NuTAM-9XXE Series

Fanless Stainless Steel Panel PC

User Manual

Release Date	Revision
Dec 2025	V1.0

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Revision History

Reversion	Date	Description
1.0	2025/12/10	Official Version

Warning!_____

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Caution
Risk of explosion if the battery is replaced with an incorrect type.
Batteries should be recycled where possible. Disposal of used batteries must be in accordance with local environmental regulations.

Packing List

Accessories (as ticked) included in this package are:
☐ Adaptor ☐ Driver & manual CD disc ☐ Other._____(please specify)

Safety Precautions

Follow the messages below to prevent your systems from damage:

- Avoid your system from static electricity on all occasions.
- Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
- Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

TABLE OF CONTENT

Chapter 1 Getting Started

1.1 Main Features

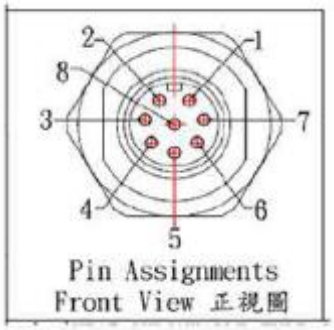
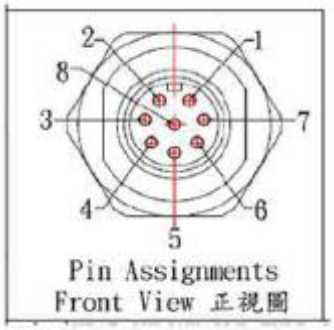
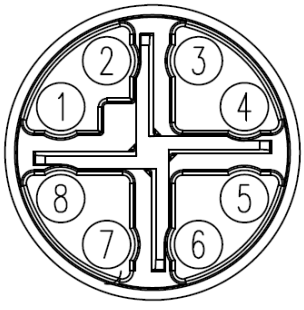
- 15” ~21.5” Fanless Stainless Steel Panel PC
- Intel® Core™ Ultra processors (Series 1)，formerly Meteor Lake
- True Flat Front Bezel Design and Grade 304 Stainless Steel Enclosure (Grade 316 for Option)
- Support Projective capacitive touch
- Touch on/off Button on the Side Edge for Hygienic Cleaning
- IP66/IP69K Rated with M12 Connectors
- DC 9~36V wide-ranging power input
- Support Ergonomic Versatile Mounting: Yoke Mounting / VESA Mounting

1.2 Serial Information

Serial Model	LCD Size	Touch Screen	M/B	Fanless	Power Input
NuTAM-915EP(H)	15”	Projected Capacitive	SBC-7133	V	DC 9~36V
NuTAM-916EP(H)	15.6”	Projected Capacitive	SBC-7133	V	DC 9~36V
NuTAM-917EP(H)	17”	Projected Capacitive	SBC-7133	V	DC 9~36V
NuTAM-919EP(H)	19”	Projected Capacitive	SBC-7133	V	DC 9~36V
NuTAM-921EP(H)	21.5”	Projected Capacitive	SBC-7133	V	DC 9~36V

1.3 Hardware Specifications

	NuTAM-9XXE
Main Board	Aplex SBC-7133, 3.5"SBC (146mm x 101.7mm)
CPU	Intel® Core™ Ultra processors (Series 1) ，formerly Meteor Lake: ● Intel® Core Ultra 5 125U (2 P-Cores x 1.3 GHz, 8 E-Cores x 0.8 GHz, 12MB cache, 15W) ● Intel® Core Ultra 7 155U (2 P-Cores x 1.7 GHz, 8 E-Cores x 1.2 GHz, 12MB cache, 15W)
CPU Turbo Mode	Disable Turbo Mode in BIOS
Chipset	SoC
Graphics	● Intel® Graphics for Ultra 5 125U (1.85 GHz) ● Intel® Graphics for Ultra 7 155U (1.95 GHz)
Memory	1 x 262-pin SO-DIMM slot, DDR5-5600MHz (non-ECC) up to 48GB

<table>
<tr><th></th><th colspan="2">Outside IO Port – Standard M12 I/O Connector on the Rear Side</th></tr>
<tr><td>USB</td><td>1 x M12 8-pin for USB2.0 with waterproof cap and chain
USB1/2:
<table><tr><th>CN1</th><th>Pin Define</th></tr><tr><td>1</td><td>USB1 5V</td></tr><tr><td>3</td><td>D1-</td></tr><tr><td>4</td><td>D1+</td></tr><tr><td>7</td><td>GND</td></tr><tr><td>2</td><td>USB2 5V</td></tr><tr><td>5</td><td>D2-</td></tr><tr><td>6</td><td>D2+</td></tr><tr><td>8</td><td>GND</td></tr></table></td><td> 
</td></tr>
<tr><td>Serial/Parallel</td><td>1 x M12 8-pin COM1, RS-232/422/485, Default RS-232, with waterproof cap and chain
<table><tr><th></th><th>Pin Define</th></tr><tr><td>1</td><td>DCD</td></tr><tr><td>2</td><td>RXD</td></tr><tr><td>3</td><td>TXD</td></tr><tr><td>4</td><td>DTR</td></tr><tr><td>5</td><td>GND</td></tr><tr><td>6</td><td>DSR</td></tr><tr><td>7</td><td>RTS</td></tr><tr><td>8</td><td>CTS</td></tr></table></td><td> 
</td></tr>
<tr><td>LAN</td><td>1 x M12 8-pin for LAN with waterproof cap and chain
LAN:
<table><tr><th></th><th>Pin Define</th></tr><tr><td>1</td><td>LAN1_0+</td></tr><tr><td>2</td><td>LAN1_0-</td></tr><tr><td>3</td><td>LAN1_1+</td></tr><tr><td>4</td><td>LAN1_1-</td></tr><tr><td>5</td><td>LAN1_2+</td></tr><tr><td>6</td><td>LAN1_2-</td></tr><tr><td>7</td><td>LAN1_3+</td></tr><tr><td>8</td><td>LAN1_3-</td></tr></table></td><td> 
</td></tr>
</table>

<table>
<tr><td>Power</td><td>1 x M12 3-pin for DC power-input
<table><tr><td></td><td>Pin Define</td></tr><tr><td>1</td><td>NC</td></tr><tr><td>3</td><td>VCC</td></tr><tr><td>4</td><td>GND</td></tr></table></td><td> 
</td></tr>
<tr><td>Optional I/O ports</td><td colspan="2">2x M12 Blank for Option (Select one from each type)
 

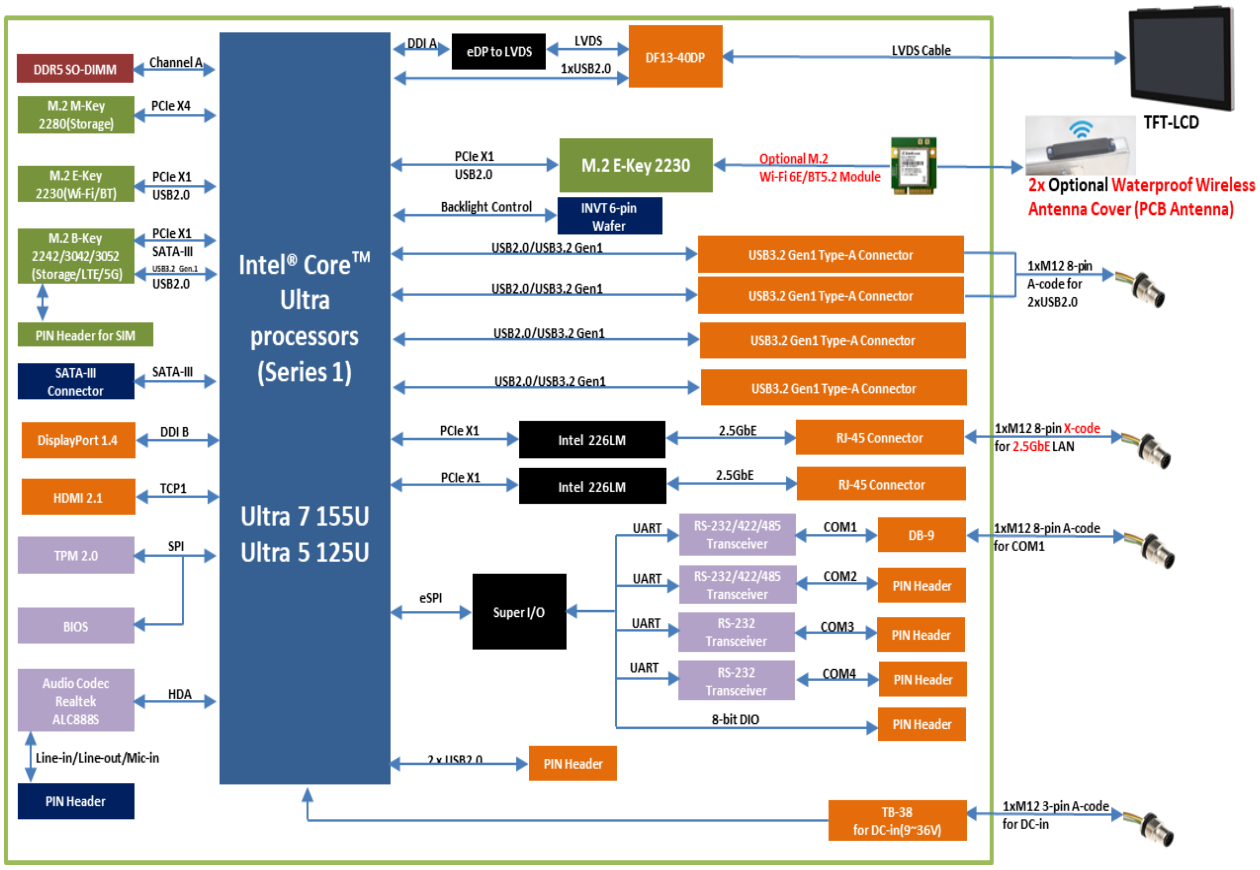
<table><tr><th>M12-1</th><th>M12-2</th></tr><tr><td>2 x USB2.0</td><td>1 x COM2(RS-232/422/485) or
1 x 2.5 GbE LAN</td></tr><tr><td>1 x USB3.2 Gen1</td><td>1 x USB3.2 Gen1 or
1 x COM2(RS-232/422/485) or
1 x 2.5 GbE LAN</td></tr><tr><td>1 x COM2(RS-232/422/485)</td><td>1 x USB3.2 Gen1 or
2 x USB2.0 or
1 x 2.5 GbE LAN</td></tr><tr><td>1 x 2.5 GbE LAN</td><td>1 x USB3.2 Gen1 or
2 x USB2.0 or
1 x COM2(RS-232/422/485)</td></tr><tr><td>1 x HDMI</td><td>1 x COM2(RS-232/422/485) or
1 x USB3.2 Gen1 or
2 x USB2.0 or
1 x 2.5 GbE LAN</td></tr></table></td></tr>
<tr><td>Storage</td><td colspan="2">● 1 x M.2 M-Key 2280 for SSD (PCIe4.0x4)</td></tr>
<tr><td>Chassis Material</td><td colspan="2">● 304 Stainless Steel Enclosure (Default)
● 316 Stainless Steel Enclosure (Optional)</td></tr>
<tr><td>Touch screen</td><td colspan="2">Projected Capacitive, Flat Panel design, default USB interface</td></tr>
</table>

Expansion Slots	● 1 x M.2 2230 E-Key (USB2.0, PCIe x1) for optional Wi-Fi/BT module ● 1 x M.2 2242/3402/3052 B-key (PCIe x1, USB3.2 Gen1, USB2.0) for optional LTE/5G module ● 1 x SIM card ● Optional M.2 Module: 6491002101000000, AX210.NGW00/OTHERS/M.2 2230 A/E KEY_INTEL/WIFI 6E +BT5.3/802.11AX (2.4G+5G+6GHz BANDS)+BT5.3/0~80 DEGREE/MEDICAL
IP Level	Totally IP66/IP69K
Safety & EMC	Meet CE / FCC, Class A
TPM	TPM 2.0
Antennas	● Optional Wi-Fi/BT Antenna Cover : 0431791630000002，SABIC-3412R/BLACK ● Optional Wi-Fi/BT Antenna Rubber : 0510000000000023，30˚+57115B+MYLAR ● Optional internal Wi-Fi/BT PCBA Antenna: (1) 6602000152400000，RFA-25-AP152L-4G-400 L=40cm (2) 6602000152500000，RFA-25-AP152L-4G-500 L=50cm

1.4 POWER

Item	Description
Power Module	DC 9~36V

1.5 Block Diagram



1.6 Dimensions

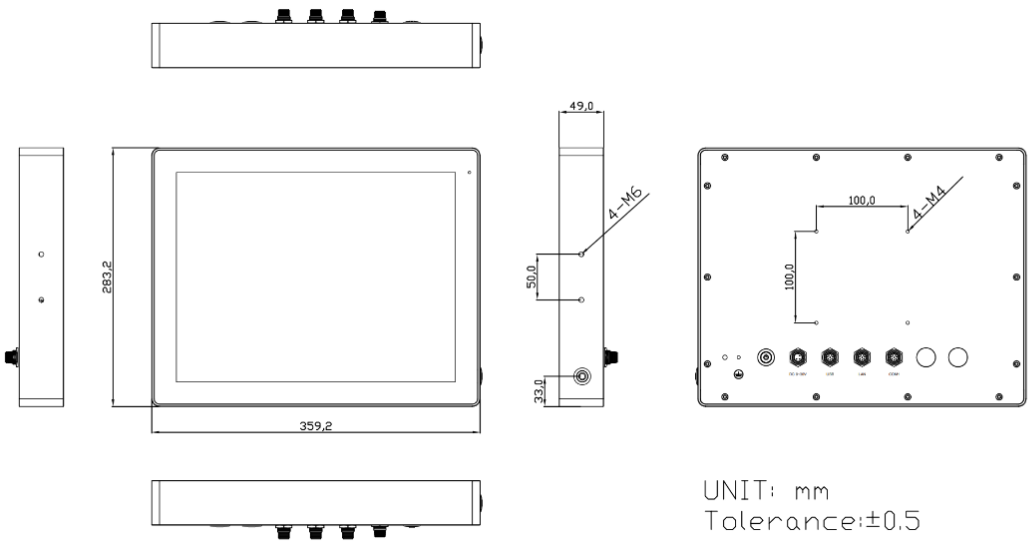


Figure 1. 1 Dimensions of NuTAM-915EP(H)

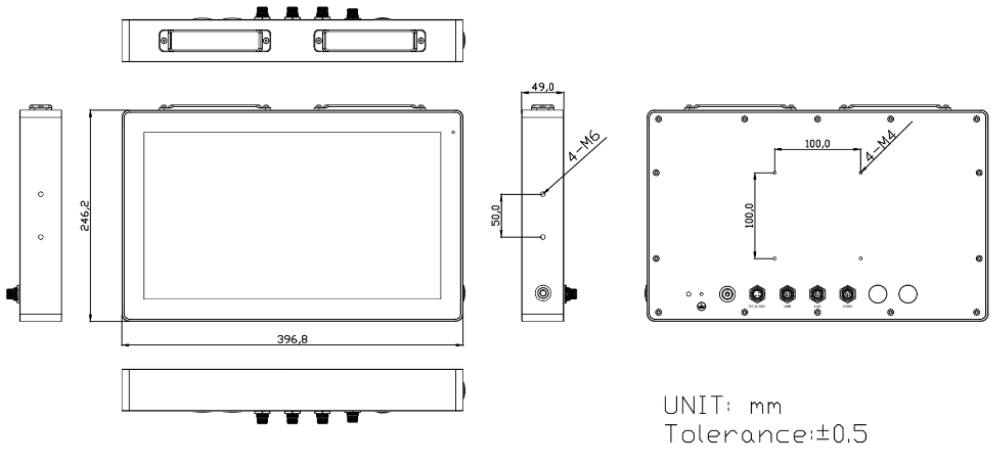


Figure 1. 2 Dimensions of NuTAM-916EP(H)

