*2160@30Hz			
Audio	Codec	Realtek Audio HDA codec			
	Audio	1, Line-Out + MIC			
Storage	M.2 SSD	1, M.2 M-Key 2280, PCIE 2x/SATA, Default SATA, Support SATA SSD			
		Notice: *: PCIE signal colay with SATA1 and M.2_KEYB_SSD1. When using SATA1, M.2_KEYB_SSD1 can only support SATA.			
	SATA	1, SATA Gen3 6Gbps			
Expansion Slot	Mini-PCle	1, Mini-PCle, PCIE+USB2.0, support WIFI+4G Module			
	SIM Card	1, SIM Crad			

Interfaces				
Model		DTX-BN95ME	DTX-BN97ME	DTX-BN100ME DTX-BN305ME
Rear I/O	Power on	1, Button		
	Ethernet	4, GbE RJ45		
	HDMI	1, HDMI TYPE-A		
	USB2.0	2, USB2.0 TYPE-A		
	USB3.0	2, USB3.0 TYPE-A		
	Power In	1, 3P 5.08mm Terminal Block		
Internal I/O		Notes: *: BOM optional support 2P 3.5mm Terminal Block.		
	Display	1, DF13, eDP/LVDS, with Backlight Control Wafer		
	Audio	1, Wafer, Line-out+ MIC		
	Storage	1, SATA 7P Port, with Power supply Wafer 1, M.2 M-Key 2280, SATA, support SATASSD		
	Expansion	1, Mini-PCle Slot, PCIE+USB2.0, Support WIFI+4G 1, Wafer, SIM Card 1, Board to Board Connector, Expansion Card 1, Header, Expansion Card Power Input		
	USB2.0	2, Wafer		
	Serial	1, P Terminal Block, COM1+COM2+Power on		
		Notice *: COM1 wafer+COM2 wafer +Power on wafer optional.		
	GPIO	1, Wafer		
	Reset	1, Wafer		
Others	HDD LED	1, Blue light LED		
	FAN	1, Wafer, CPU FAN		
	Jumper	1, LVDS1 VDD Select 1, LVDS1 Blacklight Control Select 2, COM1 RS232/RS485 Select 1, COM1 RS485 Signal 120Ω Resistive termination Select 1, CMOS Clear Select		
	RTC	1, Wafer		
	Buzzer	1		

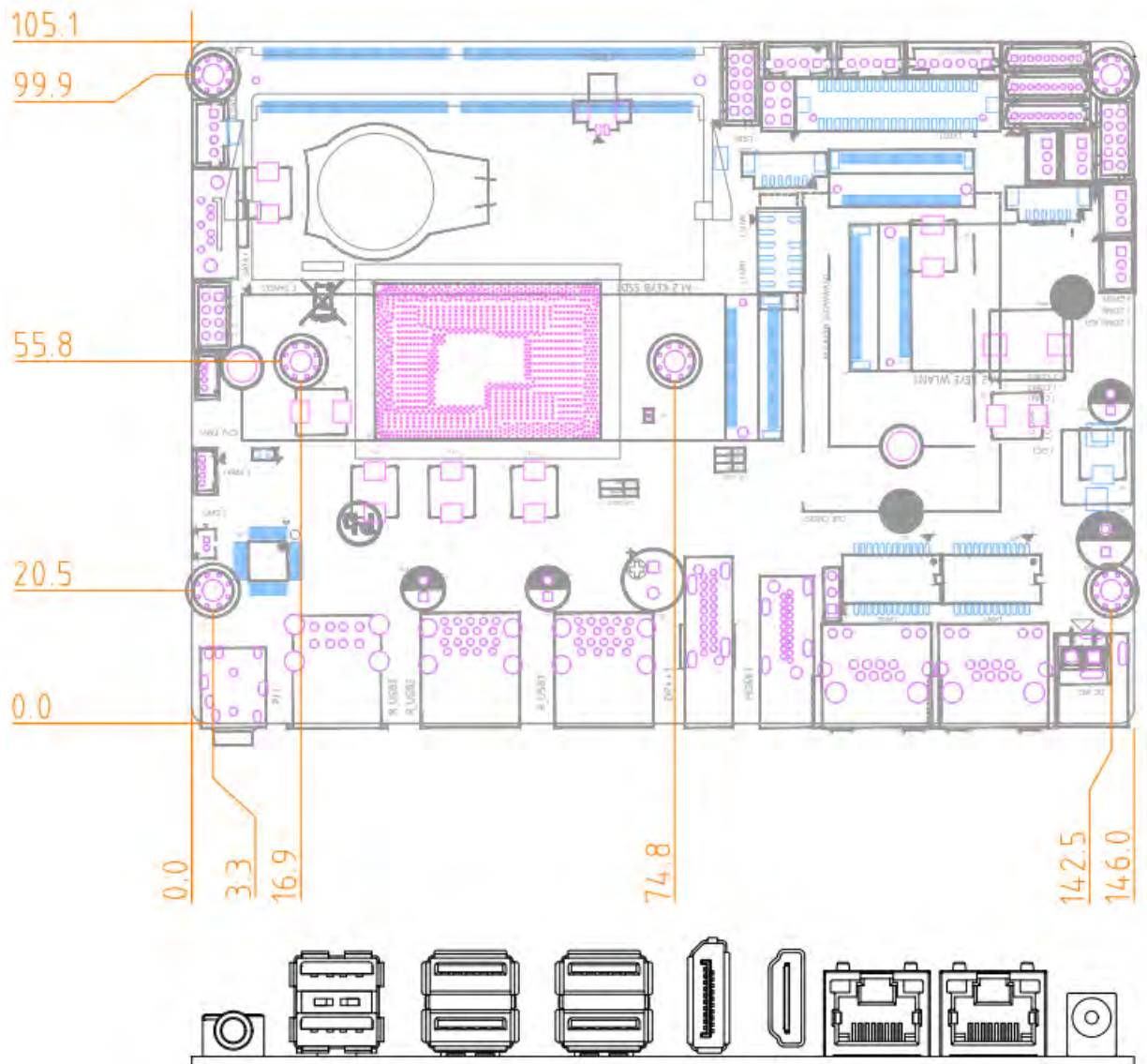
	B2B	1, Expansion Card 1, Expansion Card Power Input
Ethernet	Chipset	4, Intel® i210 GbE Ethernet Controller
USB	USB3.0	2, USB3.2 Gen1 5Gbps
	USB2.0	2, USB2.0
I/O	Serials	1, RS232/RS485, COM1, default RS232 selected by jumper 1, RS485, COM2, default RS485
	Power on	2
	Reset	1
	HDD LED	1
	FAN	—
	CMOS Clear	1
GPIO	GPIO	—
Power	Power in	1, DC 24V Power Input
		Notes: *: BOM optional support 12V.
OS	OS Supported	Windows 10/11 64bit, Linux
Environment	Temperature	Operation: -10 ~ 60°C Storage: -40 ~ 85°C
	Humidity	5 ~ 95%, non-condensing
Mechanical	Dimension	3.5 inch, 146mm*105mm
	Height	PCB: 1.6mm



