UTX-ARS1
User's Manual

Revision: 1.0
Release Date: November 10, 2025

Trademark:

* **Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacturer.**

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Environmental Protection and Safety Announcement

- Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.

- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.

- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	X	X	O	O	O	O
外部信号连接器及线材	X	X	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在

SJ/T11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出

SJ/T 11363-2006 标准规定的限量要求。

备注: 此产品所标示之环保使用期限,系指在一般正常使用状况下。

China RoHS Requirements (EN)

Poisonous or Hazardous Substances or Elements in Products

Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	**Mercury (Hg)**	**Cadmium (Cd)**	**Hexavalent Chromium (Cr(VI))**	**Polybrominated Biphenyls (PBB)**	**Polybrominated Diphenyl Ethers (PBDE)**
PCB & Other Components	X	X	O	O	O	O
Wires & Connectors for External Connections	X	X	O	O	O	O

O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

User's Notice

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	November 10, 2025

Packing List

Part Number	Description	QTY per Board
UTX-ARS1	UTX-ARS1 Mother Board	1
G01-COM-H2M22-1F	COM Cable	3
G01-SATA3-BL-1F	SATA Cable, 50cm	2
F04-MB-090-F	I/O Shield	1
F01-SPBK-1F	Jumper	2

Chapter 1 Introduction of the Motherboard

1-1 Specifications

UTX-ARS1-H810

SYSTEM	
MB FORM FACTOR	Micro-ATX
CPU	Intel® LGA1851 Socket, Processor Arrow Lake-S (MAX. TDP 125W) For additional compatible CPUs, please contact regional sales
CHIPSET	Intel® H810
MEMORY	2 x DDR5 6400MT/s, Dual Channel CU-DIMM, up to 128GB
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	Intel® PTT (Integrated fTPM) TPM2.0 (dTPM, Optional)
RTC BATTERY	Lithium Battery
DIMENSION (W X D)	244.0 (W) x 244.0(D) mm (9.6" x 9.6")
OS SUPPORT	Windows® 11 (64bit) Linux
POWER	
POWER REQUIREMENT	ATX Power Supply
POWER ON MODE	AT / ATX (Default) Mode
CONNECTOR	Internal 24+8-pin ATX Header
DISPLAY	
GPU	Intel® Graphics
LVDS	1 x 24-bit Dual Channel LVDS (Max. Resolution: 1920 x 1200 @60Hz, co-layout eDP)
DP	1 x DP1.4a (Max Resolution: 4096 x 2160@60Hz)
HDMI®	2 x HDMI® 2.1 TMDS (Max Resolution: 4096 x 2160@60Hz)
MULTIPLE DISPLAY	Support 3 Displays
AUDIO	
CODEC	Realtek Audio Codec
Line-in	1 x Audio Jack for Line-in
Line-out	1 x Audio Jack for Line-out
MIC-in	1 x Audio Jack for MIC-in
AMPLIFIER	3W
LAN	

ETHERNET	2 x RJ45 for Intel® I226-V 2.5GbE
USB PORT	
USB	2 x USB 3.2 Gen 2x1 (10Gbps, Formerly USB 3.1 Gen 2) 2 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 2 x USB 2.0 Internal Header for 6 x USB 2.0
SERIAL PORT	
COM	1 x DB-9 for RS-232/422/485 Internal Header for 5 x RS-232 Internal Header for 4 x RS-232 (Optional)
INTERNAL I/O	
GPIO	8-Bit
SMBUS	Yes
I2C	Yes
FAN	1 x CPU Fan Header 2 x System Fan Header
FRONT PANEL	HDD Active LED Power LED Power On/Off Reset
ADDITIONAL	1 x Chassis intrusion 1 x AT/ATX Mode Selection
STORAGE	
SATA	2 x SATA III
EXPANSION	
M.2	1 x M-Key 2242/2280 (SATA III) 1 x E-Key 2230 (USB 2.0/PCIe Gen 4 x1) support CNVio
PCIE	1 x PCIe Gen 5 x16 1 x PCIe Gen 4 x4 1 x PCIe Gen 4 x1
ENVIRONMENT & CERTIFICATION	
SHOCK	15G, 11ms duration
VIBRATION	1 Grms/ 5~ 500Hz/ Operation
OPERATING TEMPERATURE	-20°C ~ 60°C (-4°F ~ 140°F)
STORAGE TEMPERATURE	-20°C ~ 85°C (-4°F ~ 185°F)
OPERATING HUMIDITY	10 ~ 90% relative humidity, non-condensing
CERTIFICATION	CE/FCC Class A, LVD
ESG DECLARATION	EU RoHS, China RoHS, WEEE, REACH, TSCA Declaration, PRO65 Declaration, CMRT Report

UTX-ARS1-Q870

SYSTEM	
MB FORM FACTOR	Micro-ATX
CPU	Intel® LGA1851 Socket, Processor Arrow Lake-S (MAX. TDP 125W) For additional compatible CPUs, please contact regional sales
CHIPSET	Intel® Q870
MEMORY	4 x DDR5 6400MT/s, Dual Channel CU-DIMM, up to 256GB
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	Intel® PTT (Integrated fTPM) TPM2.0 (dTPM, Optional)
RTC BATTERY	Lithium Battery
DIMENSION (W X D)	244.0 (W) x 244.0(D) mm (9.6" x 9.6")
OS SUPPORT	Windows® 11 (64bit), Linux
POWER	
POWER REQUIREMENT	ATX Power Supply
POWER ON MODE	AT / ATX (Default) Mode
CONNECTOR	Internal 24+8-pin ATX Header
DISPLAY	
GPU	Intel® Graphics
LVDS	1 x 24-bit Dual Channel LVDS (Max. Resolution: 1920 x 1200 @60Hz, co-layout eDP)
DP	1 x DP1.4a (Max Resolution: 4096 x 2160@60Hz)
HDMI®	2 x HDMI® 2.1 TMDS (Max Resolution: 4096 x 2160@60Hz)
MULTIPLE DISPLAY	Support 4 Displays
AUDIO	
CODEC	Realtek Audio Codec
Line-in	1 x Audio Jack for Line-in
Line-out	1 x Audio Jack for Line-out
MIC-in	1 x Audio Jack for MIC-in
AMPLIFIER	3W
LAN	
ETHERNET	1 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I226-LM 2.5GbE 1 x RJ45 for Realtek® RTL8156 2.5GbE
USB PORT	

USB	6 x USB 3.2 Gen 2x1 (10Gbps, Formerly USB 3.1 Gen 2) Internal Header for 2 x USB 3.2 Gen 1 Internal Header for 6 x USB 2.0
SERIAL PORT	
COM	1 x DB-9 for RS-232/422/485 Internal Header for 5 x DB-9 for RS-232 Internal Header for 4 x RS-232 (Optional)
INTERNAL I/O	
GPIO	8-Bit
SMBUS	Yes
I2C	Yes
FAN	1 x CPU Fan Header 2 x System Fan Header
FRONT PANEL	HDD Active LED Power LED Power On/Off Reset
ADDITIONAL	1 x Chassis intrusion 1 x AT/ATX Mode Selection
STORAGE	
SATA	2 x SATA III
RAID	Intel® VMD RAID 0, 1 & SATA RAID 0, 1, 5
EXPANSION	
M.2	1 x M-Key 2242/2260/2280/22110 (PCIe Gen 4 x4) support NVMe 1 x M-Key 2242/2280 (PCIe Gen 4 x4 / SATA III) support NVMe 1 x B-Key 3042/3052 (USB 3.2/USB 2.0) for 4G/5G Module 1 x E-Key 2230 (USB 2.0/PCIe Gen 4 x1)
PCIE	1 x PCIe Gen 5 x16 2 x PCIe Gen 4 x4 1 x PCIe Gen 4 x1
SIM	1 x Nano SIM Card Slot
ENVIRONMENT & CERTIFICATION	
SHOCK	15G, 11ms duration
VIBRATION	1 Grms/ 5~ 500Hz/ Operation
OPERATING TEMPERATURE	-20°C ~ 60°C (-4°F ~ 140°F)
STORAGE TEMPERATURE	-20°C ~ 85°C (-4°F ~ 185°F)
OPERATING HUMIDITY	10 ~ 90% relative humidity, non-condensing
CERTIFICATION	CE/FCC Class A, LVD

ESG DECLARATION	EU RoHS, China RoHS, WEEE, REACH, TSCA Declaration, PRO65 Declaration, CMRT Report

UTX-ARS1-W880

SYSTEM	
MB FORM FACTOR	Micro-ATX
SYSTEM	
MB FORM FACTOR	Micro-ATX
CPU	Intel® LGA1851 Socket, Processor Arrow Lake-S (MAX. TDP 125W) For additional compatible CPUs, please contact regional sales
CHIPSET	Intel® W880
MEMORY	4 x DDR5 6400MT/s, Dual Channel CU-DIMM, up to 256GB, ECC Supported
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	Intel® PTT (Integrated fTPM) TPM2.0 (dTPM, Optional)
RTC BATTERY	Lithium Battery
DIMENSION (W X D)	244.0 (W) x 244.0(D) mm (9.6" x 9.6")
OS SUPPORT	Windows® 11 (64bit), Linux
POWER	
POWER REQUIREMENT	ATX Power Supply
POWER ON MODE	AT / ATX (Default) Mode
CONNECTOR	Internal 24+8-pin ATX Header
DISPLAY	
GPU	Intel® Graphics
LVDS	1 x 24-bit Dual Channel LVDS (Max. Resolution: 1920 x 1200 @60Hz, co-layout eDP)
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AUDIO	
CODEC	Realtek Audio Codec
Line-in	1 x Audio Jack for Line-in
Line-out	1 x Audio Jack for Line-out
MIC-in	1 x Audio Jack for MIC-in
AMPLIFIER	3W
LAN	

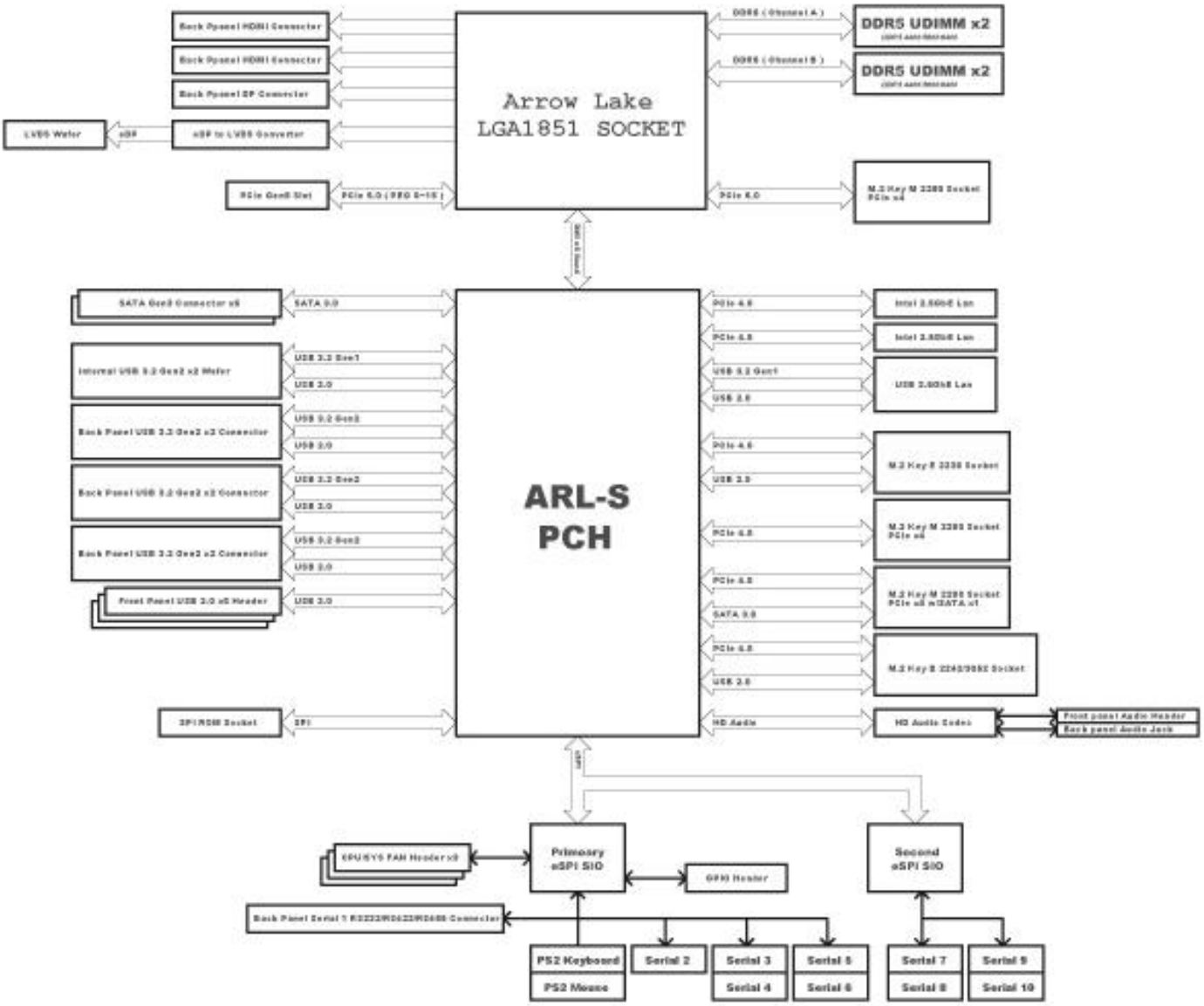
ETHERNET	1 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I226-LM 2.5GbE 1 x RJ45 for Realtek® RTL8156 2.5GbE
USB PORT	
USB	6 x USB 3.2 Gen 2x1 (10Gbps, Formerly USB 3.1 Gen 2) Internal Header for 2 x USB 3.2 Gen 1 Internal Header for 6 x USB 2.0
SERIAL PORT	
COM	1 x DB-9 for RS-232/422/485 Internal Header for 5 x DB-9 for RS-232 Internal Header for 4 x RS-232 (Optional)
INTERNAL I/O	
GPIO	8-Bit
SMBUS	Yes
I2C	Yes
FAN	1 x CPU Fan Header 2 x System Fan Header
FRONT PANEL	HDD Active LED Power LED Power On/Off Reset
ADDITIONAL	1 x Chassis intrusion 1 x AT/ATX Mode Selection
STORAGE	
SATA	2 x SATA III
RAID	Intel® VMD RAID 0, 1, 5 & SATA RAID 0, 1, 5
EXPANSION	
M.2	1 x M-Key 2242/2260/2280/22110 (PCIe Gen 4 x4) support NVMe 1 x M-Key 2242/2280 (PCIe Gen 4 x4 / SATA III) support NVMe 1 x M-Key 2280 (PCIe Gen 4 x4) support NVMe 1 x B-Key 3042/3052 (USB 3.2/USB 2.0) for 4G/5G Module 1 x E-Key 2230 (USB 2.0/PCIe Gen 4 x1)
PCIE	1 x PCIe Gen 5 x16 2 x PCIe Gen 4 x4 1 x PCIe Gen 4 x1
SIM	1 x Nano SIM Card Slot
ENVIRONMENT & CERTIFICATION	
SHOCK	15G, 11ms duration
VIBRATION	1 Grms/ 5~ 500Hz/ Operation

OPERATING TEMPERATURE	-20°C ~ 60°C (-4°F ~ 140°F)
STORAGE TEMPERATURE	-20°C ~ 85°C (-4°F ~ 185°F)
OPERATING HUMIDITY	10 ~ 90% relative humidity, non-condensing
CERTIFICATION	CE/FCC Class A, LVD
ESG DECLARATION	EU RoHS, China RoHS, WEEE, REACH, TSCA Declaration, PRO65 Declaration, CMRT Report

Ordering Information

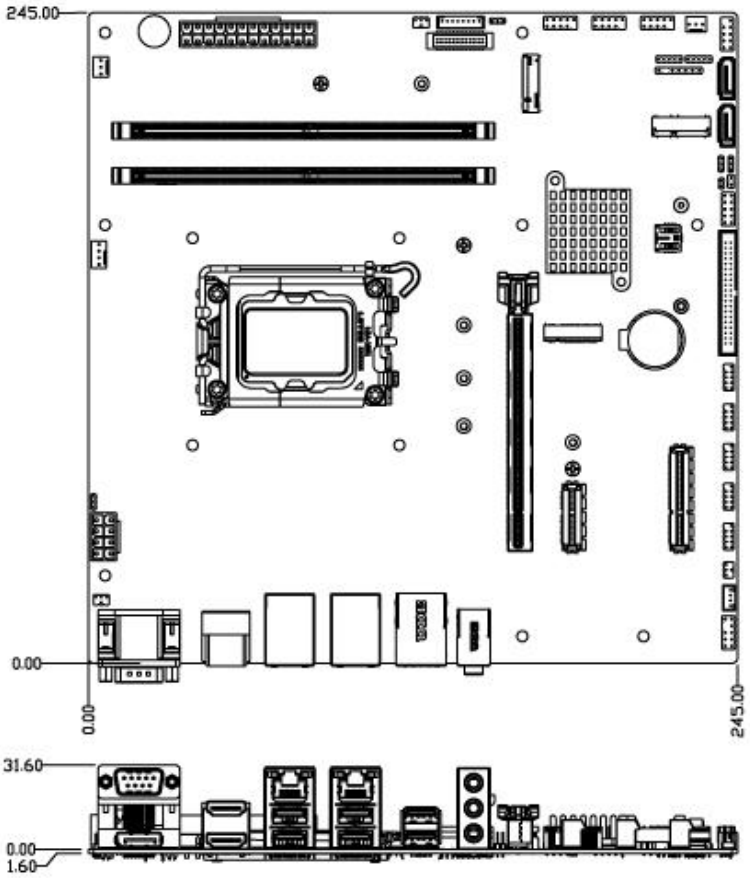
Item	UTX-ARS1-H8100010	UTX-ARS1-H8100210	UTX-ARS1-Q8700010	UTX-ARS1-Q8700210	UTX-ARS1-W8800010	UTX-ARS1-W8800210
CPU	Intel® Arrow Lake Processor H810	Intel® Arrow Lake Processor H810	Intel® Arrow Lake Processor Q870	Intel® Arrow Lake Processor Q870	Intel® Arrow Lake Processor W880	Intel® Arrow Lake Processor W880
SECURITY	Intel® PTT (fTPM)	TPM2.0 (dTPM)	Intel® PTT (fTPM)	TPM2.0 (dTPM)	Intel® PTT (fTPM)	TPM2.0 (dTPM)
ETHERNET	2 x 2.5GbE	2 x 2.5GbE	3 x 2.5GbE	3 x 2.5GbE	3 x 2.5GbE	3 x 2.5GbE
USB	4 x USB 3.2	4 x USB 3.2	6 x USB 3.2	6 x USB 3.2	6 x USB 3.2	6 x USB 3.2
USB	8 x USB 2.0	8 x USB 2.0	6 x USB 2.0	6 x USB 2.0	6 x USB 2.0	6 x USB 2.0
COM	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485
COM	5 x RS-232	5 x RS-232	5 x RS-232	5 x RS-232	5 x RS-232	5 x RS-232
COM	4 x RS-232 (Optional)	4 x RS-232 (Optional)	4 x RS-232 (Optional)	4 x RS-232 (Optional)	4 x RS-232 (Optional)	4 x RS-232 (Optional)
PCIE	1 x PCIe x16	1 x PCIe x16	1 x PCIe x16	1 x PCIe x16	1 x PCIe x16	1 x PCIe x16
PCIE	1 x PCIe x4	1 x PCIe x4	2 x PCIe x4	2 x PCIe x4	2 x PCIe x4	2 x PCIe x4
PCIE	1 x PCIe x1	1 x PCIe x1	1 x PCIe x1	1 x PCIe x1	1 x PCIe x1	1 x PCIe x1
M.2	1 x M-Key 2242/2280	1 x M-Key 2242/2280	1 x M-Key 2242/2280	1 x M-Key 2242/2280	1 x M-Key 2242/2280	1 x M-Key 2242/2280
M.2	–	–	–	–	1 x M-Key 2280	1 x M-Key 2280
M.2	–	–	1 x M-Key 2242/2260/2280/22110	1 x M-Key 2242/2260/2280/22110	1 x M-Key 2242/2260/2280/22110	1 x M-Key 2242/2260/2280/22110
M.2	1 x E-key 2230	1 x E-key 2230	1 x E-key 2230	1 x E-key 2230	1 x E-key 2230	1 x E-key 2230
M.2	–	–	1 x B-key 3042/3052	1 x B-key 3042/3052	1 x B-key 3042/3052	1 x B-key 3042/3052