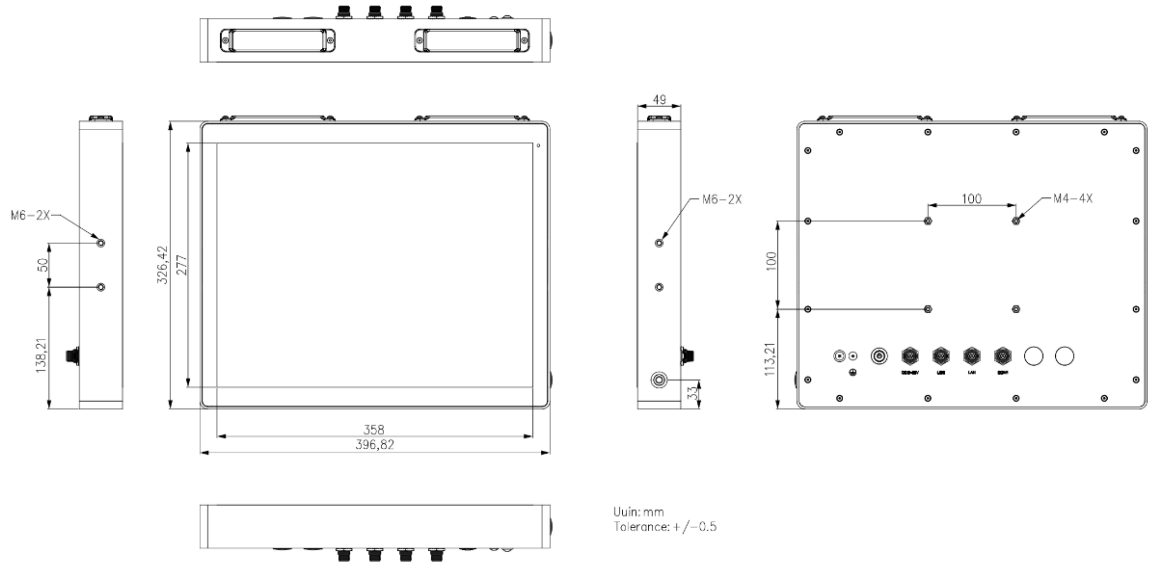


Figure 1. 3 Dimensions of NuTAM-917EP(H)

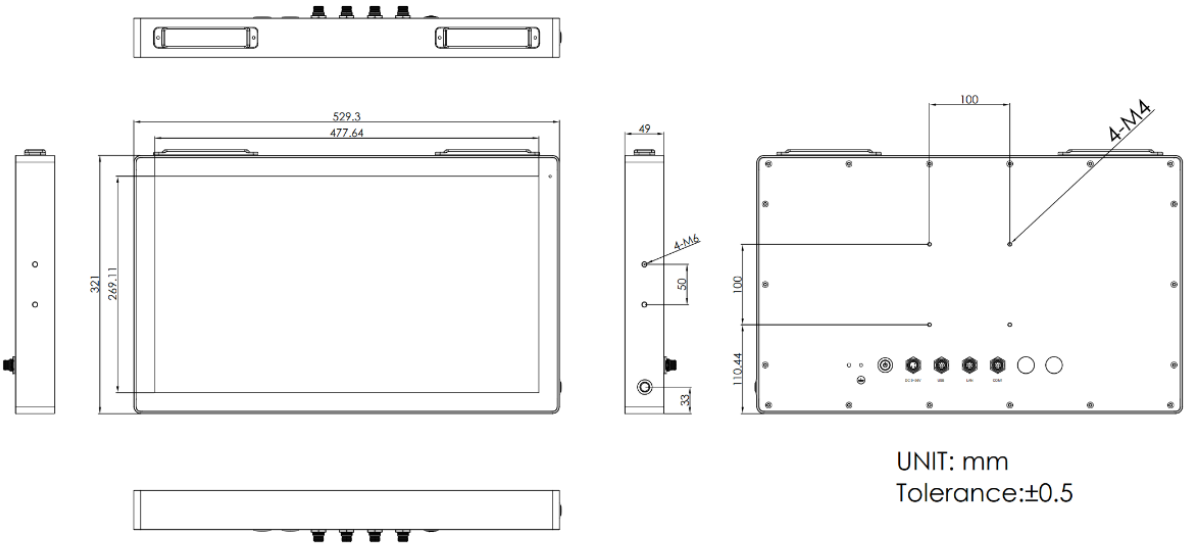


Figure 1. 4 Dimensions of NuTAM-921EP(H)

1.7 Brief Description of NuTAM-9XXE Series

There are 15”, 15.6”, 17”, 19”, and 21.5” new-generation panel PC in the NuTAM-9XXE series, adopting SUS304 grade stainless steel housing (SUS316 grade for option), which comes with 100% dust and waterproof guarantee and an all-in-one fanless design. It is powered by Intel® Core™ Ultra 5 125U and Ultra 7 155U processors, 1 x 262-pin SO-DIMM slot supporting up to 48GB DDR5-5600MHz memory, and 1 x M.2 M-Key 2280 slot for PCIe 4.0 x4 SSD. The NuTAM-9XXE series supports wide-range DC 9~36V power input and is IP66/IP69K rated with M12 connectors. Furthermore, the models support projected capacitive touch and can be designed with high-brightness LCD and optical bonding for option. It supports a touch on/off button on the side edge for hygienic cleaning and provides ergonomic versatile mounting: yoke mounting and space-saving VESA mounting.

Figure 1. 5 Front View and Touch on/off Button of NuTAM-9XXE Series

Figure 1. 6 Rear View of NuTAM-9XXE Series

1.8 Yoke Mounting and VESA Mounting

The NuAM-9XXE Series model can be Yoke mounted and VESA mounted as shown in Picture below.

Figure 1. 7 Yoke mounting of NuTAM-9XXE Series

Figure 1. 8 VESA mounting of NuTAM-9XXE Series

Chapter 2 Hardware

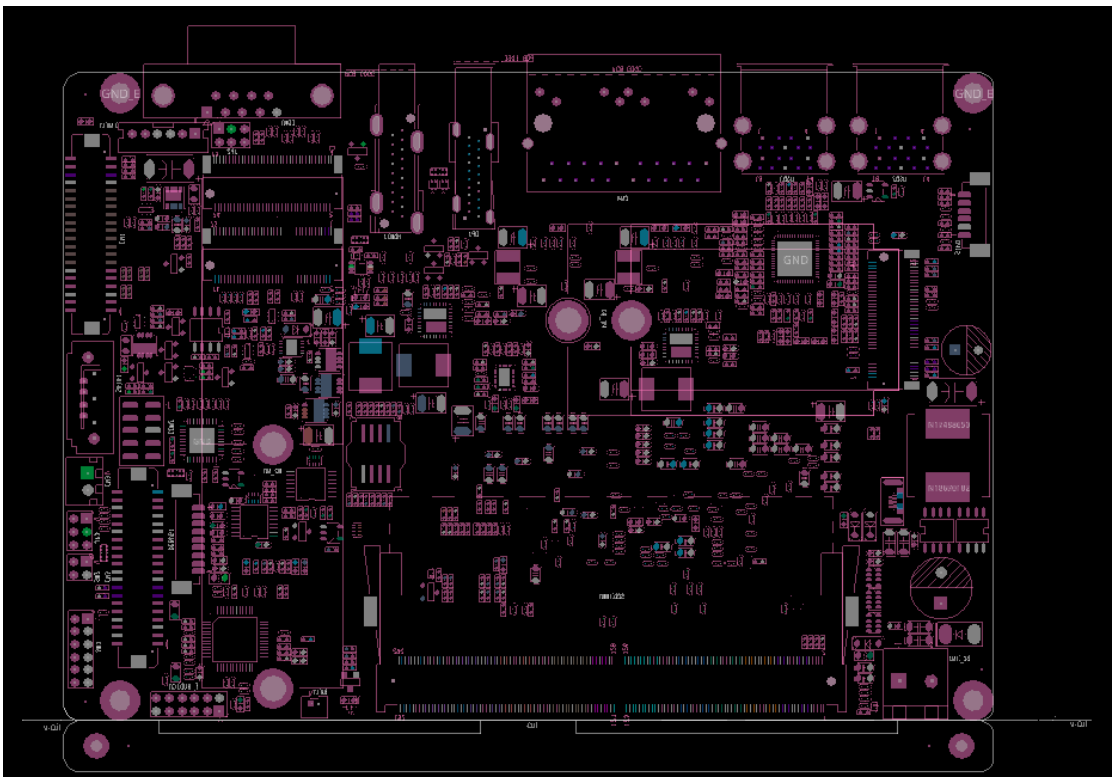
2.1 Motherboard Introduction

SBC-7133 is a 3.5" industrial motherboard developed on the basis of Intel Meteor Lake U, which provides abundant peripheral interfaces to meet the needs of different customers.

2.2 Specifications & Dimensions

Specifications	
Board Size	146mm x 101.6mm
CPU Support	Intel® Core™ Ultra 7 Processor 155U, 12C, up to 4.8GHz(P-Core) 3.8GHz(E-Core),15W-57W Intel® Core™ Ultra 5 Processor 125U, 12C, up to 4.3GHz(P-Core) 3.6GHz(E-Core),15W-57W
Chipset	SOC
Memory Support	1x SO-DIMM (260pins), up to 48GB DDR5 5600MT/s
Graphics	Integrated Intel Graphics
Display Mode	1 x HDMI 2.1b via HDMI Port 1 x DP 1.4, DP++ via DP port 1 x LVDS (18/24-bit dual LVDS) / eDP (option by BOM selection)
Support Resolution	HDMI: support up to 7680 x 4320 @60Hz DP: support up to 7680 x 4320 @60Hz or 38400 x 2160 @120Hz LVDS: support up to 1920x1080 @60Hz eDP: support up to 7680 x 4320 @60Hz Noted: Up to 3 synchronous displays
Super I/O	ITE IT8786E-I/HX
BIOS	AMI/UEFI BIOS
Storage	1 x SATAIII via SATA connector 1 x M.2 M-Key(PCIe Gen4 x4) 2280 for Storage
Ethernet	1 x 2.5 GbE LAN via intel® I226LM controller (PXE/WOL) 1 x 2.5 GbE LAN via intel® I226LM controller (PXE/WOL)
USB	4 x USB3.2 gen1/USB2.0,Type-A stack ports 2 x USB2.0 via SHD 1.25mm 2x20pin header (CN5)

Serial	1 x RS-232(default)/422/485 select via BIOS, pin9 Rear I/O (default) 5V/12V select via jumper, DB9 (COM1) 1 x RS-232(default)/422/485 select via BIOS, pin header (COM2) 2 x RS-232 via pin header/TX, RX only (COM3/COM4)
GPIO	8-bit digital I/O by SHD 1.25mm 2x20pin header (CN5)
Audio	Support Audio via Realtek ALC888S HD audio codec Support Line-in,Line-out,MIC by SHD 2.0mm 2x6pin header
Expansion Slots	1 x M.2 B-Key 2242/3042/3052 for SSD and 4G / 5G module (USB3.2 Gen1x1, PCIe2.0x1 / SATA, USB2.0), w/pin header for SIM slot 1 x M.2 E-Key 2230 for Wi-Fi / BT module (USB2.0, PCIe4.0x1)
Watchdog Timer	Software programmable 1–255 level
TPM	Onboard TPM IC Infineon_ SLB 9672VU2.0 Support TPM, select via BIOS
Switches and LED Indicators	Power button/reset button/power LED/HDD LED via SHD 1.25mm 2x20pin header (CN5)
Battery	Support 3V RTC Li-battery via 2pin wafer (BAT1)
Power Management	Wide range DC 9~36V±10% power input via 2pin terminal block
Temperature	Operating: -30℃ to 70℃ Storage: -40℃ to 85℃
Humidity	10% - 90%, non-condensing, operating
Certifications	CE/FCC class A UL RoHS2.0



Dimensions: 146 x 101.6 (units :mm)

Figure 2. 1 Motherboard Dimensions

2.3 Jumpers and Connectors Location

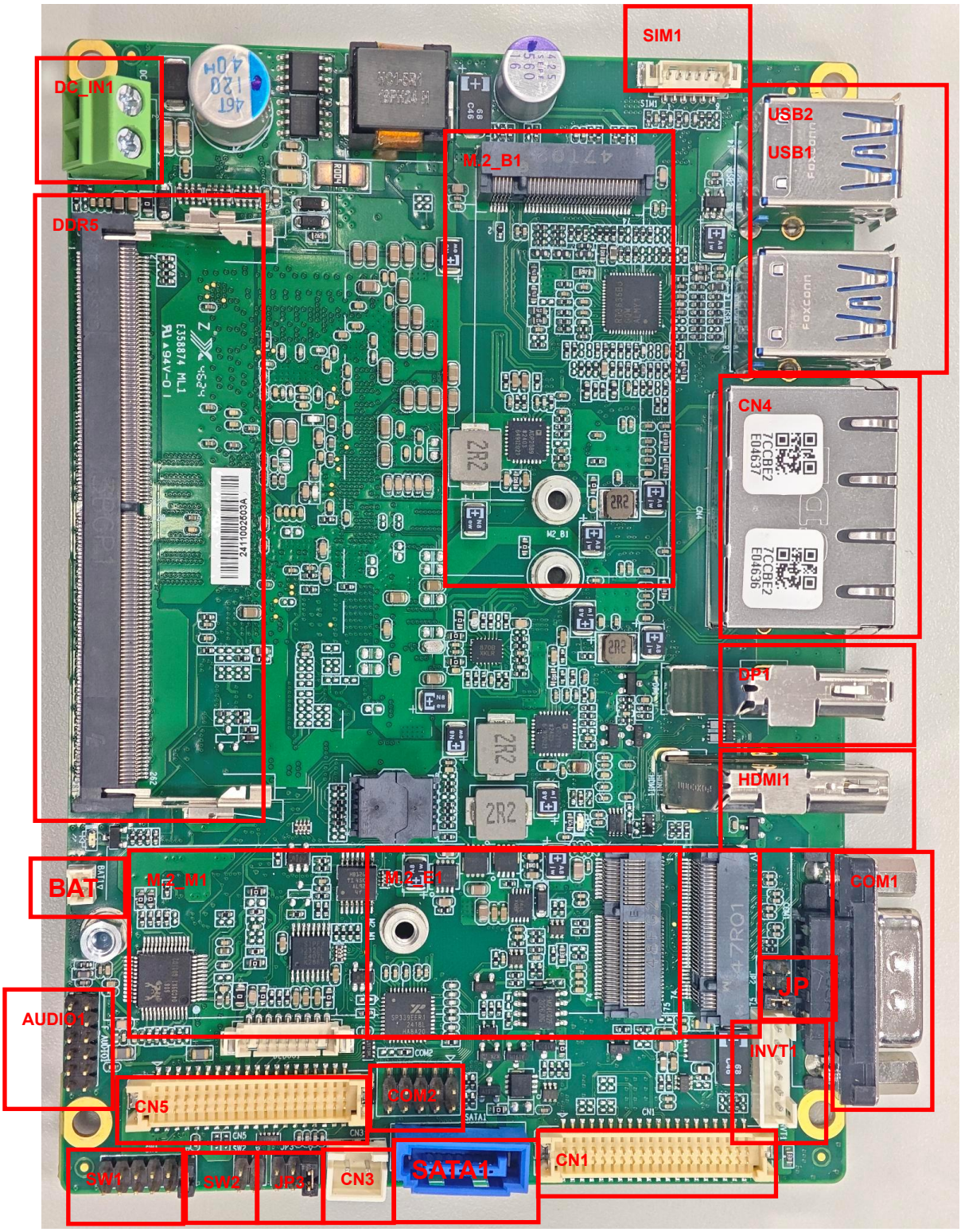


Figure 2. 2 Jumpers and Connectors Location- Board Top

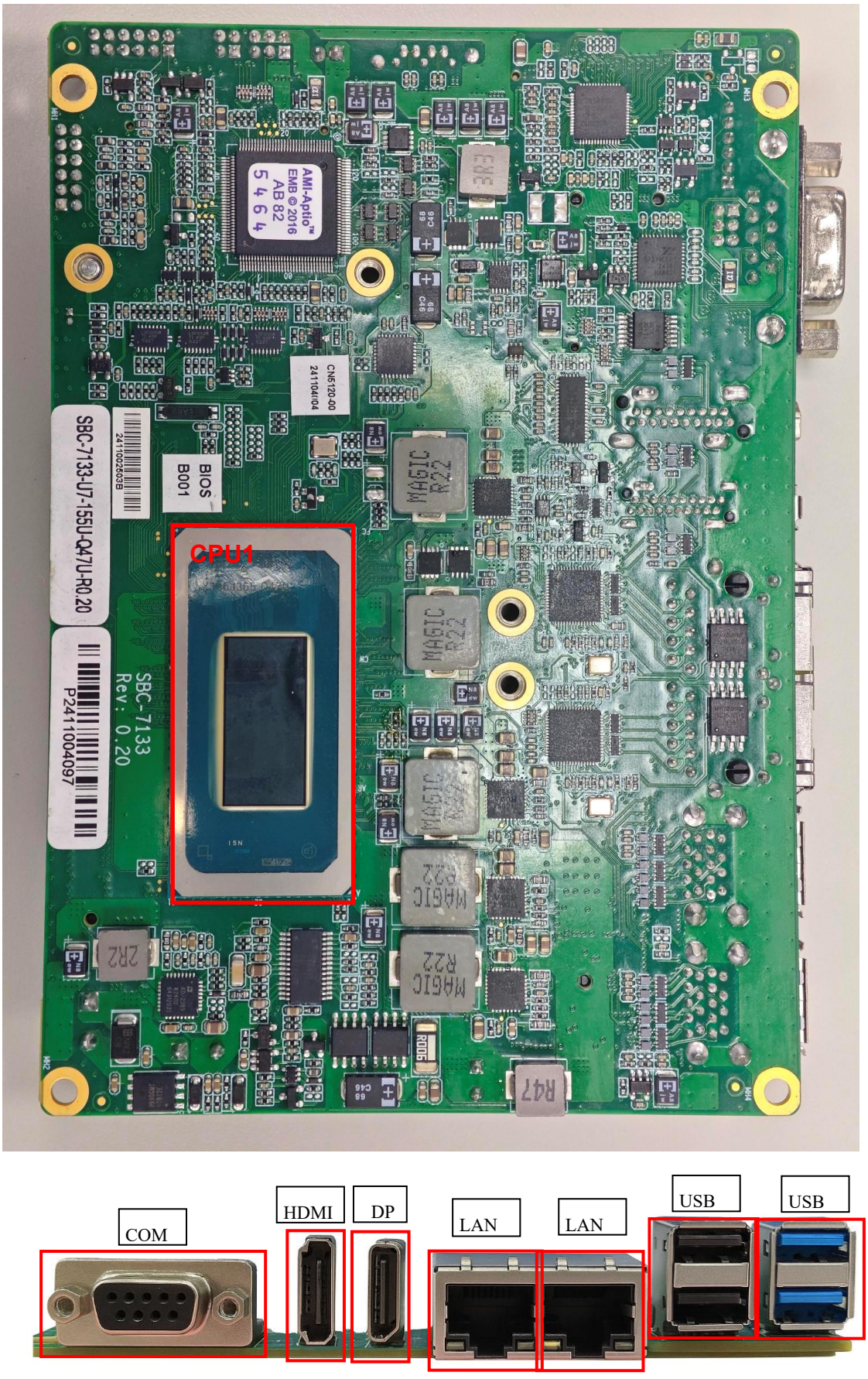


Figure 2. 3 Jumpers and Connectors Location- Board Bottom

2.4 Jumpers Setting and Connectors

1. CPU1:

(FCBGA1744) Onboard Intel Meteor Lake SoC

Model	SoC				
	Number	PBF	Cores/ Threads	TDP	Remarks
SBC-7133-I5 125U	125U	Up to 4.3GHz(P-Core) 3.6GHz(E-Core)	2C+8A / 12	15W-55W	Default
SBC-7134-I7 155U	155U	Up to 4.8GHz(P-Core) 3.8GHz(E-Core)	2C+8A / 14	15W-55W	Default

2. DDR5:

(SO-DIMM slot) DDR5 memory socket, the socket is located at the top of the board and supports 262Pin DDR5 SO-DIMM memory module up to 48GB.