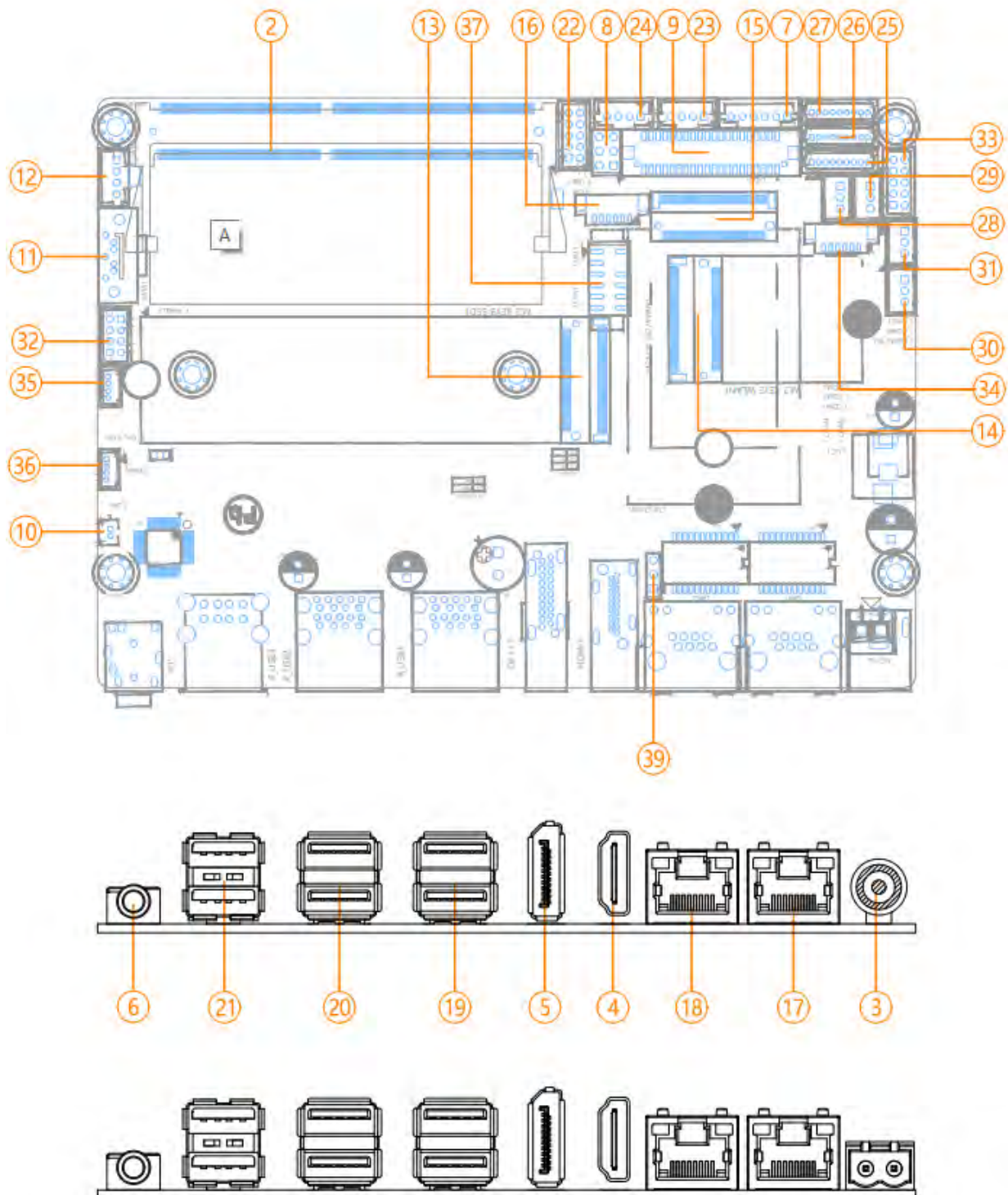
4 Block Diagram

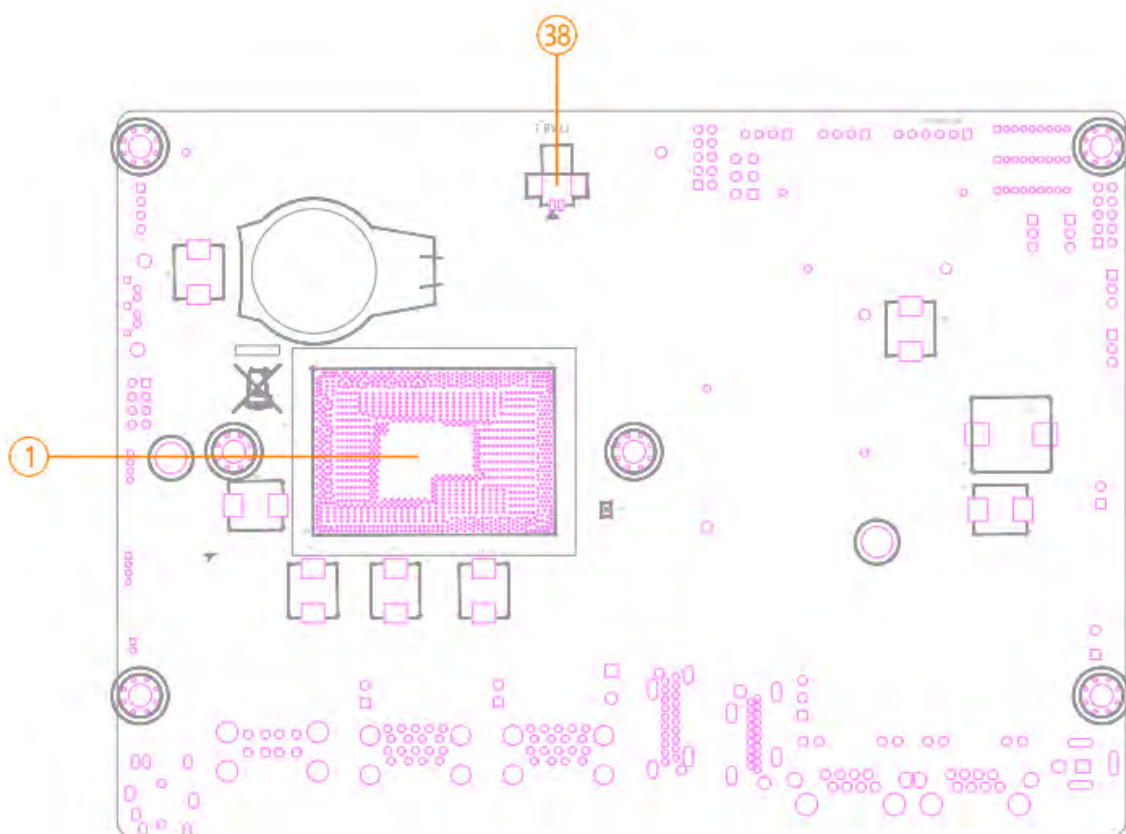


5 Mechanical Drawing



6 Headers / Wafers and Connectors





Jumpers / Headers and Connectors

①	U1	CPU
②	DIMM1	DDR4 CHA SO-DIMM Slot
③	DC_IN1 (DC_IN2)	DC 12V/24V Power Input Φ 2.5mm Thread Jack (DC 12V/24V Power Input 3.5mm 2P Terminal Block)
④	HDMI1	HDMI TYPE-A Connector
⑤	DP++1	DP++ Upright Connector
⑥	PJ1	Line-Out + MIC 2in1 3.5mm Jack
⑦	LVDS_P1	eDP/LVDS Backlight Control Wafer
⑧	JC_LVDS1	eDP/LVDS VDD Select Jumper
⑨	LVDS1	eDP/LVDS Signal Wafer
⑩	J_SPK1	Amplifier Wafer
⑪	SATA1	SATA3.0 7P Connector
⑫	P_SATA1	SATA Power Wafer
⑬	M.2_KEYB_SSD1	M.2 M-Key Slot (PCIe x2/SATA, Support PCIe x2 NVMe/ SATA SSD, 2280)
⑭	M.2_KEYE_WLAN1	M.2 E-Key Slot (PCIe+USB2.0, Support WIFI+ BlueTooth, 2230)
⑮	M.2_KEYB_SSD/WWAN1	M.2 B-Key Slot (SATA + USB3.0 + USB2.0, Support 5G/4G, 2242/3052)

⑩⑥	J_SIM1	SIM Card Wafer
⑩⑦	LAN1	GbE LAN RJ45 Connector
⑩⑧	LAN2	GbE LAN RJ45 Connector
⑩⑨	R_USB1	Dual USB3.0 TYPE-A Connector
⑪①	R_USB2	Dual USB3.0 TYPE-A Connector
⑪②	R_USB3	Dual USB2.0 TYPE-A Connector
⑪③	F_USB1	Front Dual USB2.0 Wafer
⑪④	F_USB2	Front USB2.0 Wafer
⑪⑤	F_USB3	Front USB2.0 Wafer
⑪⑥	J_COM1	COM1 Wafer
⑪⑦	J_COM2	COM2 Wafer
⑪⑧	J_COM3	COM3 Wafer
⑪⑨	J_COM4	COM4 Wafer
⑫①	J_COM5	COM5 Wafer
⑫②	J_COM6_RS1	COM6 RS485 Wafer
⑫③	J_COM6	COM6 RS232/TTL Wafer
⑫④	F_PANEL1	Front Panel Wafer
⑫⑤	J_GPIO1	Front GPIO Wafer
⑫⑥	J_I2C1	I2C Wafer
⑫⑦	CPU_FAN1	CPU FAN Wafer
⑫⑧	J_PR1	Power Debug Wafer
⑫⑨	J_ESPI1	ESPI Debug Header
⑬①	J_BAT1	CMOS Battery Wafer
⑬②	CLR_CMOS1	CMOS Clear Select Jumper

7 Definition of Connectors

7.1 DC Power Input 24V: Terminal Block, 2*1P, 3.50mm (Mark No.3, DC_IN2)

Graphic	Pin	Definition	Pin	Definition
	1	GND	2	VCC_IN ^[1]

Notes:

[1]: DC Power Input can be 24V/12V, selectable by BOM.

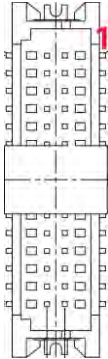
7.2 eDP/LVDS Backlight Control: Wafer, 6*1P, 2.00mm (Mark No.7, LVDS_P1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	4	BKLT_EN
	2	GND	5	VCC12S
	3	BKLT_CTL	6	VCC12S

7.3 LVDS VDD Select: Jumper, 3*2P, 2.54mm (Mark No.8, JV_LVDS1)

Graphic	Setting	Function
	1-2(Default)	VCC3.3
	3-4	VCC5
	5-6	VCC12

7.4 eDP/LVDS Signal: Wafer, 20*2P, 1.25mm (Mark No.9, LVDS1)

Graphic	Pin	Definition	Pin	Definition
	1	VDD_PANEL ^[1]	2	VDD_PANEL ^[1]
	3	LVDS_PRSENT	4	GND
	5	VDD_PANEL ^[1]	6	VDD_PANEL ^[1]
	7	LVDS_A_DATA0-	8	LVDS_B_DATA0- /EDP1_TX0- ^[2]
	9	LVDS_A_DATA0+	10	LVDS_B_DATA0+ /EDP1_TX0+ ^[2]
	11	GND	12	GND
	13	LVDS_A_DATA1-	14	LVDS_B_DATA1- /EDP1_TX1- ^[2]
	15	LVDS_A_DATA1+	16	LVDS_B_DATA1+ /EDP1_TX1+ ^[2]
	17	GND	18	GND
	19	LVDS_A_DATA2-	20	LVDS_B_DATA2- /EDP1_AUX-

	21	LVDS_A_DATA2+	22	LVDS_B_DATA2+ /EDP1_AUX+
	23	GND	24	GND
	25	LVDS_A_CLK-	26	LVDS_B_CLK- /EDP1_TX3- [2]
	27	LVDS_A_CLK+	28	LVDS_B_CLK+ /EDP1_TX3+ [2]
	29	GND	30	GND
	31	N/C	32	EDP1_HPD_C
	33	GND	34	GND
	35	LVDS_A_DATA3-	36	LVDS_B_DATA3- /EDP1_TX2- [2]
	37	LVDS_A_DATA3+	38	LVDS_B_DATA3+ /EDP1_TX2+ [2]
	39	N/C	40	GND

Notes:

[1]: Panel Power VDD is 3.3V by default, 5V or 12V is selectable by “eDP/LVDS VDD Select Jumper”. (JV_LVDS1, Mark 8).