1-2 Block Diagram

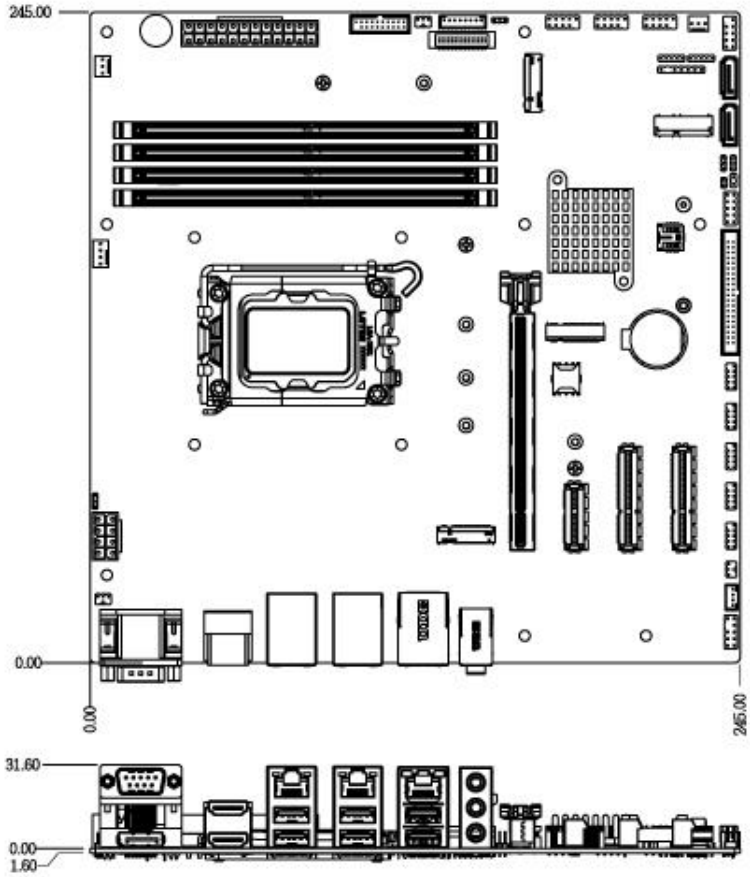


1-3 Dimension

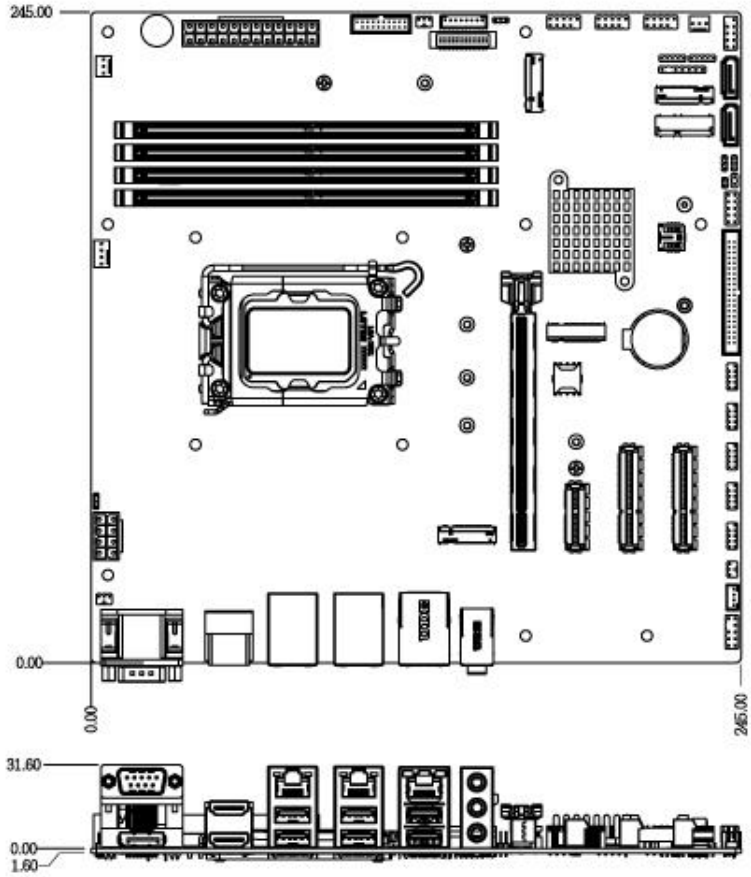
UTX-ARS1-H810



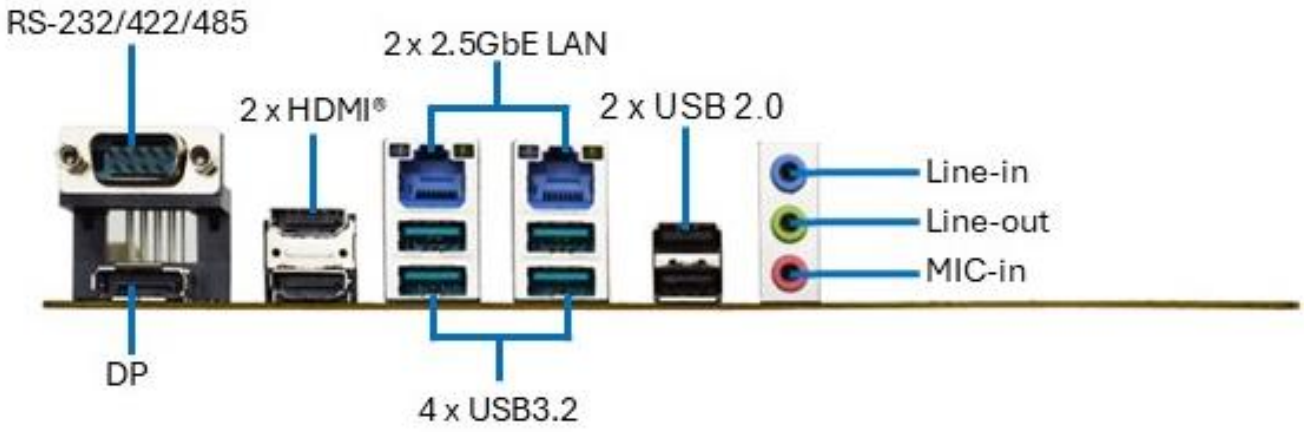
UTX-ARS1-Q870



UTX-ARS1-W880

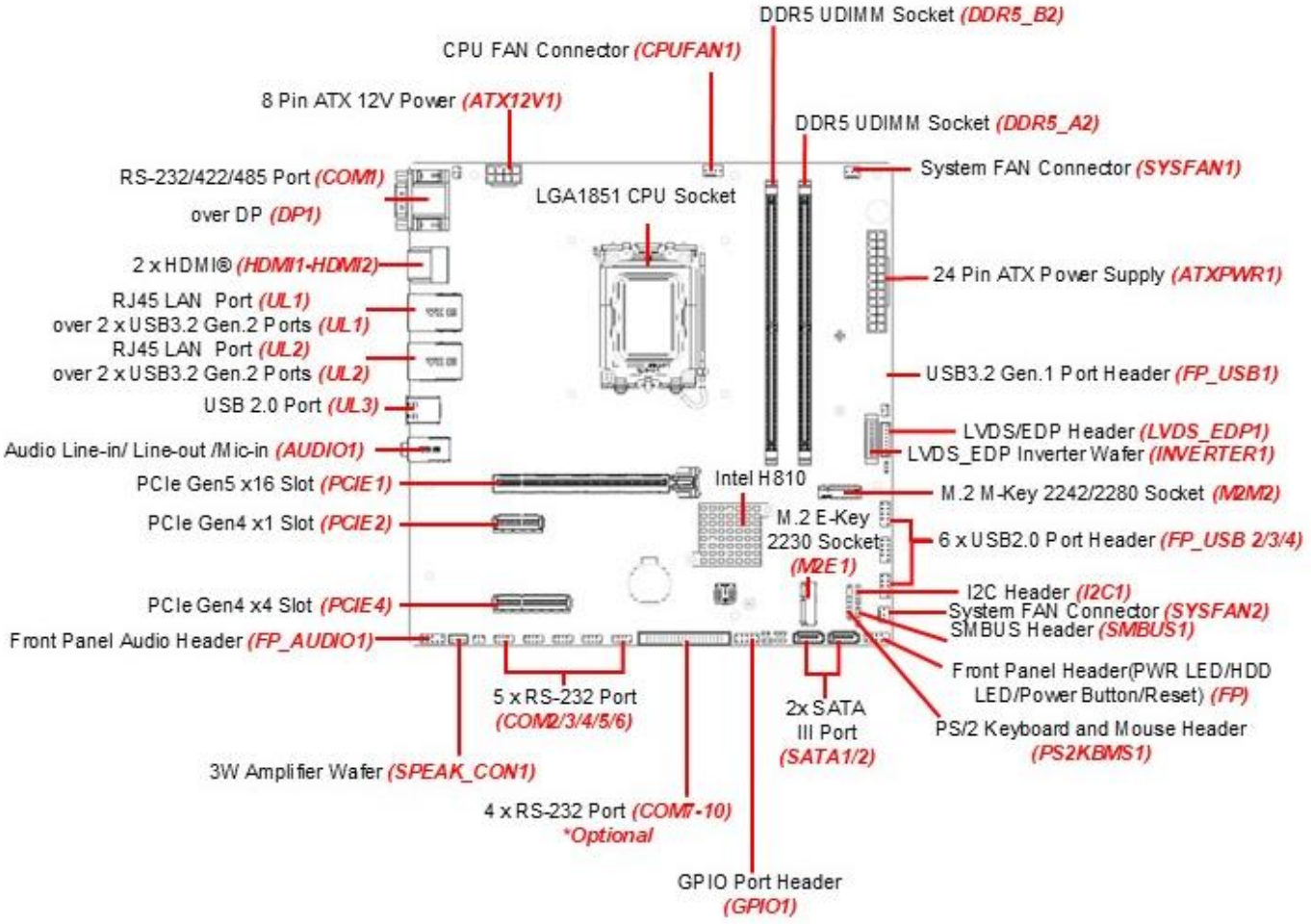


1-4 I/O Placement

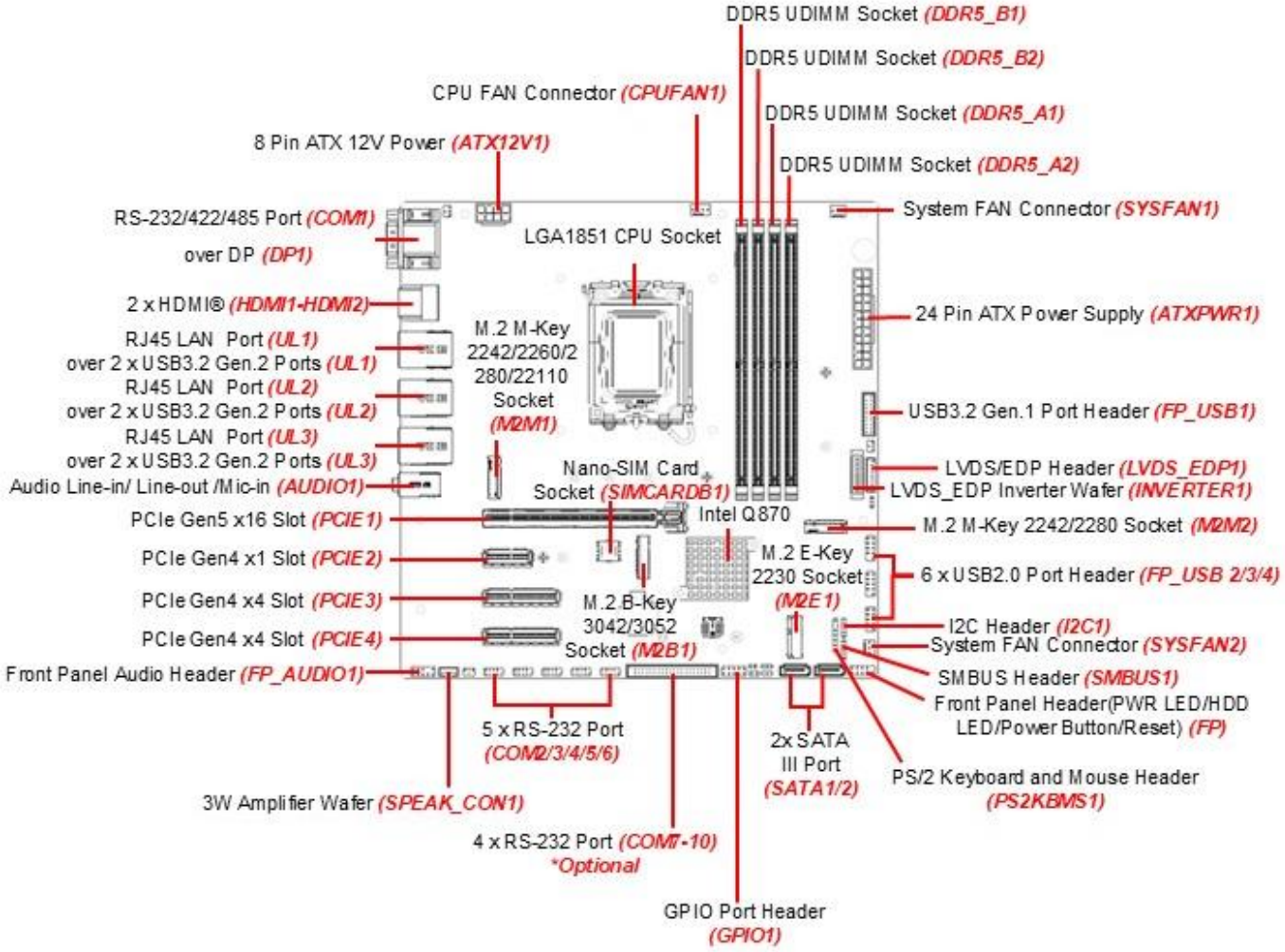


1-5 Motherboard Placement

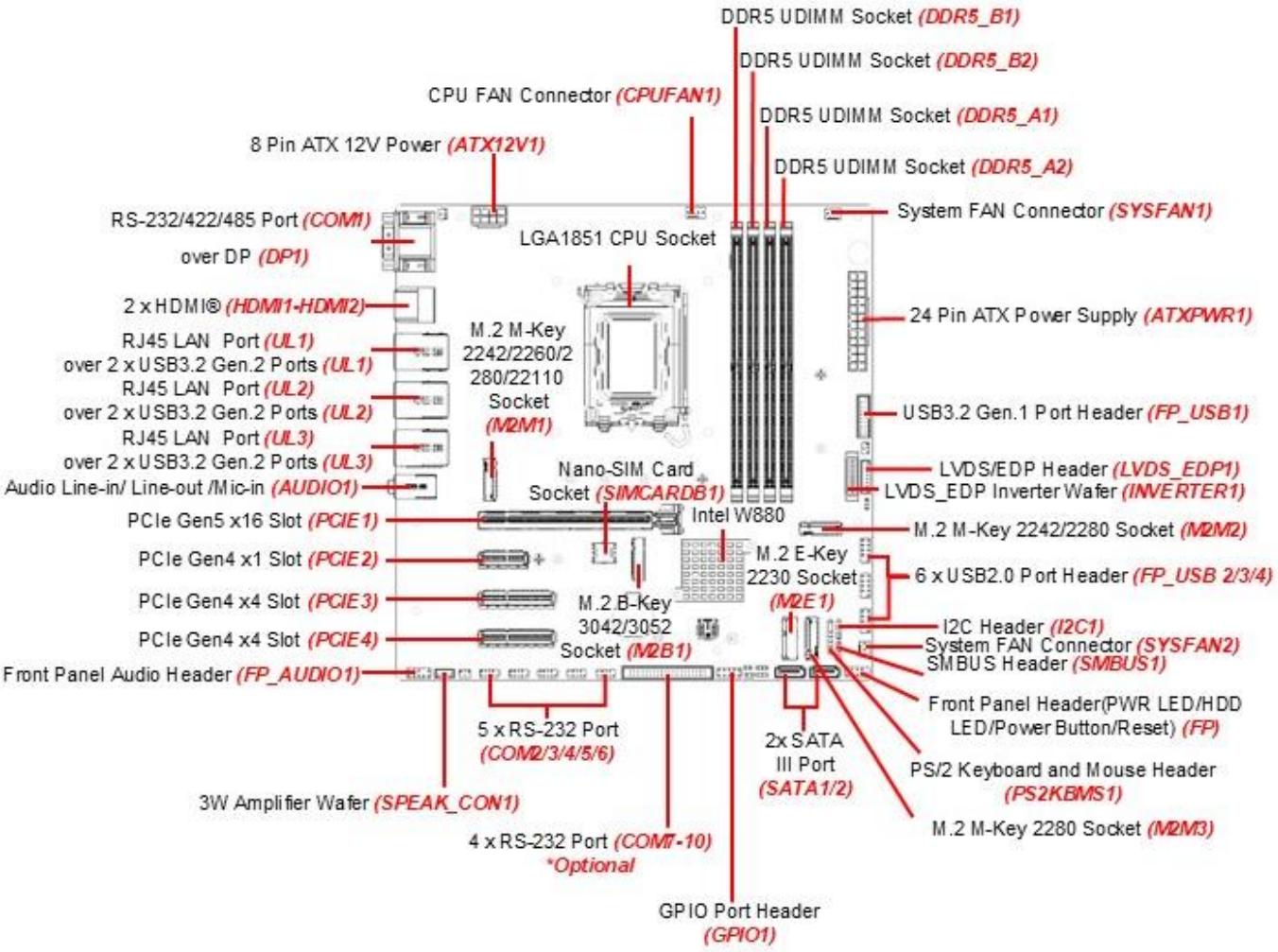
UTX-ARS1-H810



UTX-ARS1-Q870

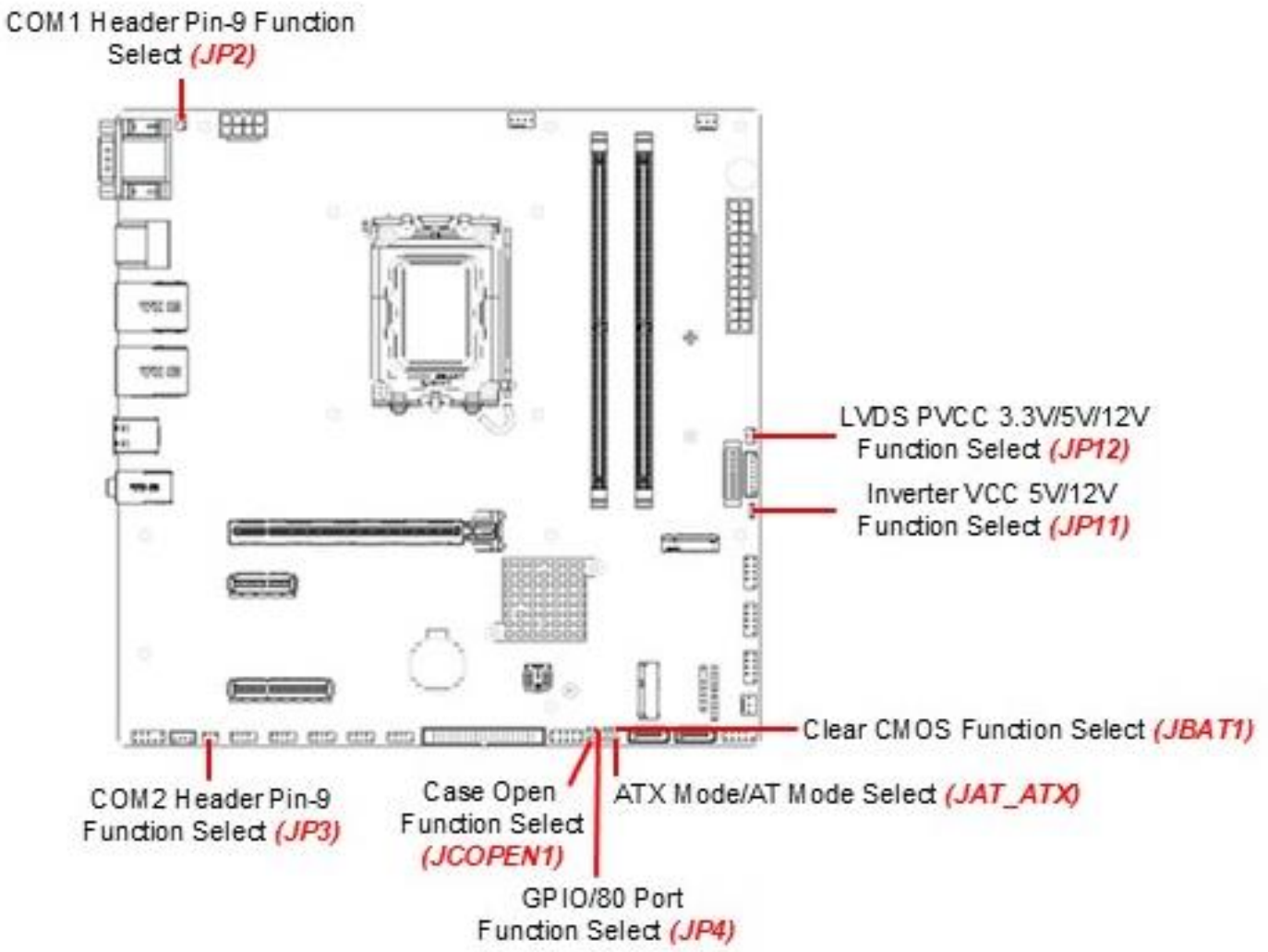


UTX-ARS1-W880

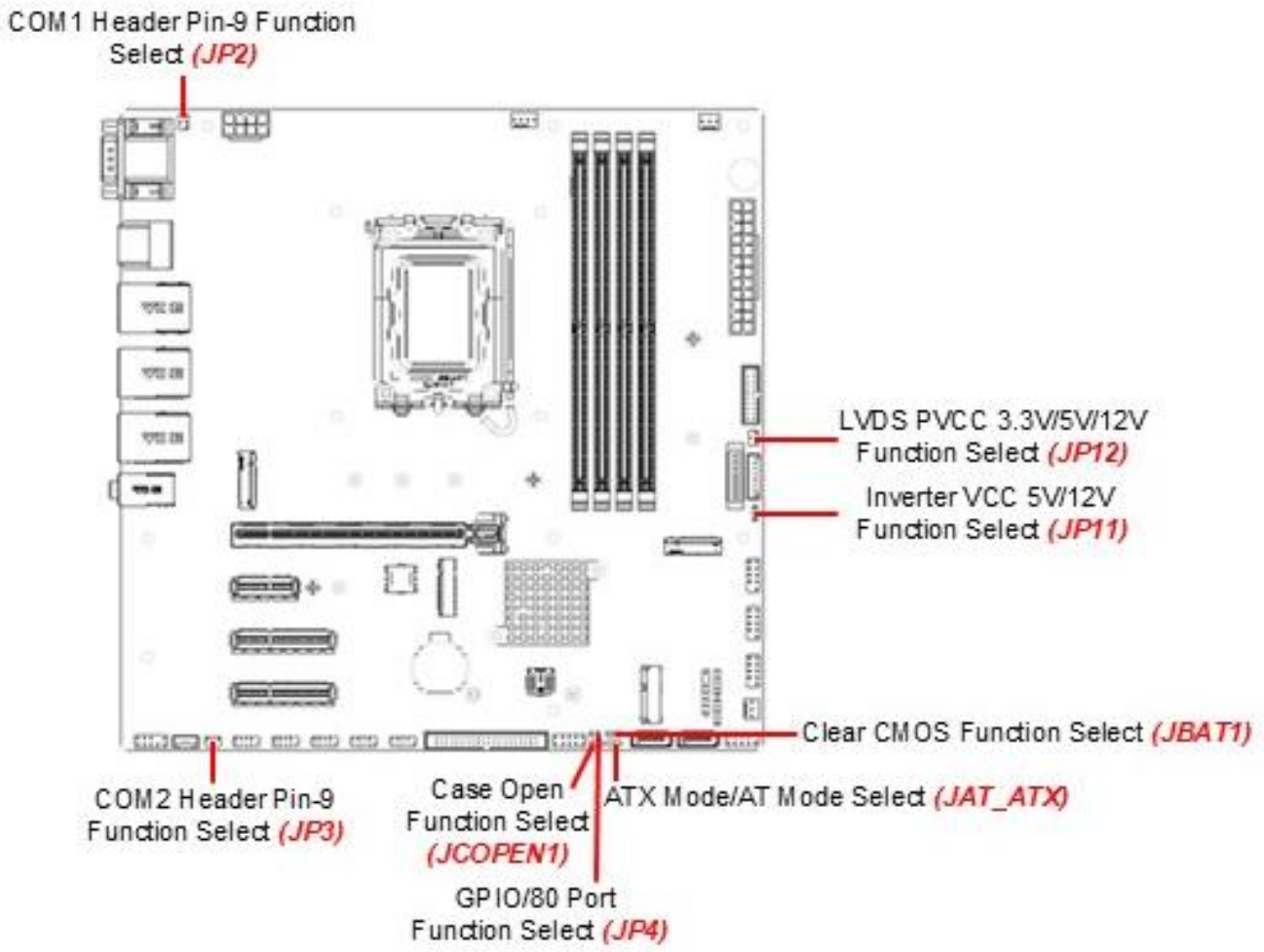


1-6 Jumper Positions

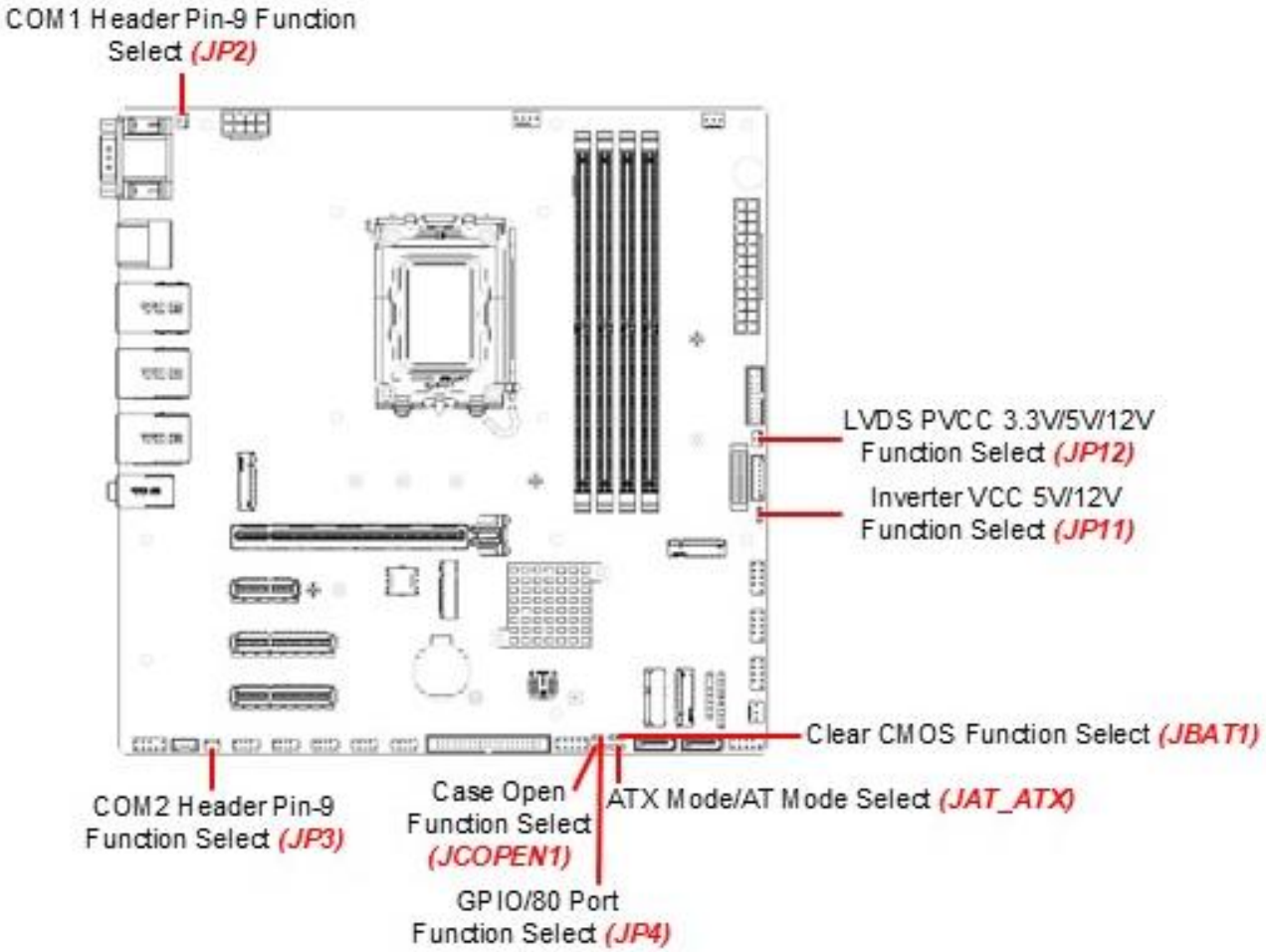
UTX-ARS1-H810



UTX-ARS1-Q870



UTX-ARS1-W880



Chapter 2 Hardware Information

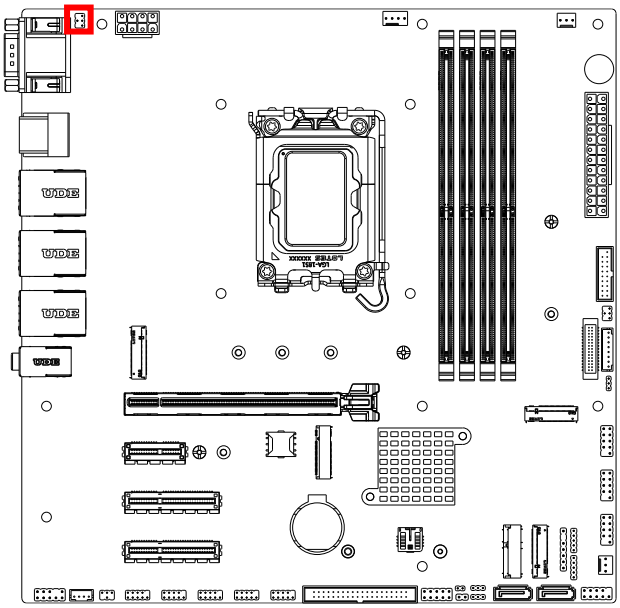
2-1 List of Jumpers

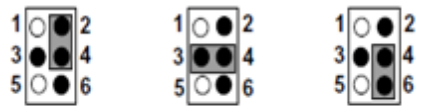
Please refer to the table below for all of the board's jumpers that you can configure for your application.

Location Printing	Function
JP2	COM1 Header Pin-9 Function Select
JP3	COM2 Header Pin-9 Function Select
JP4	GPIO/80 Port Function Select
JP11	Inverter VCC 5V/12V Function Select
JP12	LVDS PVCC 3.3V/5V/12V Function Select
JAT_ATX	ATX Mode/AT Mode Select
JBAT1	Clear CMOS Function Select
JCOPEN1	Case Open Function Select

2-2 Jumper Settings

(1) COM1 Header Pin-9 Function Select (JP2)



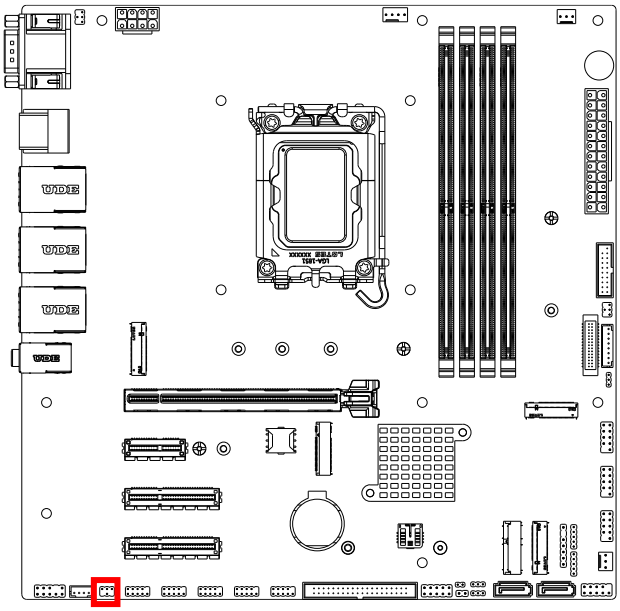


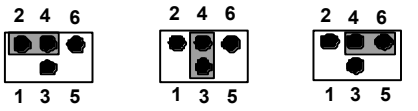
2-4 Closed:
RI=RS232;

3-4 Closed:
RI= +5V;

4-6 Closed:
RI= +12V.

(2) COM2 Header Pin-9 Function Select (JP3)



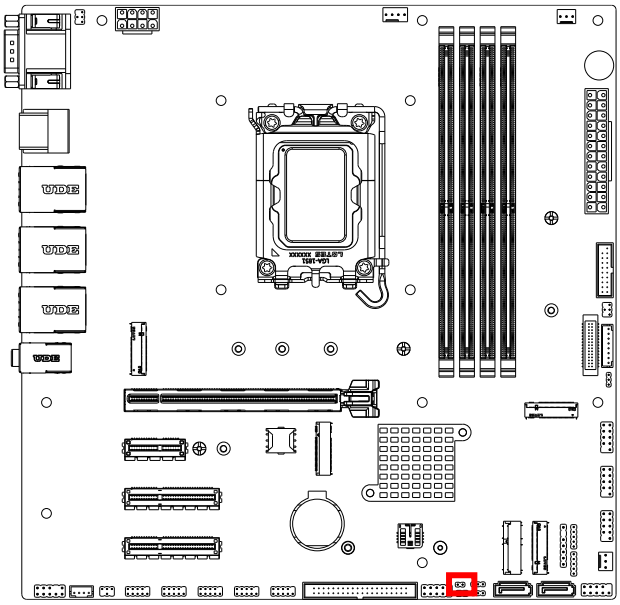


2-4 Closed:
RI=RS232

3-4 Closed:
RI= +5V

4-6 Closed:
RI= +12V

(3) GPIO/80 Port Function Select (JP4)



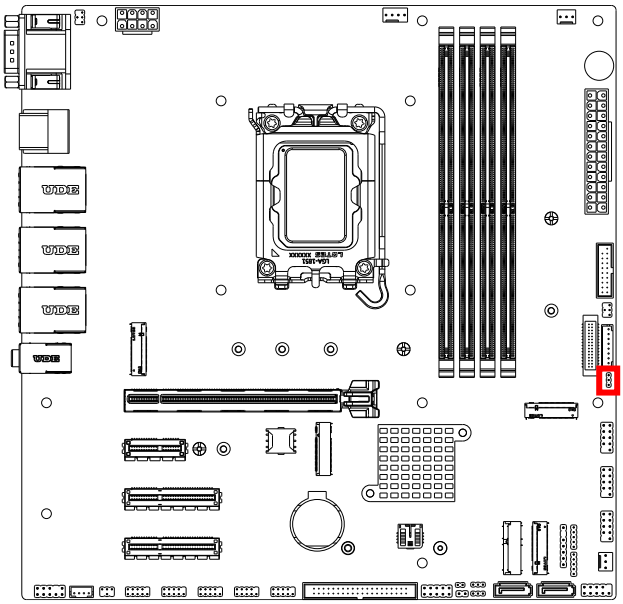


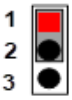
1-2 Open: GPIO= 80 Port;



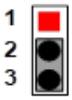
1-2 Closed: Function as GPIO Port.

(4) Inverter VCC 5V/12V Function Select (JP11)



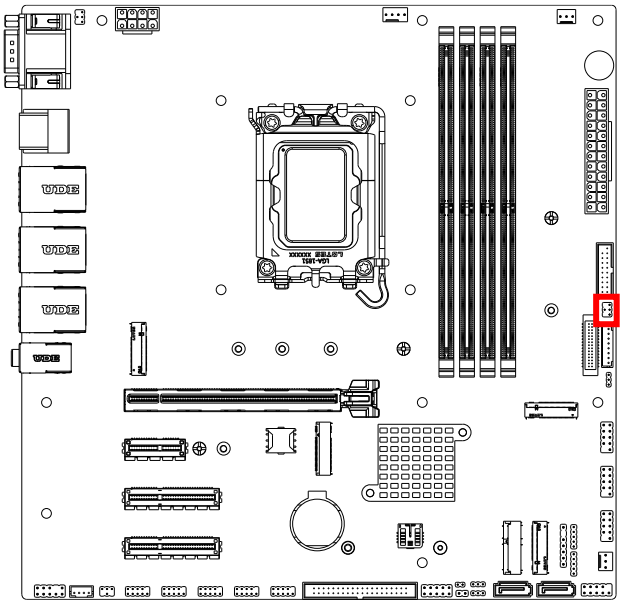


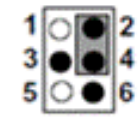
1-2 Closed: Inverter VCC=5V;



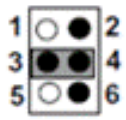
2-3 Closed: Inverter VCC=12V.

(5) LVDS PVCC 3.3V/5V/12V Function Select (JP12)

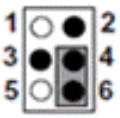




2-4 Closed:
RI=RS232;

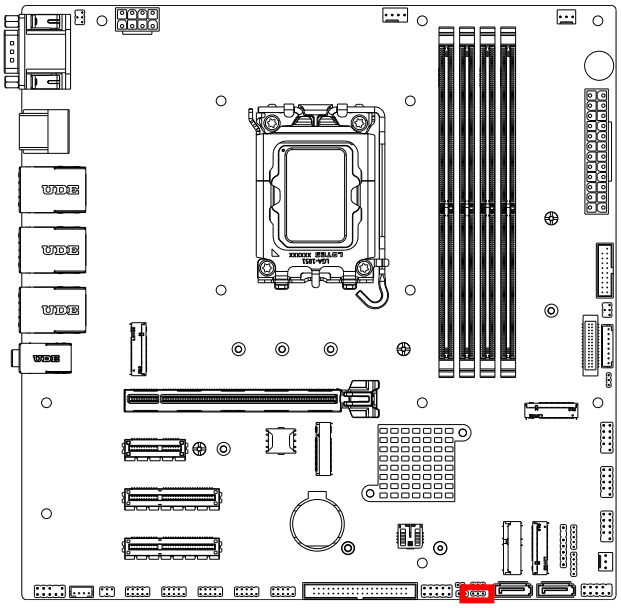


3-4 Closed:
RI= +5V;



4-6 Closed:
RI= +12V.

(6) ATX Mode/AT Mode Select (JAT_ATX)



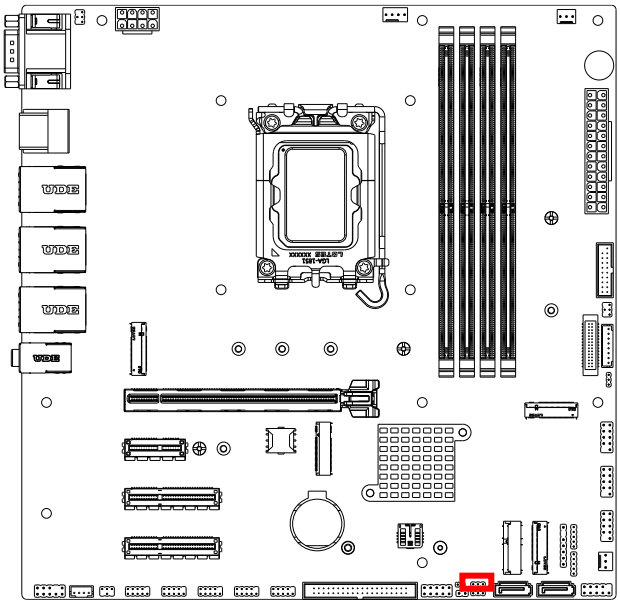


1-2 Closed: ATX Mode Selected;



2-3 Closed: AT Mode Selected.

(7) Clear CMOS Function Select (JBAT1)



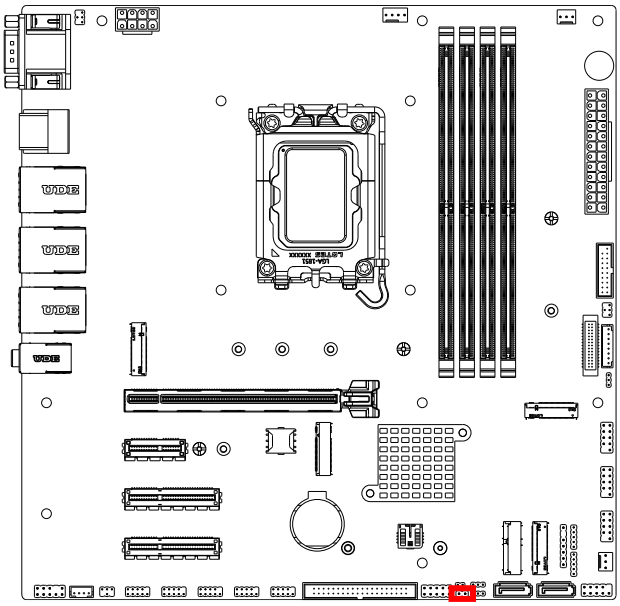


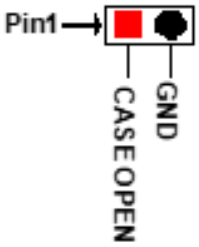
1-2 Closed: Normal;



2-3 Closed: Clear CMOS.