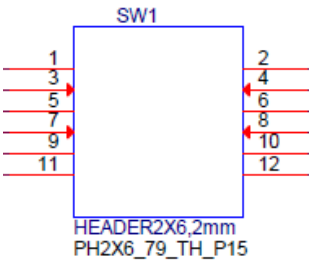
Max Memory Size (dependent on memory type).

3. VBAT1:

(1.25mm Pitch 1x2 wafer Pin Header) 3.0V Li battery is embedded to provide power for CMOS.

Pin#	Signal Name
Pin1	VCC_RTC
Pin2	GND

4. SW1:



(2.00mm Pitch 2x6 Pin Header) Power mode and LVDS setting.

Switch	Open	Close
Pin1-2	Default, PWRBTN-ON	Auto-PSON

Pin3-4	ATX Mode	Default, AT Mode
Pin5-6	Default, Normal	Close 1sec to Clear CMOS
Pin7-8	Default, LVDS 5V	LVDS 3.3V
Pin9-10	Default, LVDS Dual CH.	LVDS Single CH.
Pin11-12	Default, LVDS 6 bit Signal	LVDS 8 bit Signal

CMOS clear switch, CMOS clear operation will permanently reset old BIOS settings to factory defaults.

Procedures of CMOS clear:

a) Turn off the system and unplug the power cord from the power outlet.

b) To clear the CMOS settings, close Pin5-6 for 1 second

c) Power on the system again.

d) When entering the POST screen, press the <DEL> key to enter CMOS Setup Utility to load optimal defaults.

e) After the above operations, save changes and exit BIOS Setup.

5. SW2:

(2.0mm Pitch 2x2 wafer Pin Header) EDID EEPROM program header

Pin#	Signal Name
Pin1	3P3V_S5_EDID
Pin2	PANEL_CLK
Pin3	GND
Pin4	PANEL_DATA

6. DC_IN1:

(5.08mm Pitch DINKLE_ ELK508S-02P) DC9~36V system power input connector.

Pin#	Signal Name
Pin1	DC_IN+ (DC+9V~36V)
Pin2	DC_IN-

7. CN1:

(1.25mm Pitch 2x20 DF13-40DP Female Header) LVDS connector

Signal Name	Pin#		Signal Name
12V_S0	1	2	12V_S0
BKLT_CTRL	3	4	BKLT_EN_OUT
GND	5	6	GND
LVDS_VCC	7	8	LVDS_VCC
LVDS_VCC	9	10	LVDS_VCC
GND	11	12	GND
LA_D0_N	13	14	LA_D0_P
LA_D1_N	15	16	LA_D1_P
LA_D2_N	17	18	LA_D2_P
LA_D3_N	19	20	LA_D3_P
LA_CLKN	21	22	LA_CLKP
LB_D0_N	23	24	LB_D0_P
LB_D1_N	25	26	LB_D1_P
LB_D2_N	27	28	LB_D2_P
LB_D3_N	29	30	LB_D3_P
LB_CLKN	31	32	LB_CLKP
NC	33	34	GND

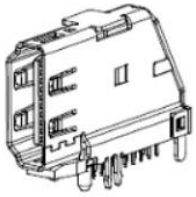
USB7_N	35	36	USB7_P
PANEL_DATA	37	38	USB_5V
PANEL_CLK	39	40	PWR_LED+

8. CN5:

(1.25mm Pitch 2x20 DF13-40DP Female Header)

Signal Name	Pin#	Pin#	Signal Name
PWR_LED+	2	1	HD_LED+
PWR_LED-	4	3	HD_LED-
PWR_BTN+	6	5	SYS_RST-
PWR_BTN-	8	7	SYS_RST+
BUZZER-	10	9	BUZZER+
USB_5V	12	11	USB_5V
USB_D2-	14	13	USB_D1-
USB_D2+	16	15	USB_D1+
GND	18	17	GND
GND	20	19	GPIO_5V
GPIO_OUT1	22	21	GPIO_IN1
GPIO_OUT2	24	23	GPIO_IN2
GPIO_OUT3	26	25	GPIO_IN3
GPIO_OUT4	28	27	GPIO_IN4
GND	30	29	GND
COM3_TX	32	31	GND
COM3_RX	34	33	GND
GND	36	35	SMBCLK
COM4_TX	38	37	SMBDATA
COM4_RX	40	39	3P3V_S5

9. HDMI1:



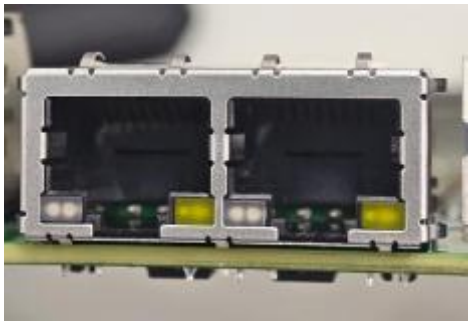
(Vertical HDMI Connector) HDMI Interface connector.

HDMI 2.1b, Support resolution up to 7680 x 4320 @60Hz.

10. DP:

(DP Connector) DisplayPort Interface connector.
DisplayPort 1.4, DP++ support resolution up to 7680 x 4320 @60Hz or 38400 x 2160 @120Hz.

11. CN4:



(2 x RJ45 Connector) Provide 2.5GbE LAN via Intel® I226-LM.

Status	Description
GREEN (Left)	1GBps
ORG (Left)	2.5GBps
Yellow (Right)	Commend, Flashing when commend sending

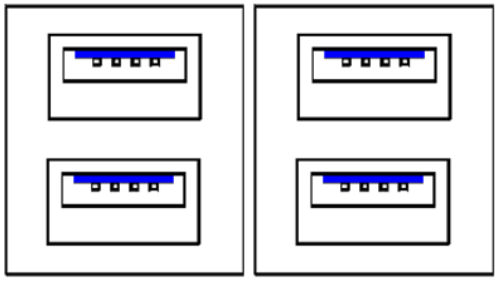
12. F_AUDIO1:

(2.0mm Pitch 2x6 Pin Header) Provide line-in/line-out/mic-in via onboard Realtek ALC888S codec.

Signal Name	Pin#	Pin#	Signal Name
5V_S5	1	2	GND_AUD
LINE-OUT-L	3	4	LINE-OUT-R
FRONT_JD	5	6	LINE_JD
LINE-IN-L	7	8	LINE-IN-R
MIC-IN-L	9	10	MIC-IN-R
GND_AUD	11	12	MIC1_JD

13. USB3、USB4:

(Double stack USB typeA) Rear USB3.2 connector, provides up to 4 USB3.2 gen1/USB2.0 ports, USB3.2 gen1 allows data transfers up to 5.0Gbps.



Each USB Type A Receptacle (4 Ports) Current limited value is 2A. If the external USB device current exceeds 2.0A, please separate connectors into different Receptacle.

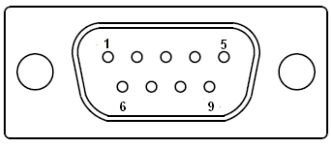
14. F_USB1:

(SHD 1.25mm 2x5pin header) Provide 2xUSB2.0 signals.

Signal Name	Pin#	Pin#	Signal Name
5V_USB23	1	2	5V_USB23
USB2_N	3	4	USB3_N
USB2_P	5	6	USB3_P
GND	7	8	GND
GND	9	10	GND

15. COM1:

(DB9 connector) Provide serial RS232/422/485 via standard DB9 male connector. Default is set to RS232, RS422/485 can be selected via BIOS. Pin 9 RI/5V/12V select via JP1.



RS232 (Default):	
Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)

5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	JP1 select Setting (RI/5V/12V)
BIOS Setup：Serial Port 1 Configuration【RS-232】	

RS422 (option):	
Pin#	Signal Name
1	422_TX-
2	422_TX+
3	422_RX+
4	422_RX-
5	GND
6	NC
7	NC
8	NC
9	NC
BIOS Setup：Serial Port 1 Configuration【RS-422】	

RS485 (option):	
Pin#	Signal Name
1	485-
2	485+
3	NC
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC
BIOS Setup：Serial Port 1 Configuration【RS-485】	

16. JP2:

(2.0mm Pitch 2x3 Pin Header) For COM1 pin9 signal setting.

JP1 Pin#	Function

Close 1-2	COM1 Pin9 RI (Ring Indicator, Default)
Close 3-4	COM1 Pin9 = +5V
Close 5-6	COM1 Pin9 = +12V

17. COM2:

(2.0mm Pitch 2x5 Pin Header) Provide serial RS232/422/485, Default is set to RS232, RS422/485 can be selected via BIOS.pin 9 RI/5V/12V select via JP3.

RS232 (Default):	
Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	JP3 select Setting (RI/5V/12V)
BIOS Setup：Serial Port 2 Configuration【RS-232】	

RS422 (option):	
Pin#	Signal Name
1	422_TX-
2	422_TX+
3	422_RX+
4	422_RX-
5	GND
6	NC
7	NC
8	NC
9	NC
BIOS Setup：Serial Port 2 Configuration【RS-422】	

RS485 (option):

Pin#	Signal Name
1	485-
2	485+
3	NC
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC
BIOS Setup：Serial Port 2 Configuration【RS-485】	

18. JP3:

(2.0mm Pitch 2x3 Pin Header) For COM2 pin9 signal setting.

JP1 Pin#	Function
Close 1-2	**COM2 Pin9 RI (Ring Indicator, Default)**
Close 3-4	COM2 Pin9 = +5V
Close 5-6	COM2 Pin9 = +12V

19. GPIO1:

(SHD 1.25mm 2x5pin header) Provide 8Xgpio with 3.3V VCC.

Signal Name	Pin#	Pin#	Signal Name
3.3V_GPIO	1	2	GND
GPIO0	3	4	GPIO1
GPIO2	5	6	GPIO3
GPIO4	7	8	GPIO5
GPIO6	9	10	GPIO7

20. INVT:

(2.0mm Pitch 1x6 Pin Header ,WTB-3001E1-064N5) For LVDS Inverter.

Pin#	Function
1	12V_S0
2	12V_S0
3	GND

4	GND
5	BKLT_EN_OUT
6	BKLT_CTRL

21. M2_B1:

(M.2 B-Key Socket) Support 2242/3052 wireless communication cards.

22. SIM1:

(1.25mm Pitch 1x6 Pin Header WTB-2021N-062NA) Support SIM card for M2_B1.

Pin#	Signal Name
1	SIMVCC
2	GND
3	SIM_RST
4	NC
5	SIM_CLK
6	SIM_DATA

23. M2_M1:

(M.2 M-Key Socket) Support 2280 PCIE interface SSD.

24. M2_E1:

(M.2 E-Key Socket) Provide USB2.0/PCIex1, support E-key 2230 WiFi/BT expansion cards.

25. SATA1:

(SATA 7Pin) SATA connector provide SATA III signal for storages.

26. CN3:

(2.5mm Pitch 1x2 Wafer Pin Header) 5V power supply for SATA1 port device.

Pin#	Signal Name

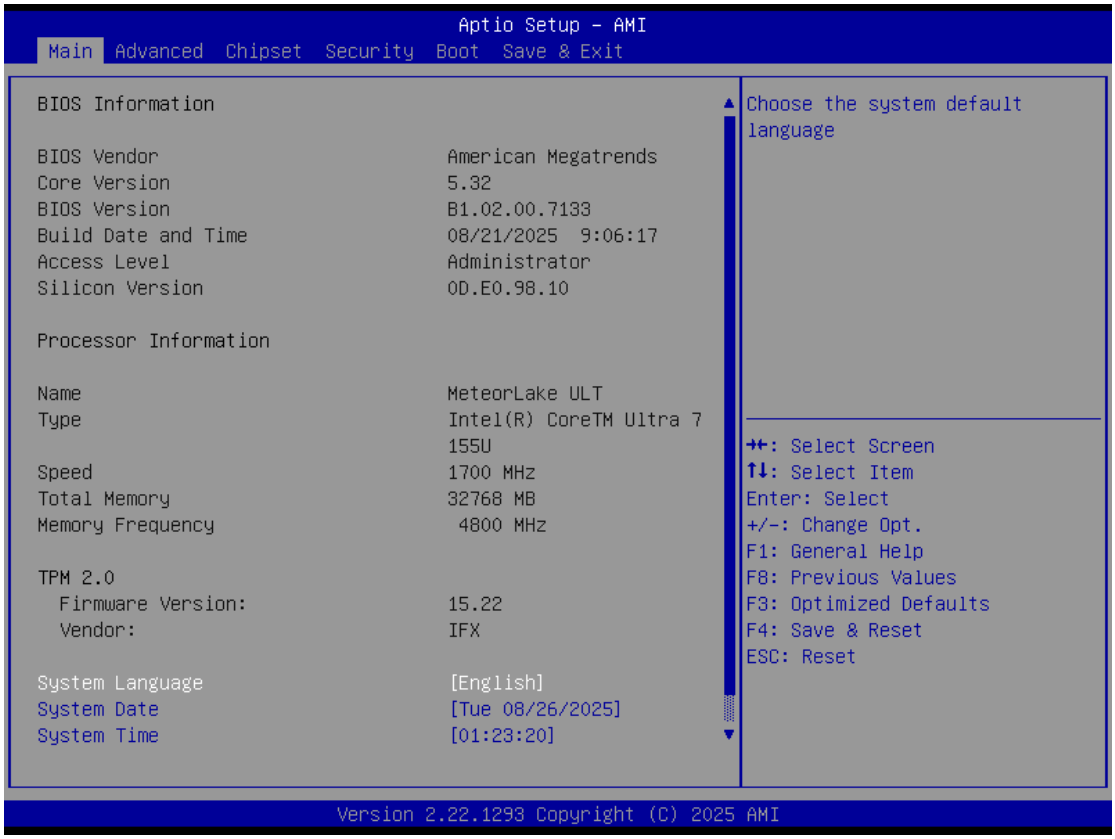
1	5V_S0
2	GND

Note:

Output current of the connector must not be above 1A.