[2]: It supports LVDS by default and can support eDP if specified. (BOM selectable).

7.5 Amplifier: Wafer, 2*1P, 1.25mm (Mark No.10, J_SPK1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC_BAT	2	GND

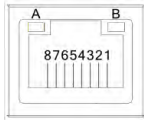
7.6 SATA Power: Wafer, 4*1P, 2.00mm (Mark No.12, P_SATA1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC12	3	GND
	2	GND	4	VCC5

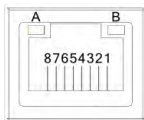
7.7 SIM Card: Wafer, 6*1P, 1.25mm (Mark No.16, J_SIM1)

Graphic	Pin	Definition	Pin	Definition
	1	UIM_PWR	4	UIM_CLK
	2	UIM_DATA	5	UIM_RST
	3	GND	6	UIM_VPP

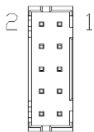
7.8 GbE LAN: RJ45 Connector (Mark No.17, LAN1)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI0+		5	MDI2-	
	2	MDI0-		6	MDI1-	
	3	MDI1+		7	MDI3+	
	4	MDI2+		8	MDI3-	
	A	Active LED	ACT: Twinkling Green	B	Speed LED	1000M: Turn Yellow
			Only LINK: Lights Off			100M: Turn Green
			Stop: Lights Off			10M: Lights Off

7.9 GbE LAN: RJ45 Connector (Mark No.18, LAN2)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI0+		5	MDI2-	
	2	MDI0-		6	MDI1-	
	3	MDI1+		7	MDI3+	
	4	MDI2+		8	MDI3-	
	A	Active LED	ACT: Twinkling Green	B	Speed LED	1000M: Turn Yellow
			Only LINK: Lights Off			100M: Turn Green
			Stop: Lights Off			10M: Lights Off

7.10 Front USB2.0: Wafer, 5*2P, 2.00mm (Mark No.22, F_USB1)

Graphic	Pin	Definition		Pin	Definition	
	1	VCC5		2	VCC5	
	3	USB2.0_1-		4	USB2.0_2-	
	5	USB2.0_1+		6	USB2.0_2+	
	7	GND		8	GND	
	9	GND		10	GND	

7.11 Front USB2.0: Wafer, 4*1P, 2.00mm (Mark No.23, F_USB2)

Graphic	Pin	Definition		Pin	Definition	
	1	VCC5		3	USB2.0+	
	2	USB2.0-		4	GND	

7.12 Front USB2.0: Wafer, 4*1P, 2.00mm (Mark No.24, F_USB3)

Graphic	Pin	Definition	Pin	Definition
	1	VCC5	3	USB2.0+
	2	USB2.0-	4	GND

7.13 COM1: Wafer, 9*1P, 1.25mm (Mark No.25, J_COM1)

Graphic	Pin	Definition	Pin	Definition
	1	PIN1 [1]	6	CTS
	2	DSR	7	DTR
	3	RXD	8	PIN9 [2]
	4	RTS	9	GND
	5	TXD		

Notes:

[1]: PIN1 can be DCD#/5V selectable by RES, support DCD# by default.

[2]: PIN9 can be RI#/12V selectable by RES, support RI# by default.

7.14 COM2: Wafer, 9*1P, 1.25mm (Mark No.26, J_COM2)

Graphic	Pin	Definition	Pin	Definition
	1	PIN1 [1]	6	TXD
	2	RXD	7	RTS
	3	DSR	8	PIN9 [2]
	4	DCD	9	GND
	5	DTR		

Notes:

[1]: PIN1 can be CTS#/5V selectable by RES, support DCD# by default.

[2]: PIN9 can be RI#/12V selectable by RES, support RI# by default.

7.15 COM3: Wafer, 9*1P, 1.25mm (Mark No.27, J_COM3)

Graphic	Pin	Definition	Pin	Definition
	1	PIN1 [1]	6	TXD
	2	RXD	7	RTS
	3	DSR	8	PIN9 [2]
	4	DCD	9	GND
	5	DTR		

Notes:

[1]: PIN1 can be CTS#/5V SEL by selectable, support DCD# by default.

[2]: PIN9 can be RI#/12V SEL by selectable, support RI# by default.

7.16 COM4: Wafer, 3*1P, 2.00mm (Mark No.28, J_COM4)

Graphic	Pin	Definition	Pin	Definition
	1	RXD	3	GND
	2	TXD		

7.17 COM5: Wafer, 3*1P, 2.00mm (Mark No.29, J_COM5)

Graphic	Pin	Definition	Pin	Definition
	1	RXD	3	GND
	2	TXD		

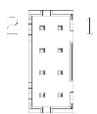
7.18 COM6 RS485: Wafer, 3*1P, 2.00mm (Mark No.30, J_COM6_RS1)

Graphic	Pin	Definition	Pin	Definition
	1	RS485+	3	GND
	2	RS485-		

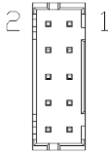
7.19 COM6: Wafer, 3*1P, 2.00mm (Mark No.31, J_COM6)

Graphic	Pin	Definition	Pin	Definition
	1	RXD	3	GND
	2	TXD		

7.20 Front Panel: Wafer, 4*2P, 2.00mm (Mark No.32, F_PANEL1)

Graphic	Pin	Definition	Pin	Definition
	1	PWR LED+	2	HDD_LED+
	3	PWR LED-	4	HDD_LED-
	5	PWR On+	6	RESET-
	7	PWR On-	8	RESET+

7.21 GPIO: Wafer, 5*2P, 2.00mm (Mark No.33, J_GPIO1)

Graphic	Pin	Definition	Pin	Definition
	1	SIO_GPI71 (0xA06 Bit1, H [1])	2	SIO_GPI70 (0xA06 Bit0, H [1])
	3	SIO_GPI73 (0xA06 Bit3, H [1])	4	SIO_GPI72 (0xA06 Bit2, H [1])
	5	SIO_GPO75 (0xA06 Bit5, H [1])	6	SIO_GPO74 (0xA06 Bit4, H [1])
	7	SIO_GPO77 (0xA06 Bit7, H [1])	8	SIO_GPO76 (0xA06 Bit6, H [1])
	9	GND	10	+3.3V [2]

Notes:

[1]: "H" or "L" means the default voltage is High or Low level (3.3V GPIO).

[2]: Power on this Pin is 3.3V by default, 5V is available if specified. (resistor selectable)

7.22 I2C: Wafer, 6*1P, 1.25mm (Mark No.34, J_I2C1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC3.3	4	RST
	2	GND	5	SCL
	3	INT	6	SDA

7.23 CPU FAN: Wafer, 4*1P, 1.25mm (Mark No.35, CPU_FAN1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection
	2	VCC12 [1]	4	FAN Speed Control

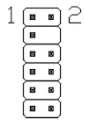
Notes:

[1]: Power on this Pin is 12V by default, 5V is available if specified. (resistor selectable)

7.24 Power Debug: Wafer, 4*1P, 1.25mm (Mark No.36, J_PRM1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	VCCIN_SCL
	2	VCCIN_PE	4	VCCIN_SDA

7.25 ESPI Debug: Header, 6*2P, 2.00mm (Mark No.37, J_ESPI1)

Graphic	Pin	Definition	Pin	Definition
	1	ESPI_IO0	2	VCC3.3
	3	ESPI_IO1		
	5	ESPI_IO2	6	ESPI_CLK
	7	ESPI_IO3	8	GND
	9	ESPI_CS0-	10	VCC3.3
	11	ESPI_ALERT0_N	12	PLTRST_N ^[1]

Notes:

[1]: Signal on this Pin is PLT_RST_N by default, ESPI_RST0_N is available if specified. (resistor selectable).

7.26 CMOS Battery: Wafer, 2*1P, 1.25mm (Mark No.38, J_BAT1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC_BAT	2	GND

7.27 CMOS Clear: Jumper, 3*1P, 2.54mm (Mark No.39, CLR_CMOS1)

Graphic	Setting	Function
	1-2(Default)	Normal
	2-3	Clear CMOS

8 BIOS Setup

Notice! The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version from our official website.

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

8.1 Entering Setup

Power on the computer and by pressing immediately allows you to enter Setup.