(8) Case Open Function Select (JCOPEN1)





2-3 List of Connectors

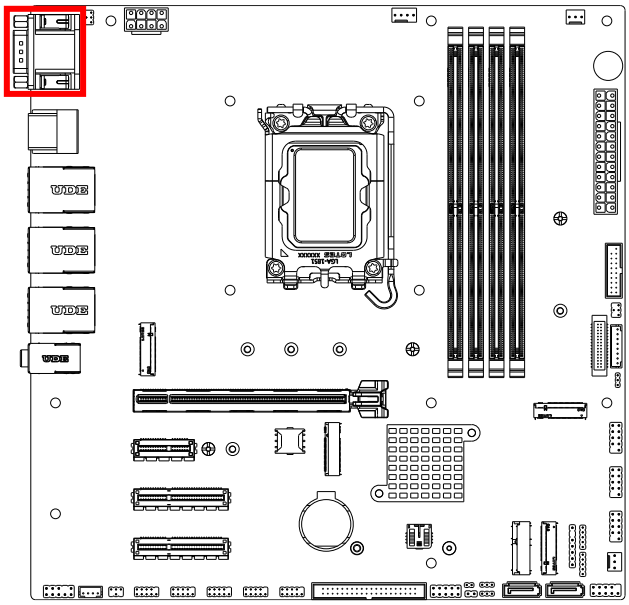
Please refer to the table below for all of the board's jumpers that you can configure for your application.

Location Printing	Function
COM1	Serial Port (RS232/422/485) Connector *Support 5V/12V
DP1	Display Port Connector
HDMI1-HDMI2	HDMI Connector x2
UL1 (LAN)	RJ-45 2.5G LAN Port Connector
UL1 (USB 3.2 Gen.2)	USB3.2 Gen.2 Port Connector
UL2 (LAN)	RJ-45 2.5G LAN Port Connector
UL2 (USB 3.2 Gen.2)	USB3.2 Gen.2 Port Connector
UL3 (LAN)	RJ-45 2.5G LAN Port Connector (Only Q870/W880 Chipset)
UL3 (USB 3.2 Gen.2)	USB3.2 Gen.2 Port Connector (Only Q870/W880 Chipset)
UL3 (USB 2.0)	USB2.0 Port Connector (Only H810 Chipset)
AUDIO1	Audio Line In/Line Out/MIC Connector
FP_AUDIO1	Front Panel Audio Header
SPEAK_CON1	3W Amplifier Wafer
COM 2/3/4/5/6	RS232 Serial Port Header
COM7-10	RS232 Serial Port Header
GPIO1	GPIO Port Header
SATA 1/2	SATAIII Port Connector
FP	Front Panel Header (PWR LED/HDD LED/Power Button/Reset)
CPUFAN1	CPU FAN Connector
SYSFAN 1/2	System FAN Connector
PS2KBMS1	PS/2 Keyboard and Mouse Header
SMBUS1	SMBUS Header
I2C1	I2C Header
FP_USB 2/3/4	USB2.0 Port Header
LVDS_EDP1	LVDS/EDP Header
INVERTER1	LVDS_EDP Inverter Wafer
FP_USB1	USB3.2 Gen.1 Port Header
M2M1	M.2 2242/2260/2280/22110 Key M Socket (Only Q870/W880 Chipset)
M2M2	M.2 2242/2280 Key M Socket
M2M3	M.2 2242/2280 Key M Socket (Only W880 Chipset)
M2E1	M.2 2230 Key E Socket
M2B1	M.2 2242/3052 Key B Socket (Only Q870/W880 Chipset)
SIMCARDB1	Nano-SIM Card Socket
ATXPWR1	24 Pin ATX Power Supply Connector

ATX12V1	8 Pin ATX 12V Power Connector
DDR5_A1	DDR5 UDIMM Socket
DDR5_A2	DDR5 UDIMM Socket (H810 Chipset Only this Memory Socket)
DDR5_B1	DDR5 UDIMM Socket
DDR5_B2	DDR5 UDIMM Socket (H810 Chipset Only this Memory Socket)
PCIE1	PCIe Gen5 x16 Slot
PCIE2	PCIe Gen4 x1 Slot
PCIE3	PCIe Gen4 x4 Slot (Only Q870/W880 Chipset)
PCIE4	PCIe Gen4 x4 Slot

2-4 Connector Settings

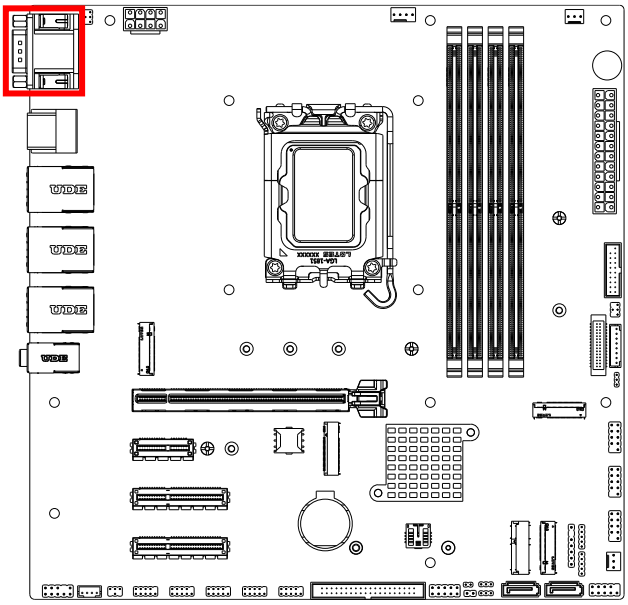
*(1) Serial Port (RS232/422/485) Connector *Support 5V/12V (COM1)*





Pin NO.	RS232	*RS422 (optional)	*RS485 (optional)
Pin 1	DCD	TX-	DATA-
Pin 2	RXD	TX+	DATA+
Pin 3	TXD	RX+	NC
Pin 4	DTR	RX-	NC
Pin 5	GND	GND	GND
Pin 6	DSR	NC	NC
Pin 7	RTS	NC	NC
Pin 8	CTS	NC	NC
Pin 9	RI	NC	NC

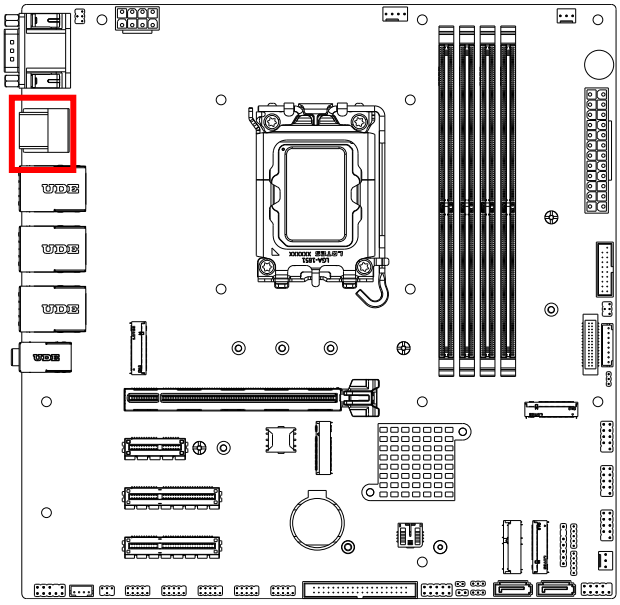
(2) DP Connector (DP1)





Note: Standard specifications.

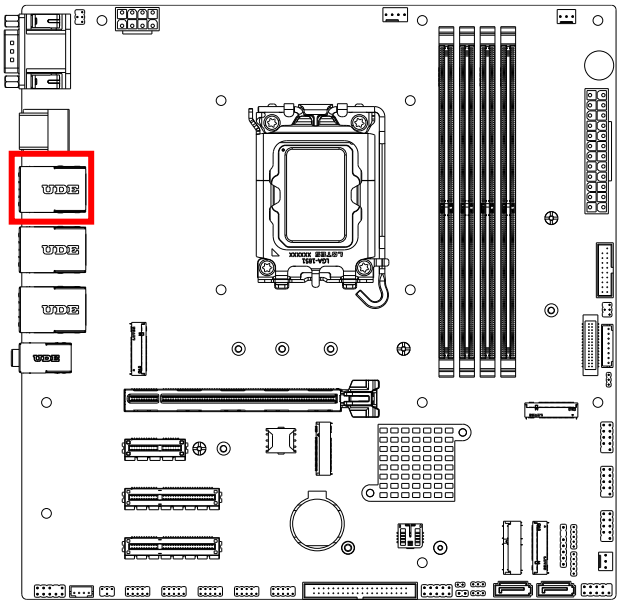
(3) HDMI Connector x2 (HDMI1-HDMI2)

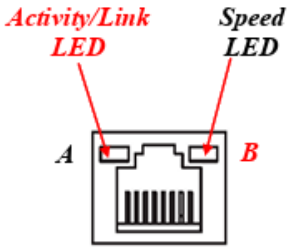




Note: Standard specifications.

(4) RJ-45 LAN Port Connector (UL1)





A: Activity/Link LED

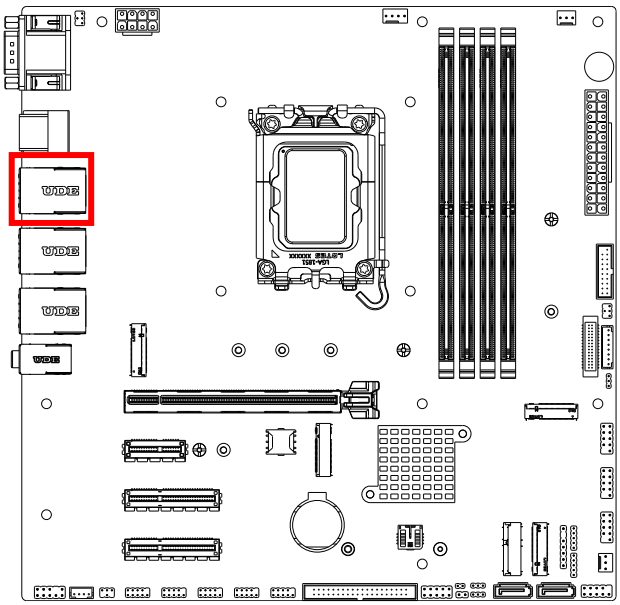
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

B: Speed LED

Status	Description
Off	10/100Mbps connection
Orange	1Gbps connection
Green	2.5Gbps connection

** **Note:** **2.5Gbps** high-speed transmission rate is **only** supported over **CAT 5e UTP cable**.*

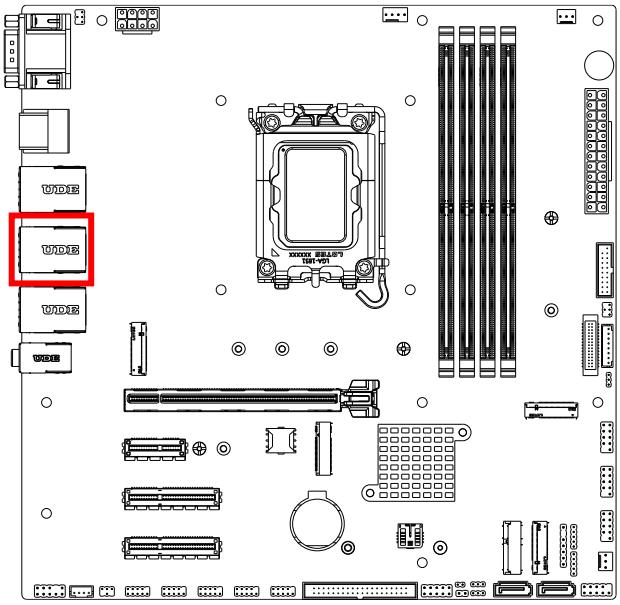
(5) USB3.2 (Gen.2) Port Connector (UL1)

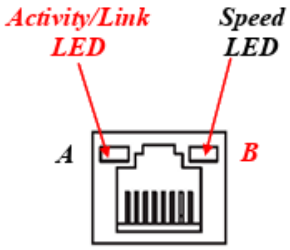




Note: Standard specifications.

(6) RJ-45 LAN Port Connector (UL2)





A: Activity/Link LED

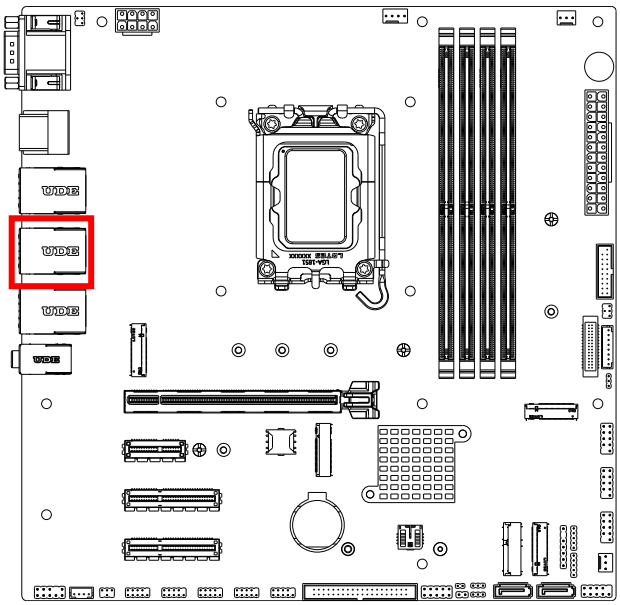
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

B: Speed LED

Status	Description
Off	10/100Mbps connection
Orange	1Gbps connection
Green	2.5Gbps connection

** **Note:** **2.5Gbps** high-speed transmission rate is **only** supported over **CAT 5e UTP cable**.*

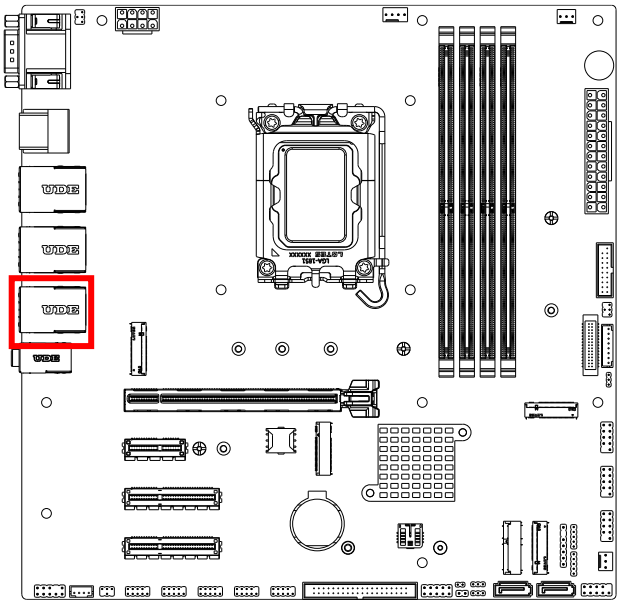
(7) USB3.2 (Gen.2) Port Connector (UL2)

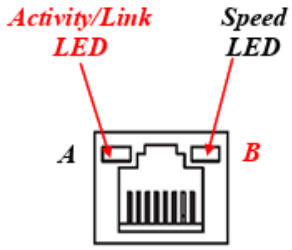




Note: Standard specifications.

*(8) RJ-45 LAN Port Connector (UL3) *Only for W880/Q870 Chipset*





A: Activity/Link LED

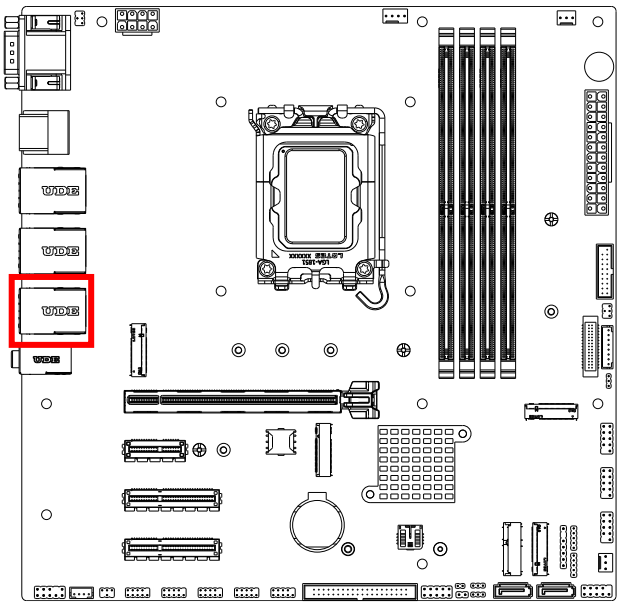
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

B: Speed LED

Status	Description
Off	10/100Mbps connection
Orange	1Gbps connection
Green	2.5Gbps connection

** **Note:** **2.5Gbps** high-speed transmission rate is **only** supported over **CAT 5e UTP cable**.*

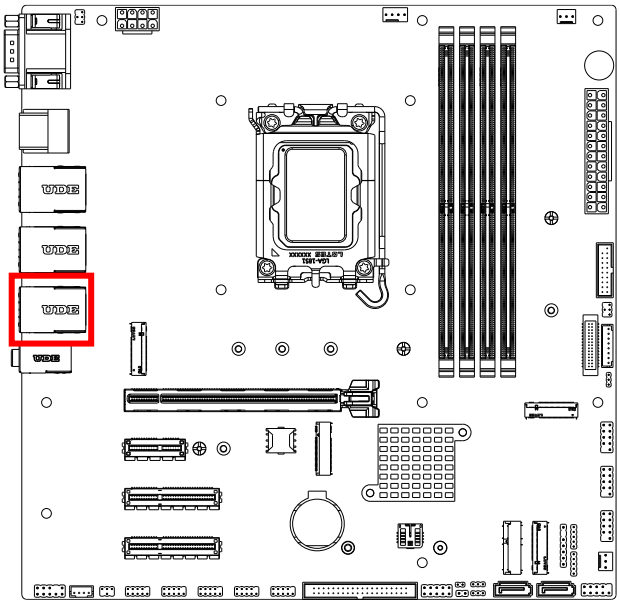
*(9) USB3.2 (Gen.2) Port Connector (UL3) *Only for W880/Q870 Chipset*





Note: Standard specifications.

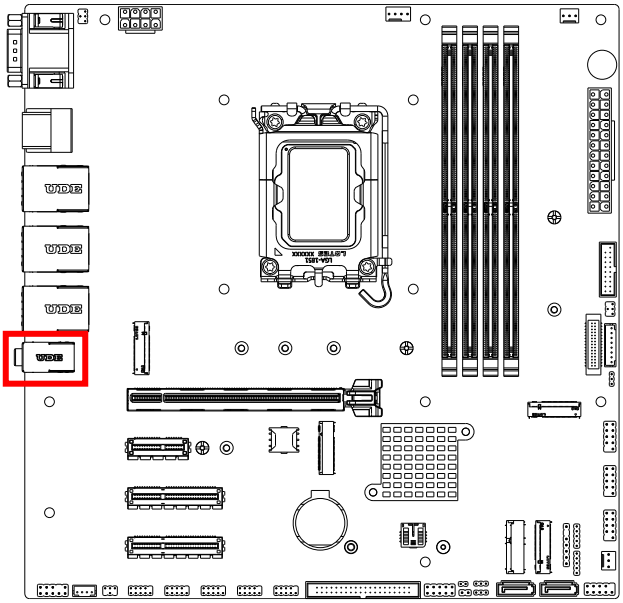
*(10) USB2.0 Port Connector (UL3) *Only for H810 Chipset*





Note: Standard specifications.

(11) Audio Line In/Line Out/MIC Connector (AUDIO1)

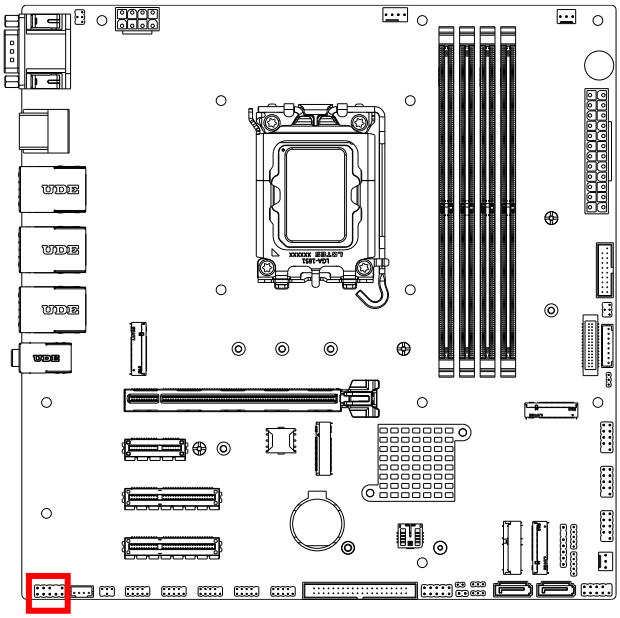


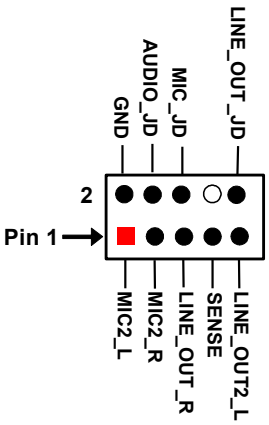


Note: Standard specifications.

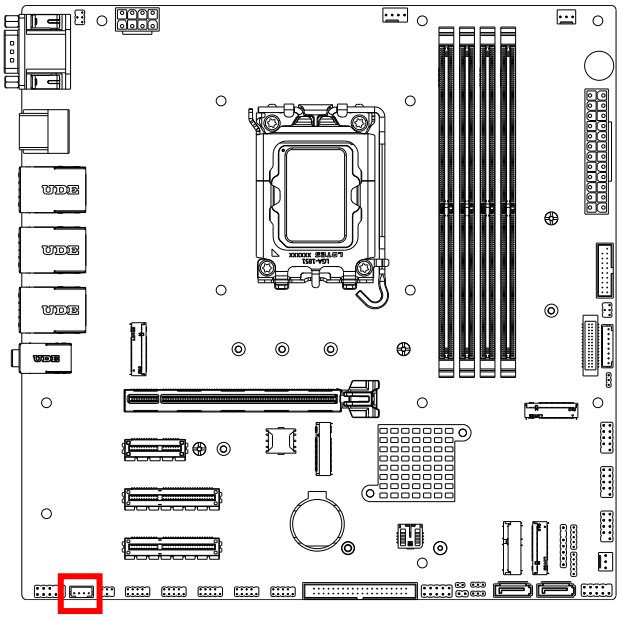
(12) Front Panel Audio Header (FP_AUDIO1)

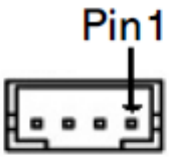
This header connects to Front Panel Line-Out, MIC-In connector with cable





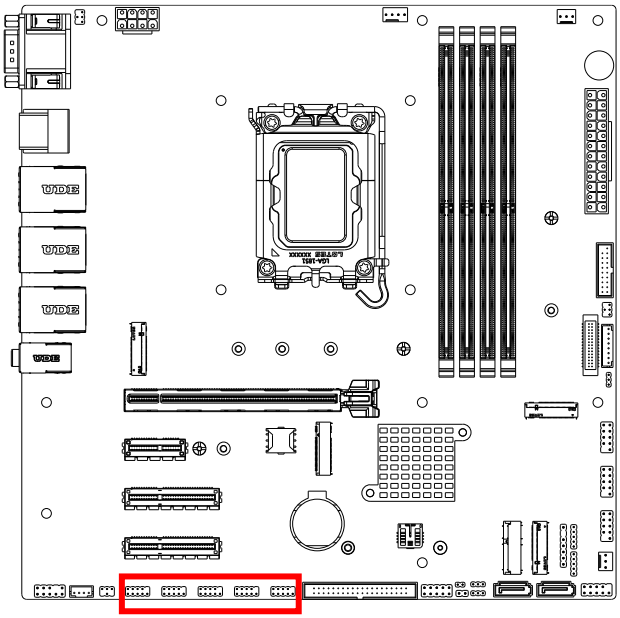
(13) 3W Amplifier Wafer (SPEAK_CON1)

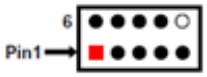




Pin No.	Definition
1	L-
2	L+
3	R+
4	R-

(14) RS232 Serial Port Header (COM2/3/4/5/6)

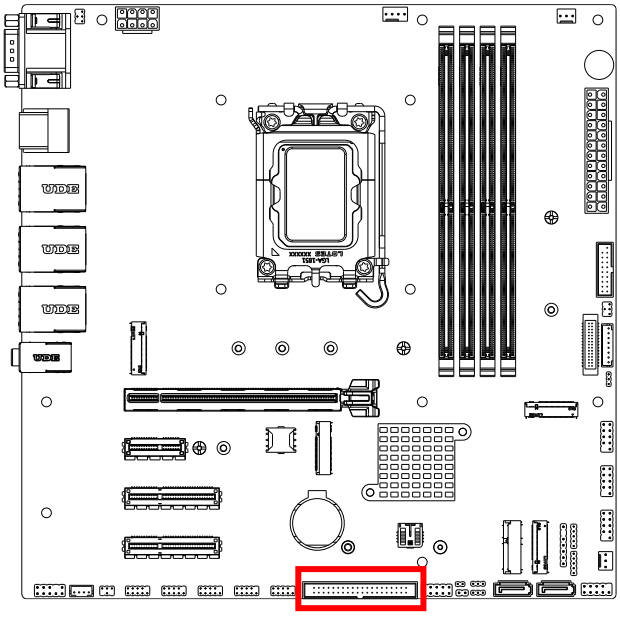


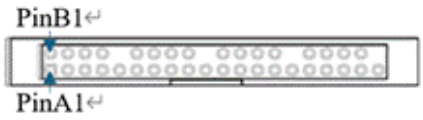


Pin NO.	Pin 6	Pin 7	Pin 8	Pin 9	
RS232	DSR	RTS	CTS	RI	
Pin NO.	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
RS232	DCD	RXD	TXD	DTR	GND

COM7-10	Pin NO	RS232	Pin NO.	RS232
COM7	Pin A1	DCD7	Pin B1	DSR7
	Pin A2	SIN7	Pin B2	RTS7
	Pin A3	SOUT7	Pin B3	CTS7
	Pin A4	DTR7	Pin B4	RI7
	Pin A5	GND	Pin B5	N/A
COM8	Pin A6	DCD8	Pin B6	DSR8
	Pin A7	SIN8	Pin B7	RTS8
	Pin A8	SOUT8	Pin B8	CTS8
	Pin A9	DTR8	Pin B9	RI8
	Pin A10	GND	Pin B10	N/A
COM9	Pin A11	DCD9	Pin B11	DSR9
	Pin A12	SIN9	Pin B12	RTS9
	Pin A13	SOUT9	Pin B13	CTS9
	Pin A14	DTR9	Pin B14	RI9
	Pin A15	GND	Pin B15	N/A
COM10	Pin A16	DCD10	Pin B16	DSR10
	Pin A17	SIN10	Pin B17	RTS10
	Pin A18	SOUT10	Pin B18	CTS10
	Pin A19	DTR10	Pin B19	RI10
	Pin A20	GND	Pin B20	N/A

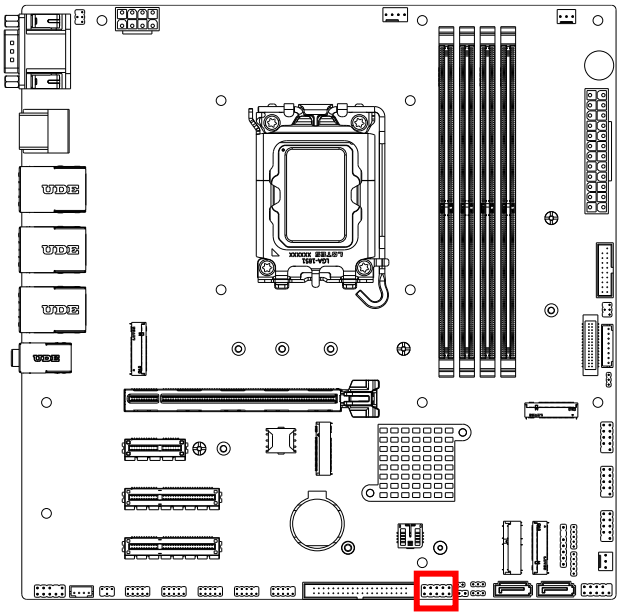
(15) RS232 Serial Port Header (COM7-10)

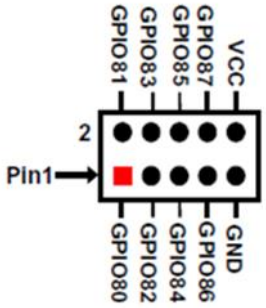




***Note*: COM7-10 ports are optional and by request only**

(16) GPIO Port Header (GPIO1)

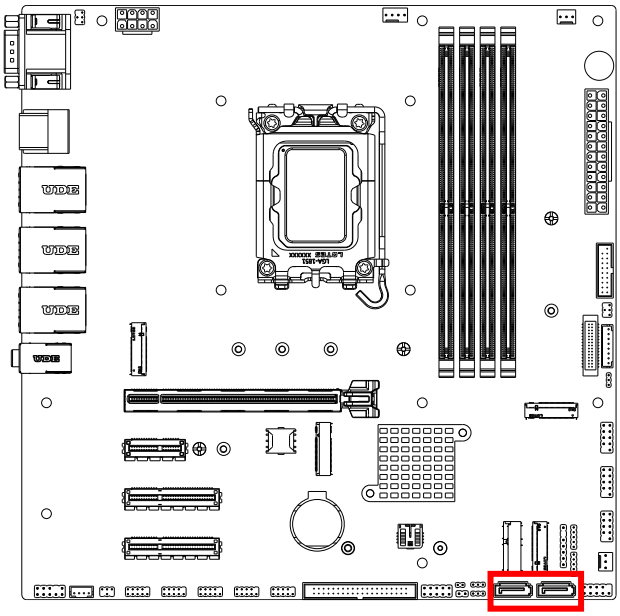




***JP4** Open: For 80Port Function;*
***JP4** Closed: Normal 8-bit GPIO.*

(17) SATAIII Port Connector (SATA1/2)

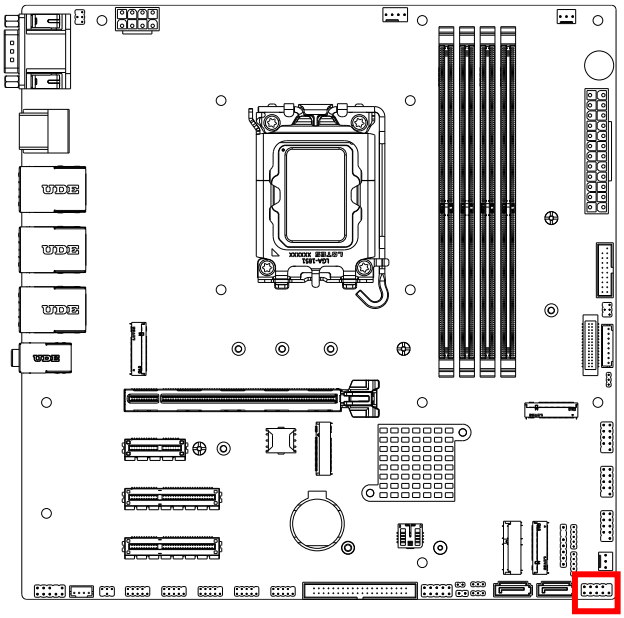
This is a high-speed SATAIII port that supports 6GB/s transfer rate

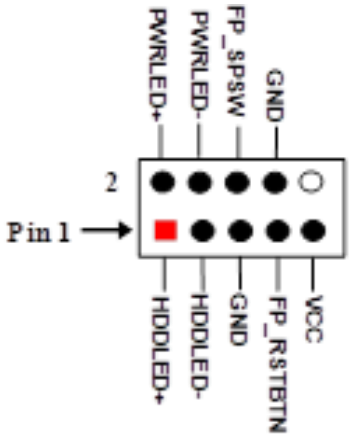


Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

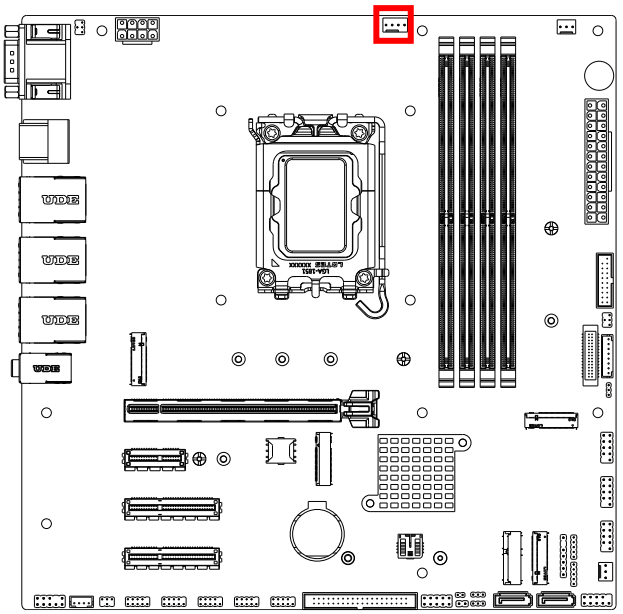
Note: Standard specifications.