Chapter 3 BIOS Setup

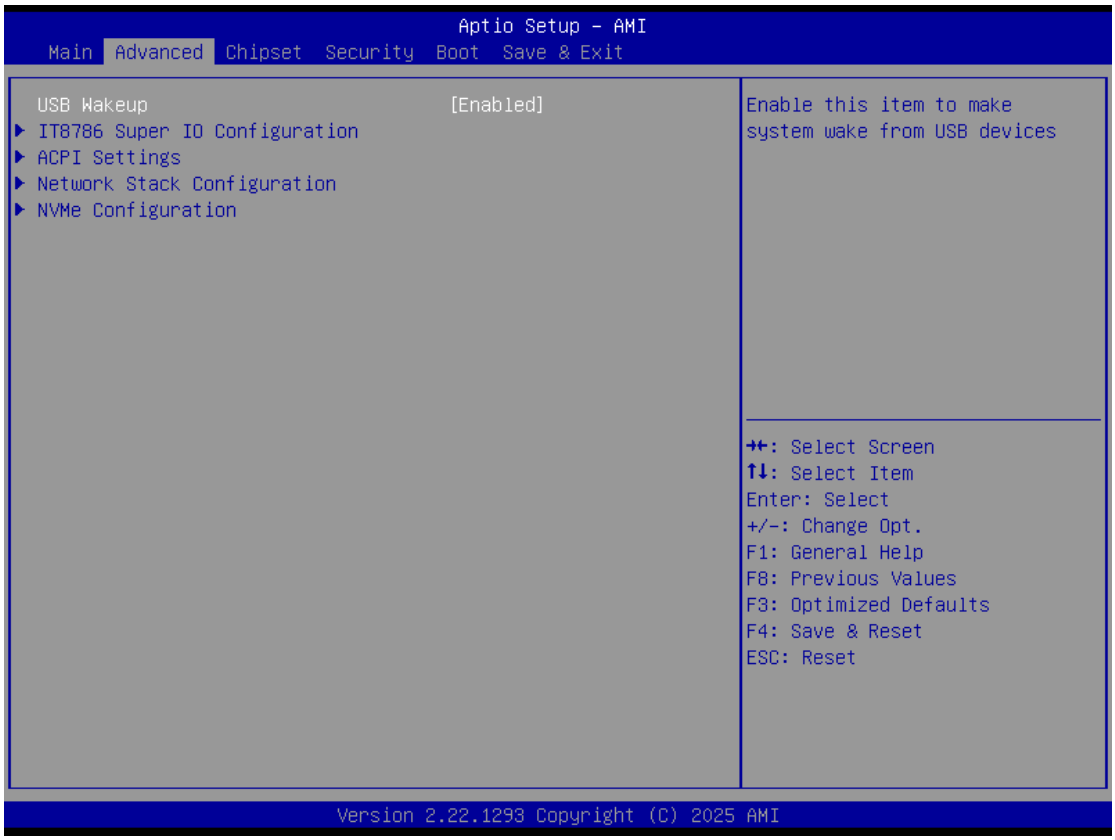
3.1 Main



Parameter	Option	Description
BIOS Information		
BIOS Vendor	American Megatrends	BIOS Vendor
Core Version	5.32 (Dynamically Updated)	Core Version
BIOS Version	B1.02.00.7133 (Dynamically Updated)	BIOS version
Build Date and Time	08/21/2025 09:06:17 (Dynamically Updated)	Build Date and Time
Access Level	Administrator (Dynamically Updated)	Access Level
Silicon Version	0D.E0.98.10	Silicon Version

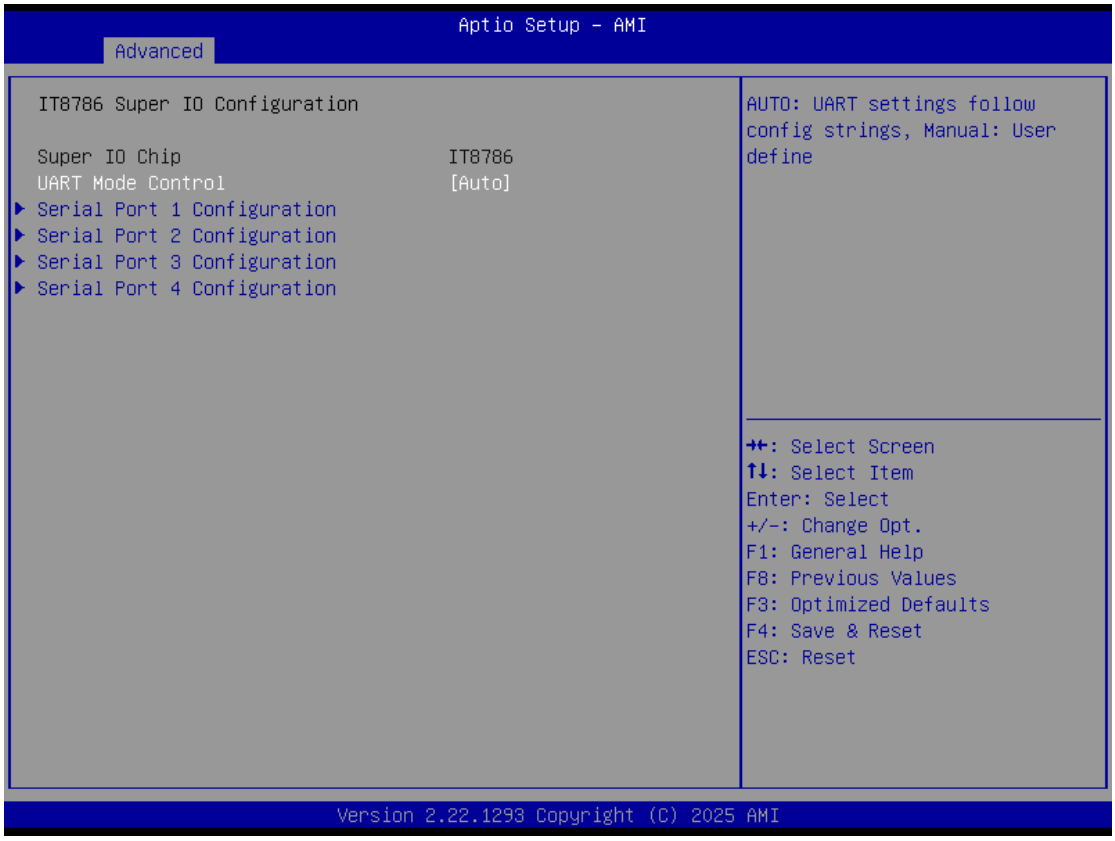
Processor Information		
Name	MeteorLake ULT	Displays the Processor Details
Type	Intel(R) Core(TM) Ultra 7 155U (Dynamically Updated)	Displays the Processor Type
Speed	1700 MHz (Dynamically Updated)	Displays the Processor Speed
Total Memory	32768 MB (Dynamically Updated)	Total Memory in the System
Memory Frequency	4800 MHz (Dynamically Updated)	Displays the Frequency of Memory
TPM 2.0		
Firmware Version:	15.22	Firmware Version
Vendor:	IFX	Vendor
System Language	English (Default)	Choose the system default language
System Date	Tue 08/26/2025	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998-9999 Months: 1-12 Days: Dependent on month Range of Years may vary.
System Time	01:23:20	Set the Time. Use Tab to switch between Time elements.

3.2 Advanced



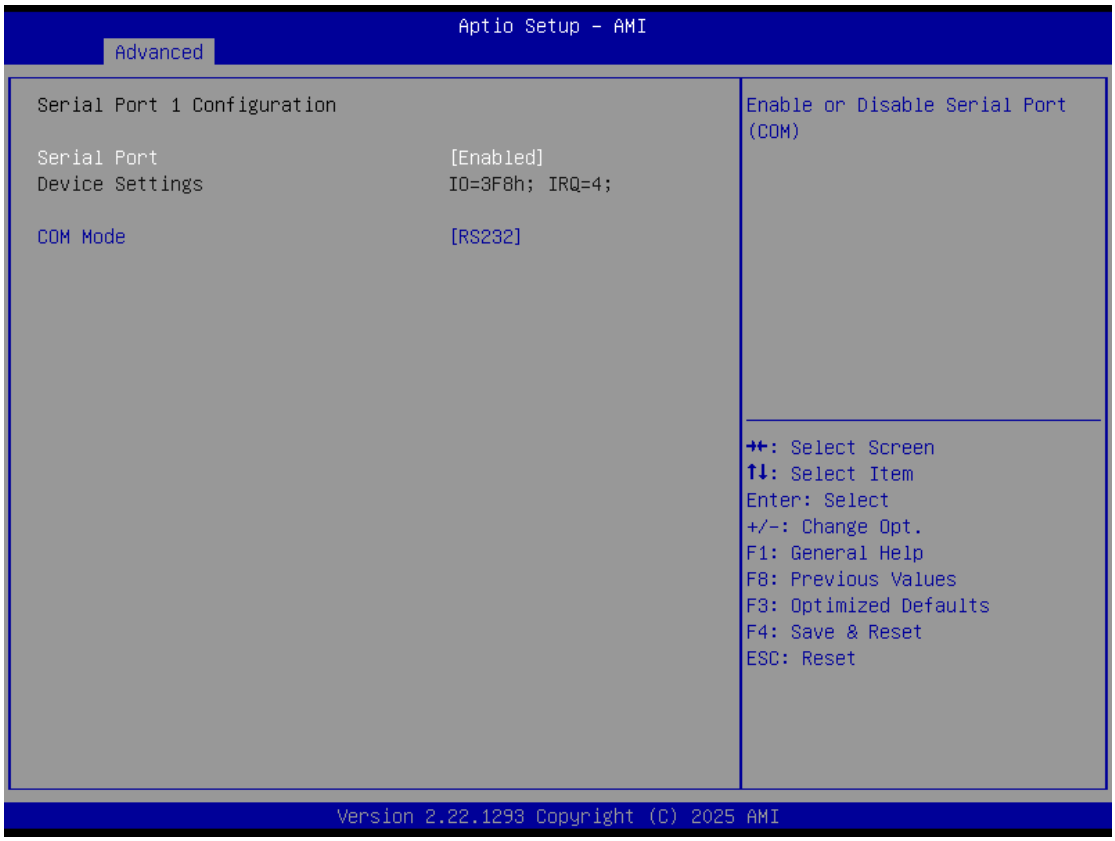
Parameter	Option	Description
USB Wakeup	Disabled Enabled (Default)	Enable this item to make system wake from USB devices
IT8786 Super IO Configuration		System Super IO Chip Parameters
ACPI Settings		System ACPI Parameters
Network Stack Configuration		Network Stack Settings
NVMe Configuration		NVMe Device Options Settings

8.2.1 IT8786 Super IO Configuration



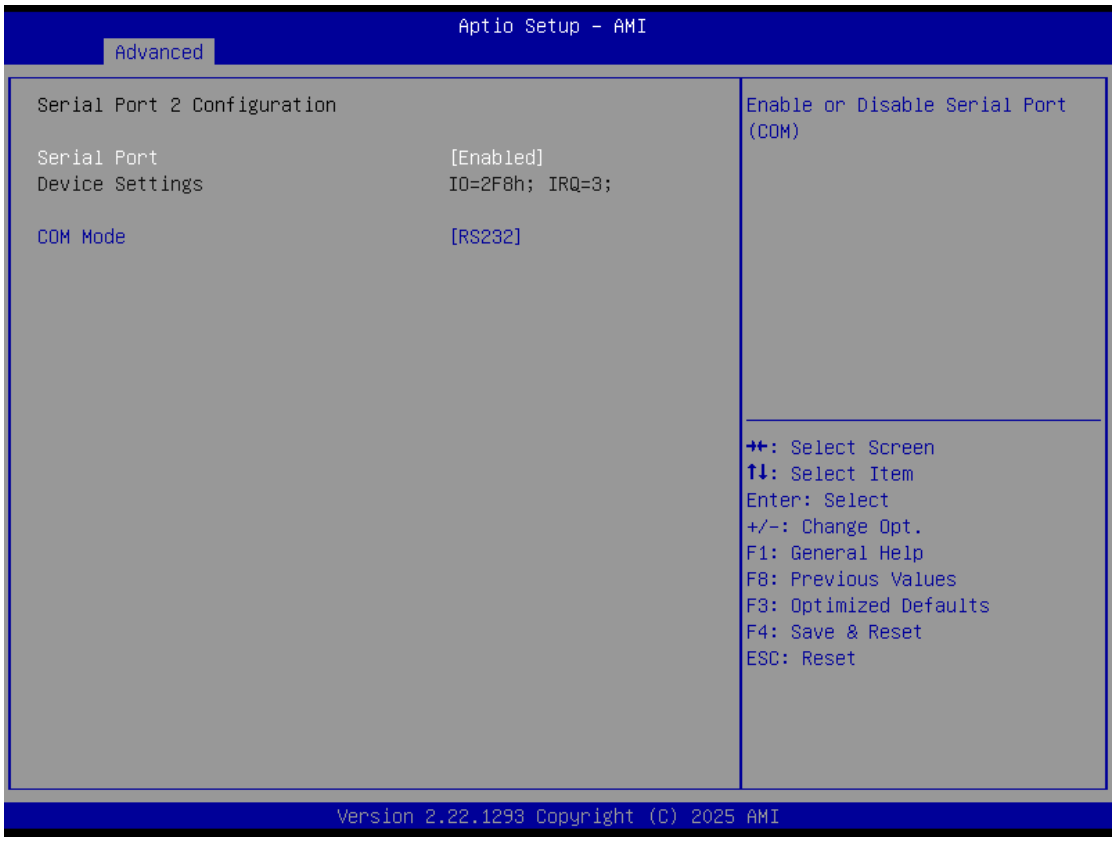
Parameter	Option	Description
IT8786 Super IO Configuration		
Super IO Chip	IT8786	Show Super I/O Chip
UART Mode Control	Manual Auto (Default)	AUTO: UART settings follow config strings, Manual: User define
Serial Port 1 Configuration		Set Parameters of Serial Port 1 (COMA)
Serial Port 2 Configuration		Set Parameters of Serial Port 2 (COMB)
Serial Port 3 Configuration		Set Parameters of Serial Port 3 (COMC)
Serial Port 4 Configuration		Set Parameters of Serial Port 4 (COMD)

8.2.1.1 Serial Port 1 Configuration



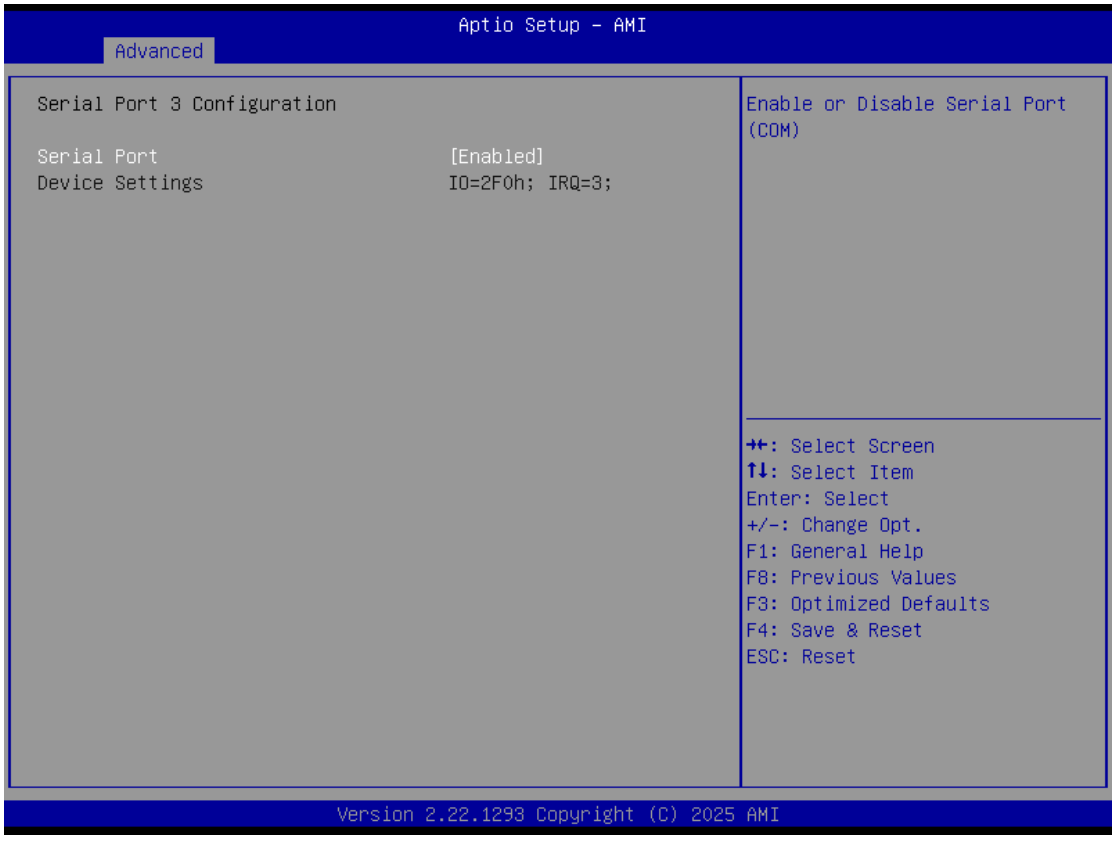
Parameter	Option	Description
Serial Port 1 Configuration		
Serial Port	Disabled Enabled (Default)	Enable or Disable Serial Port (COM)
Device Settings	IO=3F8h; IRQ=4;	Show Device Settings
COM Mode Select	RS232 (Default) RS422 RS485	Select Function Mode