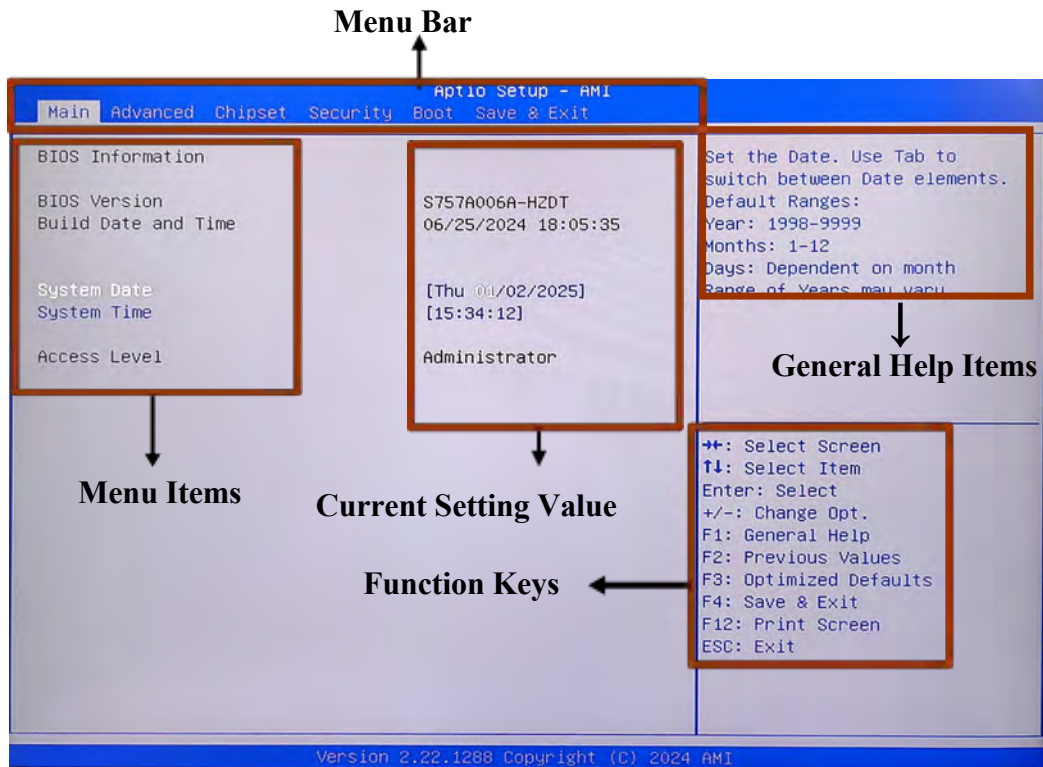
If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at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

Press **** to enter Setup; press **< F7>** to enter pop-up Boot menu.

BIOS Boot Menu Screen (boot device options please refer to actual configuration)

8.2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



8.3 Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press ←→ (left, right) to select screen.
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous values.
- [F3]: Optimized defaults.
- [F4]: Save & Exit.
- Press <Esc> to exit from BIOS Setup.

8.4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

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>**.

8.5 Menu Bars

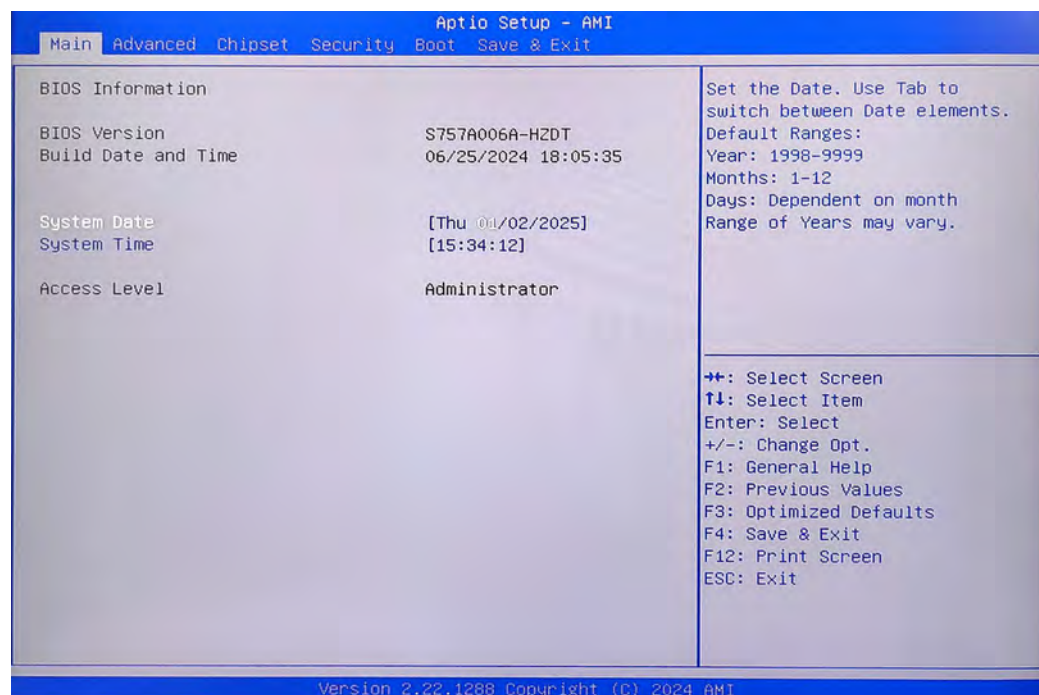
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Security	Password settings
Boot	To change boot settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

8.6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the **<+>** or **<->** and numerical keyboard keys to select the value you want in each item.



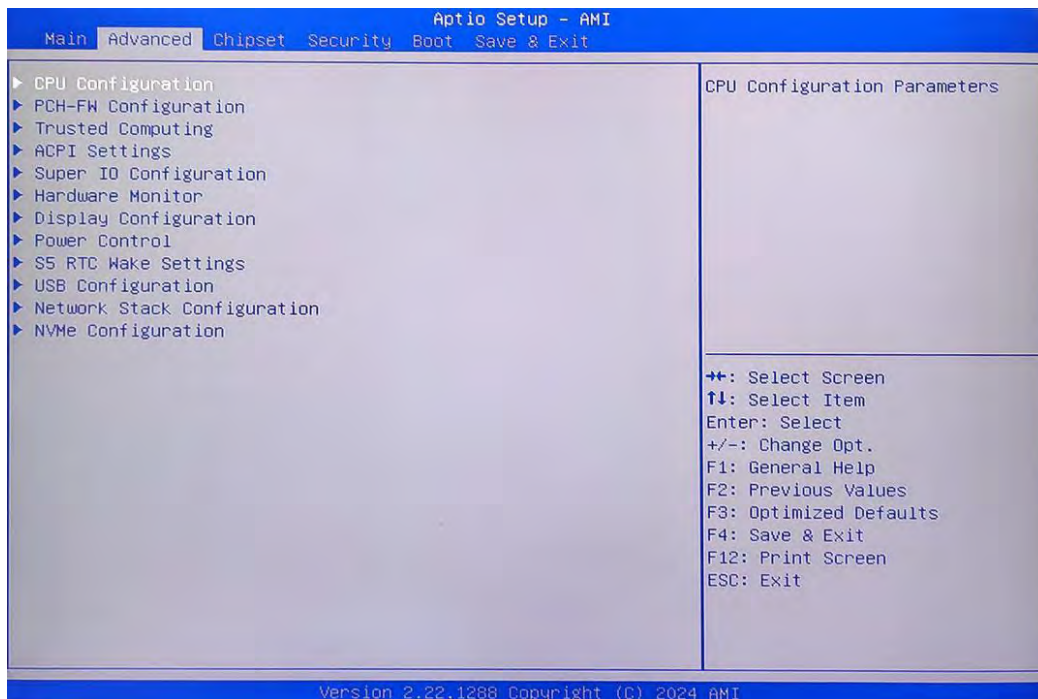
System Date

Set the date. Please use [Tab] to switch between date elements.

System Time

Set the time. Please use [Tab] to switch between time elements.

8.7 Advanced Menu



► CPU Configuration

Press [Enter] to view current CPU configuration and make settings for the following sub-items:

► Efficient-Core Information

Use this item to displays the E-Core information.

Press [Enter] to make settings for the following sub-items:

Intel VMX Virtualization Technology:

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. Set the default value to: [Enabled]. The optional settings: [Enabled]; [Disabled].

C States:

Use this item to enable/disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized. Set the default value to: [Enabled]. The optional settings: [Enabled]; [Disabled].

Turbo Mode:

Use this item to enable/disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled. Set the default value to: [Enabled]. The optional settings: [Enabled]; [Disabled].

View/Configure Turbo Options:

Use this item to View/Configure Turbo Options

► **Performance-Core Information**

Boot Performance Mode

Use this item to select the performance state that the BIOS will set starting from reset vector.

Boot Performance Mode Set the default value to: [Turbo Performance].

The optional settings: [Min Non-Turbo Performance]; [Max Non-Turbo Performance]; [Turbo Performance].

► **PCH-FW Configuration**

Use this item to Configure Management Engine Technology Parameters.

► **Trusted Computing**

Press [Enter] to view current status information, or make further settings in the following sub-items:

Security Device Support

Use this item to enable or disable BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Security Device Support Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], user can make further settings in the following items:

Active PCR Banks

Available PCR Banks

SHA256 PCR Bank

Use this item to Enable or Disable SHA256 PCR Bank

SHA256 PCR Bank Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

SHA384 PCR Bank

Use this item to Enable or Disable SHA384 PCR Bank

SHA384 PCR Bank Set the default value to: [Disabled].

The optional settings: [Disabled]; [Enabled].

Pending Operation

Use this item to schedule an operation for the security device

NOTE: Your computer will reboot during restart in order to change state of security device

Pending Operation Set the default value to: [None].

The optional settings: [None]; [TPM Clear].

Physical Presence Spec Version

Use this item to select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3. Set the default value to: [1.3]. The optional settings: [1.3]; [1.2].

Device Select

TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated. Set the default value to: [Auto]. optional settings: [TPM 1.2]; [TPM 2.0]; [Auto].

► **ACPI Settings**

Press [Enter] to make settings for the following sub-item:

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

Pending Operation Set the default value to: [S3(Suspend to RAM)]

The optional settings: [Suspend Disabled]; [S3(Suspend to RAM)].

Super I/O Configuration

Press [Enter] to make settings for the following sub-item:

Super IO Configuration

► **Serial Port 1 Configuration**

Use this item to set parameters of serial port 1 (COMA)

Press [Enter] to make settings for the following sub-item:

Serial Port

Use this item to enable or disable serial port (COM)

Pending Operation Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], user can make further settings in the following items:

Device Settings

Change Settings

Use this item to select an optimal settings for super IO device

Change Settings Set the default value to: [Auto]

The optional settings: [Auto]; [IO= 3F8h; IRQ=4]; [IO= 2F8h; IRQ=3].

▶ **PC Health Status**

Press [Enter] to view current hardware health status, make further settings in 'SmartFAN Configuration' and set value in 'Shutdown Temperature'.