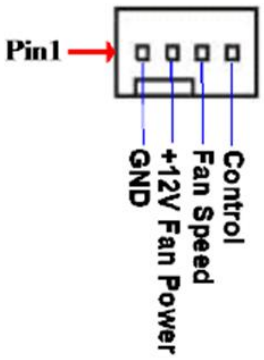
(18) Front Panel Header(PWR LED/HDD LED/Power Button/Reset)(FP)



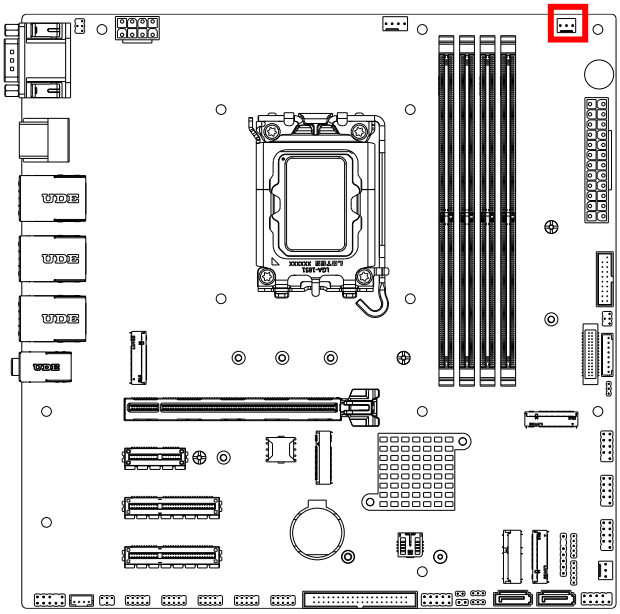


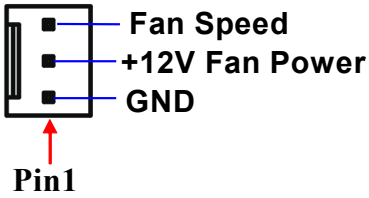
(19) Front Panel Header (PWR LED/HDD LED/Power Button/Reset) (FP)



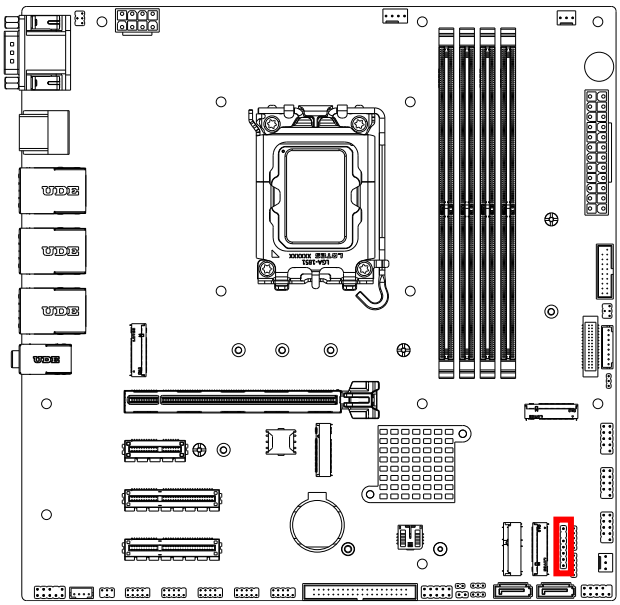


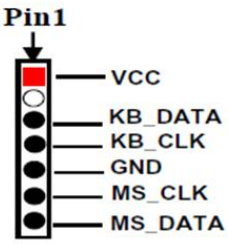
(20) System FAN Connector (SYSFAN1/2)



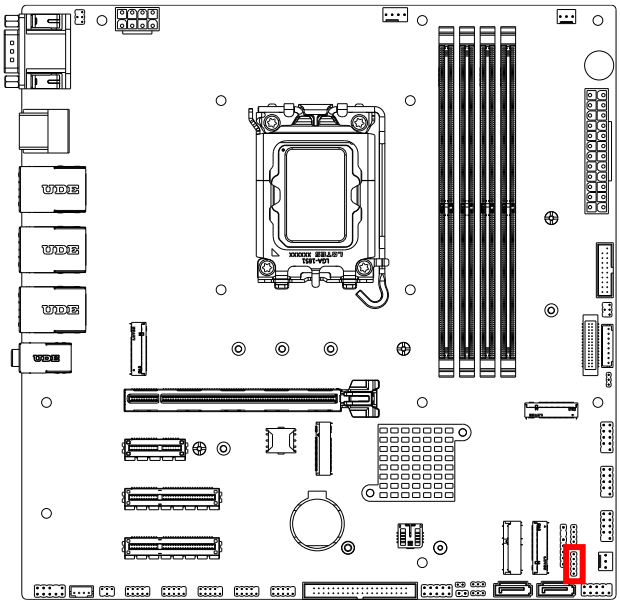


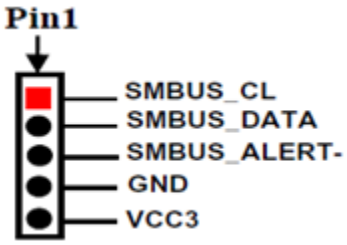
(21) PS/2 Keyboard and Mouse Header (PS2KBMS1)



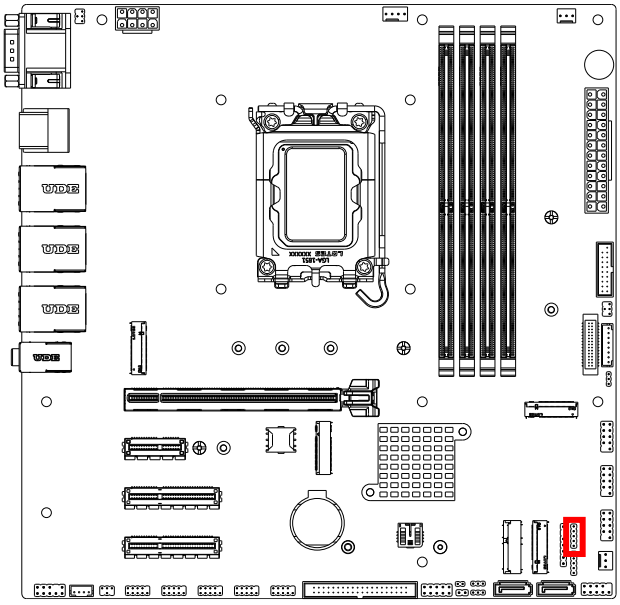


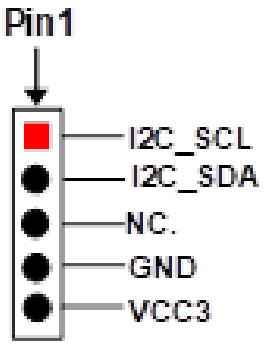
(22) SMBUS Header (SMBUS1)



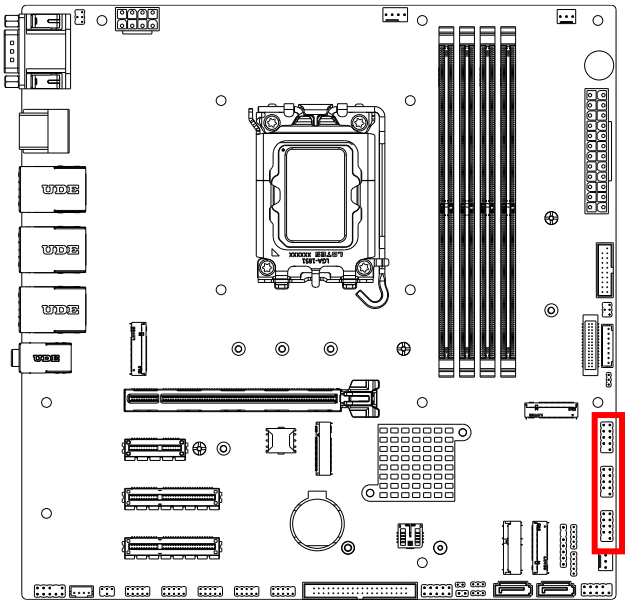


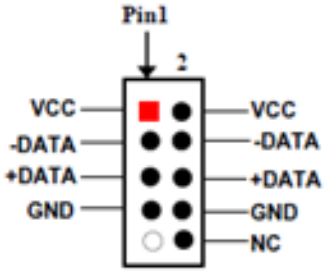
(23) SMBUS Header (SMBUS1)



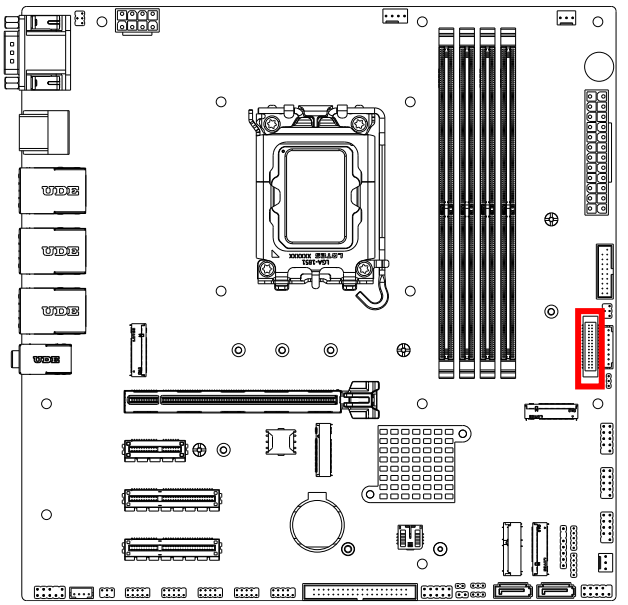


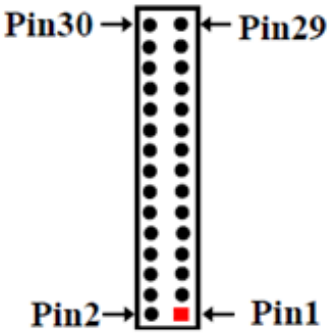
(24) SMBUS Header (SMBUS1)





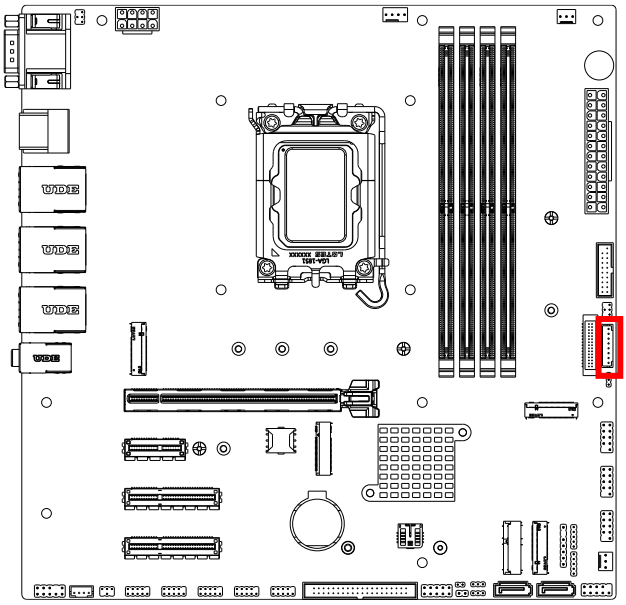
(25) LVDS/EDP Header (LVDS_EDP1)

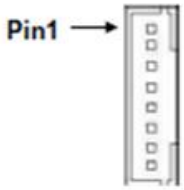




Pin Define	Pin NO.	Pin NO.	Pin Define
LCD_VCC	Pin 30	Pin 29	LCD_VCC
LCD_VCC	Pin 28	Pin 27	LCD_VCC
LVDSA_DATAN0	Pin 26	Pin 25	LVDSA_DATAP0
LVDSA_DATAN1	Pin 24	Pin 23	LVDSA_DATAP1
LVDSA_DATAN2	Pin 22	Pin 21	LVDSA_DATAP2
LVDS_CLKAN	Pin 20	Pin 19	LVDS_CLKAP
LVDSA_DATAN3	Pin 18	Pin 17	LVDSA_DATAP3
GND	Pin 16	Pin 15	GND
GND	Pin 14	Pin 13	GND
LVDS_DDC_SCL	Pin 12	Pin 11	LVDS_DDC_SDA
LVDSB_DATAP0	Pin 10	Pin 9	LVDSB_DATAN0
LVDSB_DATAP1	Pin 8	Pin 7	LVDSB_DATAN1
LVDSB_DATAP2	Pin 6	Pin 5	LVDSB_DATAN2
LVDSB_CLKP	Pin 4	Pin 3	LVDS_CLKBN
LVDSB_DATAP3	Pin 2	Pin 1	LVDSB_DATAN3

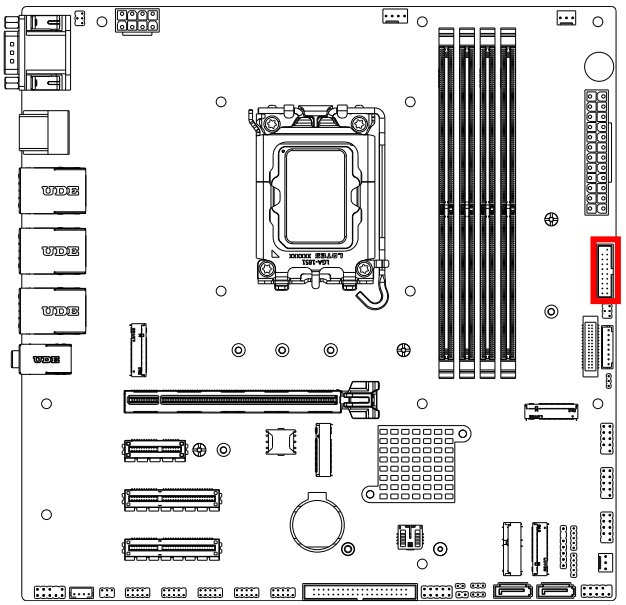
(26) LVDS/EDP Inverter Wafer (INVERTER1)

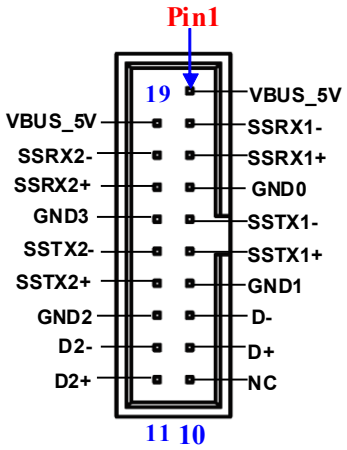




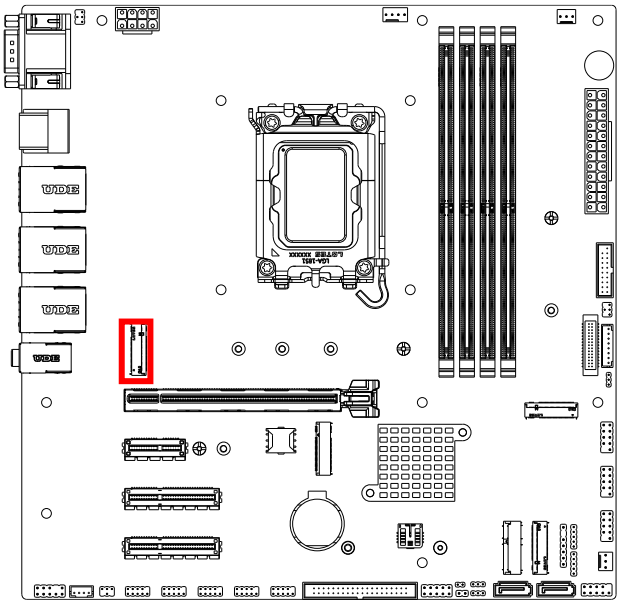
Pin No.	Definition
1	LCD_BKLT_EN
2	LCD_BKLT_PWM
3	Backlight VCC
4	Backlight VCC
5	GND
6	GND
7	BRTNSS_UP
8	BRTNSS_DOWN

(27) USB3.2 (Gen.1) Port Header (FP_USB1)





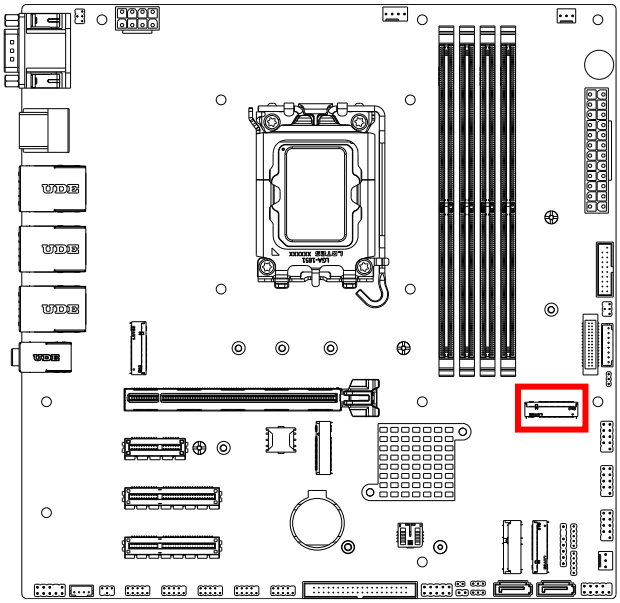
(28) M.2 2242/2260/2280/22110 Key M Socket (M2M1)





Note: Standard specifications.

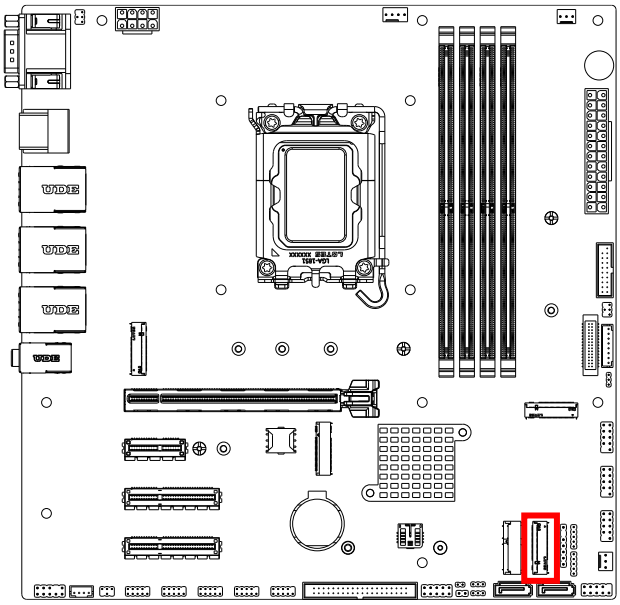
(29) M.2 2242/2280 Key M Socket (M2M2)





Note: Standard specifications.

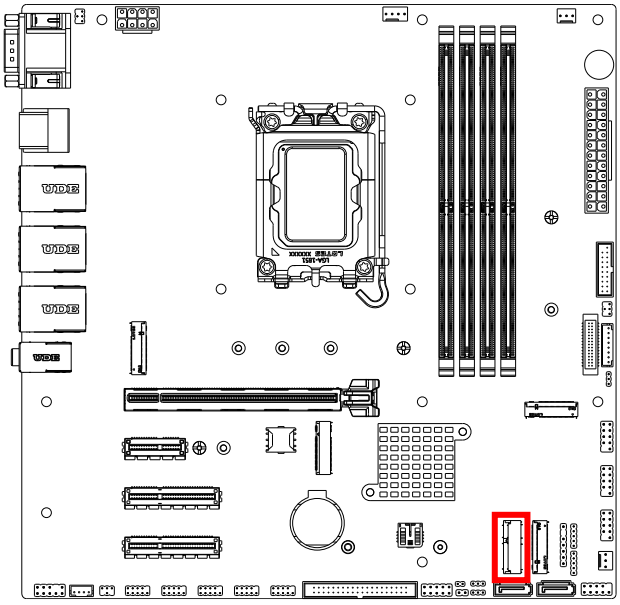
(30) M.2 2242/2280 Key M Socket (M2M3)

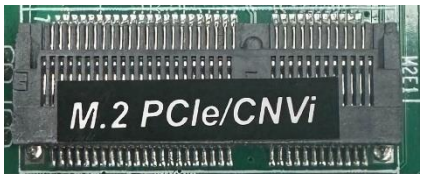




Note: Standard specifications.

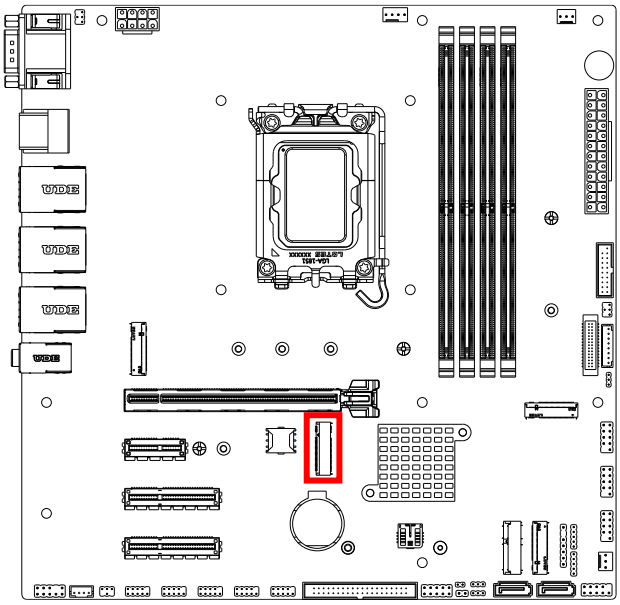
(31) M.2 2230 Key E Socket (M2E1)





Note: Standard specifications.

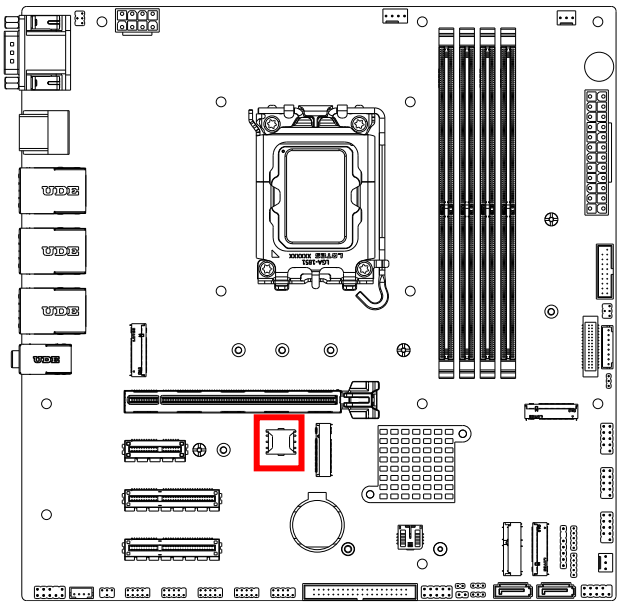
(32) M.2 2242/3052 Key B Socket (M2B1)

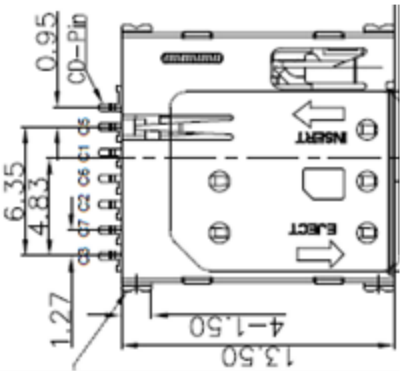




Note: Standard specifications.

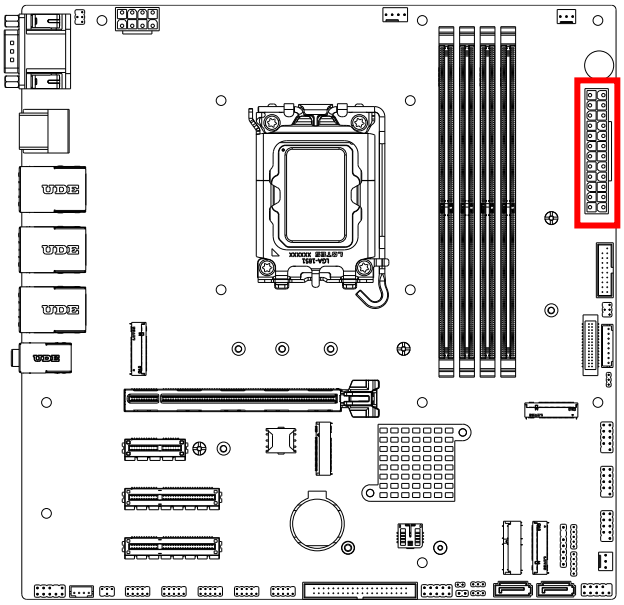
(33) Nano-SIM Card Socket (SIMCARDB1)

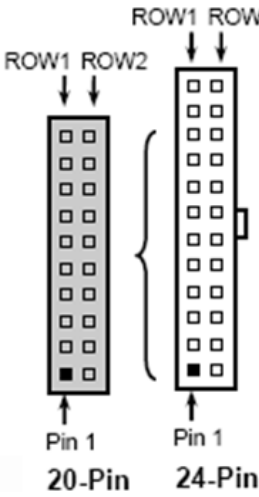




Note: Standard specifications.

(34) 24 Pin ATX Power Supply Connector (ATXPWR1)

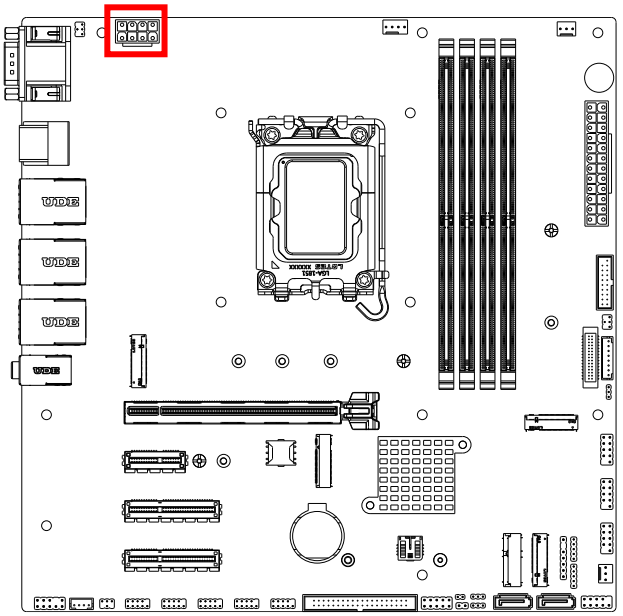


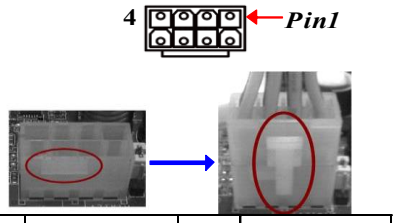


PIN	ROW1	ROW2
1	3.3V	3.3V
2	3.3V	-12V
3	GND	GND
4	5V	Soft Power On
5	GND	GND
6	5V	GND
7	GND	GND
8	Power OK	-5V
9	+5V (for Soft Logic)	+5V
10	+12V	+5V
11	+12V	+5V
12	+3V	GND

Note: Standard specifications.