8.2.1.2 Serial Port 2 Configuration



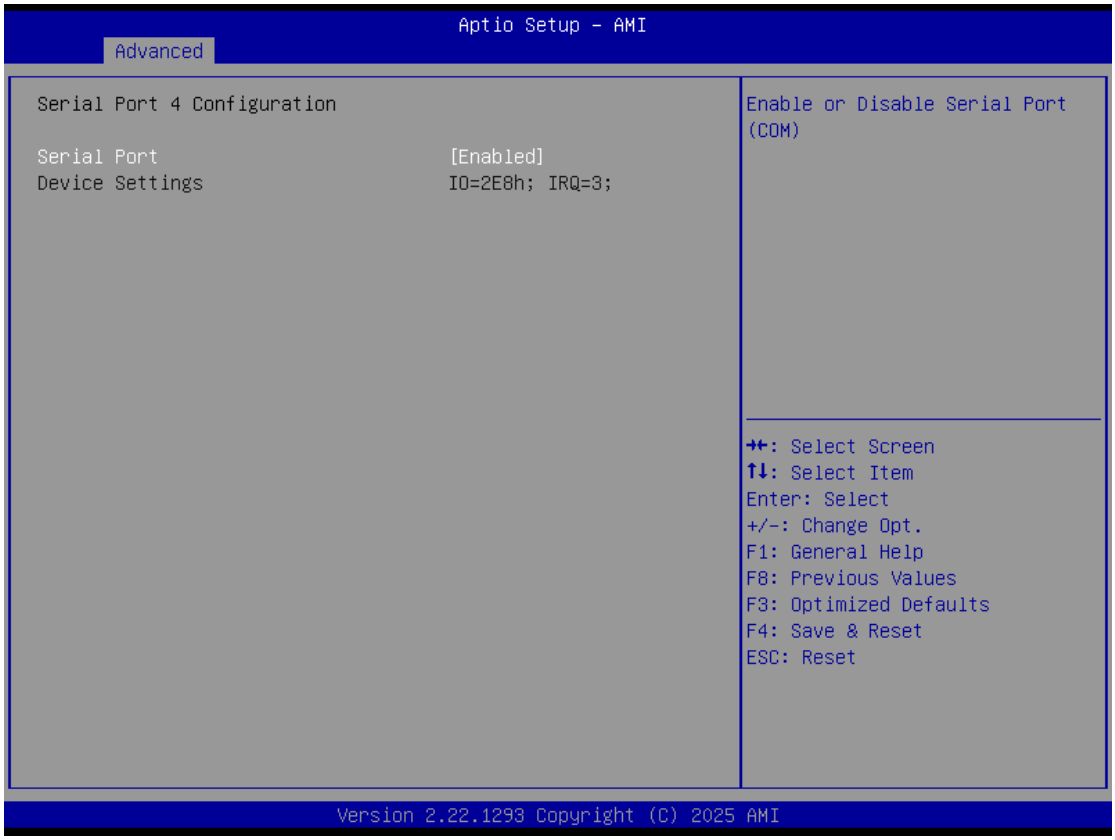
Parameter	Option	Description
Serial Port 2 Configuration		
Serial Port	Disabled Enabled (Default)	Enable or Disable Serial Port (COM)
Device Settings	IO=2F8h; IRQ=3;	Show Device Settings
COM Mode Select	RS232 (Default) RS422 RS485	Select Function Mode

8.2.1.3 Serial Port 3 Configuration



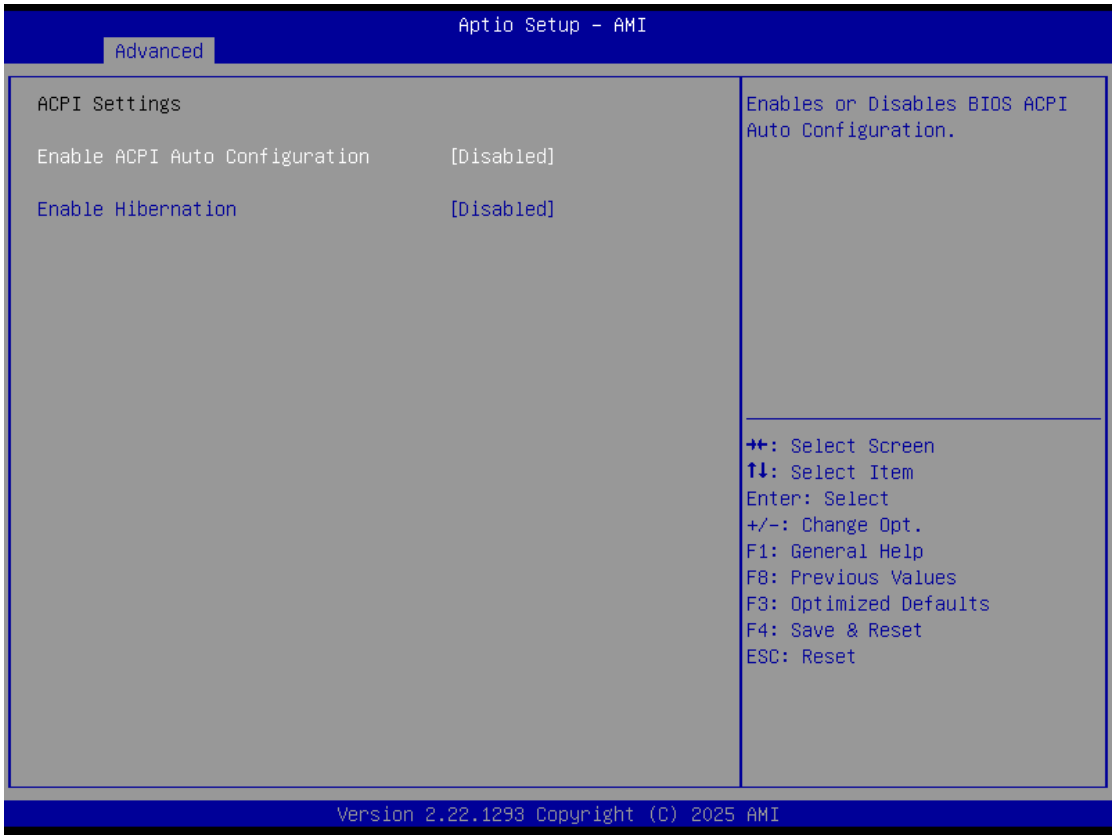
Parameter	Option	Description
Serial Port 3 Configuration		
Serial Port	Disabled Enabled (Default)	Enable or Disable Serial Port (COM)
Device Settings	IO=2F0h; IRQ=3;	Show Device Settings

8.2.1.4 Serial Port 4 Configuration



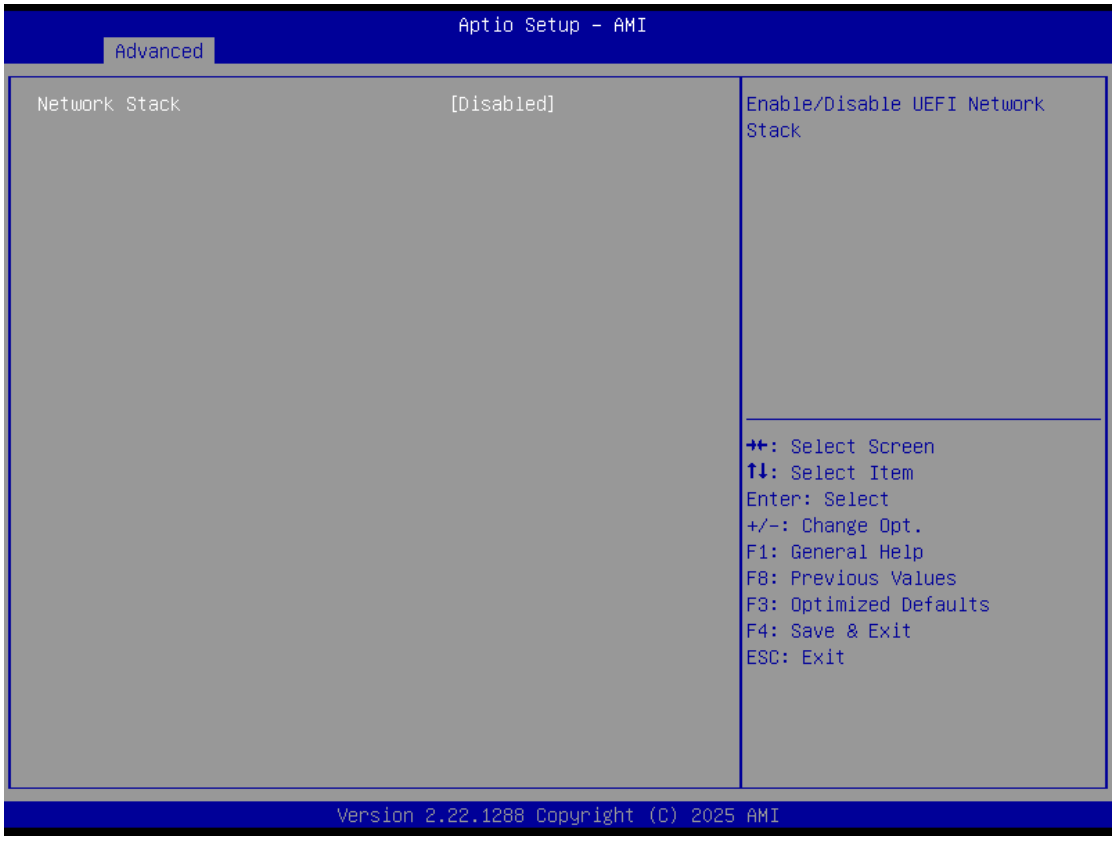
Parameter	Option	Description
Serial Port 4 Configuration		
Serial Port	Disabled Enabled (Default)	Enable or Disable Serial Port (COM)
Device Settings	IO=2E8h; IRQ=3;	Show Device Settings

8.2.2 ACPI Settings



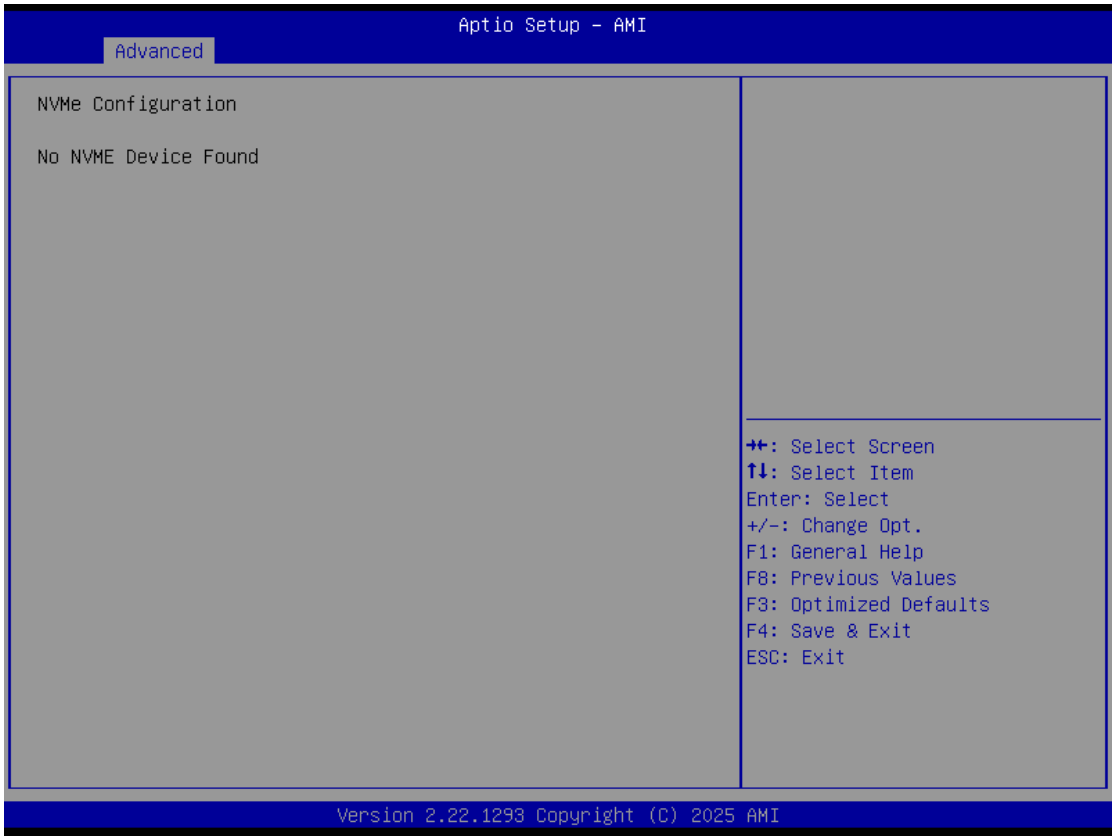
Parameter	Option	Description
ACPI Settings		
Enable ACPI Auto Configuration	Disabled (Default) Enabled	Enables orDisables BIOS ACPI Auto Configuration
Enable Hibernation	Disabled (Default) Enabled	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems

8.2.3 Network Stack Configuration



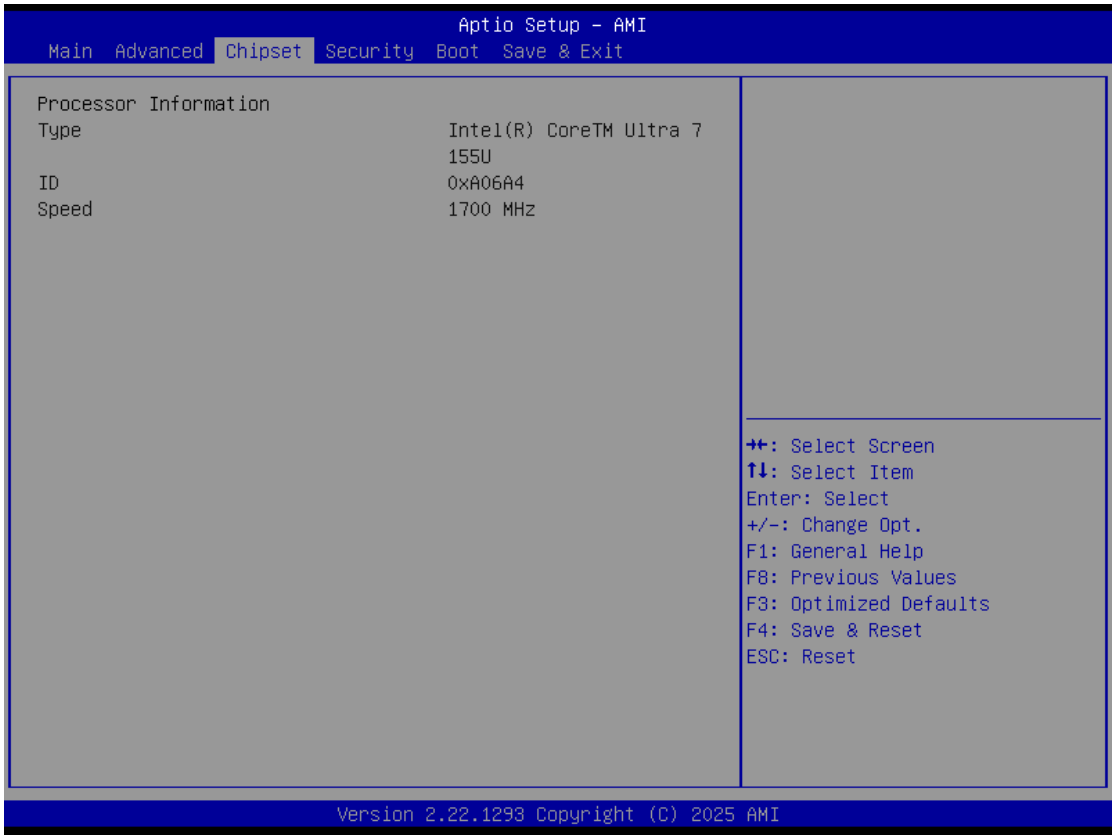
Parameter	Option	Description
Network Stack	Disabled (Default) Enabled	Enable/Disable UEFI Network Stack
IPv4 PXE Support	Disabled Enabled (Default)	Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available
IPv4 HTTP Support	Disabled (Default) Enabled	Enable/Disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available
IPv6 PXE Support	Disabled (Default) Enabled	Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available
IPv6 HTTP Support	Disabled (Default) Enabled	Enable/Disable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will not be available
PXE boot wait time	0 (Default)	Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value
Media detect count	1 (Default)	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value

8.2.4 NVMe Configuration



Parameter	Description
NVMe Configuration	NVMe Device Options Settings
(Devices)	Show NVMe device

3.3 Chipset



Parameter	Option	Description
Processor Information		
Type	Intel(R) Core(TM) Ultra 7 155U (Dynamically Updated)	Displays the Processor Type
ID	0xA06A4 (Dynamically Updated)	Displays the Processor ID
Speed	1700 MHz (Dynamically Updated)	Displays the Processor Speed