▶ **Power Control**

Press [Enter] to make settings for the following sub-items:

▶ **Power On after Power Failure**

Use this item to specify what state to go to when power is re-applied after a power failure.

System State after Power Failure Set the default value to: [Power off].

The optional settings: [Power On]; [Power off]; [Last State].

Soft Off by PWR-BTTN

Use this item to set soft off mode. Set the default value to: [Instant Off]. The optional settings: [Instant Off]; [Delay 4 Sec].

Power Limit 4 Override

Use this item to enabled/disable power Limit 4 override. If this option is disabled, BIOS will program the default values for Power Limit 4.

Power Limit 4 Override Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], user can make further settings in the following items:

Power Limit 4

Use this item to power Limit 4 value in Milli watts. BIOS will round to the nearest 1/8W when programming. If the value is 0, BIOS will program this value as 1.25*TDP. For 12.50W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

Power Limit 4 Set the default value to: [0].

When set as [Enabled], the following items shall appear:

▶ **USB Configuration**

Press [Enter] to make settings for the following sub-items:

USB Configuration

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

XHCI Hand-off Set the default value to: [Enabled].

The optional settings: [Enabled]; [Disabled].

USB Mass Storage Driver Support

Use this item to enable or disable USB mass storage driver support.

USB Mass Storage Driver Support Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

USB hardware delays and time-outs:

USB transfer time-out

Use this item to set the time-out value for Control, Bulk, and Interrupt transfers.

USB transfer time-out Set the default value to: [20 sec].

The optional settings: [1 sec]; [5 sec]; [10 sec]; [20 sec].

Device Reset time-out

Use this item to set USB mass storage device Start Unit command time-out.

Device Reset time-out Set the default value to: [20 sec].

The optional settings: [10 sec]; [20 sec]; [30 sec]; [40 sec].

Device Power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.

Device Power-up delay Set the default value to: [Auto].

The optional settings: [Auto]; [Manual].

When set as [Manual], user can make further settings in the following items:

Device Power-up Delay in Seconds

Use this item to delay range is 1..40 seconds, in one second increments

Device Power-up Delay in Seconds Set the default value to: [5].

► **Network Stack Configuration**

Press [Enter] to go to 'Network Stack' screen to make further settings.

Network Stack

Use this item to enable or disable UEFI Network Stack.

Network Stack Set the default value to: [Disabled]

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], the following sub-items shall appear:

IPv4 PXE Support

Use this item to enable IPv4 PXE boot support. When set as [Disabled], IPv4 boot support will not be available.

IPv4 PXE Support Set the default value to: [Enabled].

The optional settings: [Disabled]; [Enabled].

IPv6 PXE Support

Use this item to enable IPv6 PXE boot support. When set as [Disabled], IPv6 boot support will not be available.

IPv6 PXE Support Set the default value to: [Disabled].

The optional settings: [Disabled]; [Enabled].

PXE Boot Wait Time

Use this item to set wait time to press [ESC] key to abort the PXE boot.

Use either [+] / [-] or numeric keys to set the value.

PXE Boot Wait Time Set the default value to: 5

Media Detect Count

Use this item to set number of times presence of media will be checked.

Use either [+] / [-] or numeric keys to set the value.

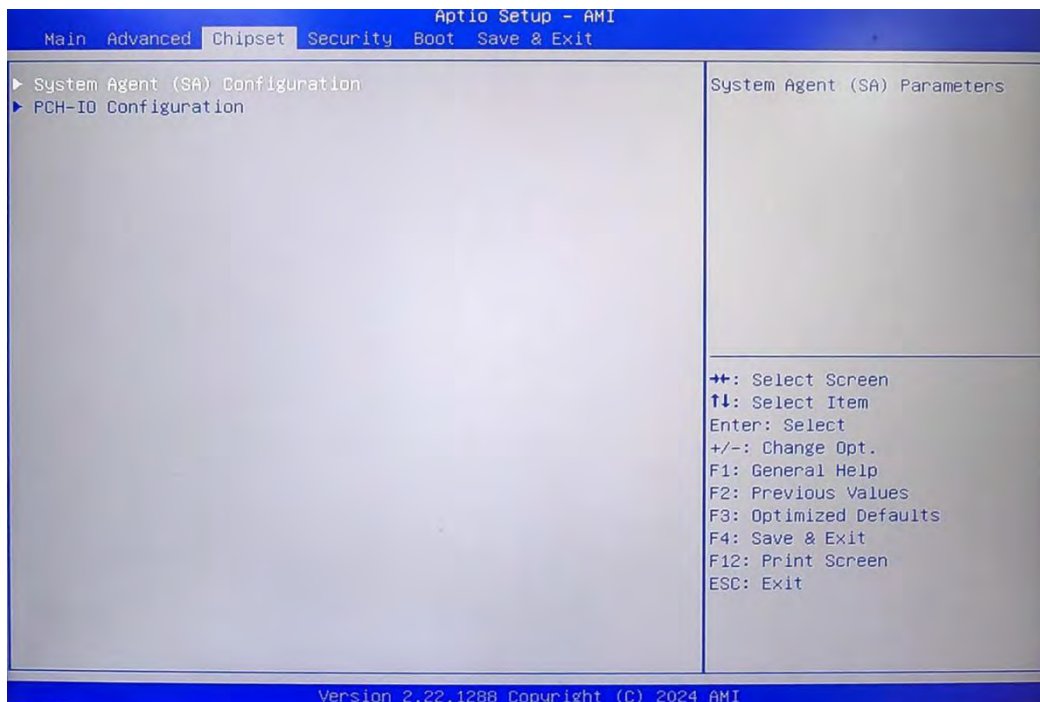
Media Detect Count Set the default value to: 5

► **NVMe Configuration**

Press [Enter] to view current NVMe Configuration.

***Note:** options only when NVME device is available.

8.8 Chipset Menu



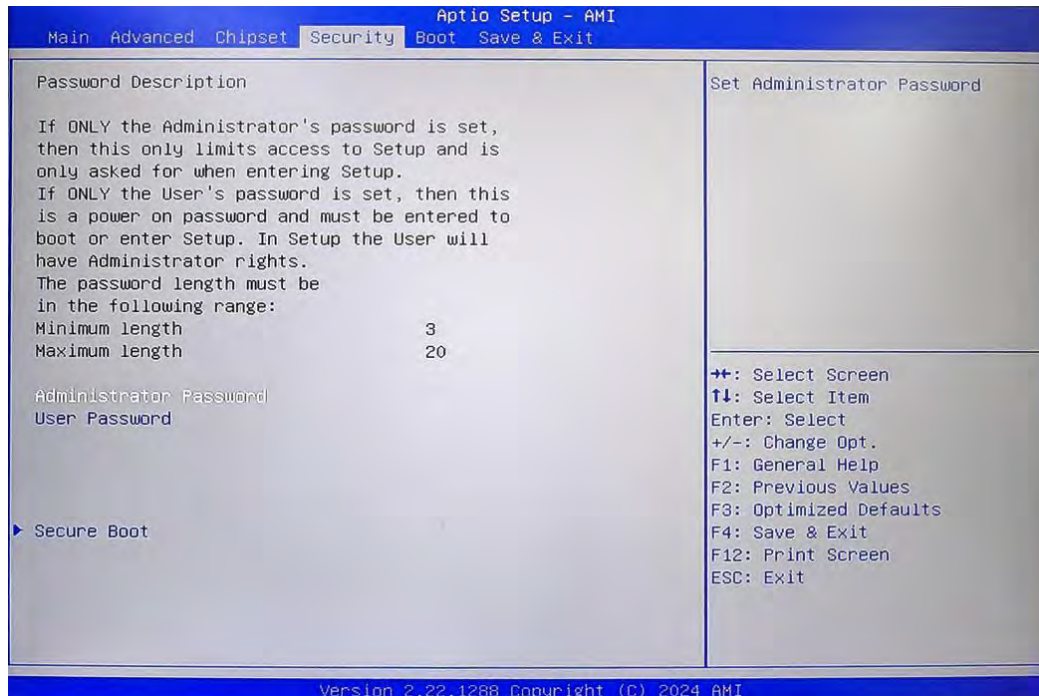
- ▶ **System Agent (SA) Configuration**
Press [Enter] to make settings for the following sub-items:
 - Memory Configuration**
Use this item to Search for memory parameter information.
- ▶ **PCH-IO Configuration**
Press [Enter] to make settings for the following sub-items:
 - PCH-IO Configuration**
- ▶ **SATA Configuration**
Press [Enter] to make settings for the following sub-items:
 - SATA Controller(s)**
Use this item to enable or disable SATA device.
SATA Controller Set the default value to: [Enabled].
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following sub-items shall appear:
 - M.2**
 - Port**
 - Port**
Port Set the default value to: [Enabled].
The optional settings: [Disabled]; [Enabled].
 - SATA Port**
 - Port**
Port Set the default value to: [Enabled].
The optional settings: [Disabled]; [Enabled].
 - USB Configuration**
 - USB Port Disable Override**
Selectively Enable/Disable the corresponding USB port from reporting a Device Connection to the controller. Set the default value to: [Disabled].
The optional settings: [Disabled]; [Enabled].

I2C Touch Panel

Indicates what type of I2C Touch Panel is connected to this Serial IO controller. Set the default value to: [Disabled].

The optional settings: [Disabled]; [Enabled].

8.9 Security Menu



Security menu allow users to change administrator password and user password settings.

Administrator Password

If there is no password present on system, please press [Enter] to create new administrator password. If password is present on system, please press [Enter] to verify old password then to clear/change password. Press again to confirm the new administrator password.

User Password

If there is no password present on system, please press [Enter] to create new user password. If password is present on system, please press [Enter] to verify old password then to clear/change password. Press again to confirm the new administrator password.