(35) 8 Pin ATX 12V Power Connector (ATX12V1)

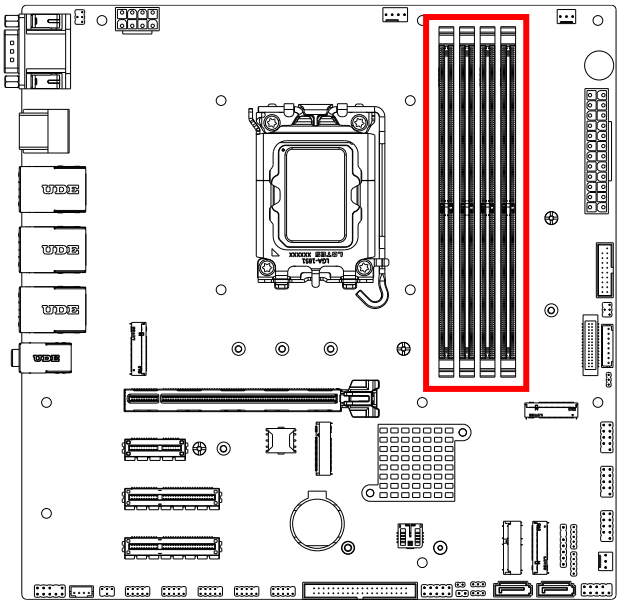


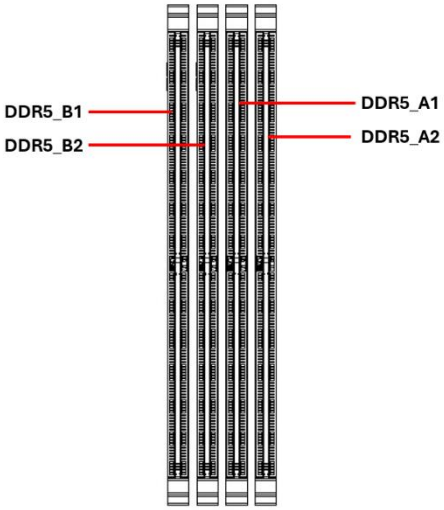


Pin	Definition	No.	Definition
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V

Note: Standard specifications.

(36) DDR5 UDIMM Socket (DDR5_ A1/A2/B1/B2)





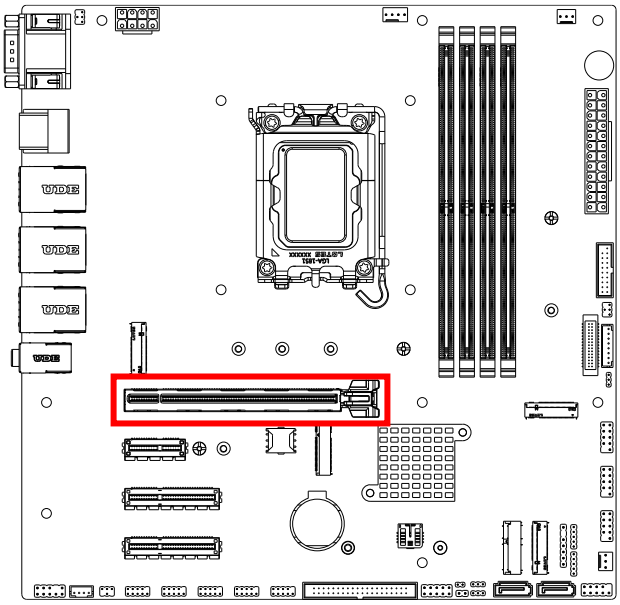
Memory module installation recommendation

Configuration	DDR5_B1	DDR5_B2	DDR5_A1	DDR5_A2
1	--	--	--	install
2	--	install	--	install
4	install	install	install	install

Notice!

- Always insert memory modules in the DDR5_A2 Socket first.
- It is unable to activate dual channel feature if you install one or three memory modules, order can be from right-to-left, and it must be installed in pairs.
- If you install memory modules in wrong direction, it will damage the motherboard and memory module.

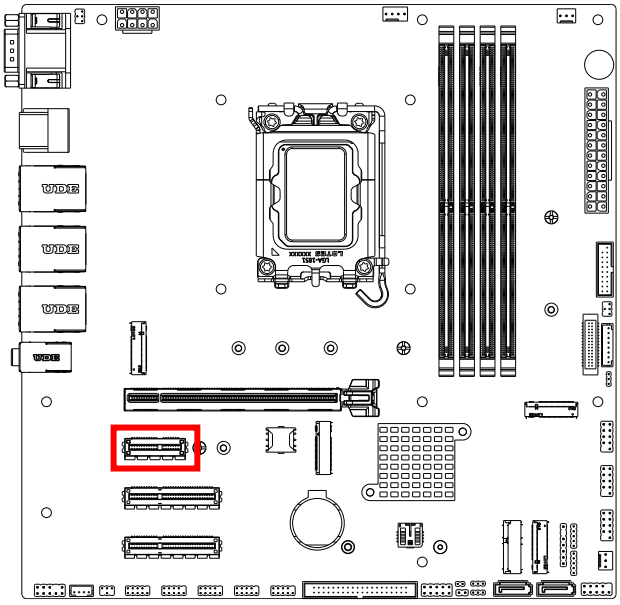
(37) PCIe Gen5 x16 Slot (PCIE1)





Note: Standard specifications.

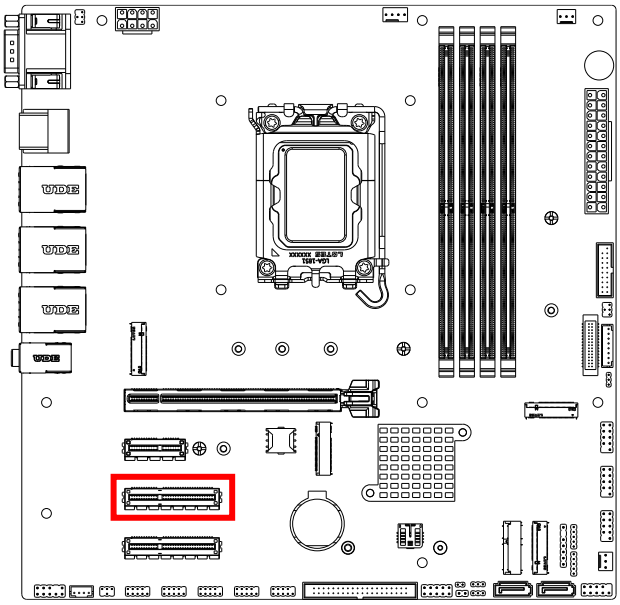
(38) PCIe Gen4 x1 Slot (PCIE2)





Note: Standard specifications.

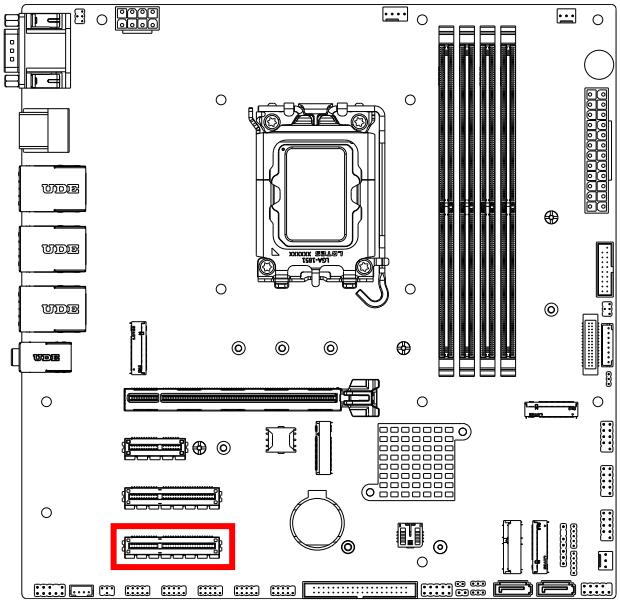
*(39) PCIe Gen4 x4 Slot (PCIE3) *Only for Q870/W880*





Note: Standard specifications.

(40) PCIe Gen4 x4 Slot (PCIE4)





Note: Standard specifications.

2-5 Maximum Voltage & Current Limit

Below is a list of maximum voltage & Current Limit specification for motherboard interface (including but not limited to slots, connectors and headers) for setup reference:

Parts		Working Voltage	Current Support
USB Port	UL1 USB3.2 Gen.2	5V	900mAx2
	UL2 USB3.2 Gen.2	5V	900mAx2
	UL3 USB3.2 Gen.2	5V	900mAx2
	FP_USB1 USB 3.2 Gen1	5V	900mAx2
	FP_USB2	5V	500mAx2
	FP_USB3	5V	500mAx2
	FP_USB3	5V	500mAx2
FP		5V	1A
LVDS_EDP1		3.3V/5V/12V (via jumper setting)	2A
INVERTER1		5V/12V (via jumper setting)	2A
CPUFAN1/SYSFAN1/SYSFAN2		12V	1A
GPIO1		5V	500mA
PS2KBMS1		5V	500mA
SMBUS1		3.3V	500mA
I2C1		3.3V	500mA

Chapter 3 Introducing BIOS

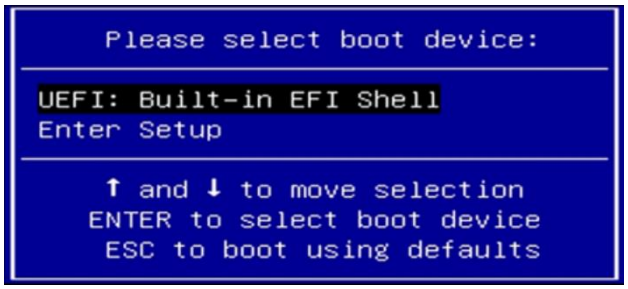
Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download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

3-1 Entering Setup

Power on the computer and by pressing <Del> 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

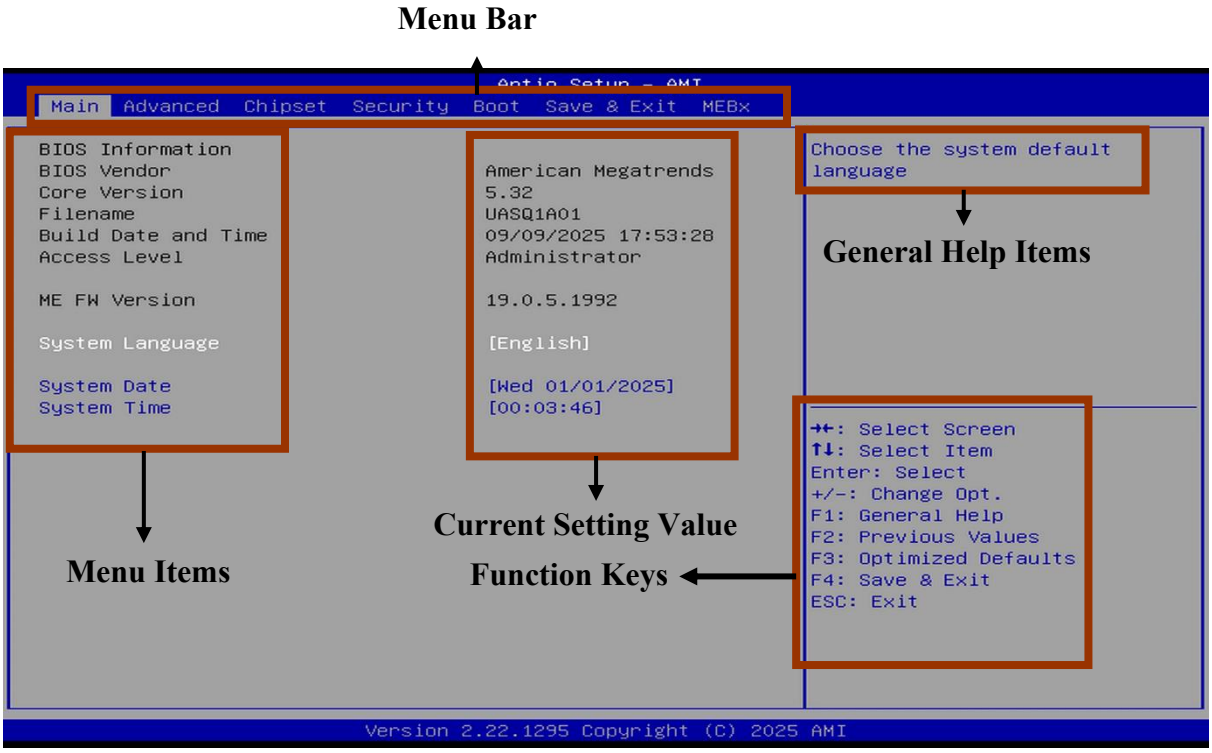
Press **<Del>** to enter Setup; press < **F7**> to enter pop-up Boot menu.



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

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



3-3 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.

3-4 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**>.

3-5 Menu Bars

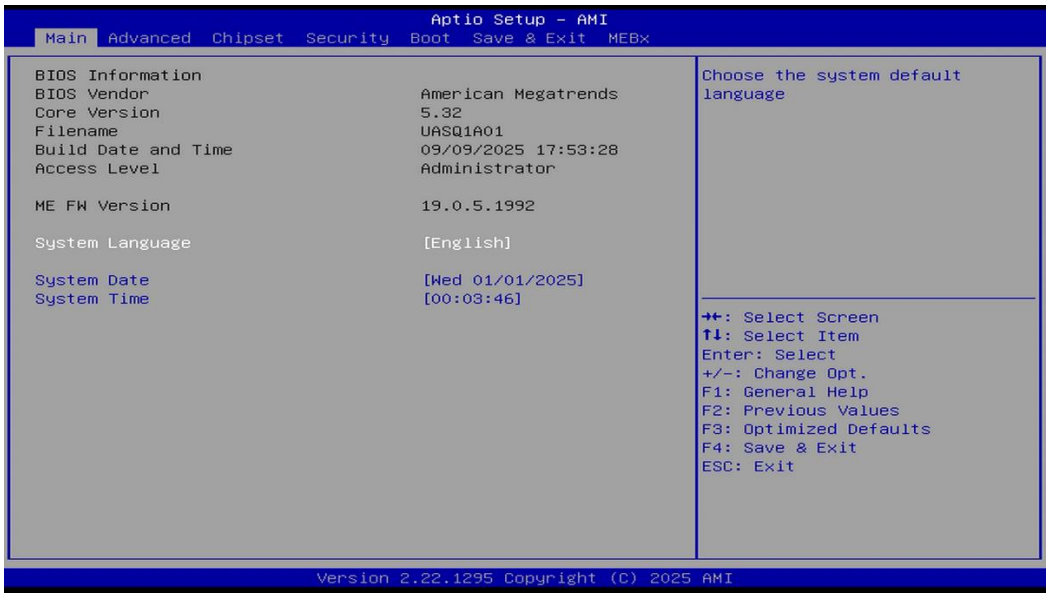
There are six menu bars on top of BIOS screen:

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.

3-6 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.



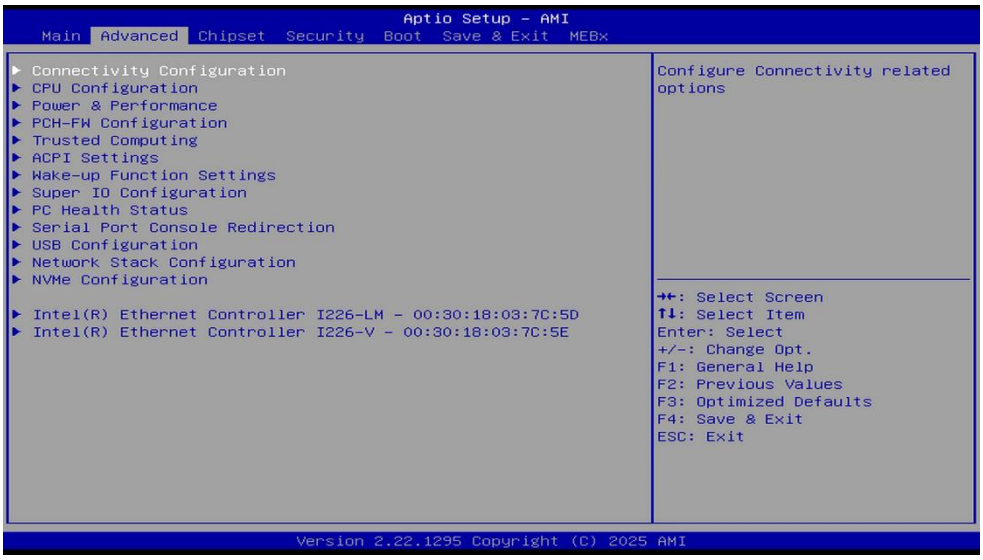
System Date

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

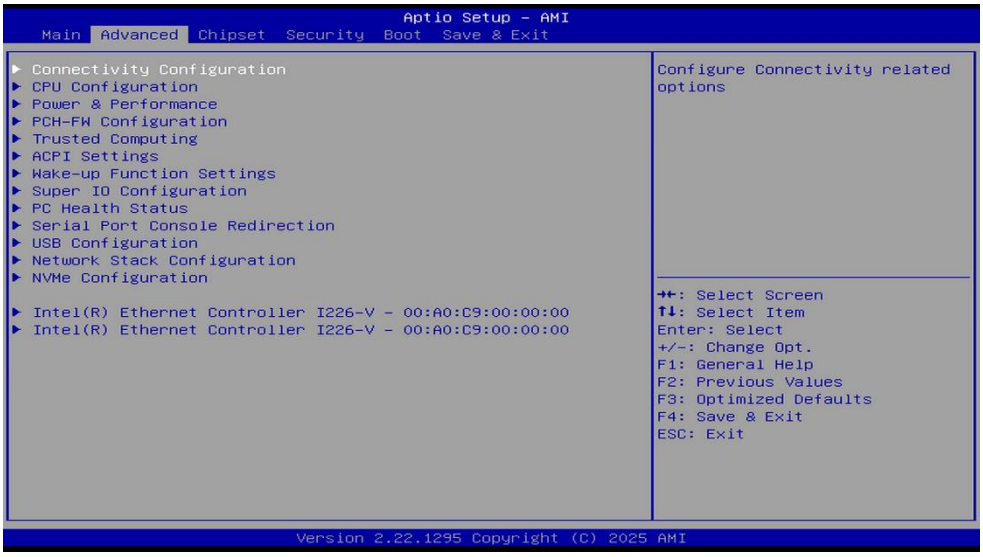
System Time

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

3-7 Advanced Menu



Note: For platform Q870/W880



Note: For platform H810

- **Connectivity Configuration**

  Use this item to configure Connectivity related options. Press [Enter] to make settings for the following sub-items:

  CNVi CRF Present

  CNVi Mode

  This option configures Connectivity.

  CNVi Mode Set the default value to: [Auto Detection]

The optional settings: [Disabled Integrated]; [Auto Detection].
[Auto Detection] means that if Discrete solution is discovered it will be enabled by default. Otherwise, Integrated solution (CNVi) will be enabled;
[Disabled Integrated] disables Integrated Solution.

- **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:

L1 Date Cache/L1 Instruction Cache/L2 Cache/L3 Cache

- **Performance-Core Information**

  Use this item to displays the P-Core information.
  Press [Enter] to make settings for the following sub-items:

L1 Date Cache/L1 Instruction Cache/L2 Cache/L3 Cache

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

Intel(R) SpeedStep(tm)
This item allows more than two frequency ranges to be supported.
Intel(R) SpeedStep(tm) Set the default value to: [Enabled]
The optional settings: [Disabled]; [Enabled].

Turbo Mode
Use this item to enable or disable processor Turbo Mode (requires Intel Speed Step or Intel Speed Shift to be available and enabled).
Turbo Mode Set the default value to: [Enabled]
The optional settings: [Disabled]; [Enabled];

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

Package C State Limit
Use this item to maximum package C State Limit setting. CPU default: leaves to factory default value. Auto: initializes to deepest available package C State Limit.
Package C State Limit Set the default value to: [Auto]
The optional settings: [C0/C1]; [C2]; [C3]; [C6]; [C7]; [C7S]; [C8]; [C9]; [C10]; [CPU Default]; [Auto].

- **Power & Performance**
  Press [Enter] to make settings for the following sub-items:
- **CPU – Power Management Control**
  CPU-Power Management Control Options.
  Press [Enter] to make settings for the following sub-items:

Power Limit 1

Use this item to set Power Limit 1 in Milli Watts. BIOS will round to the nearest 1/8W when programming.

0 = no custom override. For 12.50W, enter 12500.

Overclocking SKU: Value must be between Max and Min Power Limits (specified by PACKAGE_POWER_SKU_MSR).

Other SKUs: This value must be between Min Power Limit and Processor Base Power (TDP) Limit. If value is 0, BIOS will program Processor Base Power (TDP) value.

Power Limit 1 Set the default value to: [0]

Power Limit 1 Time Window

Use this item to set Power Limit 1 Time Window value in seconds. The value may vary from 0 to 128. 0 = default value (28 sec for Mobile and 8 sec for Desktop). Defines time window which Processor Base Power (TDP) value should be maintained.

Power Limit 1 Time Window Set the default value to: [0]

The optional settings are: [0]; [1]; [2]; [3]; [4]; [5]; [6]; [7]; [8]; [10]; [12]; [14]; [16]; [20]; [24]; [28]; [32]; [40]; [48]; [56]; [64]; [80]; [96]; [112]; [128].

Power Limit 2

Use this item to set Power Limit 2 Value in Milli Watts. BIOS will round to the nearest 1/8W when programming.

0=no custom override. For 12.50w, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

Power Limit 2 Set the default value to: [0]

Power Limit 4 Override

If this option isdisabled, BIOS will leave the default values for Power Limit

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

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

Power Limit 4

Power Limit 4 in Milli Watts.BIOS will round to the nearest1/8W when programming. For 12.50W, enter 12500. If the value is 0, BIOS leaves default value.

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

- **GT/Media-Power Management Control**

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

RC6(Render Standby)

Use this item to check to enable render standby support.

RC6(Render Standby) Set the default value to: [Enabled]

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

RC6(Media Standby)

Use this item to check to enable render standby support.

RC6(Media Standby) Set the default value to: [Enabled]

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

Maximum GT frequency

Use this item to Maximum GT frequency limited by the user. Choose between 100MHZ (RPN) and 1200MHZ (RP0). Value beyond the range will be clipped to min/max supported by SKU.

Maximum GT frequency Set the default value to: [Default Max Frequency]

The optional settings: [Default Max Frequency]; [100Mhz] ; [150Mhz] ; [200Mhz] ; [250Mhz] ; [300Mhz] ; [350Mhz] ; [400Mhz] ; [450Mhz] ; [500Mhz] ; [550Mhz] ; [600Mhz] ; [650Mhz] ; [700Mhz] ; [750Mhz] ; [800Mhz] ; [850Mhz] ; [900Mhz] ; [950Mhz] ; [1000Mhz] ; [1050Mhz] ; [1100Mhz] ; [1150Mhz] ; [1200Mhz].

Disable Turbo GT frequency

Use this item to enabled: disables turbo GT frequency. Disabled: GT frequency is not limited.
Disable Turbo GT frequency Set the default value to: [Disabled]
The optional settings: [Disabled]; [Enabled].

- **PCH-FW Configuration**

Use this item to configure management engine technology parameters

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

TPM Device Selection

Use this item to selects TPM device: PTT or dTPM. PTT-Enables PTT in SKuMgr dTPM 1.2-Disables PTT in SKuMgr Warning! PTT/dTPM will be disabled and all date saved on it will be lost.

The optional settings: [dTPM]; [PTT].
TPM Device Selection Set the default value to: [PTT]

Note:

The default value of TPM Device Selection is [PTT]. The default setting may vary depending on the product shipping version, as shown below:

- ***Q87000 / W88000 / H81000 → Default: [PTT]***
- ***Q87002 / W88002 / H81002 → Default: [dTPM]***

- **Trusted Computing**

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

Security Device Support

Use this item to enable or disable BIOS support for security devices. O.S will not show security device. TCG EFI protocol and INT1A interface will not be available.
The optional settings: [Disabled]; [Enabled].
Security Device Support Set the default value to: [Enabled]
When set as [Enabled], user can make setting in the following items that appear:

SHA256 PCR Bank

Use this item to enable or disable SHA256 PCR Bank.
The optional settings: [Disabled]; [Enabled].
SHA256 PCR Bank Set the default value to: [Enabled]

SHA384 PCR Bank

Use this item to enable or disable SHA384 PCR Bank.
The optional settings: [Disabled]; [Enabled].
SHA384 PCR Bank Set the default value to: [Disabled]

SM3_256 PCR Bank

Use this item to enable or disable SM3_256 PCR Bank.
The optional settings: [Disabled]; [Enabled].
SM3_256 PCR Bank Set the default value to: [Disabled]

Pending Operation

Use this item to schedule an operation for security device.

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

Pending Operation Set the default value to: [None]

Note:** **Your computer will reboot during restart in order to change State of Security Device.

- **ACPI Settings**

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

ACPI Settings

ACPI Sleep State

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

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

ACPI Sleep State Set the default value to: [S3 (Suspend to RAM)]

- **Wake-up Function Settings**

Wake-up System With Fixed Time

This item will only show when* *'Wake-up System with Dynamic Time'*** *is set as [Disabled].*

Use this item to enable or disable system wake-up by RTC alarm. When this function is enabled, system will wake on the time (hr::min::sec) specified.

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

Wake-up System With Fixed Time Set the default value to: [Disabled]

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

Wake-up Hour

Use this item to select 0-23 for example enter 3 for 3am and 15 for 3pm.

Wake-up Hour Set the default value to: [0]

Wake-up Minute

Use this item to select 0-59.

Wake-up Minute Set the default value to: [0]

Wake-up Second

Use this item to select 0-59.

Wake-up Second Set the default value to: [0]

Wake-up System with Dynamic Time

This item will only show when* *'Wake-up System with Fixed Time'*** *is set as [Disabled].*

Use this item to enable or disable system wake-up by RTC alarm. When enabled, system will wake on the current time + Increase minute(s).

Wake-up System with Dynamic Time Set the default value to: [Disabled]

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

Wake-up Minute Increase

Use this item to select 1-60 minute(s).
Wake-up Minute Increase Set the default value to: [1]

PS2 KB/MS Wake-Up
Use this item to enable or disable PS2 KB/MS Wake-Up from (S3/S4/S5) support only disable ERP function.
Please disable ERP before activating this function in S4-S5
The optional settings: [Disabled]; [Enabled].
PS2 KB/MS Wake-Up Set the default value to: [Disabled]
PCIE Wake-up from S3-S5
The optional settings: [Disabled]; [Enabled].
PCIE Wake-up from S3-S5 Set the default value to: [Disabled]
USB S3/S4 Wake-up
Use this item to enable or disable USB S3/S4 Wake-up support only disable ERP function.
The optional settings: [Disabled]; [Enabled].
USB S3/S4 Wake-up Set the default value to: [Disabled]
USB S5 Power
Use this item to USB power after system shutdown support only disable ERP function.
The optional settings: [Disabled]; [Enabled]
USB S5 Power Set the default value to: [Enabled]

- **Super IO Configuration**

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

ERP Support
Use this item to energy-related products function. Disable ERP to active all wake-up functions.
The optional settings are: [Disabled]; [Enabled].
ERP Support Set the default value to: [Disabled]

- **Serial Port 1 Configuration**

Press [Enter] to make settings for the following items:
Serial Port
Use this item to enable or disable serial port (COM).
The optional settings: [Disabled]; [Enabled].
Serial Port Set the default value to: [Enabled]
When set as [Enabled], user can make settings in the following items that appear:
Change Settings
Use this item to select an optimal settings for super IO device.

The optional settings are:[IO=3F8h; IRQ=4] [IO=3F8h; IRQ=3,4,5,7,10,11] ; [IO=2F8h; IRQ=3,4,5,7,10,11;]; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: [IO=3F8h; IRQ=4]

Transmission Mode Select

The optional settings are: [RS422]; [RS232]; [RS485].

Transmission Mode Select Set the default value to: [RS232]

Mode Speed Select

Use this item to RS232/RS422/RS485 Speed Select.

The optional settings are: [RS232/RS422/RS485=250Kbps]; [RS232=1Mbps, RS422/RS485=10Mbps].

Mode Speed Select Set the default value to: [RS232=1Mbps, RS422/RS485=10Mbps]

- **Serial Port 2 Configuration**

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

Serial Port

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

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

Serial Port Select Set the default value to: [Enabled]

When set as [Enabled], users can make settings in the following items that appear:

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are: [IO=2F8h; IRQ=3]; [IO=3F8h; IRQ=3,4,5,7,10,11;]; [IO=2F8h; IRQ=3,4,5,7,10,11;] ; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: [IO=2F8h; IRQ=3]

- **Serial Port 3 Configuration**

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

Serial Port

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

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

Serial Port Select Set the default value to: [Enabled]

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

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are:[IO=3F8h; IRQ=10]; [IO=3F8h; IRQ=3,4,5,7,10,11;]; [IO=2F8h; IRQ=3,4,5,7,10,11;] ; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;] ; [IO=3E0h; IRQ=3,4,5,7,10,11;]; ; [IO=2E0h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: IO=3F8h; IRQ=10]

- **Serial Port 4 Configuration**

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

Serial Port

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

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

Serial Port Select Set the default value to: [Enabled]

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

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are:[IO=2E8h; IRQ=10]; [IO=3F8h; IRQ=3,4,5,7,10,11;]; [IO=2F8h; IRQ=3,4,5,7,10,11;] ; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;] ; [IO=3E0h; IRQ=3,4,5,7,10,11;]; ; [IO=2E0h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: [IO=2E8h; IRQ=10]

- **Serial Port 5 Configuration**

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

Serial Port

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

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

Serial Port Select Set the default value to: [Enabled]

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

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are:[IO=3E0h; IRQ=11]; [IO=3F8h; IRQ=3,4,5,7,10,11;]; [IO=2F8h; IRQ=3,4,5,7,10,11;] ; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;] ; [IO=3E0h; IRQ=3,4,5,7,10,11;]; ; [IO=2E0h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: [IO=3E0h; IRQ=11]

- **Serial Port 6 Configuration**

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

Serial Port

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

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

Serial Port Select Set the default value to: [Enabled]

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

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are: [IO=2E0h; IRQ=11]; [IO=3F8h; IRQ=3,4,5,7,10,11;]; [IO=2F8h; IRQ=3,4,5,7,10,11;] ; [IO=3E8h; IRQ=3,4,5,7,10,11;]; [IO=2E8h; IRQ=3,4,5,7,10,11;] ; [IO=3E0h; IRQ=3,4,5,7,10,11;]; ; [IO=2E0h; IRQ=3,4,5,7,10,11;].

Change Settings Set the default value to: [IO=2E0h; IRQ=11]

WatchDog Reset Timer

Use this item to support WDT reset function.

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

WatchDog Reset Timer Set the default value to: [Disabled]

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

WatchDog Reset Timer Value

User can set a value in the range of [10] to [255] seconds or [1] to [255] minutes.

WatchDog Reset Timer Value Set the default value to: [10]

WatchDog Reset Timer Unit

The optional settings are: [Sec.]; [Min.].