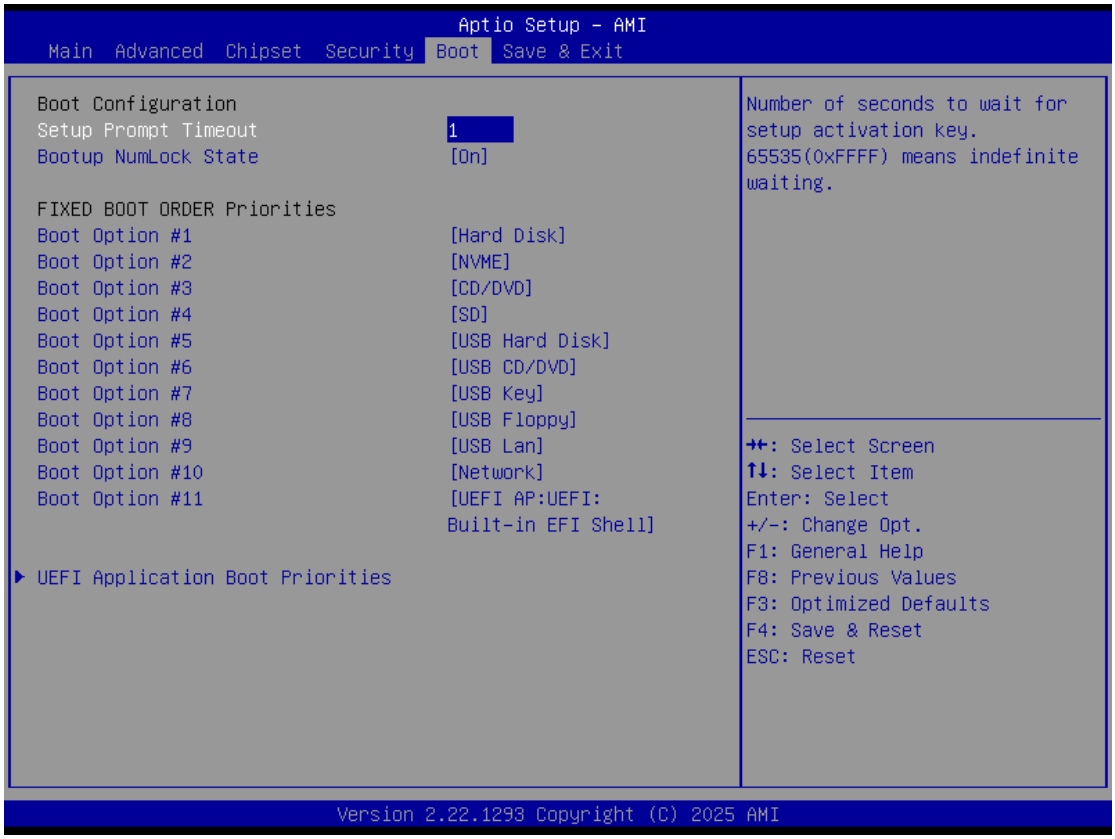
3.4 Security

Parameter	Description
Administrator Password	Set Administrator Password
User Password	Set User Password
Secure Boot	Secure Boot configuration

8.4.1 Secure Boot

Parameter	Option	Description
Secure Boot	Disabled Enabled (Default)	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 Mode	Standard (Default) Custom	Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication
Restore Factory Keys		Force System to User Mode. Install factory default Secure Boot key databases
Reset To Setup Mode		Delete all Secure Boot key databases from NVRAM
Expert Key Management		Enables expert users to modify Secure Boot Policy variables without variable authentication

3.5 Boot



Parameter	Option	Description
Boot Configuration		
Setup Prompt Timeout	1 (Default)	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting
FIXED BOOT ORDER Priorities		
Boot Option #1	Hard Disk (Default) NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network	Sets the system boot order

	UEFI AP:UEFI: Built-in EFI Shell Disabled	
Boot Option #2	Hard Disk NVME (Default) CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #3	Hard Disk NVME CD/DVD (Default) SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #4	Hard Disk NVME CD/DVD SD (Default) USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #5	Hard Disk NVME CD/DVD SD USB Hard Disk (Default) USB CD/DVD USB Key USB Floppy USB Lan	Sets the system boot order

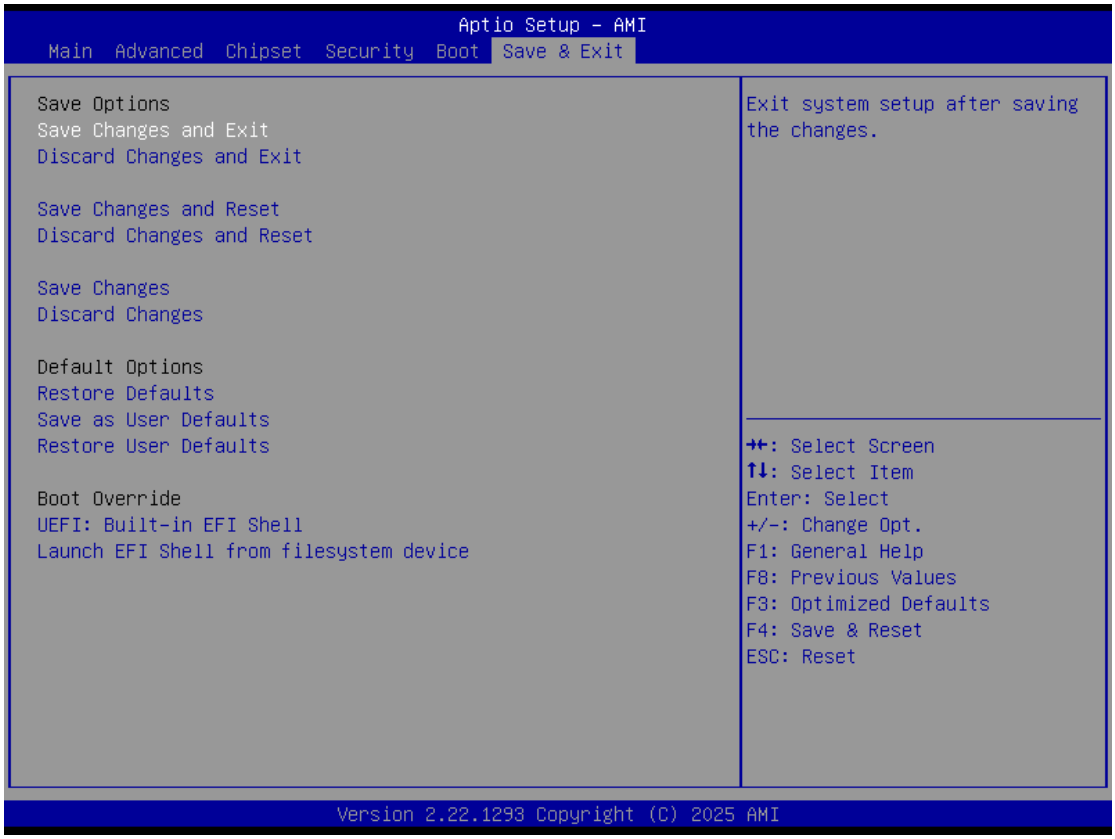
	Network UEFI AP:UEFI: Built-in EFI Shell Disabled	
Boot Option #6	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD (Default) USB Key USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #7	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key (Default) USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #8	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy (Default) USB Lan Network UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #9	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy	Sets the system boot order

	USB Lan (Default) Network UEFI AP:UEFI: Built-in EFI Shell Disabled	
Boot Option #10	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network (Default) UEFI AP:UEFI: Built-in EFI Shell Disabled	Sets the system boot order
Boot Option #11	Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network UEFI AP:UEFI: Built-in EFI Shell (Default) Disabled	Sets the system boot order
UEFI Application Boot Priorities		Specifies the Boot Device Priority sequence from available UEFI Application

8.5.1 UEFI Application Boot Priorities

Parameter	Option	Description
Boot Option #1	UEFI: Built-in EFI Shell (Default) Disabled	Sets the system boot order

3.6 Save & Exit



Parameter	Description
Save Changes and Exit	Exit system setup after saving the changes
Discard Changes and Exit	Exit system setup without saving any changes
Save Changes and Reset	Reset the system after saving the changes
Discard Changes and Reset	Reset system setup without saving any changes
Save Changes	Save Changes done so far to any of the setup options
Discard Changes	Discard Changes done so far to any of the setup options
Default Options	
Restore Defaults	Restore/Load Default values for all the setup options
Save as User Defaults	Save the changes done so far as User Defaults
Restore User Defaults	Restore the User Defaults to all the setup options
Boot Override	
UEFI: Built-in EFI Shell	

Launch EFI Shell from filesystem device	Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices

Chapter 4 Installation of Drivers

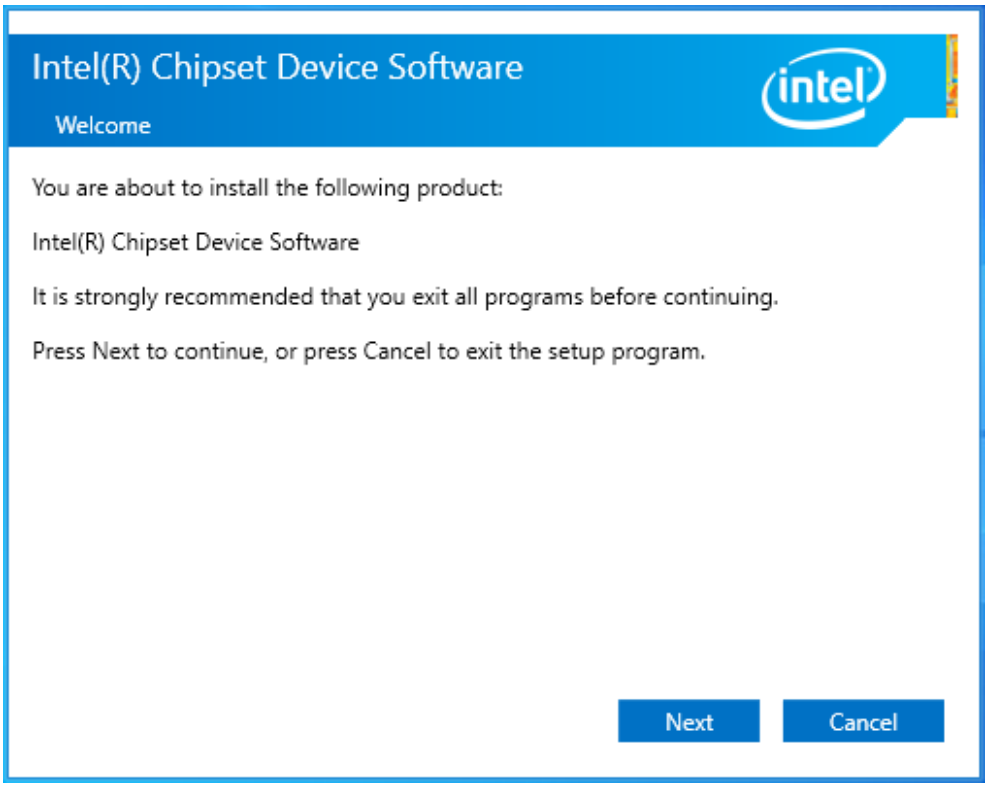
This chapter describes the installation procedures for software and drivers under the windows 10. The software and drivers are included with the motherboard. The contents include Intel Chipset, Graphics chipset driver, Audio driver, LAN driver and Intel® management engine interface. The instructions are as below.

Important Note:
After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the installation of

4.1 Intel Chipset

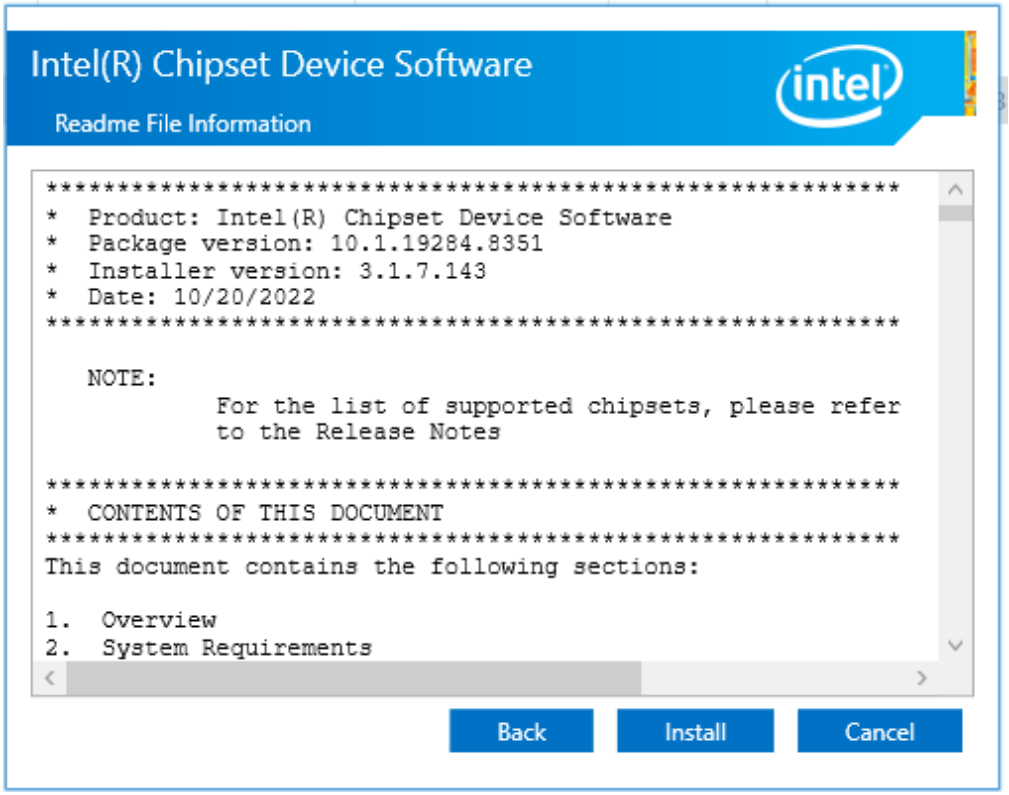
To install the Intel chipset driver, please follow the steps below.

Step 1. Here is welcome page. Please make sure you save and exit all programs before install. Click **Next**.



Step 2. Read the license agreement. Click **Accept** to accept all of the terms of the license agreement.

Step 3. Click **Install** to begin the installation.



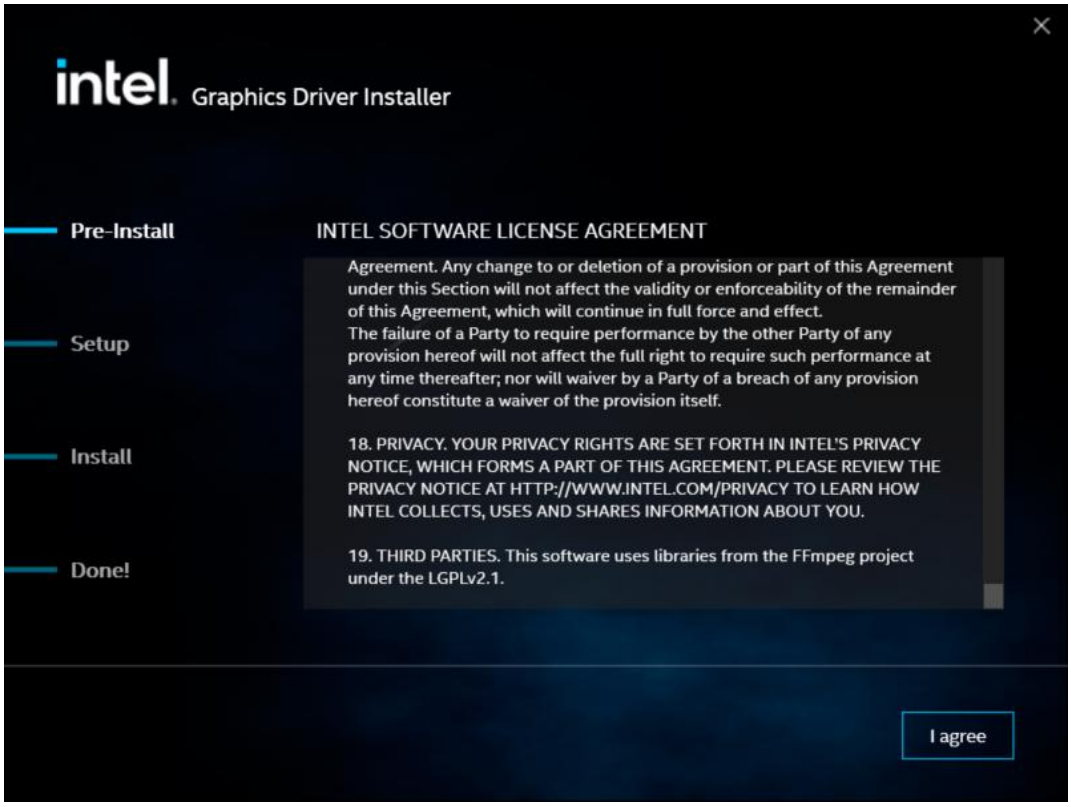
Step 4. Select **Restart Now** to reboot your computer for the changes to take effect.