► Secure Boot

Press [Enter] to make customized secure settings:

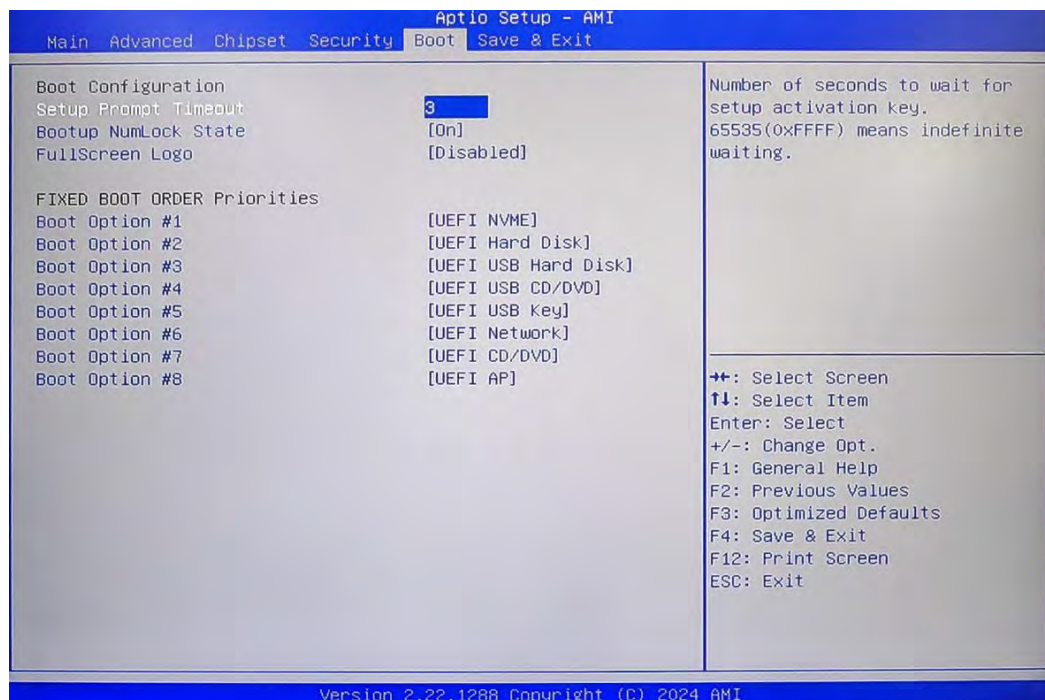
System Mode

Secure Boot

Secure Boot feature is active if secure boot is enabled, Platform Key(PK) is enrolled and the system is in user mode. The mode change requires platform reset.

Secure Boot Set the default value to: [Enabled].
The optional settings are: [Disabled]; [Enabled].

8.10 Boot Menu



Boot Configuration

Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

65535(0Xffff) means indefinite waiting

Setup Prompt Timeout Set the default value to: [1].

Bootup Numlock State

Use this item to select keyboard numlock state.

Bootup Numlock State Set the default value to: [Off].

The optional settings are: [On]; [Off].

FullScreen Logo

Use this item to enable or disables FullScreen Logo option. Set the default value to: [Disabled].

The optional settings are: [Disabled]; [Enabled].

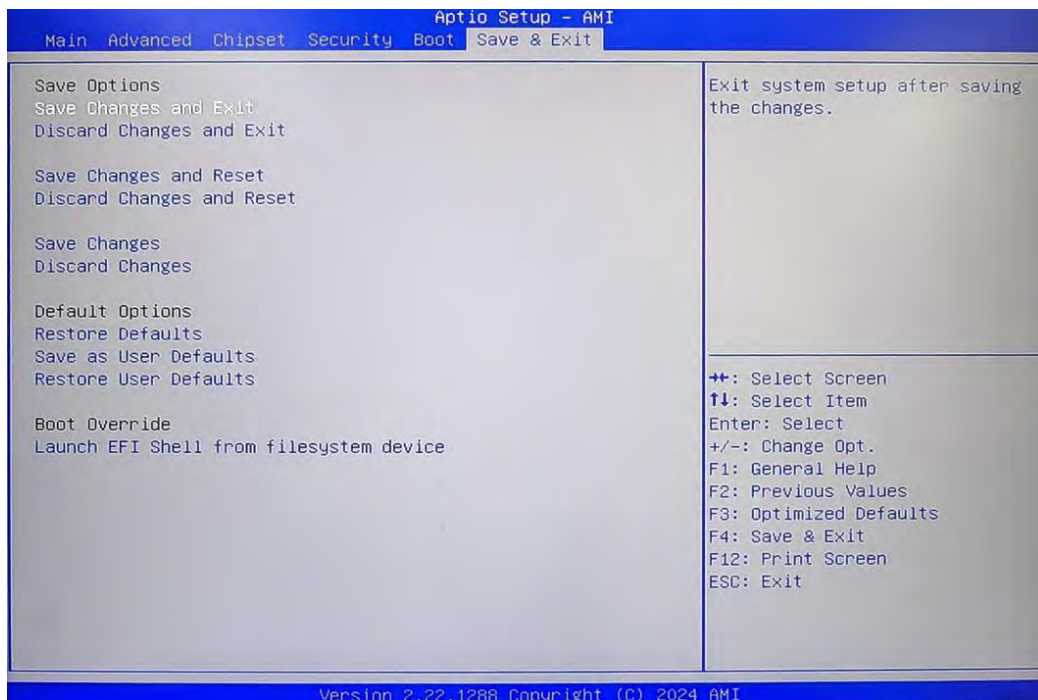
Boot Option Priorities

Boot Option #1

Boot Option #1 Set the default value to: [UEFI: Built-in EFI Shell]

The optional settings are: [UEFI: Built-in EFI Shell]; [Disabled].

8.11 Save & Exit Menu



Save Changes and Reset

This item allows user to reset the system after saving the changes.

Discard Changes and Reset

This item allows user to reset the system without saving any changes.

Restore Defaults

Use this item to restore /load default values for all the setup options.

Save as User Defaults

Use this item to save the changes done so far as user defaults.

Restore User Defaults

Use this item to restore defaults to all the setup options.