WatchDog Reset Timer Unit Set the default value to: [Sec]

WatchDog Wake-up Timer

Use this item to support WDT Wake-up.

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

WatchDog Wake-up Timer Set the default value to: [Disabled]

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

WatchDog Wake-up Timer Value

User can set a value in the range of [10]~[4095] seconds, or [1]~[4095] minutes.

WatchDog Reset Timer Value Set the default value to: [10]

WatchDog Wake-up Timer Unit

The optional settings are: [Sec.]; [Min.].

WatchDog Reset Timer Unit Set the default value to: [Sec]

ATX Power Emulate AT Power

This item support Emulate AT power function, MB power On/Off control by power supply. Use needs to select 'AT or ATX Mode' on MB jumper at first (refer to **JAT_ATX** jumper setting Pin 1&2 of for **ATX Mode** & Pin 2&3 of **AT Mode** Select).

Case Open Detect

Use this item to detect if case have ever been opened. Show message in POST.

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

Case Open Detect Set the default value to: [Disabled]

When set as [Enabled], system will detect if COPEN has been short or not (*refer to* **JCOPEN1** jumper setting for Case Open Detection); if Pin 1&2 of **JCOPEN1** are short, system will show Case Open Message during POST.

- **PC Health Status**

  Press [Enter] to view current hardware health status, make further settings in '**SmartFAN Configuration**'.

- **SmartFAN Configuration**

  Press [Enter] to make settings for SmartFan Configuration:

  SmartFAN Configuration

  CPUFAN Type

  CPU Fan Mode Select. WM Mode: Force 4-Pin Fan. DC Mode: Force 3-Pin Fan.

  The optional settings are: [PWM Mode]; [DC Mode].

CPUFAN Type Set the default value to: [DC Mode]

CPUFAN1 Smart Mode

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

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

CPUFAN Full-Speed Temperature

Use this item to set CPUFAN full speed temperature. Fan will run at full speed when above this pre-set temperature.

CPUFAN Full-Speed Temperature Set the default value to: [60]

CPUFAN Full-Speed Duty

Use this item to set CPUFAN full-speed duty. Fan will run at full speed when above this pre-set duty.

CPUFAN Full-Speed Duty Set the default value to: [100]

CPUFAN Idle-Speed Temperature

Use this item to set CPUFAN idle speed temperature. Fan will run at idle speed when below this pre-set temperature.

CPUFAN Idle-Speed Temperature Set the default value to: [40]

CPUFAN Idle-Speed Duty

Use this item to set CPUFAN idle speed duty. Fan will run at idle speed when below this pre-set duty

CPUFAN Idle-Speed Duty Set the default value to: [40]

SYSFAN1 Smart Mode / SYSFAN2 Smart Mode

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

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

SYSFAN1 Full-Speed Temperature / SYSFAN2 Full-Speed Temperature

Use this item to set SYSFAN1/2 full speed temperature. Fan will run at full speed when above this pre-set temperature.

SYSFAN1/2 Full-Speed Temperature Set the default value to: [60]

SYSFAN1 Full-Speed Duty / SYSFAN2 Full-Speed Duty

Use this item to set SYSFAN1/2 full-speed duty. Fan will run at full speed when above this pre-set duty.

SYSFAN1/2 Full-Speed Duty Set the default value to: [100]

SYSFAN1 Idle-Speed Temperature / SYSFAN2 Idle-Speed Temperature

Use this item to set SYSFAN1/2 idle speed temperature. Fan will run at idle speed when below this pre-set temperature.

SYSFAN1/2 Idle-Speed Temperature Set the default value to:[30]

SYSFAN1 Idle-Speed Duty / SYSFAN2 Idle-Speed Duty

Use this item to set SYSFAN1/2 idle speed duty. Fan will run at idle speed when below this pre-set duty

SYSFAN1/2 Idle-Speed Duty Set the default value to:[40]

- **Serial Port Console Redirection**

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

COM1

Console Redirection

Console Redirection enable or disable.

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

Console Redirection Set the default value to: [Disabled]

When set as **[Enabled**], user can make further settings in the '**Console Redirection Settings**' screen:

- **Console Redirection Settings**

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

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

Terminal Type

The optional settings: [VT100]; [VT100Plus]; [VT-UTF8]; [ANSI].
[ANSI]: Extended ASCII char set;
[VT100]: ASCII char set;
[VT100Plus]: Extends VT100 to support color, function keys, etc.
[VT-UTF8]: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Terminal Type Set the default value to: [ANSI]

Bits per second

Use this item to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

The optional settings: [9600]; [19200]; [38400]; [57600]; [115200]; [230400]; [460800]; [921600].

Bits per second Set the default value to: [115200]

Data Bits

The optional settings: [7]; [8].

Data Bits Set the default value to: [8]

Parity

A parity bit can be sent with the data bits to detect some transmission errors.
The optional settings: [None]; [Even]; [Odd]; [Mark]; [Space].
[Even]: parity bit is 0 if the num of 1's in the data bits is even;
[Odd]: parity bit is 0 if num of 1's in the data bits is odd;
[Mark]: parity bit is always 1;
[Space]: parity bit is always 0;
Parity Set the default value to: [None]
[Mark] and **[Space]**: parity do not allow for error detection. They can be used as an additional data bit.

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.
The optional settings: [1]; [2].

Stop Bits Set the default value to: [1]

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a “stop” signal can be sent to stop the data flow. Once the buffers are empty, a “start” signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

The optional settings: [None]; [Hardware RTS/CTS].

Flow Control Set the default value to: [None]

VT-UTF8 Combo Key Support

Use this item to enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

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

VT-UTF8 Combo Key Support Set the default value to: [Enabled]

Recorder Mode

With this mode enabled only text will be sent. This is to capture Terminal data.

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

Recorder Mode Set the default value to: [Disabled]

Resolution 100x31

Use this item to enable or disable extended terminal resolution.

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

Resolution 100x31 Set the default value to: [Disabled]

Putty KeyPad

Use this item to select FunctionKey and KeyPad on Putty.

The optional settings: [VT100]; [LINUX]; [XTERMR6]; [SCO]; [ESCN]; [VT400].

Putty KeyPad Set the default value to: [VT100]

Serial Port for Out-of-Band Management/

Windows Emergency Management Services (EMS)

Console Redirection EMS

Use this item to enable or disable console redirection.

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

Console Redirection EMS Set the default value to: [Disabled]

When set as **[Enabled]**, user can make further settings in ‘**Console Redirection Settings**’ screen:

- **Console Redirection Settings**

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

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

Terminal Type EMS

The optional settings: [VT100]; [VT100Plus]; [VT-UTF8]; [ANSI].

[VT-UTF8] is the preferred terminal type for out-of-band management. The next best choice is **[VT100+]** and then **[VT100]**. See above, in Console Redirection Settings page, for more help with Terminal Type/Emulation.

Terminal Type EMS Set the default value to: [VT-UTF8]

Bits per second EMS

Use this item to select serial port transmission speed. The speed must be matched on the other

side. Long or noisy lines may require lower speeds.

The optional settings: [9600]; [19200]; [57600]; [115200]; [230400]; [460800]; [921600].

Bits per second EMS Set the default value to: [115200]

Flow Control EMS

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a “stop” signal can be sent to stop the data flow. Once the buffers are empty, a “start” signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

The optional settings: [None]; [Hardware RTS/CTS]; [Software Xon/Xoff].

Flow Control EMS Set the default value to: [None]

Data Bits EMS

The default setting is: [8].

**This item may or may not show up, depending on different configuration.*

Parity EMS

The default setting is: [None].

**This item may or may not show up, depending on different configuration.*

Stop Bits EMS

The default setting is: [1].

**This item may or may not show up, depending on different configuration.*

- **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.

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

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

USB Mass Storage Driver Support

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

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

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

USB hardware delay and time-out

USB Transfer time-out

Use this item to set the time-out value for control, bulk, and interrupt transfers.

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

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

Device reset time-out

Use this item to set USB mass storage device start unit command time-out.

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

Device reset time-out Set the default value to: [20 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.
The optional settings: [Auto]; [Manual].
Device power-up delay Set the default value to: [Auto]
Select **[Manual]** you can set value for the following sub-item: '**Device power-up delay in seconds**', the delay range is 1 .. 40 seconds, in one second increments.

- **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.
The optional settings: [Disabled]; [Enabled].
Network Stack Set the default value to: [Disabled]
When set as **[Enabled]**, the following sub-items shall appear:
IPv4 PXE Support
Use this item to enable/disable IPv4 PXE Boot Support. When set as [Disabled], IPv4 PXE boot support will not be available.
The optional settings: [Disabled]; [Enabled].
IPv4 PXE Support Set the default value to: [Enabled]
IPv6 PXE Support
Use this item to enable/disable IPv6 PXE Boot Support. When set as [Disabled], IPv6 PXE boot support will not be available.
The optional settings: [Disabled]; [Enabled].
IPv6 PXE Support Set the default value to: [Disabled]
PXE boot wait time
Wait time in seconds 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**

Use this item to set NVMe Device options settings.

NVMe Configuration

- **Intel (R) Ethernet Controller I226-LM – XX:XX:XX:XX:XX:XX**
- **Intel (R) Ethernet Controller I226-V – XX:XX:XX:XX:XX:XX**

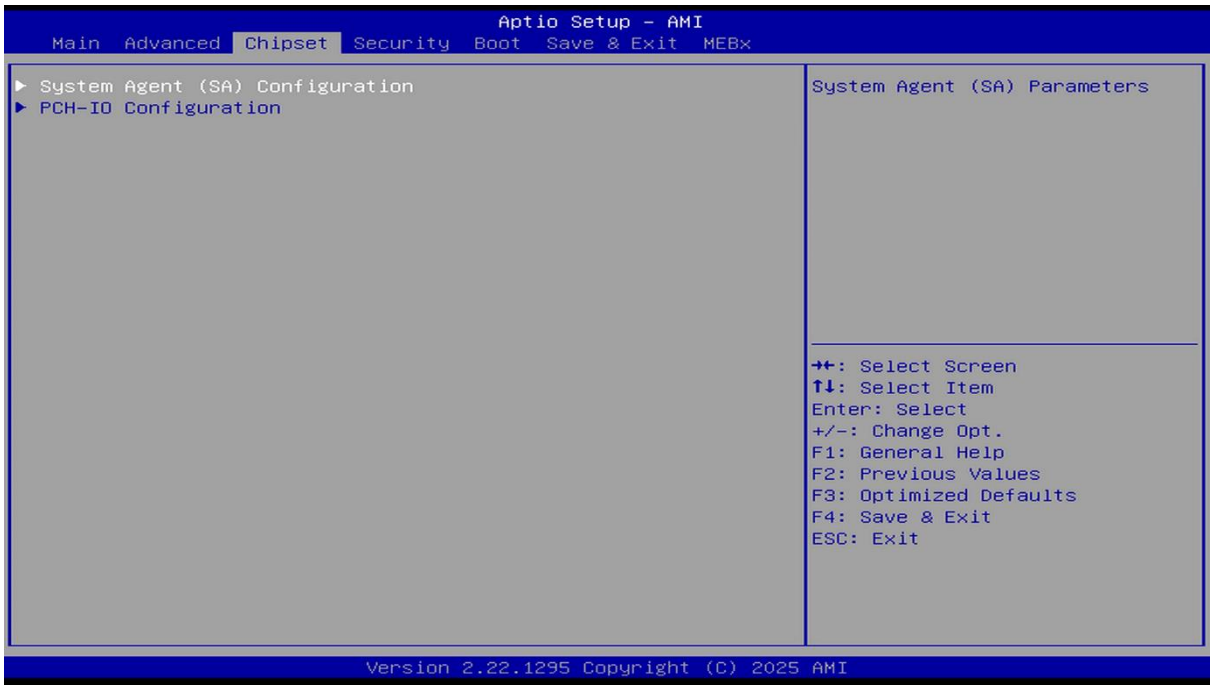
Note: For platform Q870/W880

- **Intel (R) Ethernet Controller I226-V – XX:XX:XX:XX:XX:XX**

- **Intel (R) Ethernet Controller I226-V – XX:XX:XX:XX:XX:XX**

Note: For platform H810

3-8 Chipset Menu



- **System Agent (SA) Configuration**

Press [Enter] to make settings for the following sub-items:
Maximum Memory Frequency Set the default value to: [Auto].

Memory Frequency

Total Memory

- **Maximum Memory Frequency**

Use this item to Maximum Memory Frequency selections in Mhz
The optional settings are: [Auto];[4000]; [4400]; [4800]; [5200]; [5600] ; [6000] ; [6400].
Maximum Memory Frequency Set the default value to: [Auto]

- **Graphics Configuration**

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

PCIE1 Slot

Use this item to control the PCI Express root port

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

PCIE1 Slot Set the default value to: [Enabled]

PCIe Speed

The optional settings: [Auto]; [Gen1];[Gen2];[Gen3];[Gen4];[Gen5].

PCIe Speed Set the default value to: [Auto].

PCIE1 Slot Lane Select

The optional settings: [X16]; [X8/X8].

PCIE1 Slot Lane Select Set the default value to: [X16].

Note: For platform Q870/W880

Primary Display

Use this item to select which graphics device should be primary display

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

Primary Display Select Set the default value to: [Auto].

Internal Graphics

Use this item to keep IGFX enabled based on the setup options

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

Internal Graphics Select Set the default value to: [Auto].

DVMT Pre-Allocated

Use this item to select DVMT 5.0 Pre-Allocated (Fixed) graphics memory size used by the internal graphics device

The optional settings: [32M]; [64M];[96M];[128M].

DVMT Pre-Allocated Select Set the default value to: [128M].

Active LFP

Use this item to select the Active LFP Configuration.

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

Active LFP Set the default value to: [Disabled]

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

Panel Type

The optional settings are: [1024x600 1ch 18-bit]; [1024x768 1ch 18-bit]; [1024x768 1ch 24-bit]; [1280x800 1ch 18-bit]; [1280x800 1ch 24-bit]; [1366x768 1ch 18-bit]; [1366x768 1ch 24-bit]; [1440x900 2ch 18-bit]; [1440x900 2ch 24-bit]; [1280x1024 2ch 24-bit]; [1680x1050 2ch 24-bit]; [1920x1080 2ch 24-bit]; [eDP].

Panel Type Set the default value to: [eDP]

Backlight Control

Use this item to make back light control setting.

The optional settings are: [PWM Inverted]; [PWM Normal].

Backlight Control Set the default value to: [PWM Normal]

- **VMD setup menu**

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

  Enable VMD controller

  Use this item to enable/disable to VMD controller

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

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

  Enable VMD controller Select Set the default value to: [Disabled].

  Enable VMD Global Mapping

  Use this item to enable/disable to VMD global mapping

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

Enable VMD Global Mapping Select Set the default value to: [Disabled]

Map this Root Port under VMD

Use this item to Map/UnMap this root port to VMD

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

Map this Root Port under VMD Set the default value to: [Disabled].

Root Port BDF details

► **PCH-IO Configuration**
Press [Enter] to make settings for the following sub-items:

► **SATA Controller(s)**
Use this item to enable or disable SATA device.
The optional settings: [Disabled]; [Enabled].
SATA Controller(s) Set the default value to: [Enabled]
When set as **[Enabled]**, the following sub-items shall appear:

SATA1

Port
The optional settings: [Disabled]; [Enabled].
SATA1 Set the default value to: [Enabled].

SATA2

Port
The optional settings: [Disabled]; [Enabled].
SATA2 Set the default value to: [Enabled].

M2M2

Port
The optional settings: [Disabled]; [Enabled].
SATA3 Set the default value to: [Enabled].

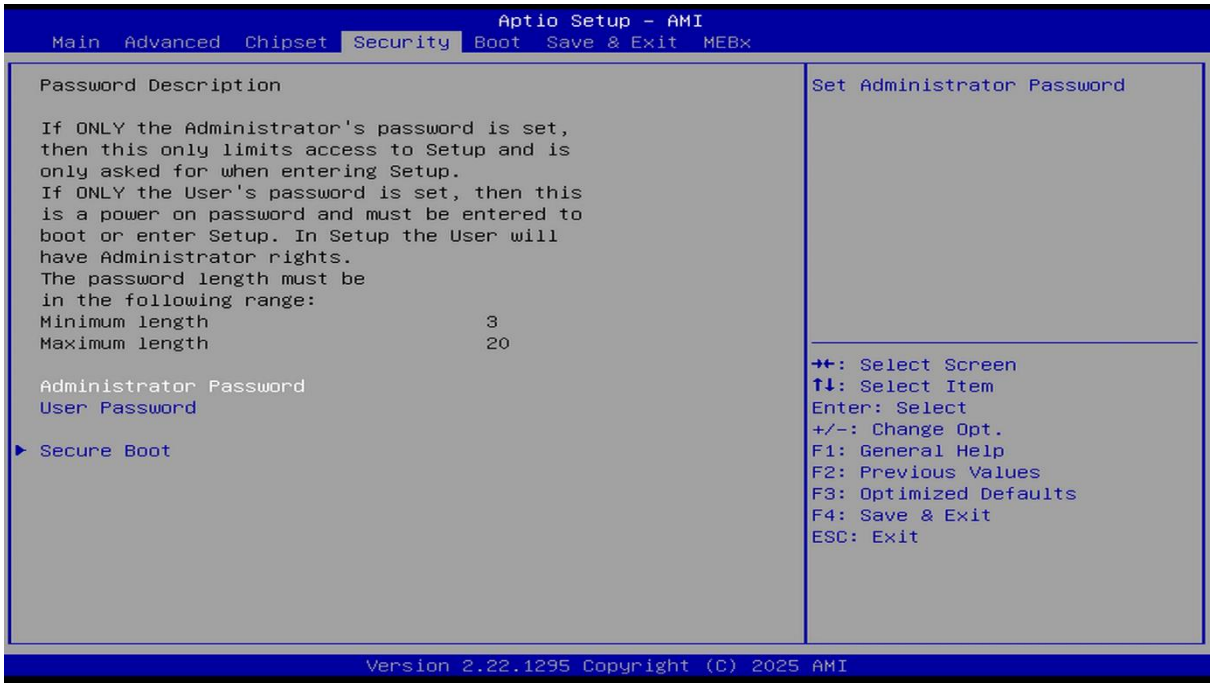
M2B1

Port
The optional settings: [Disabled]; [Enabled].
SATA4 Set the default value to: [Enabled].

HD Audio
This item controls detection of the HD-Audio device.
The optional settings are: [Disabled]; [Enabled].
[**Disabled**]: HDA will be unconditionally disabled.
[**Enabled**]: HAD will be unconditionally enabled.
HD Audio Set the default value to: [Enabled].

System State After Power Failure
Use this item to specify what state to go to when power is re-applied after a power failure (G3 state)
The optional settings are: [Always On]; [Always Off]; [Former State].
System State After Power Failure Set the default value to: [Always Off]

3-9 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 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.

- **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.

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

  Secure Boot Set the default value to: [Enabled]

  Secure Boot Mode

  Set UEFI Secure Boot Mode to Standard mode or Custom mode. This change is effective after save. After reset, this mode will return to Standard mode.

  In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.

  The optional settings: [Standard]; [Custom].

  Secure Boot Mode Set the default value to: [Standard]

  When set as [**Custom**], user can make further settings in the following items that show up:

  - **Restore Factory Keys**

    Use this item to force system to User Mode, to install factory default Secure Boot key databases.

  - **Reset To Setup Mode**

Use this item to Delete all secure boot key databases from NVRAM.

- **Key Management**

This item enables expert users to modify Secure Boot Policy variables without full authentication, which includes the following items:

Vendor Keys

Factory Key Provision

This item is for user to install factory default Secure Boot keys after the platform reset and while the System is in Setup mode.
The optional settings: [Disabled]; [Enabled].
Factory Key Provision Set the default value to: [Disabled]

- **Restore Factory Keys**

Use this item to force system into User Mode. Install factory default Secure Boot key databases.

- **Reset To Setup Mode**

Use this item to Delete all Secure Boot key databases from NVRAM.

- **Enroll Efi Image**

This item allows the image to run in Secure Boot mode.
Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).

- **Export Secure Boot variables**

Use this item to save NVRAM content of Secure Boot variables to a file.

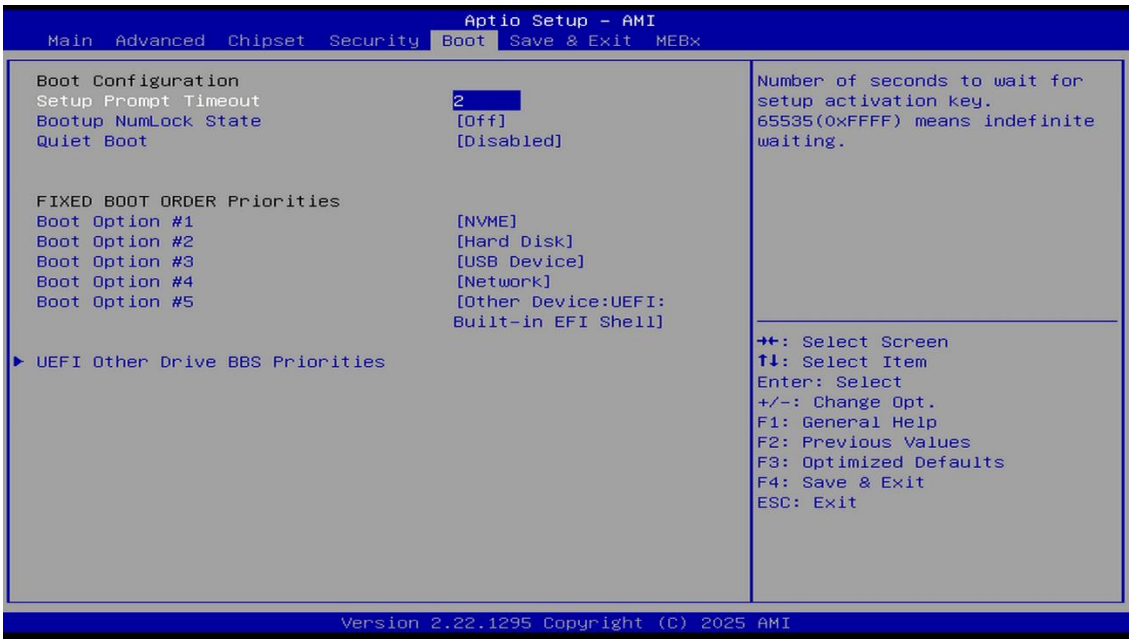
- **Export Secure Boot variables**

- **Platform Key(PK)**
- **Key Exchange Keys(KEK)**
- **Signatures(db)**
- **Forbidden Signatures(dbx)**
- **Authorized TimeStamps(dbt)**
- **OsRecovery Signatures(dbr)**

Use this item to enroll Factory Defaults or load certificates from a file:
1. Public Key Certificate:
   a) EFI_SIGNATURE_LIST
   b) EFI_ CERT_X509 (DER)
   c) EFI_ CERT_RSA2048 (bin)
   d) EFI_ CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/COFF Image (SHA256)

Key Source: Factory, Modified, Mixed

3-10 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: [2]

Bootup NumLock State

Use this item to select keyboard NumLock state.

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

Bootup NumLock State Set the default value to: [Off]

Quiet Boot

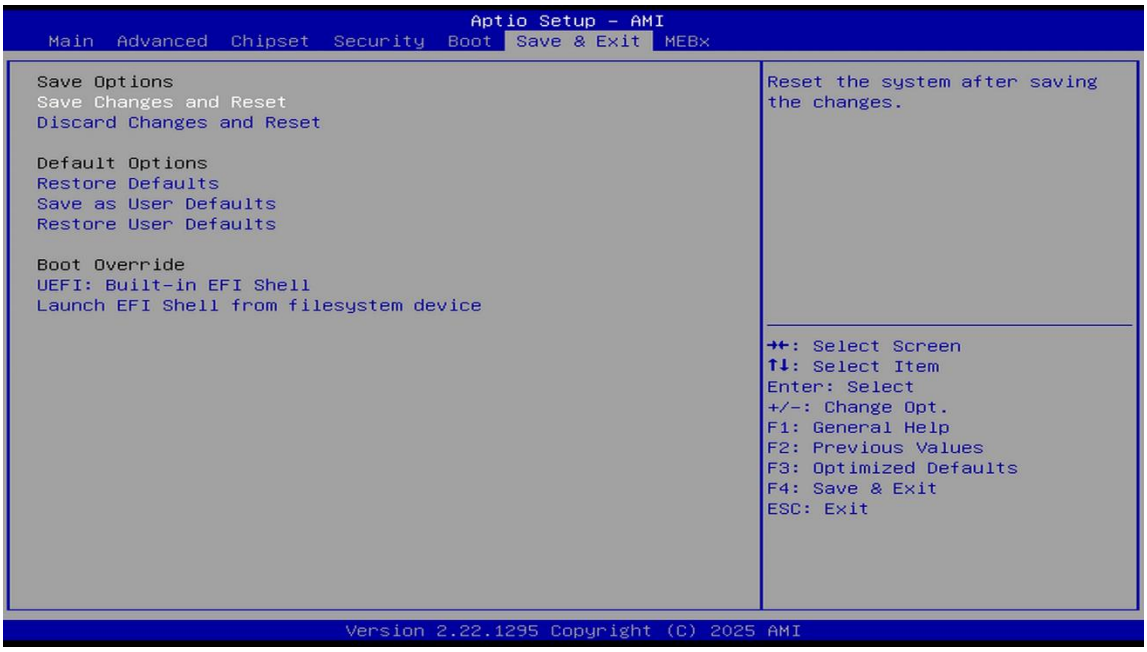
The optional settings: [Disabled]; [Enabled].

Quiet Boot Set the default value to: [Disabled]

Boot Option Priorities

Boot Option #1~#5 This item allows you to set the system boot order. Configuration options: [NVME]; [Hard Disk]; [USB Device]; [Network] ; [Other Device:UEFI:Built-in EFI-Shell]

3-11 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 setup 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.