4.2 Intel® HD Graphics Chipset

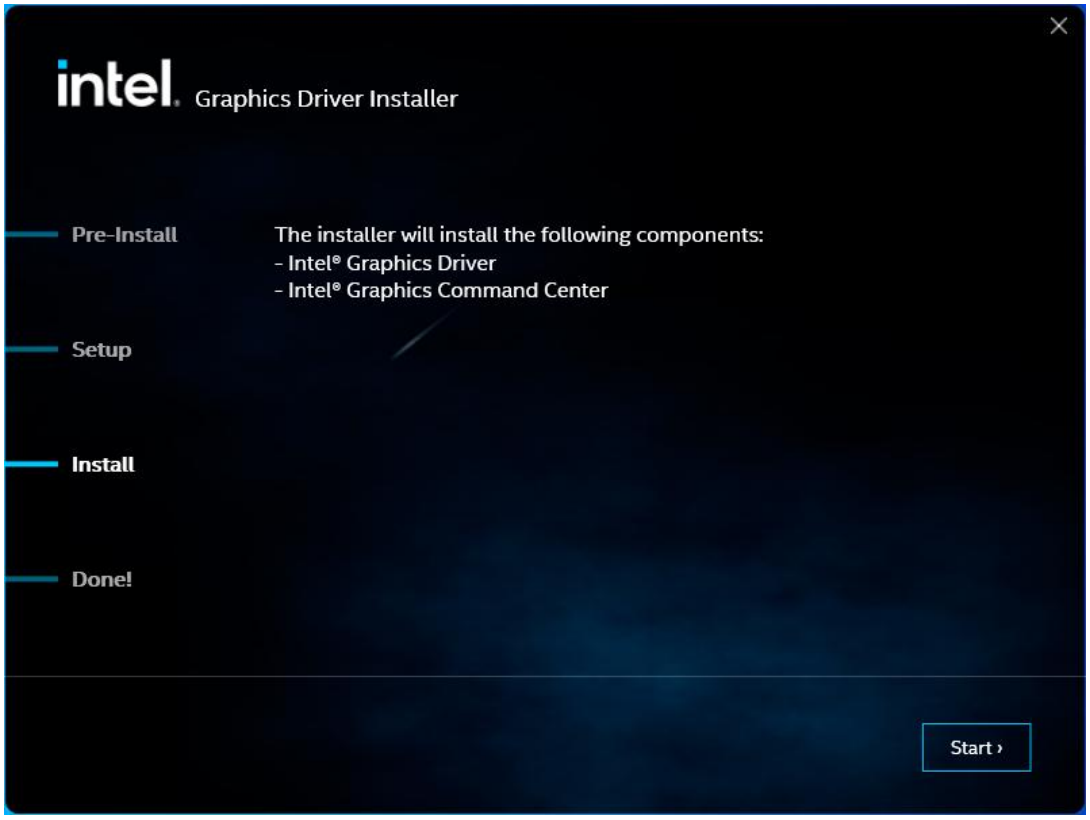
To install the Intel® HD Graphics Chipset, please follow the steps below.

Step 1. Click **Begin installation.**

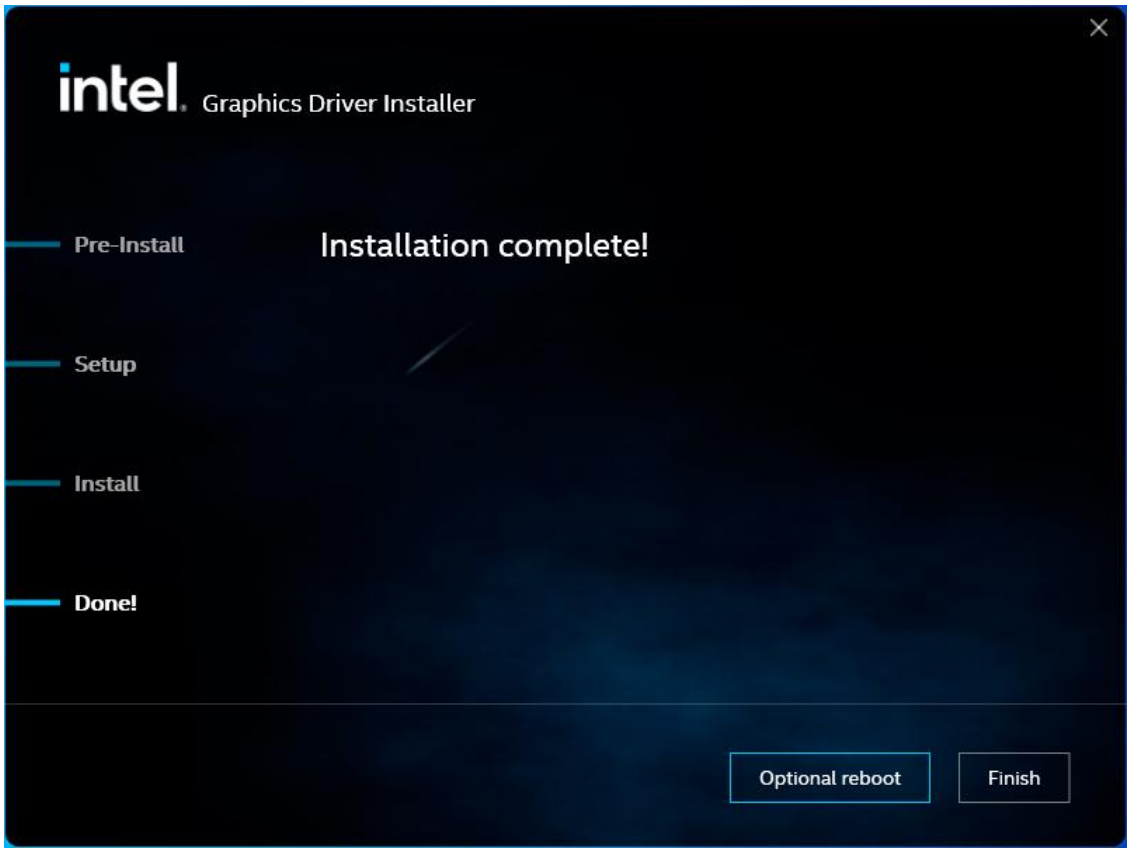
Step 2. Read the license agreement. Click **I agree** to accept all the terms of the license agreement.



Step 3. Choose **Install** function and Click **Start** to setup program.



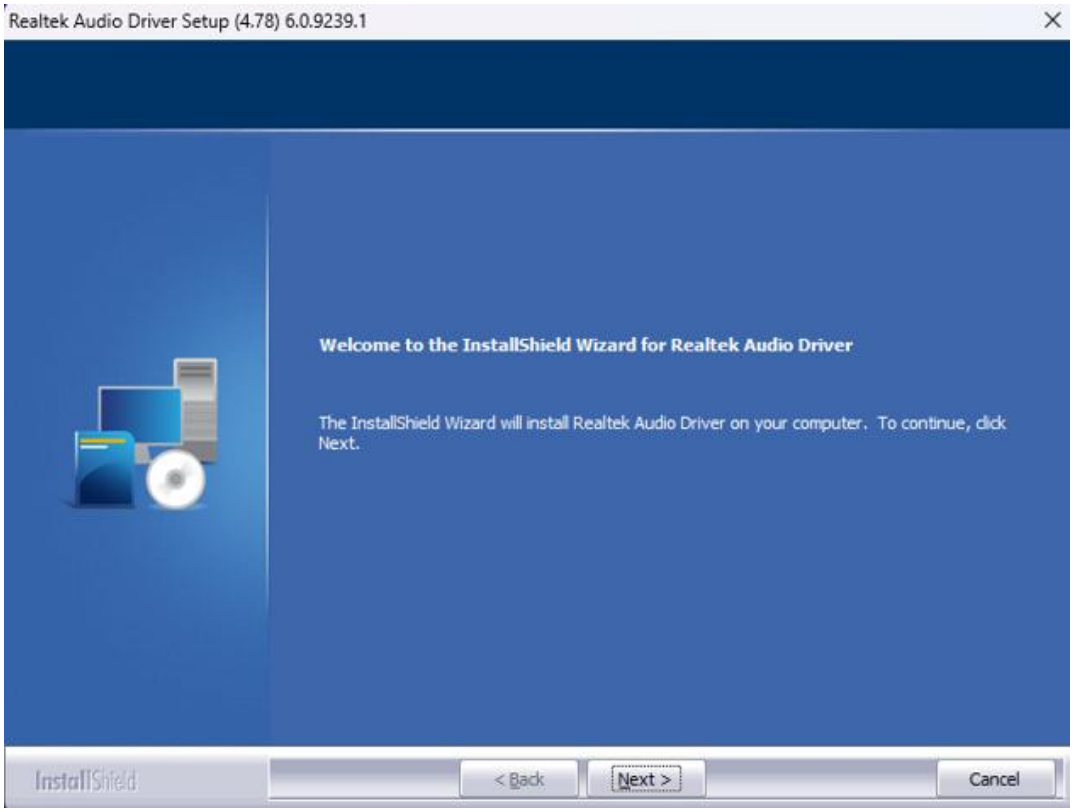
Step 4. Click **Finish** to complete installation.



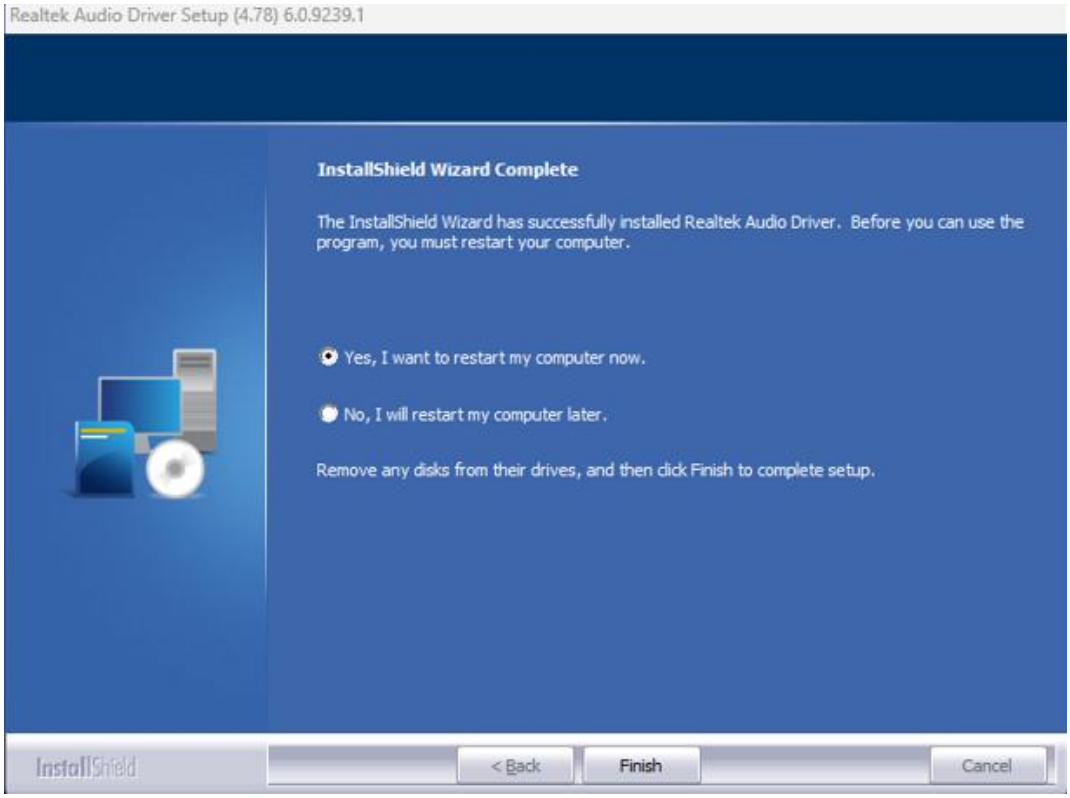
4.3 Audio Chipset

To install the Realtek HD Audio Driver, please follow the steps below.

Step 1. Click **Next** to continue.



Step 2. Click **Yes, I want to restart my computer now**. Click **Finish** to complete the installation.

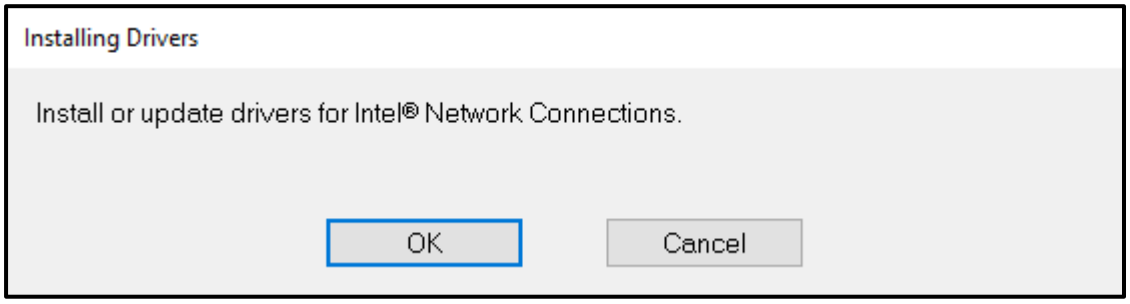

Realtek Audio Driver Setup (4.78) 6.0.9239.1
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Realtek Audio Driver. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

4.4 I LAN Driver

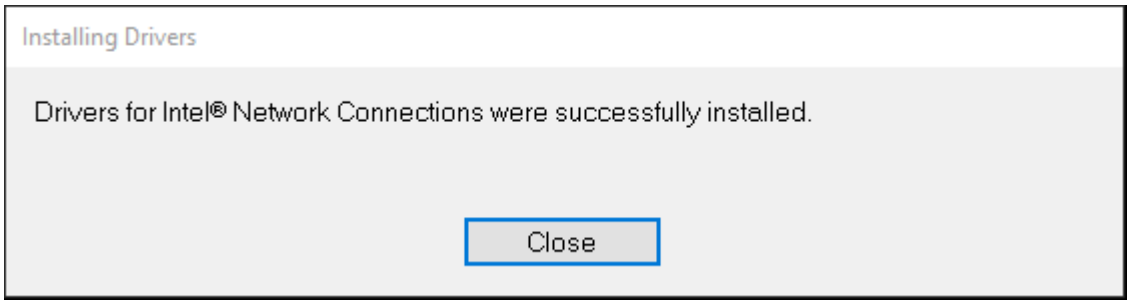
To install the LAN driver, please follow the steps below.

Step 1. Click **Zip File** to continue.

Step 2. Click **OK** to begin the installation.



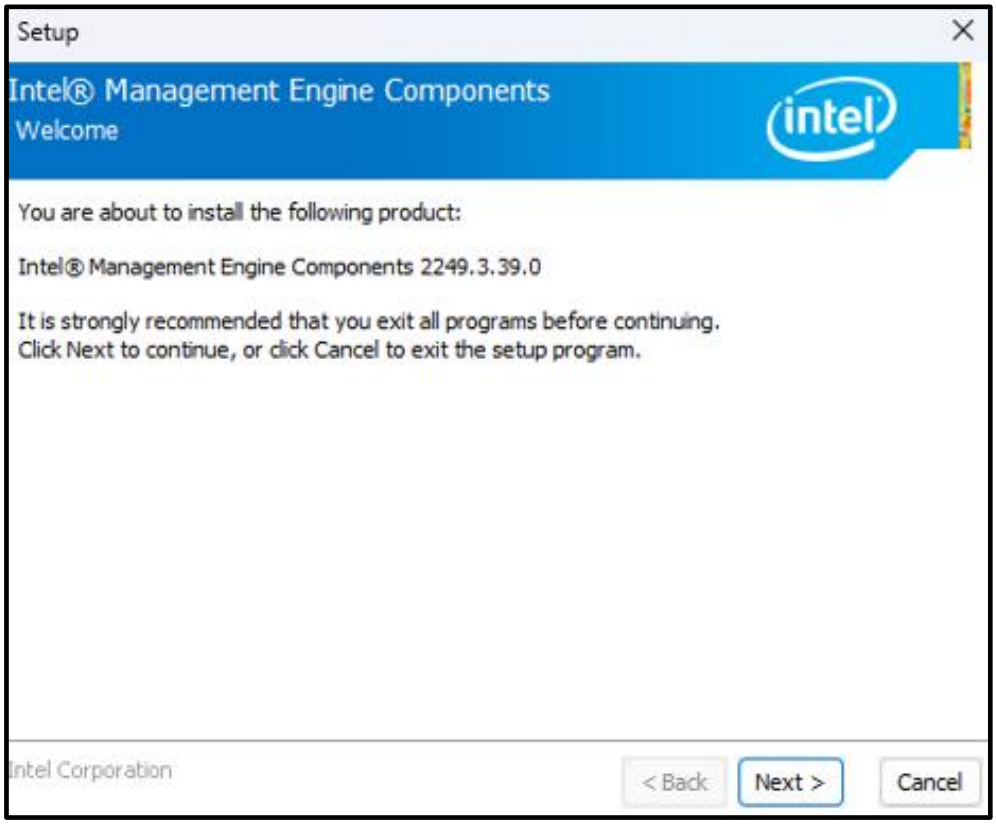
Step 3. Click **Close** to finish installation.