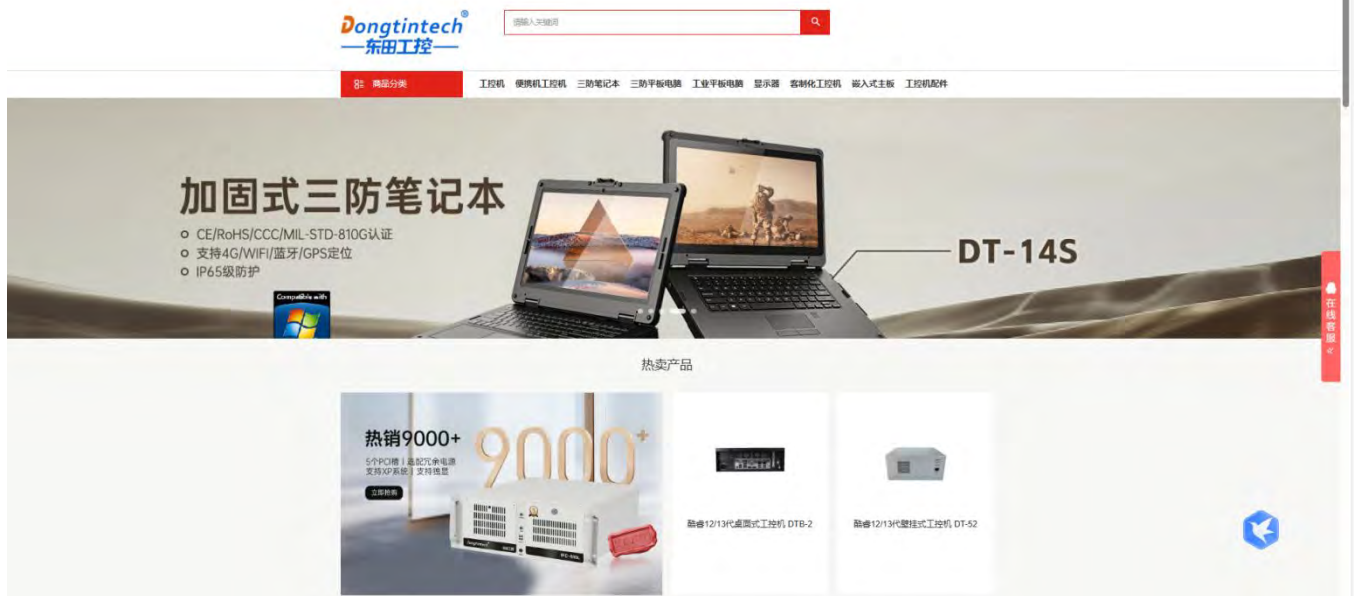
Boot Override

UEFI: Built-in EFI Shell

9 Driver Installation

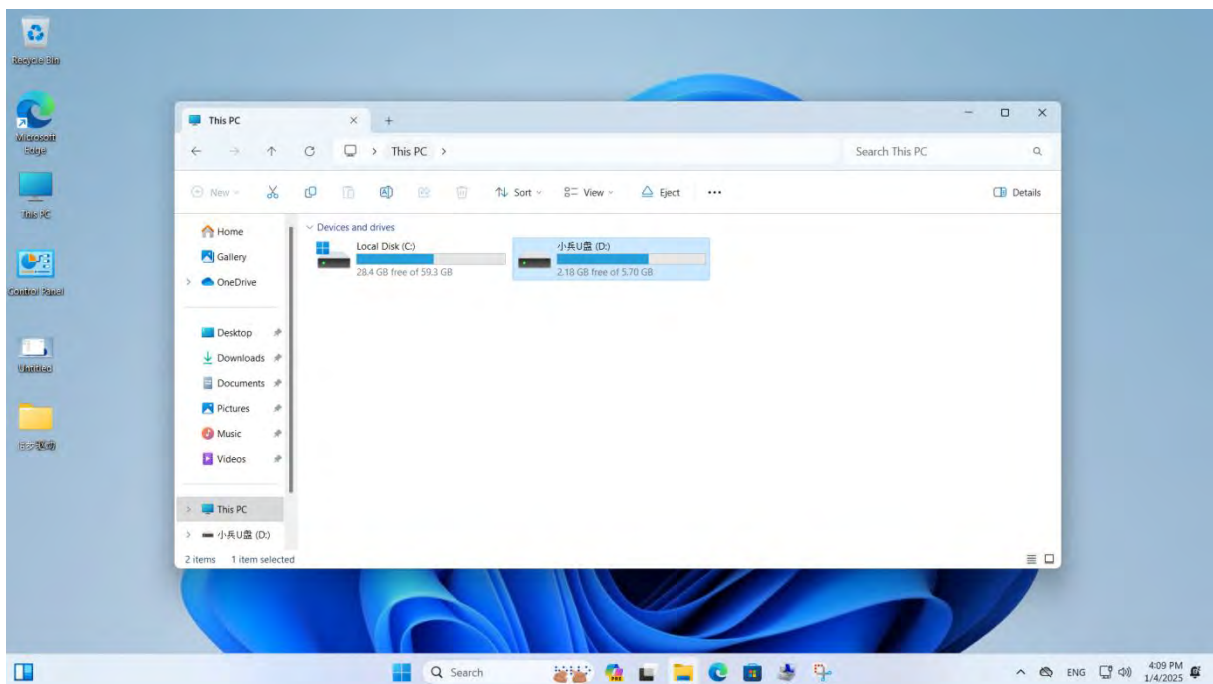
9.1 Download Driver:

First, users need to download the driver compatible with their motherboard and operating system version from the official website of Dongtian to this device. Make sure to download the latest version of the driver for the best performance and compatibility. The download address can be found at <http://dtpcshop.com/>.



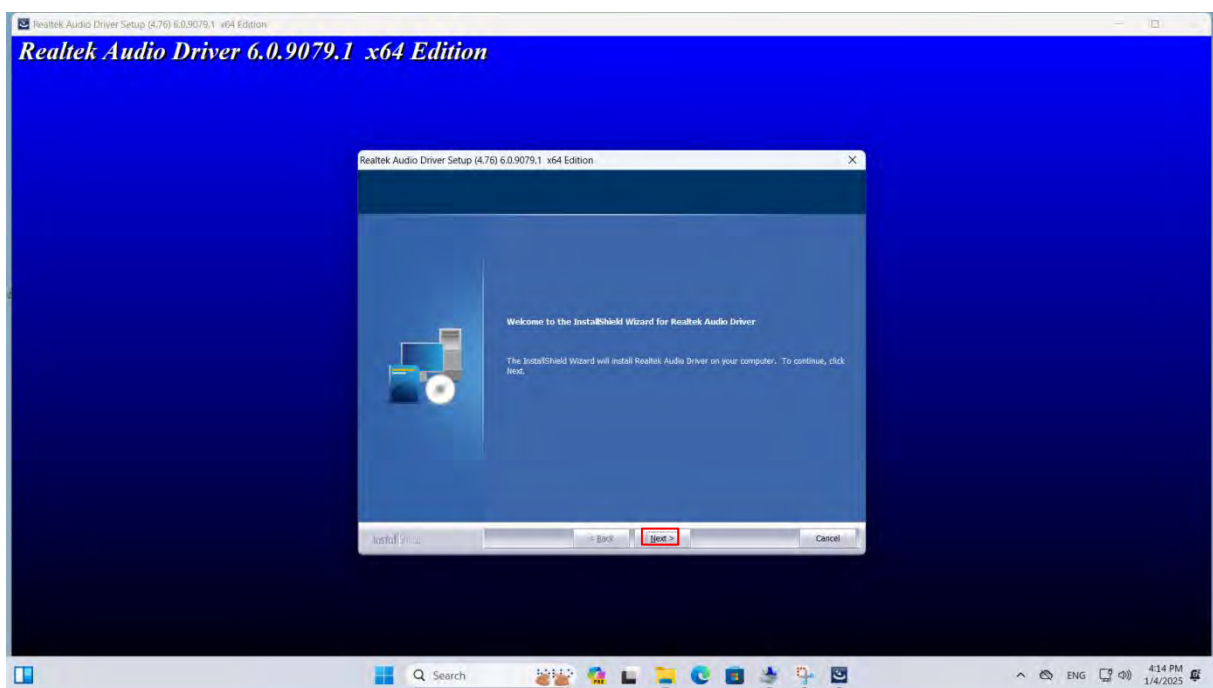
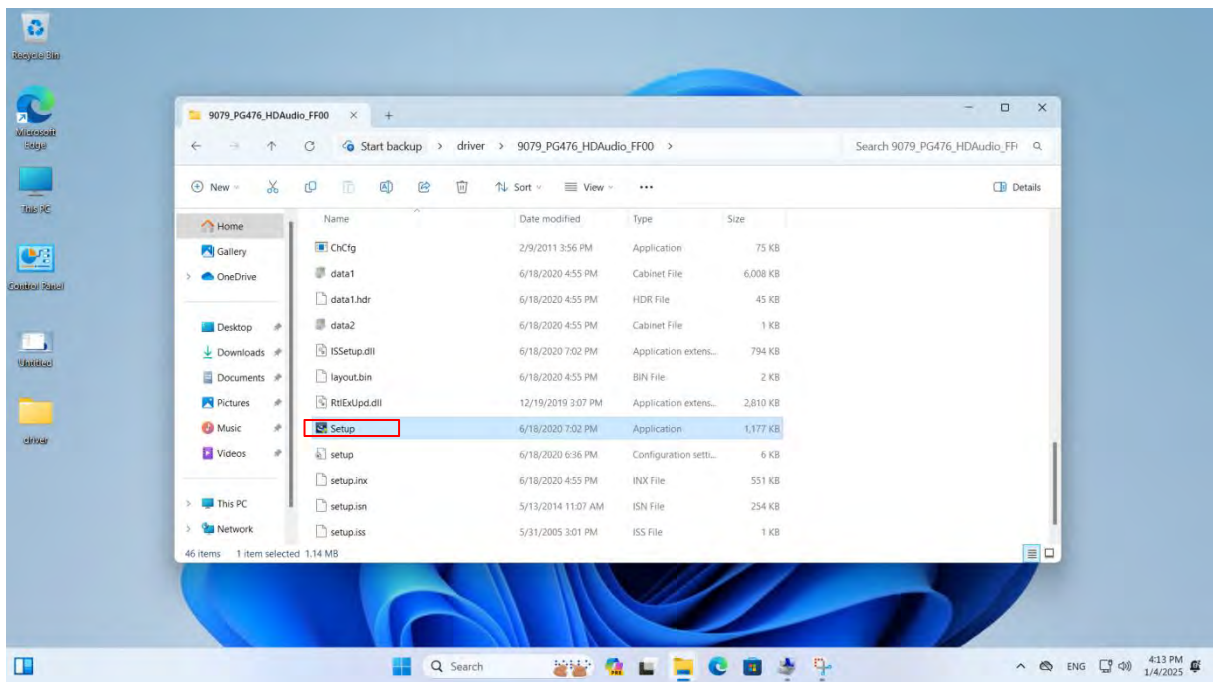
9.2 Unzip the file:

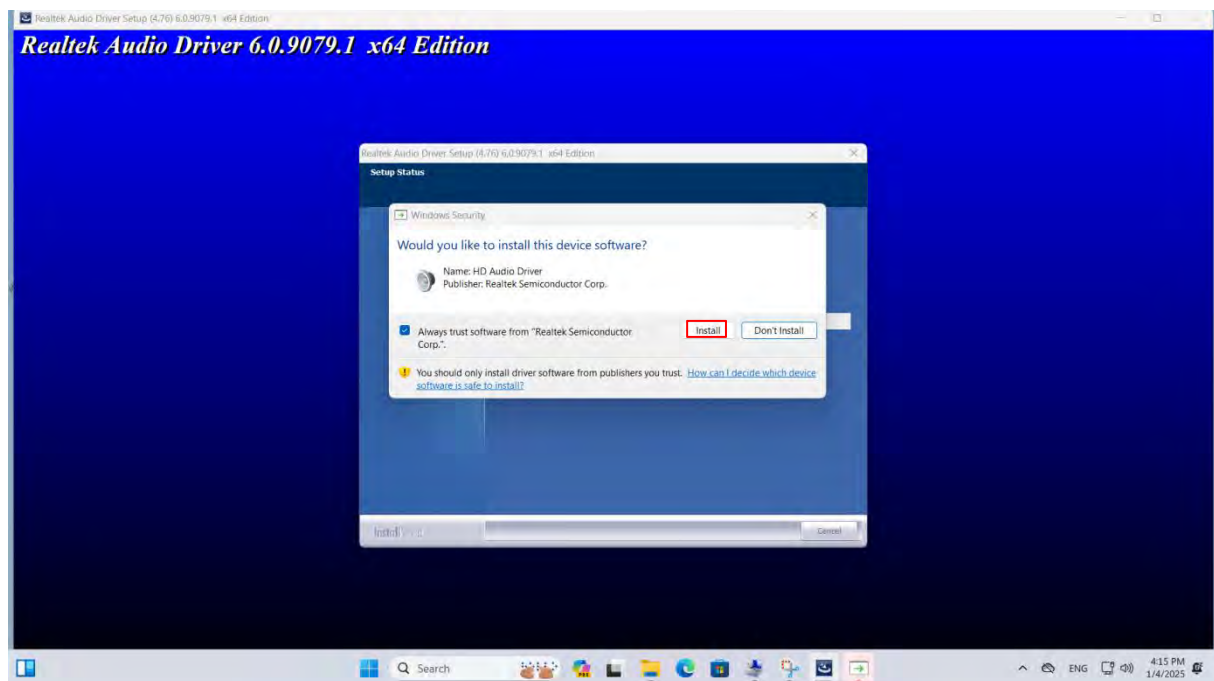
Once the download is complete, extract the driver files to an easily accessible folder.