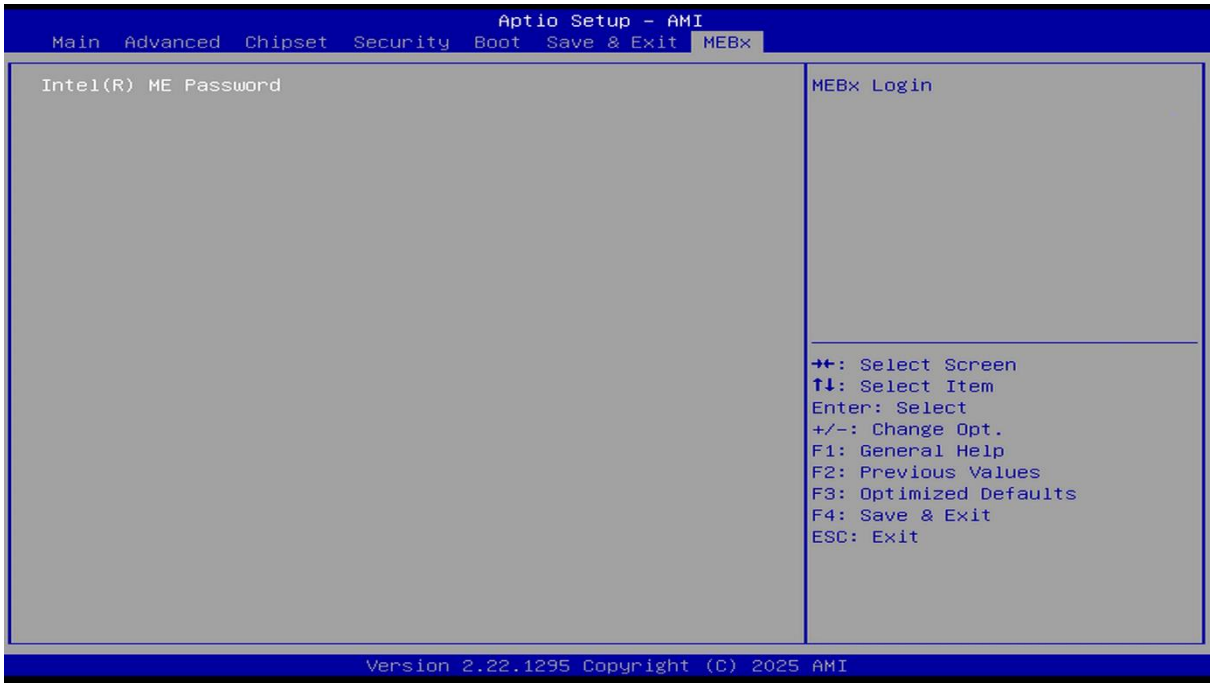
Restore User Defaults

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

Boot Override

3-12 MEBx

Note: For platform Q870/W880



- **Intel(R) ME Password**

  Use this item to MEBx Login

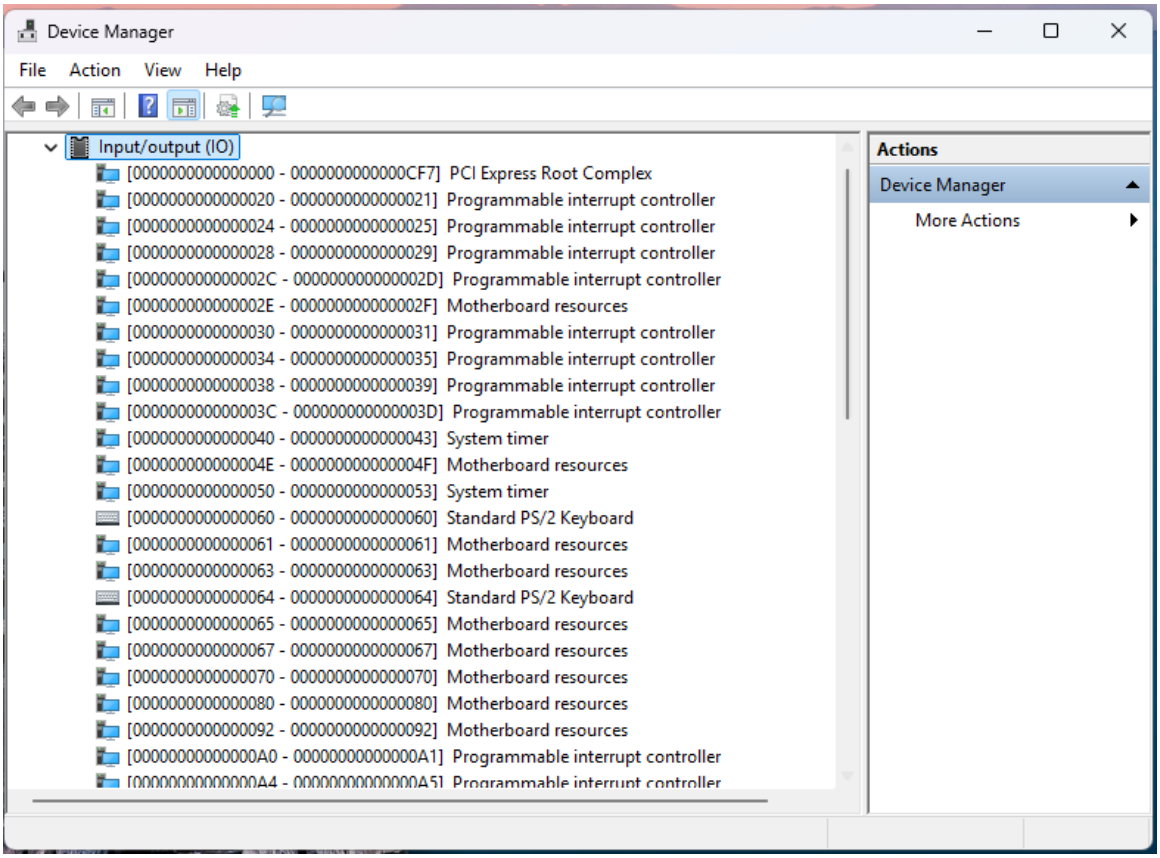
Appendix A

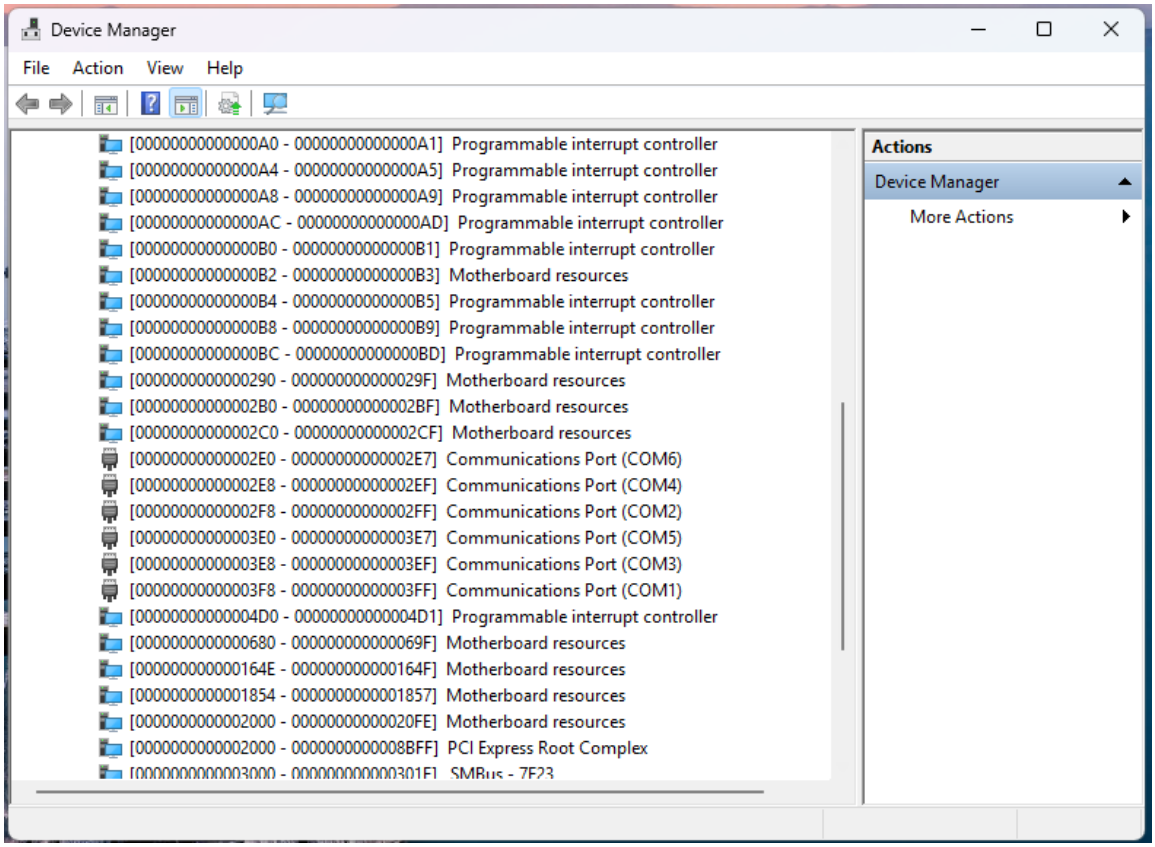
Mating Connectors

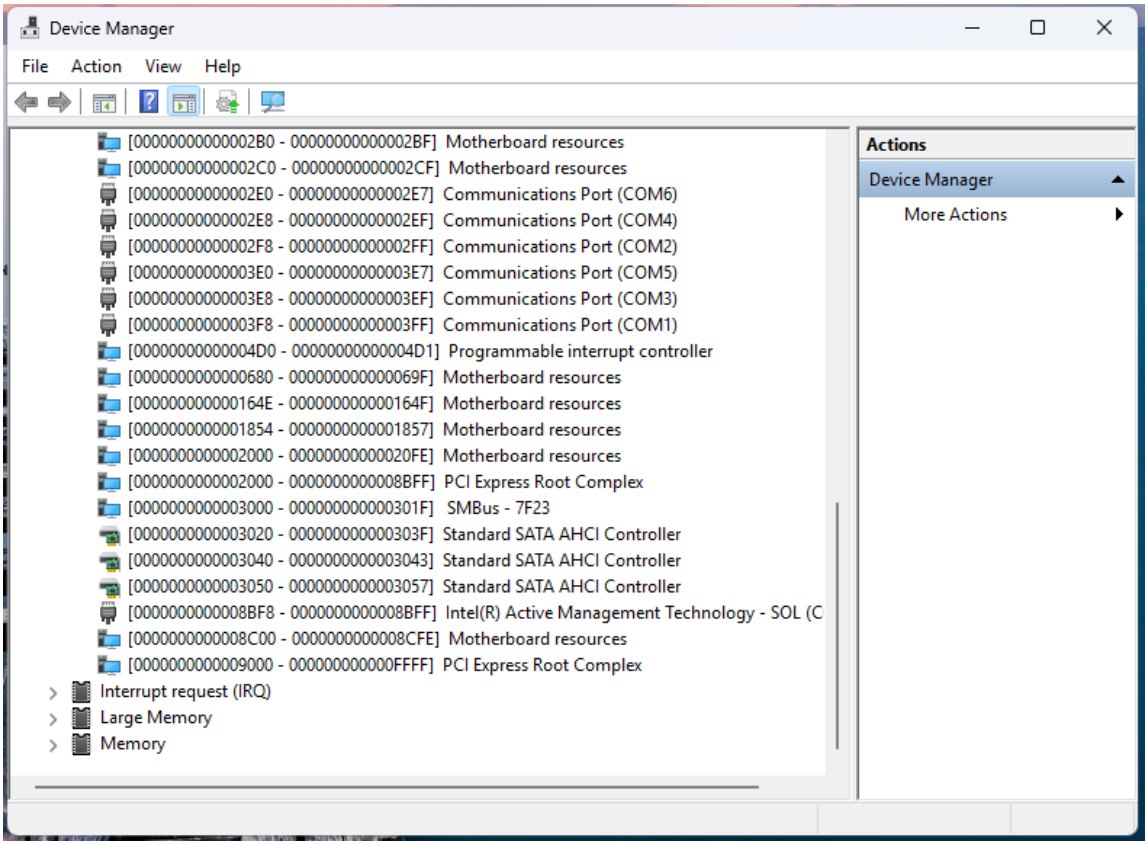
Location Printing	Function	Vendor	Vendor P/N
COM1	Serial Port (RS232/422/485) Connector	Topt	DR-19M-100
FP_AUDIO1	Front Panel Audio Header	Topt	PH254-205S-GBB0008A
SPEAK_CON1	3W Amplifier Wafer	Topt	WF2-1104-S6W-B0
COM2/3/4/5/6	RS232 Serial Port Header	Topt	PH200-205M-GBB00010D
COM7-10	RS232 Serial Port Header	Topt	PH200-205M-GBB00010D
GPIO1	GPIO Port Header	Kunguang	PH2.0 2*5P SQ8.1/5.8(0)/4.2 SMT
FP	Front Panel Header (PWR LED/HDD LED/Power Button/Reset)	DCNT	P525-05DG01ST408
CPUFAN1	CPU FAN Connector	Topt	WF254-104S-TEW0004A
SYSFAN1/2	System FAN Connector	Topt	WF254-104S-TEW0004A
PS2KBMS1	PS/2 Keyboard and Mouse Header	DCNT	P525-07SG01ST403
SMBUS1	SMBUS Header	Topt	PH200-A105-SGCB-RN
I2C1	I2C Header	Topt	PH200-A105-SGCB-RN
FP_USB2/3/4	USB2.0 Port Header	Topt	FPH003V-05G1B3BG
LVDS_EDP1	LVDS/EDP Header	CHUFON	C151900-160
INVERTER1	LVDS/EDP Inverter Wafer	TOPT	WF2-1108-K-S6R-B0
FP_USB1	USB3.2 (Gen.1) Port Header	LOTES	GAP-ABA-USB-050-P05

Appendix B

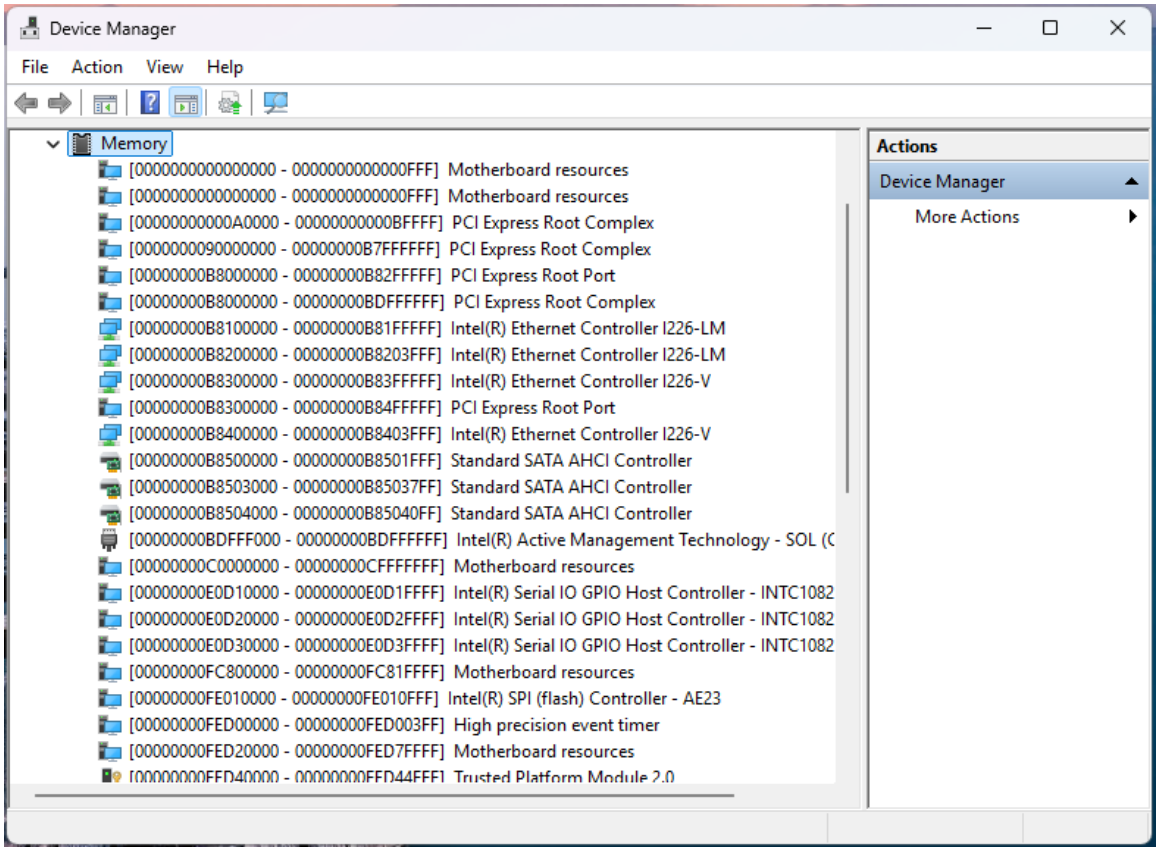
I/O Address Map

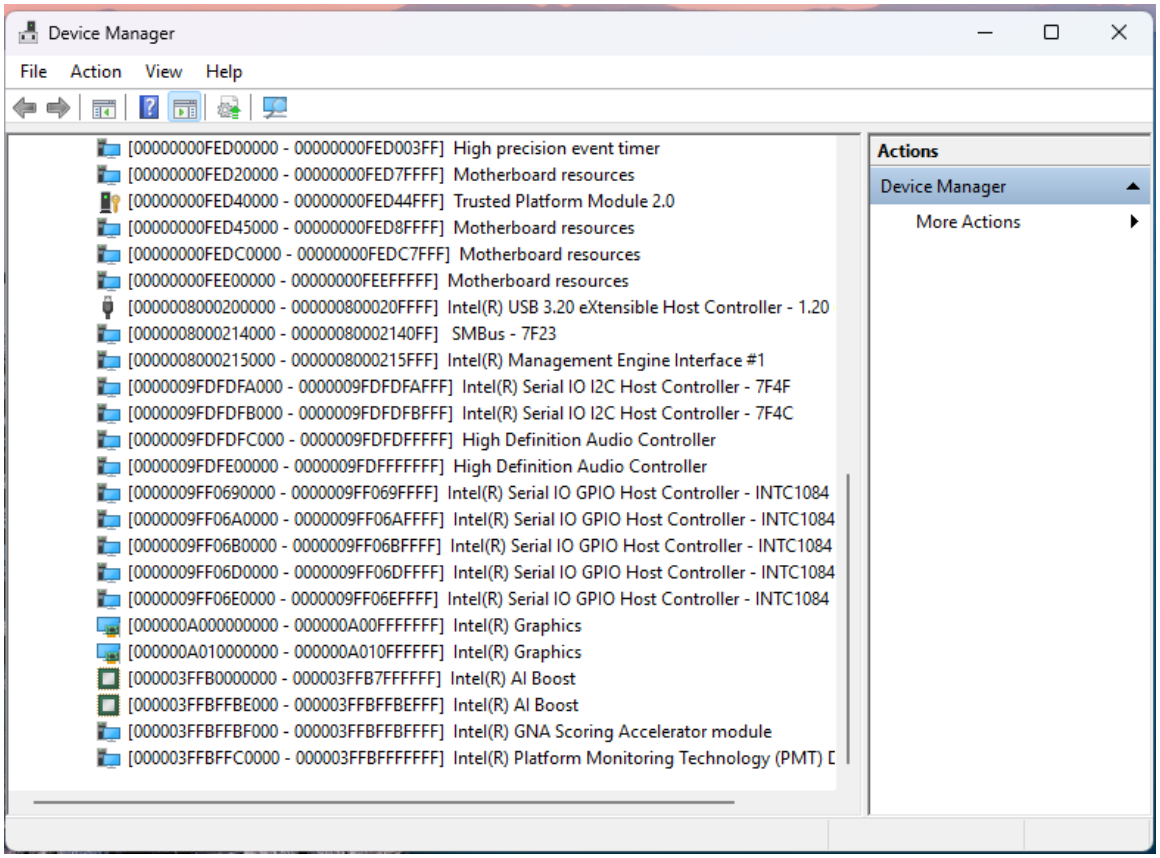


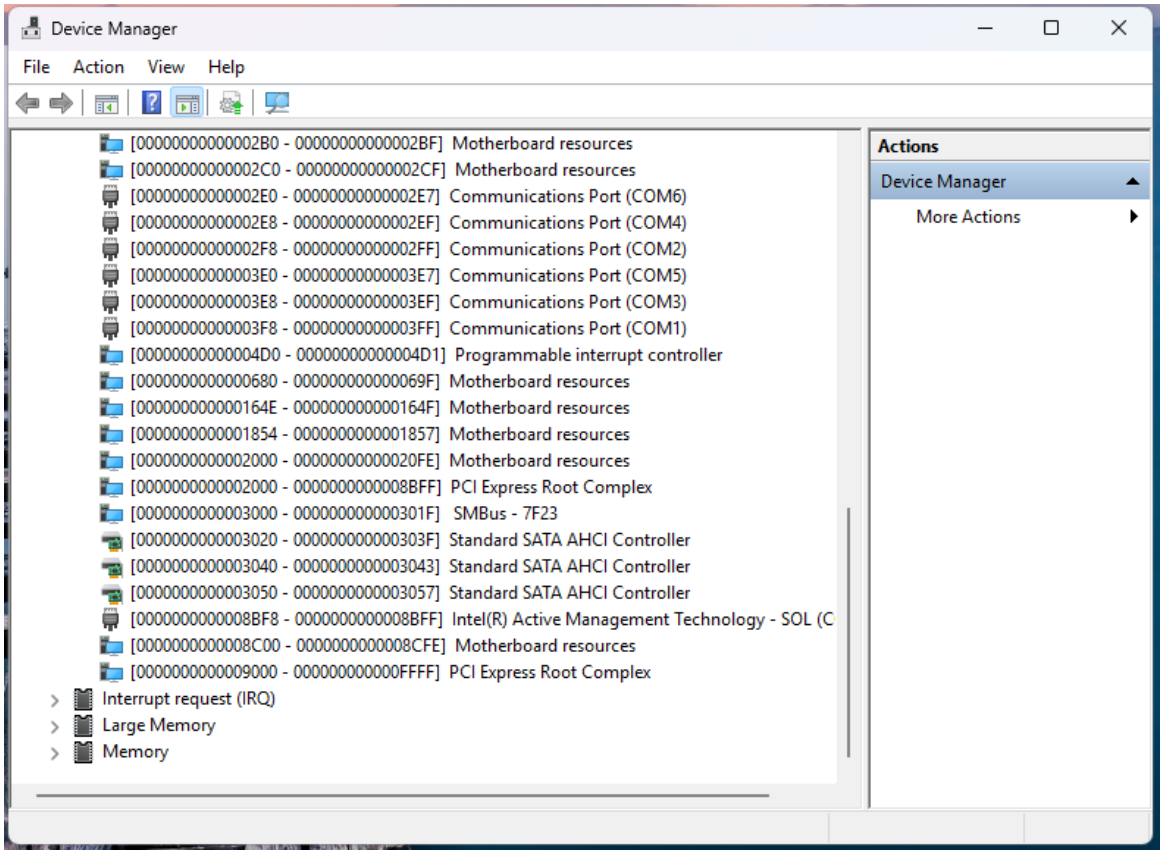

Device Manager
File Action View Help
[00000000000000A0 - 00000000000000A1] Programmable interrupt controller
[00000000000000A4 - 00000000000000A5] Programmable interrupt controller
[00000000000000A8 - 00000000000000A9] Programmable interrupt controller
[00000000000000AC - 00000000000000AD] Programmable interrupt controller
[00000000000000B0 - 00000000000000B1] Programmable interrupt controller
[00000000000000B2 - 00000000000000B3] Motherboard resources
[00000000000000B4 - 00000000000000B5] Programmable interrupt controller
[00000000000000B8 - 00000000000000B9] Programmable interrupt controller
[00000000000000BC - 00000000000000BD] Programmable interrupt controller
[0000000000000290 - 000000000000029F] Motherboard resources
[00000000000002B0 - 00000000000002BF] Motherboard resources
[00000000000002C0 - 00000000000002CF] Motherboard resources
[00000000000002E0 - 00000000000002E7] Communications Port (COM6)
[00000000000002E8 - 00000000000002EF] Communications Port (COM4)
[00000000000002F8 - 00000000000002FF] Communications Port (COM2)
[00000000000003E0 - 00000000000003E7] Communications Port (COM5)
[00000000000003E8 - 00000000000003EF] Communications Port (COM3)
[00000000000003F8 - 00000000000003FF] Communications Port (COM1)
[00000000000004D0 - 00000000000004D1] Programmable interrupt controller
[0000000000000680 - 000000000000069F] Motherboard resources
[000000000000164E - 000000000000164F] Motherboard resources
[0000000000001854 - 0000000000001857] Motherboard resources
[0000000000002000 - 00000000000020FE] Motherboard resources
[0000000000002000 - 0000000000008BFF] PCI Express Root Complex
Actions
Device Manager
More Actions


Device Manager
File Action View Help
[00000000000002B0 - 00000000000002BF] Motherboard resources
[00000000000002C0 - 00000000000002CF] Motherboard resources
[00000000000002E0 - 00000000000002E7] Communications Port (COM6)
[00000000000002E8 - 00000000000002EF] Communications Port (COM4)
[00000000000002F8 - 00000000000002FF] Communications Port (COM2)
[00000000000003E0 - 00000000000003E7] Communications Port (COM5)
[00000000000003E8 - 00000000000003EF] Communications Port (COM3)
[00000000000003F8 - 00000000000003FF] Communications Port (COM1)
[00000000000004D0 - 00000000000004D1] Programmable interrupt controller
[0000000000000680 - 000000000000069F] Motherboard resources
[000000000000164E - 000000000000164F] Motherboard resources
[0000000000001854 - 0000000000001857] Motherboard resources
[0000000000002000 - 00000000000020FE] Motherboard resources
[0000000000002000 - 0000000000008BFF] PCI Express Root Complex
[0000000000003000 - 000000000000301F] SMBus - 7F23
[0000000000003020 - 000000000000303F] Standard SATA AHCI Controller
[0000000000003040 - 0000000000003043] Standard SATA AHCI Controller
[0000000000003050 - 0000000000003057] Standard SATA AHCI Controller
[0000000000008BF8 - 0000000000008BFF] Intel(R) Active Management Technology - SOL (C
[0000000000008C00 - 0000000000008CFE] Motherboard resources
[0000000000009000 - 000000000000FFFF] PCI Express Root Complex
Interrupt request (IRQ)
Large Memory
Memory
Actions
Device Manager
More Actions