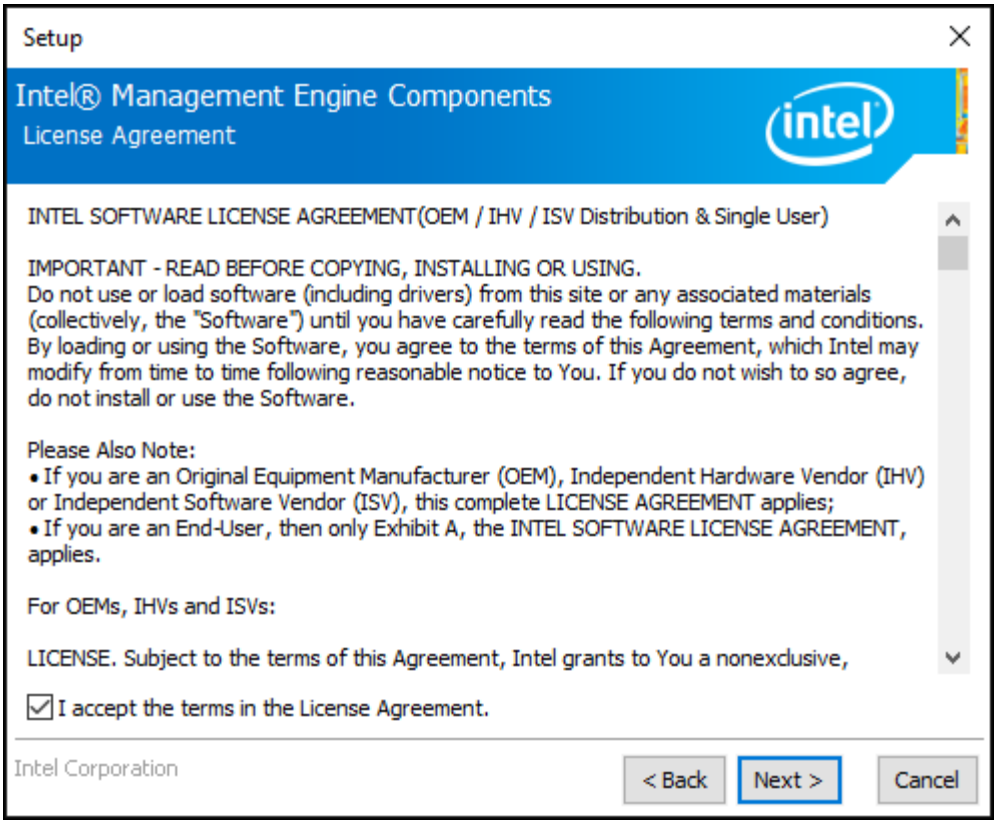
4.5 Intel® Management Engine Interface

To install the Intel® Management Engine Interface, please follow the steps below.

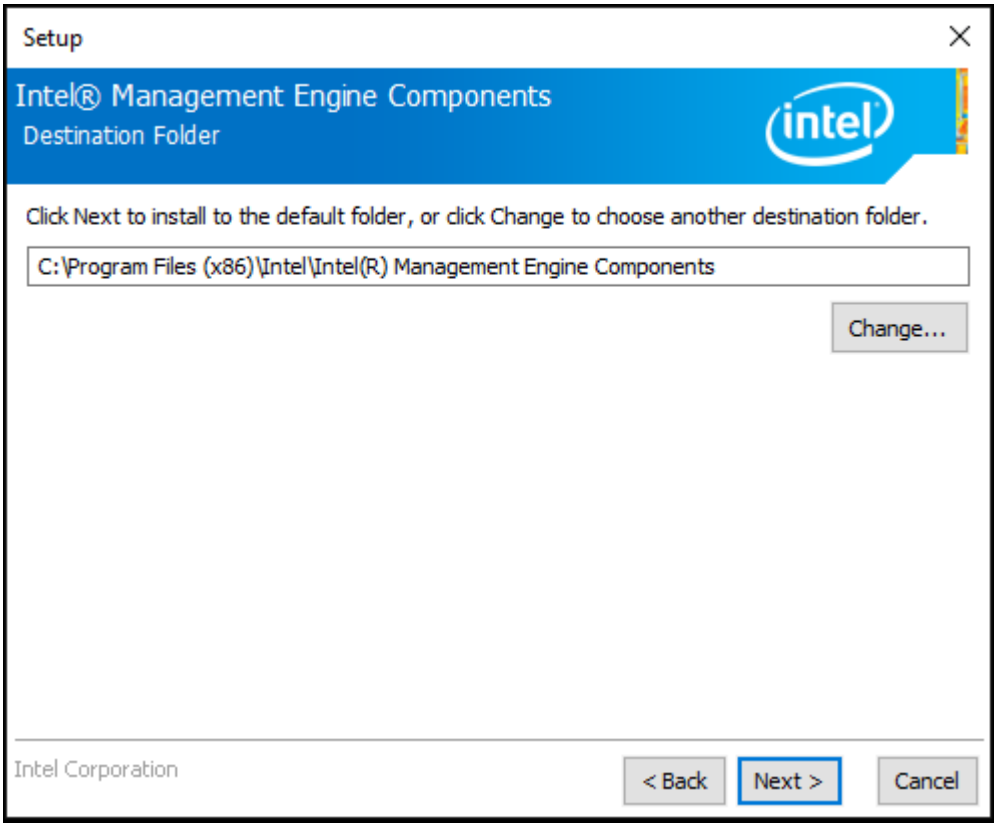
Step 1. Select setup language you need. Click **Next** to continue.



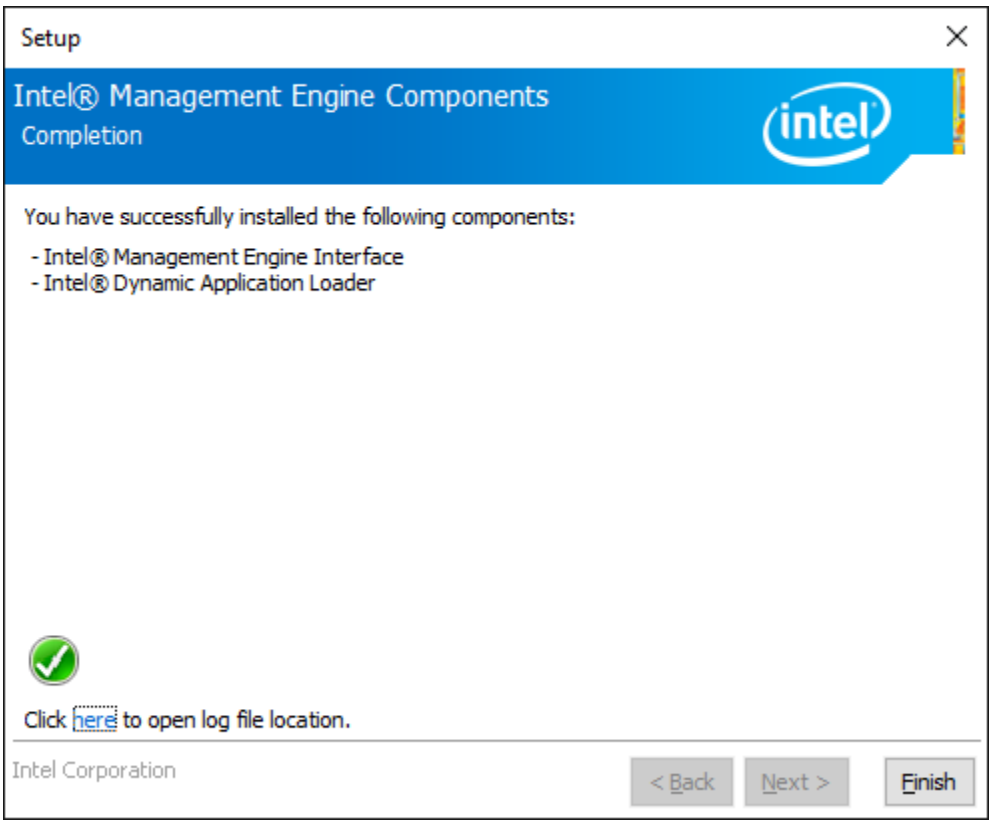
Step 2. Choose **I accept the terms in the License Agreement** and click **Next** to begin the installation.



Step 3. Click **Next** to continue.



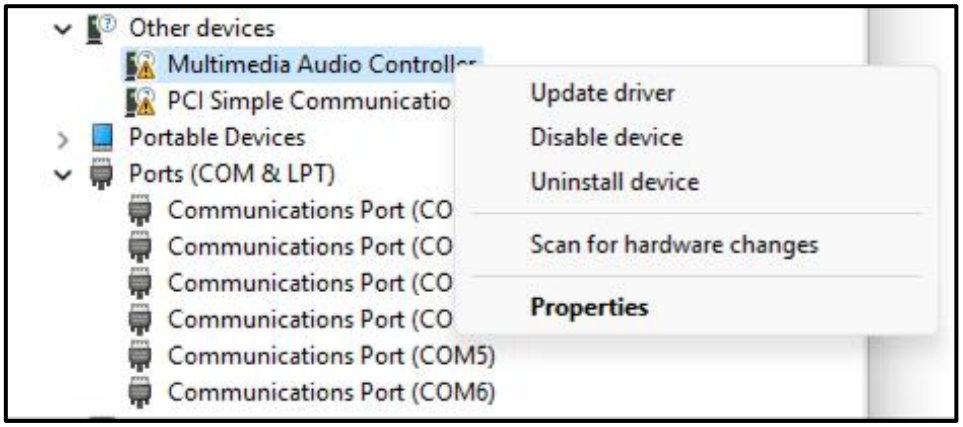
Step 4. Click **Finish** to complete the installation.



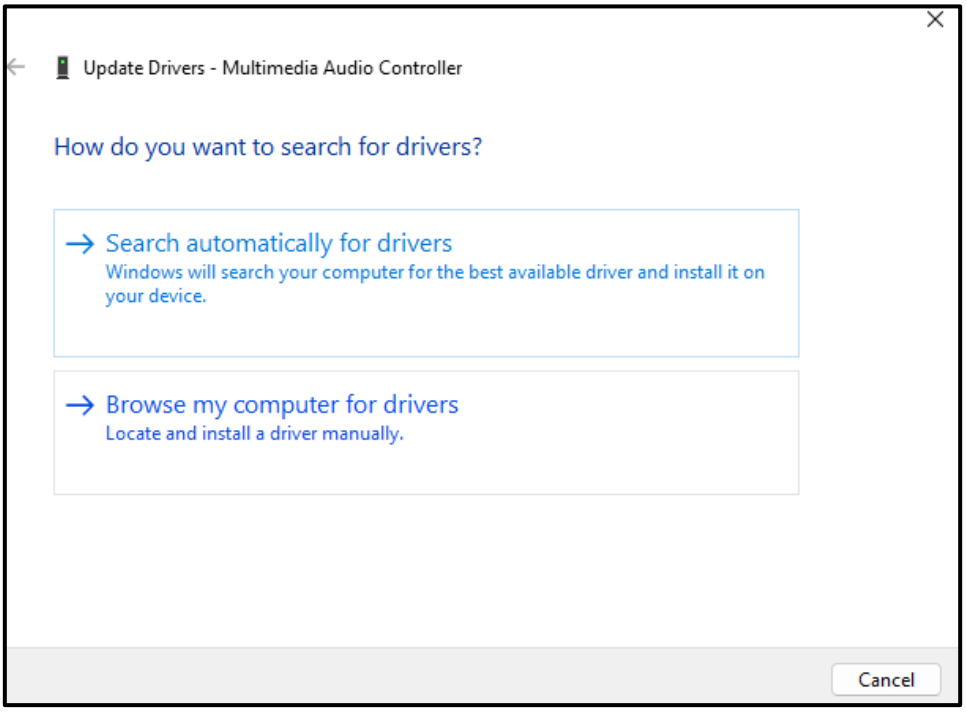
4.6 Intel® Speed Select Technology

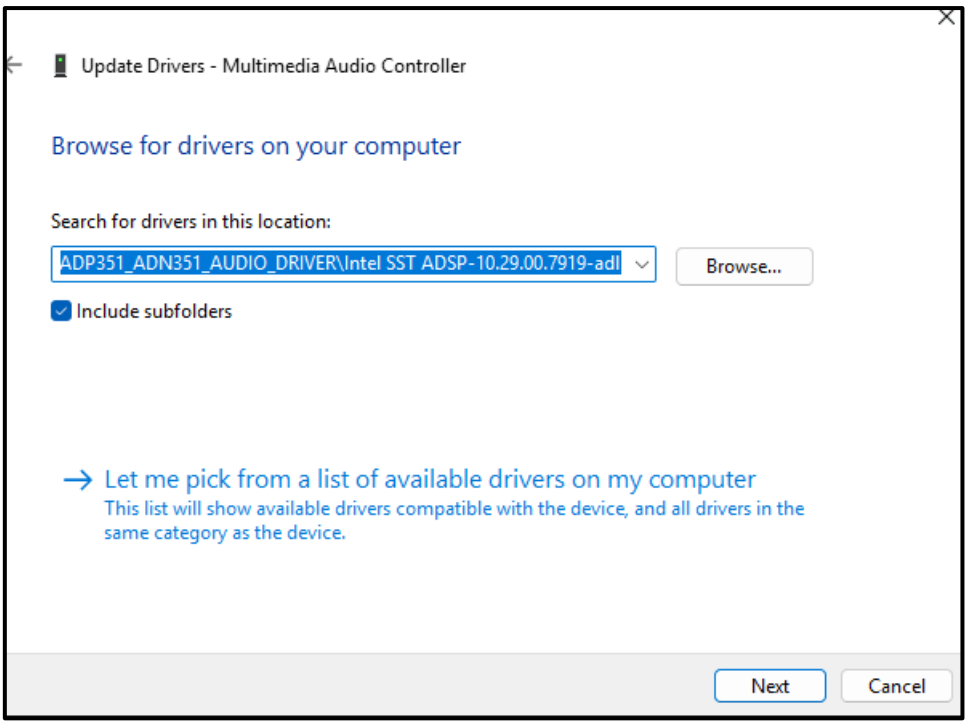
To install the Intel® Speed Select Technology, please follow the steps below.

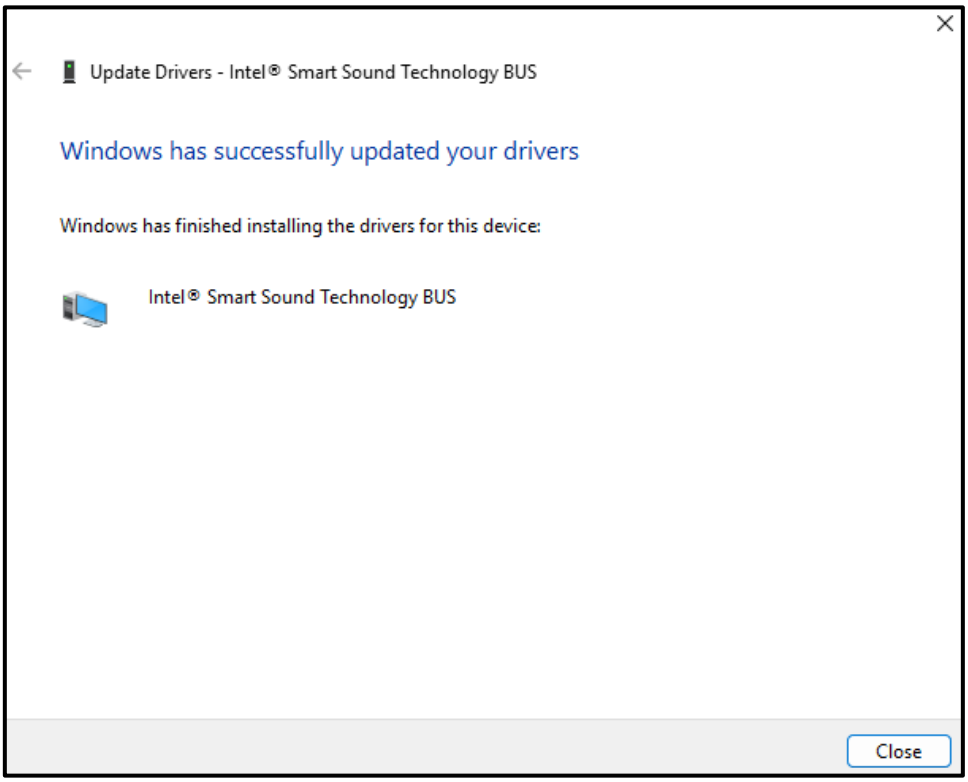
Step 1. Enable Device Manager under Window and you could see there are exclamation mark on Audio Control, please right click you mouse and pop up an property window, then select “update driver”



Step 2. Select “Browse my computer for drivers” then select driver from your driver folder then install it.




Update Drivers - Multimedia Audio Controller
Browse for drivers on your computer
Search for drivers in this location:
ADP351_ADN351_AUDIO_DRIVER\Intel SST ADSP-10.29.00.7919-adl
Browse...
Include subfolders
Let me pick from a list of available drivers on my computer
This list will show available drivers compatible with the device, and all drivers in the same category as the device.
Next
Cancel


Update Drivers - Intel® Smart Sound Technology BUS
Windows has successfully updated your drivers
Windows has finished installing the drivers for this device:
Intel® Smart Sound Technology BUS
Close