9.3 Run the installer:

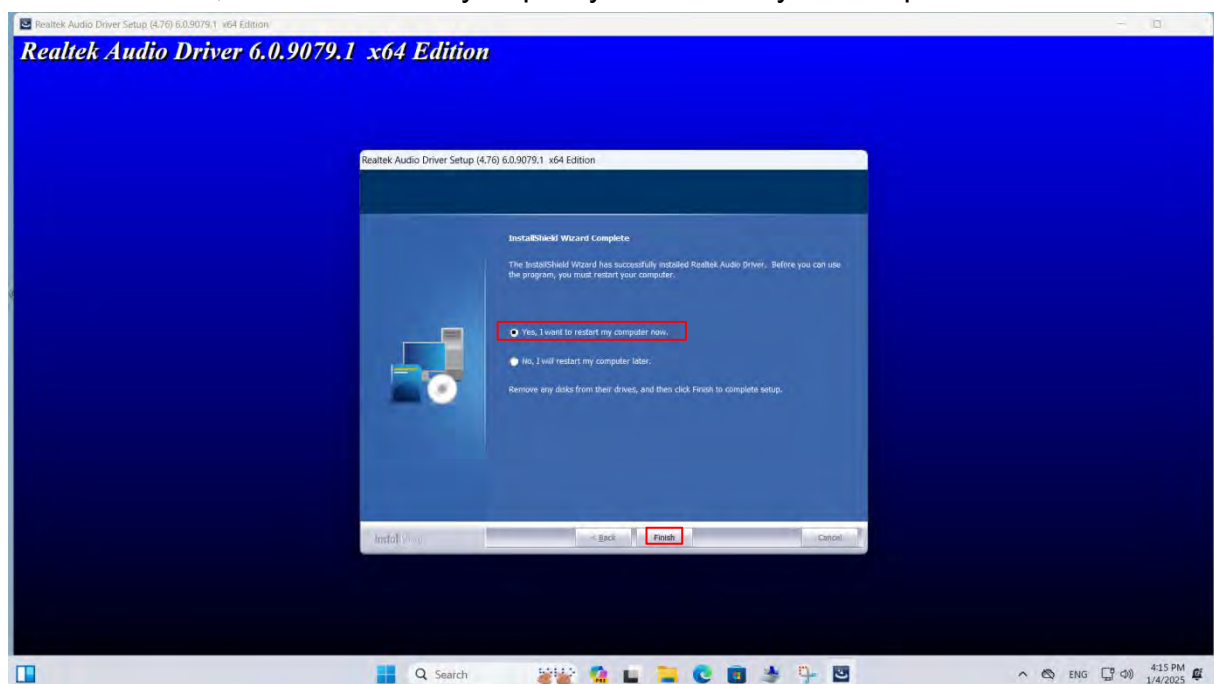
Find the setup program (usually an .exe file) in the unzipped folder and double-click it to run it. Follow the prompts to complete the installation process, which usually requires you to agree to the license agreement and select the installation path.





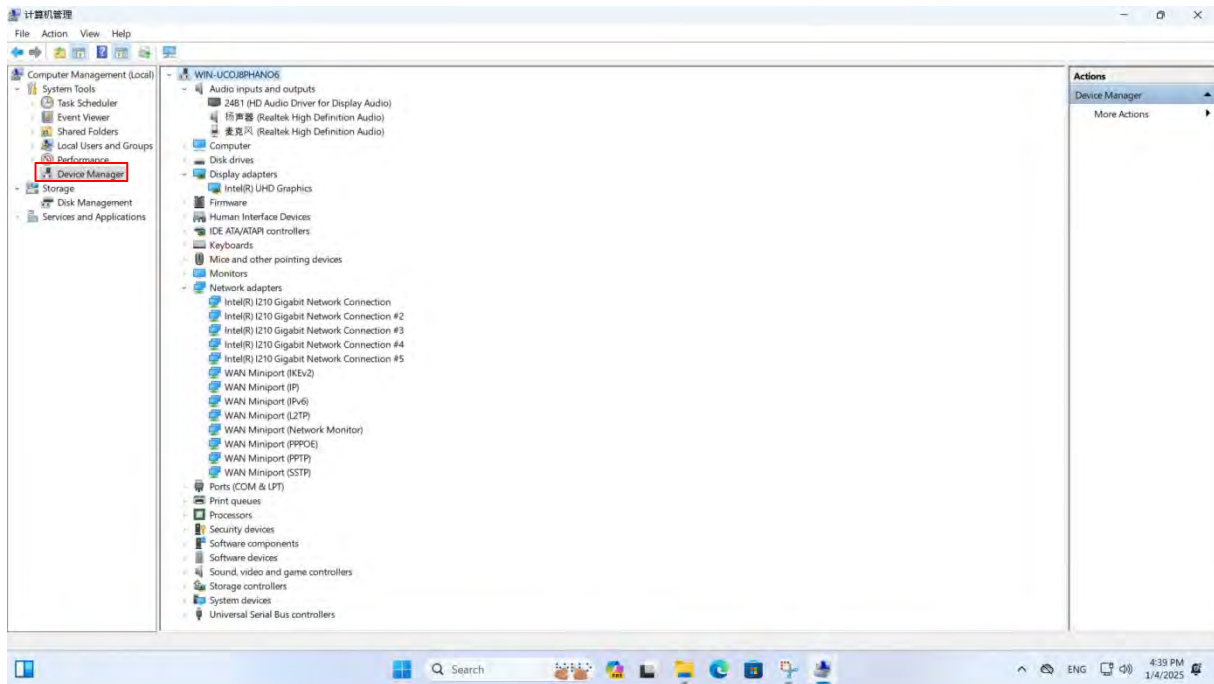
9.4 Restart your computer:

After installation, some drivers may require you to restart your computer to take effect.



9.5 Check the driver:

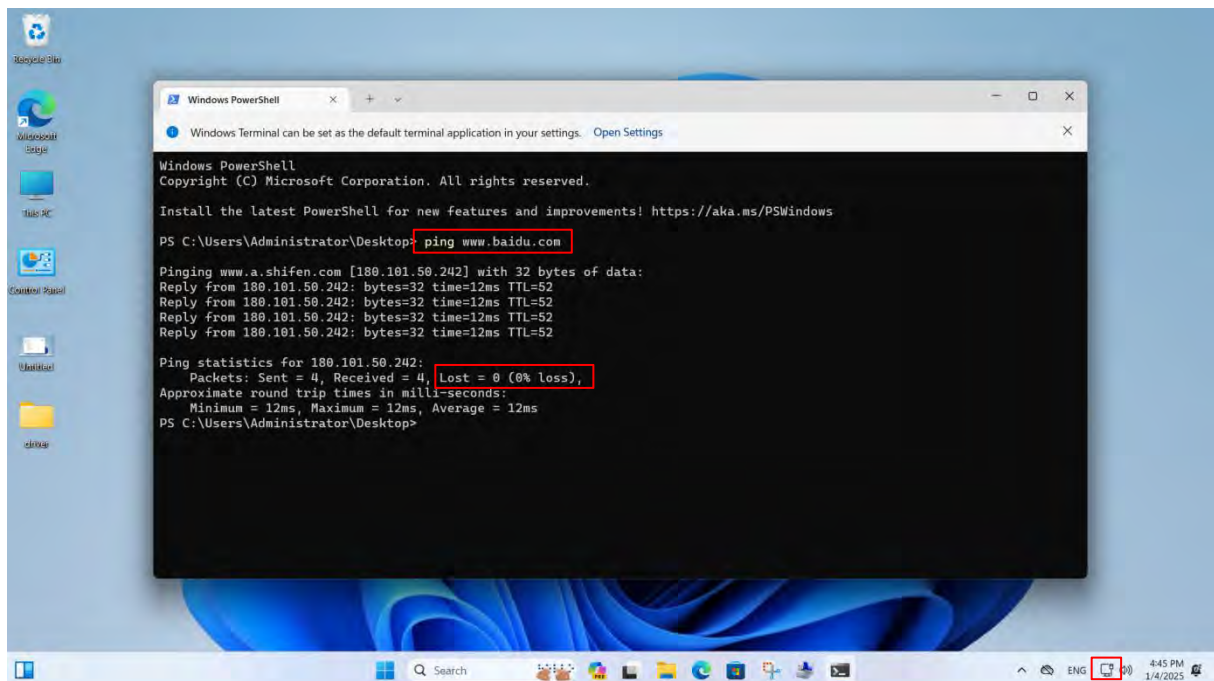
After the installation is complete, you can use the Device Manager to verify whether the driver has been successfully installed.



10 Network and WiFi connections

10.1 Network connection:

- You can check whether the network icon in the lower right corner of the device prompts [Network connected]
- In the device command prompt, enter a URL to check whether the network is connected successfully. Usually, a successful connection will show no packet loss.





10.2 WiFi connection:

You can check whether the WIFI icon in the lower right corner of the device prompts [WIFI is available]

You can check whether the WIFI module is recognized by the device manager.

In the device command prompt, enter a URL to check whether the WIFI connection is successful. Usually, if the connection is successful, it will show no packet loss.

If it cannot be recognized, it is recommended to restart the device and try again.

FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.