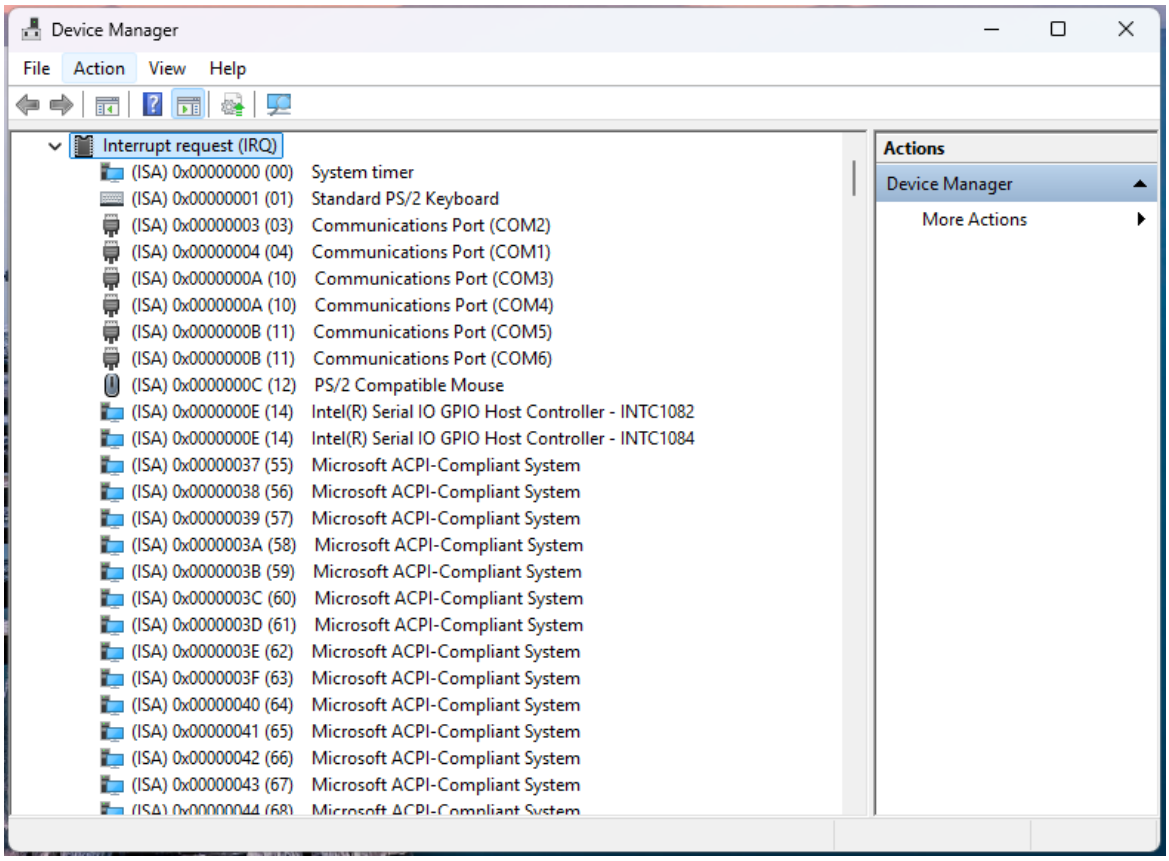
A2 Memory Address Map

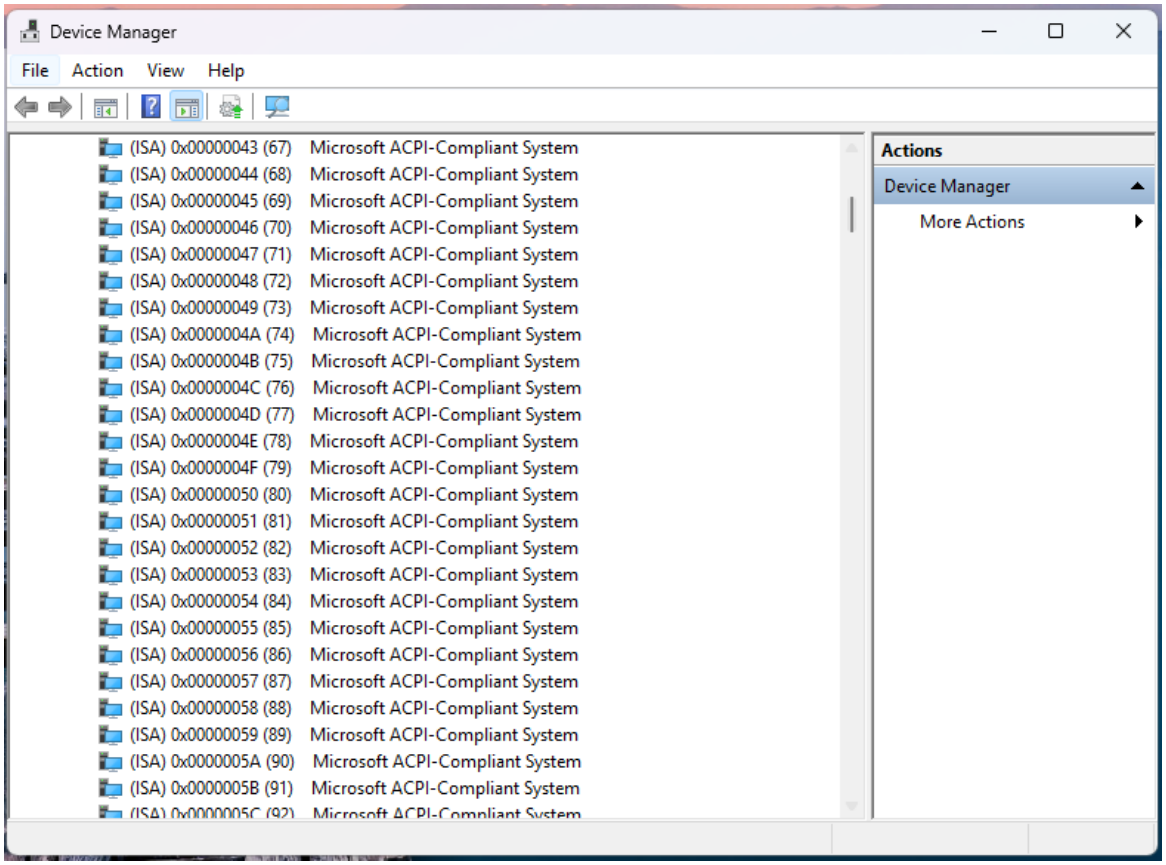


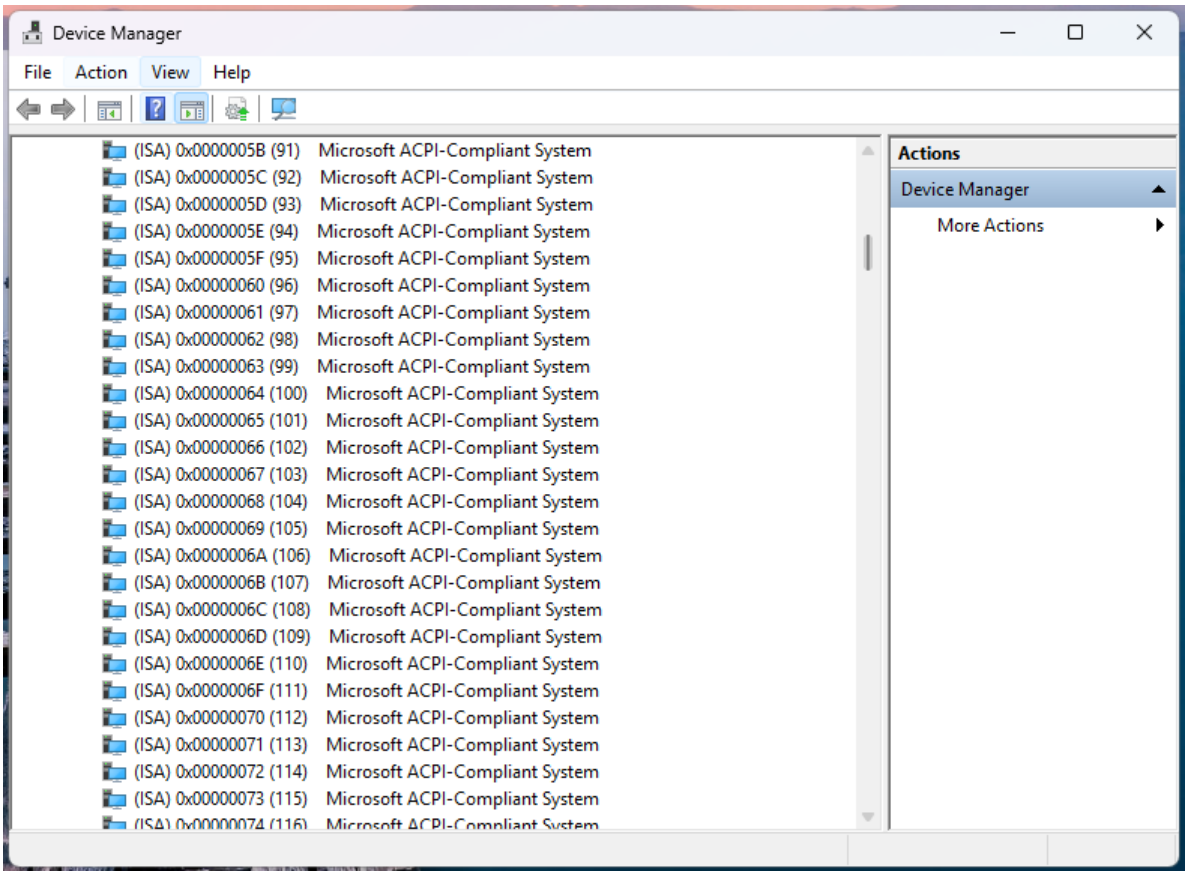


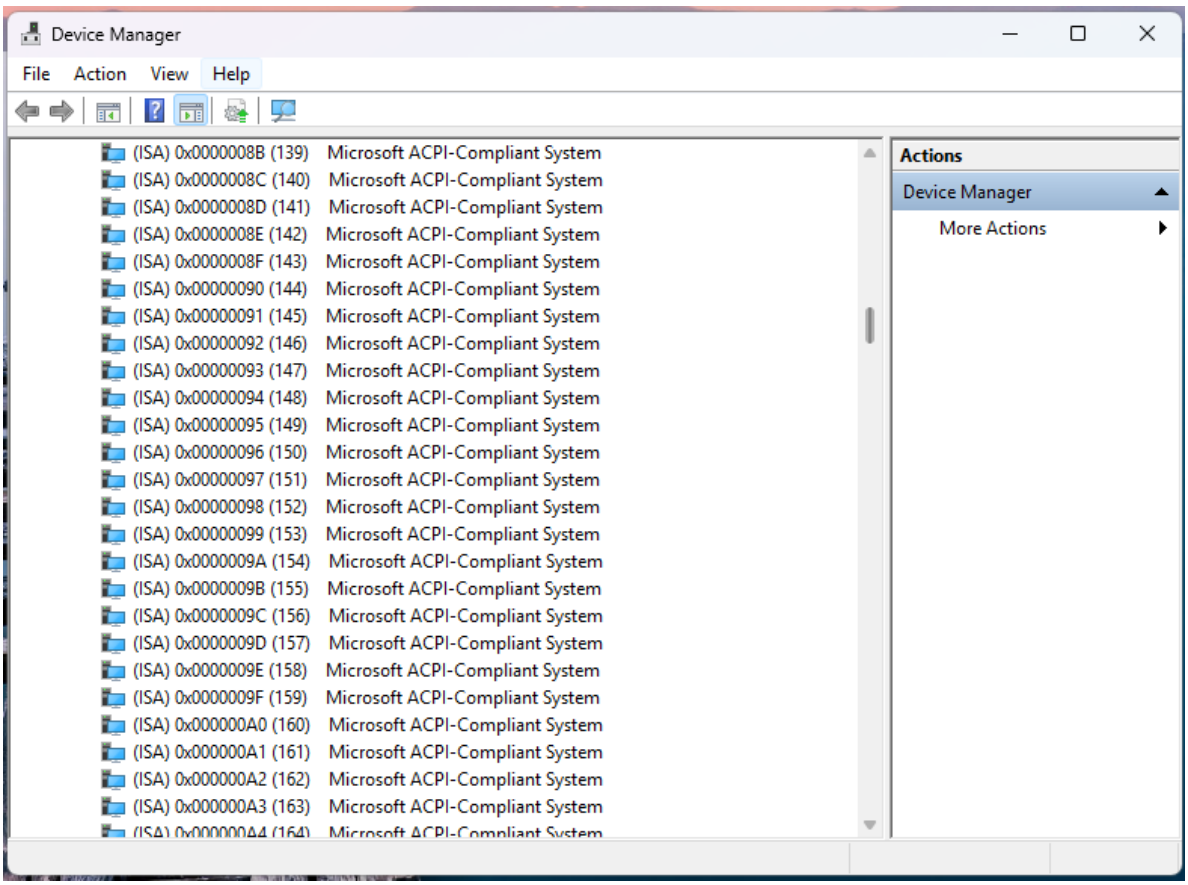

Device Manager
File Action View Help
[00000000000002B0 - 00000000000002BF] Motherboard resources
[00000000000002C0 - 00000000000002CF] Motherboard resources
[00000000000002E0 - 00000000000002E7] Communications Port (COM6)
[00000000000002E8 - 00000000000002EF] Communications Port (COM4)
[00000000000002F8 - 00000000000002FF] Communications Port (COM2)
[00000000000003E0 - 00000000000003E7] Communications Port (COM5)
[00000000000003E8 - 00000000000003EF] Communications Port (COM3)
[00000000000003F8 - 00000000000003FF] Communications Port (COM1)
[00000000000004D0 - 00000000000004D1] Programmable interrupt controller
[0000000000000680 - 000000000000069F] Motherboard resources
[000000000000164E - 000000000000164F] Motherboard resources
[0000000000001854 - 0000000000001857] Motherboard resources
[0000000000002000 - 000000000000020FE] Motherboard resources
[0000000000002000 - 0000000000008BFF] PCI Express Root Complex
[0000000000003000 - 000000000000301F] SMBus - 7F23
[0000000000003020 - 000000000000303F] Standard SATA AHCI Controller
[0000000000003040 - 0000000000003043] Standard SATA AHCI Controller
[0000000000003050 - 0000000000003057] Standard SATA AHCI Controller
[0000000000008BF8 - 0000000000008BFF] Intel(R) Active Management Technology - SOL (C
[0000000000008C00 - 0000000000008CFE] Motherboard resources
[0000000000009000 - 000000000000FFFF] PCI Express Root Complex
Interrupt request (IRQ)
Large Memory
Memory
Actions
Device Manager
More Actions

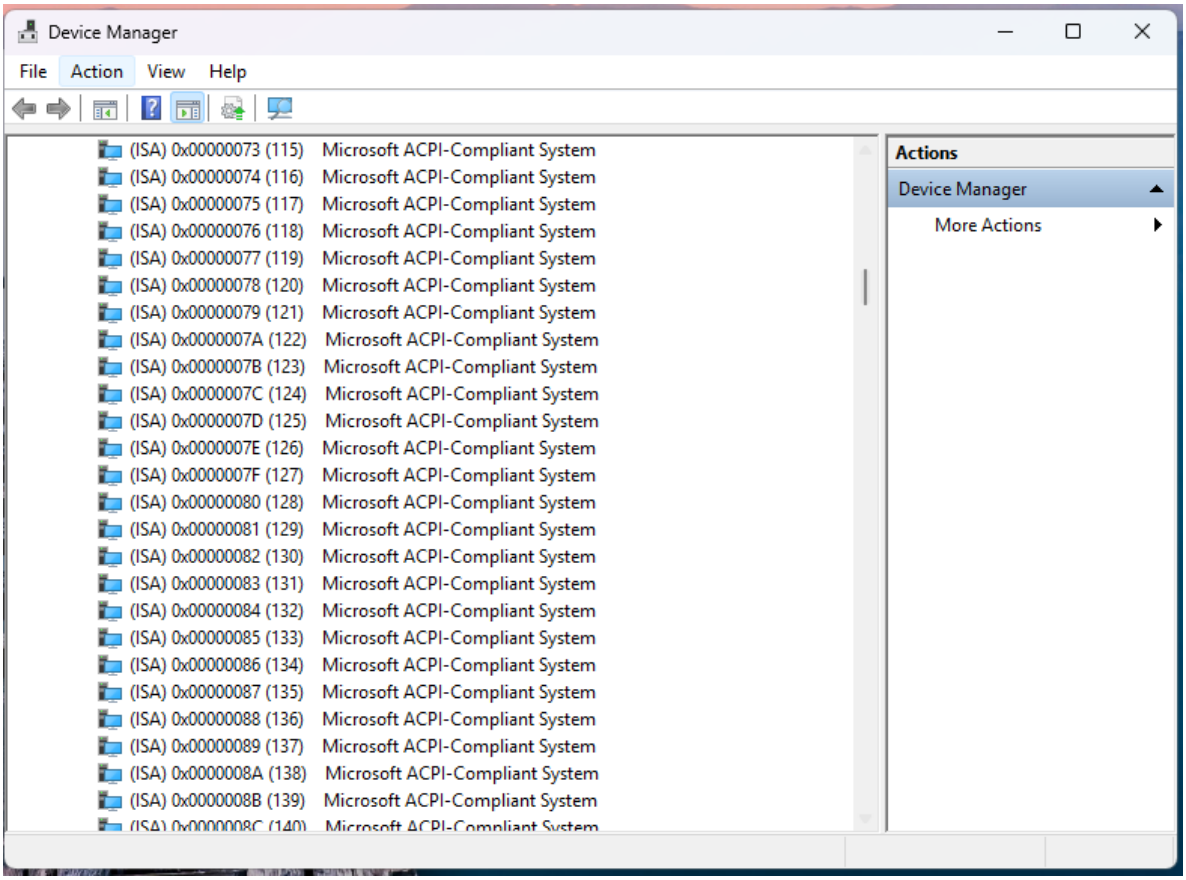
A3 IRQ Mapping Chart

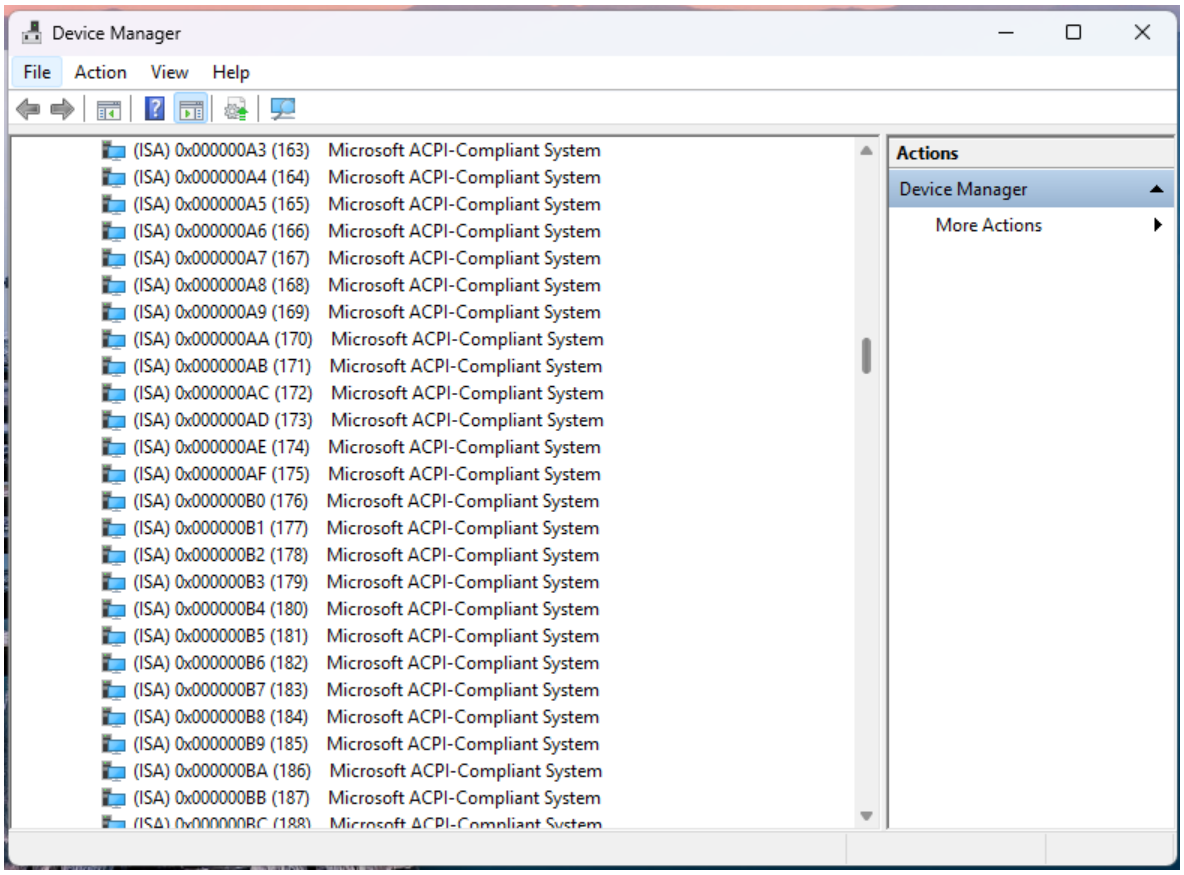


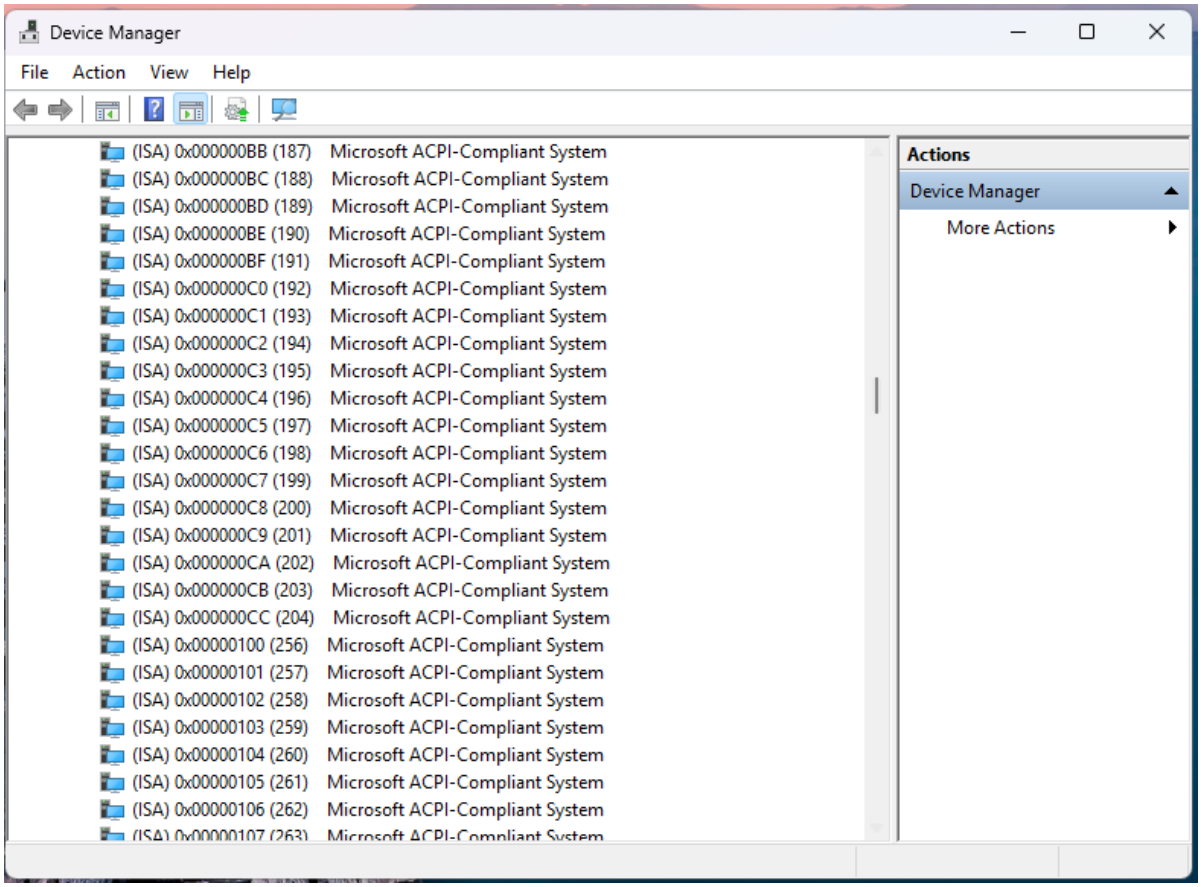


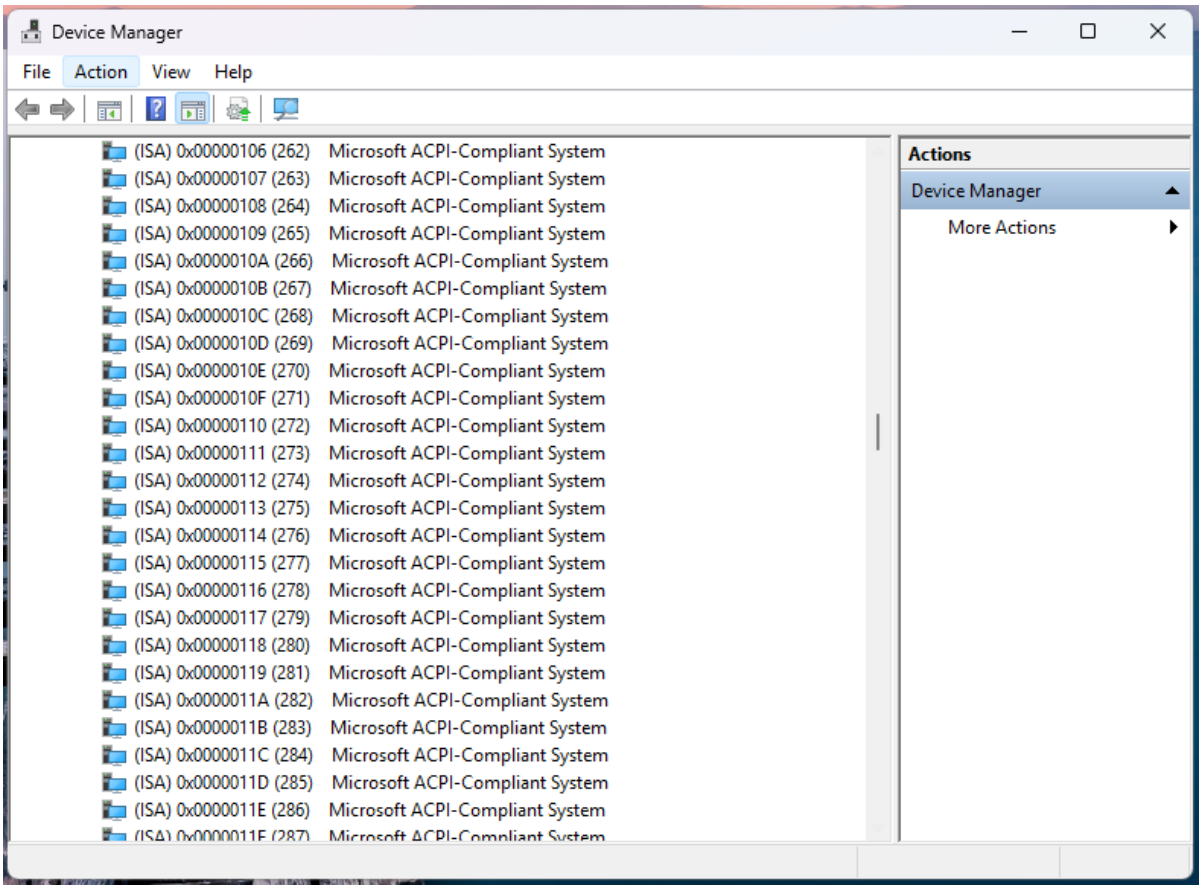

Device Manager
File Action View Help
(ISA) 0x0000005B (91) Microsoft ACPI-Compliant System
(ISA) 0x0000005C (92) Microsoft ACPI-Compliant System
(ISA) 0x0000005D (93) Microsoft ACPI-Compliant System
(ISA) 0x0000005E (94) Microsoft ACPI-Compliant System
(ISA) 0x0000005F (95) Microsoft ACPI-Compliant System
(ISA) 0x00000060 (96) Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97) Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98) Microsoft ACPI-Compliant System
(ISA) 0x00000063 (99) Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100) Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101) Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102) Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103) Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104) Microsoft ACPI-Compliant System
(ISA) 0x00000069 (105) Microsoft ACPI-Compliant System
(ISA) 0x0000006A (106) Microsoft ACPI-Compliant System
(ISA) 0x0000006B (107) Microsoft ACPI-Compliant System
(ISA) 0x0000006C (108) Microsoft ACPI-Compliant System
(ISA) 0x0000006D (109) Microsoft ACPI-Compliant System
(ISA) 0x0000006E (110) Microsoft ACPI-Compliant System
(ISA) 0x0000006F (111) Microsoft ACPI-Compliant System
(ISA) 0x00000070 (112) Microsoft ACPI-Compliant System
(ISA) 0x00000071 (113) Microsoft ACPI-Compliant System
(ISA) 0x00000072 (114) Microsoft ACPI-Compliant System
(ISA) 0x00000073 (115) Microsoft ACPI-Compliant System
Actions
Device Manager
More Actions

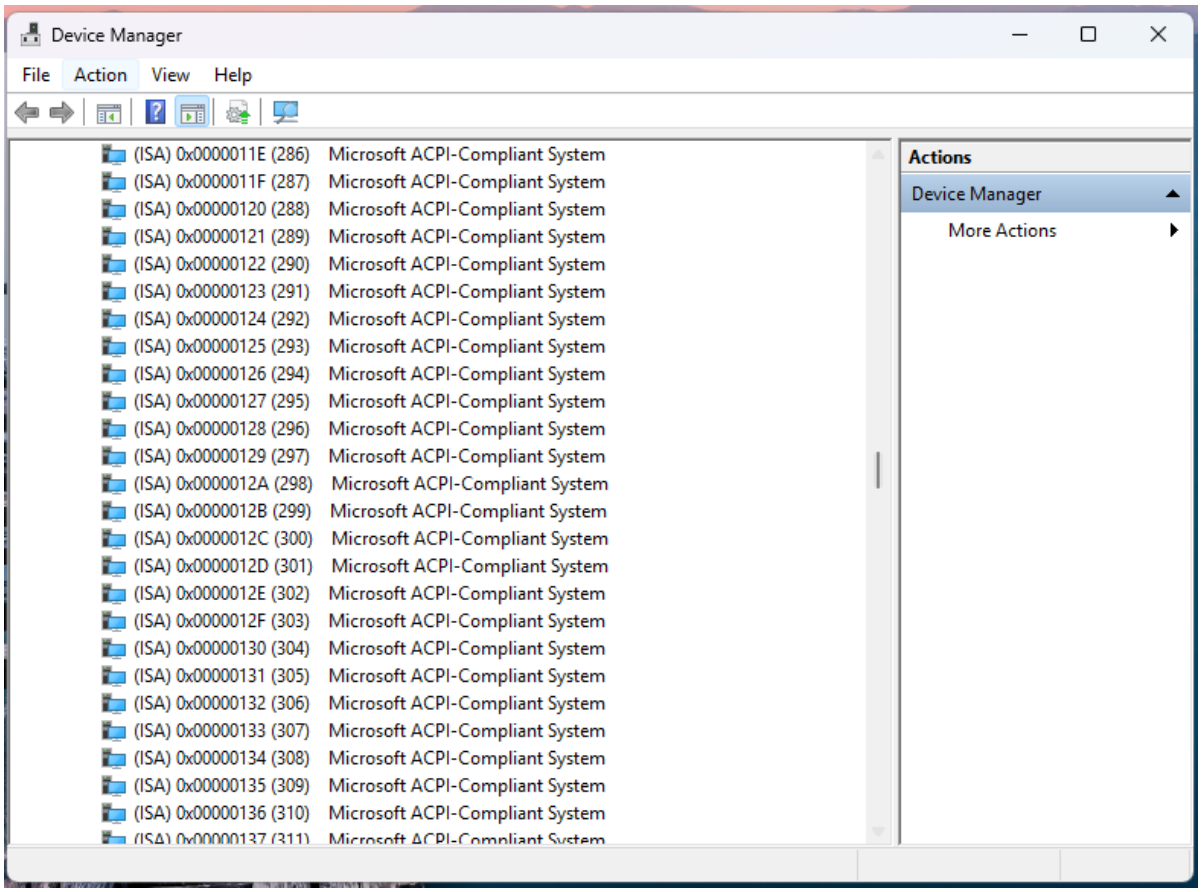

Device Manager
File Action View Help
(ISA) 0x0000008B (139) Microsoft ACPI-Compliant System
(ISA) 0x0000008C (140) Microsoft ACPI-Compliant System
(ISA) 0x0000008D (141) Microsoft ACPI-Compliant System
(ISA) 0x0000008E (142) Microsoft ACPI-Compliant System
(ISA) 0x0000008F (143) Microsoft ACPI-Compliant System
(ISA) 0x00000090 (144) Microsoft ACPI-Compliant System
(ISA) 0x00000091 (145) Microsoft ACPI-Compliant System
(ISA) 0x00000092 (146) Microsoft ACPI-Compliant System
(ISA) 0x00000093 (147) Microsoft ACPI-Compliant System
(ISA) 0x00000094 (148) Microsoft ACPI-Compliant System
(ISA) 0x00000095 (149) Microsoft ACPI-Compliant System
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(ISA) 0x00000097 (151) Microsoft ACPI-Compliant System
(ISA) 0x00000098 (152) Microsoft ACPI-Compliant System
(ISA) 0x00000099 (153) Microsoft ACPI-Compliant System
(ISA) 0x0000009A (154) Microsoft ACPI-Compliant System
(ISA) 0x0000009B (155) Microsoft ACPI-Compliant System
(ISA) 0x0000009C (156) Microsoft ACPI-Compliant System
(ISA) 0x0000009D (157) Microsoft ACPI-Compliant System
(ISA) 0x0000009E (158) Microsoft ACPI-Compliant System
(ISA) 0x0000009F (159) Microsoft ACPI-Compliant System
(ISA) 0x000000A0 (160) Microsoft ACPI-Compliant System
(ISA) 0x000000A1 (161) Microsoft ACPI-Compliant System
(ISA) 0x000000A2 (162) Microsoft ACPI-Compliant System
(ISA) 0x000000A3 (163) Microsoft ACPI-Compliant System
Actions
Device Manager
More Actions

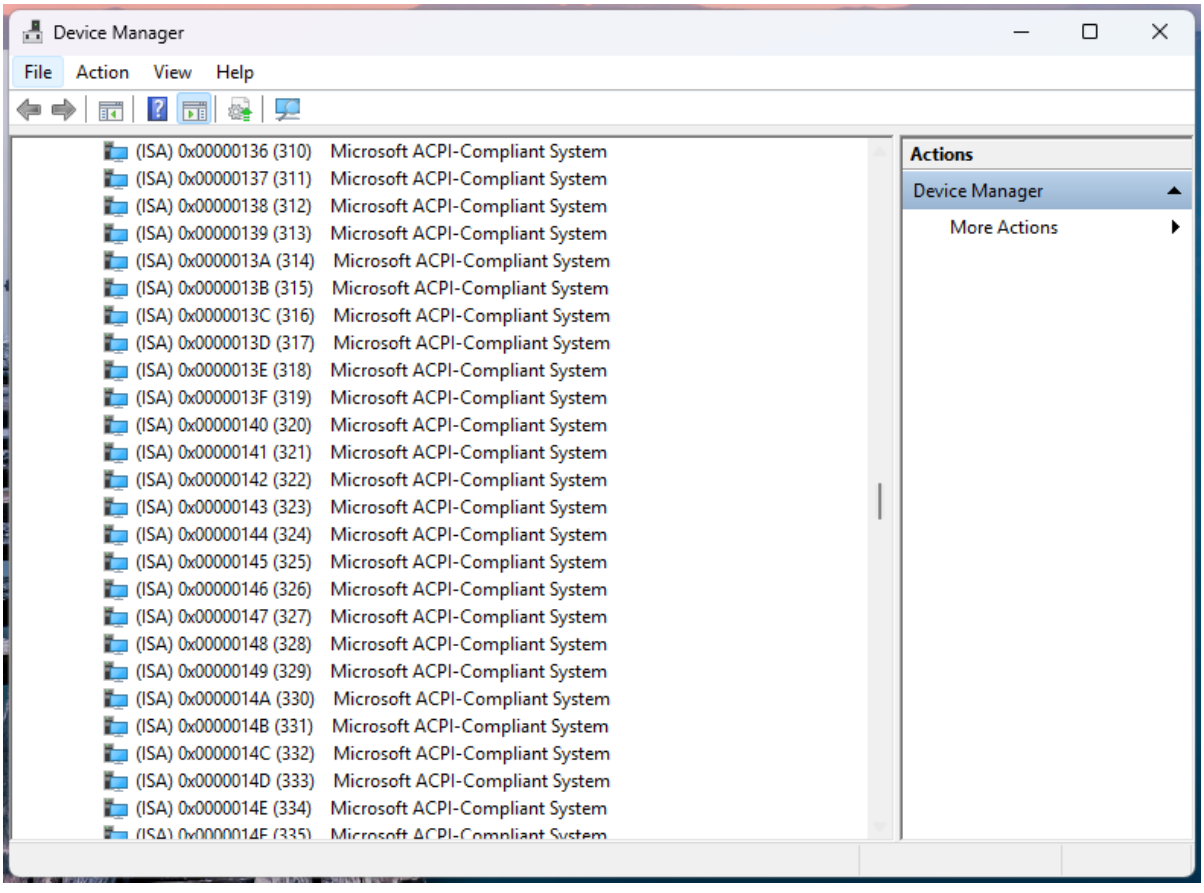

Device Manager
File Action View Help
(ISA) 0x00000073 (115) Microsoft ACPI-Compliant System
(ISA) 0x00000074 (116) Microsoft ACPI-Compliant System
(ISA) 0x00000075 (117) Microsoft ACPI-Compliant System
(ISA) 0x00000076 (118) Microsoft ACPI-Compliant System
(ISA) 0x00000077 (119) Microsoft ACPI-Compliant System
(ISA) 0x00000078 (120) Microsoft ACPI-Compliant System
(ISA) 0x00000079 (121) Microsoft ACPI-Compliant System
(ISA) 0x0000007A (122) Microsoft ACPI-Compliant System
(ISA) 0x0000007B (123) Microsoft ACPI-Compliant System
(ISA) 0x0000007C (124) Microsoft ACPI-Compliant System
(ISA) 0x0000007D (125) Microsoft ACPI-Compliant System
(ISA) 0x0000007E (126) Microsoft ACPI-Compliant System
(ISA) 0x0000007F (127) Microsoft ACPI-Compliant System
(ISA) 0x00000080 (128) Microsoft ACPI-Compliant System
(ISA) 0x00000081 (129) Microsoft ACPI-Compliant System
(ISA) 0x00000082 (130) Microsoft ACPI-Compliant System
(ISA) 0x00000083 (131) Microsoft ACPI-Compliant System
(ISA) 0x00000084 (132) Microsoft ACPI-Compliant System
(ISA) 0x00000085 (133) Microsoft ACPI-Compliant System
(ISA) 0x00000086 (134) Microsoft ACPI-Compliant System
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Actions
Device Manager
More Actions

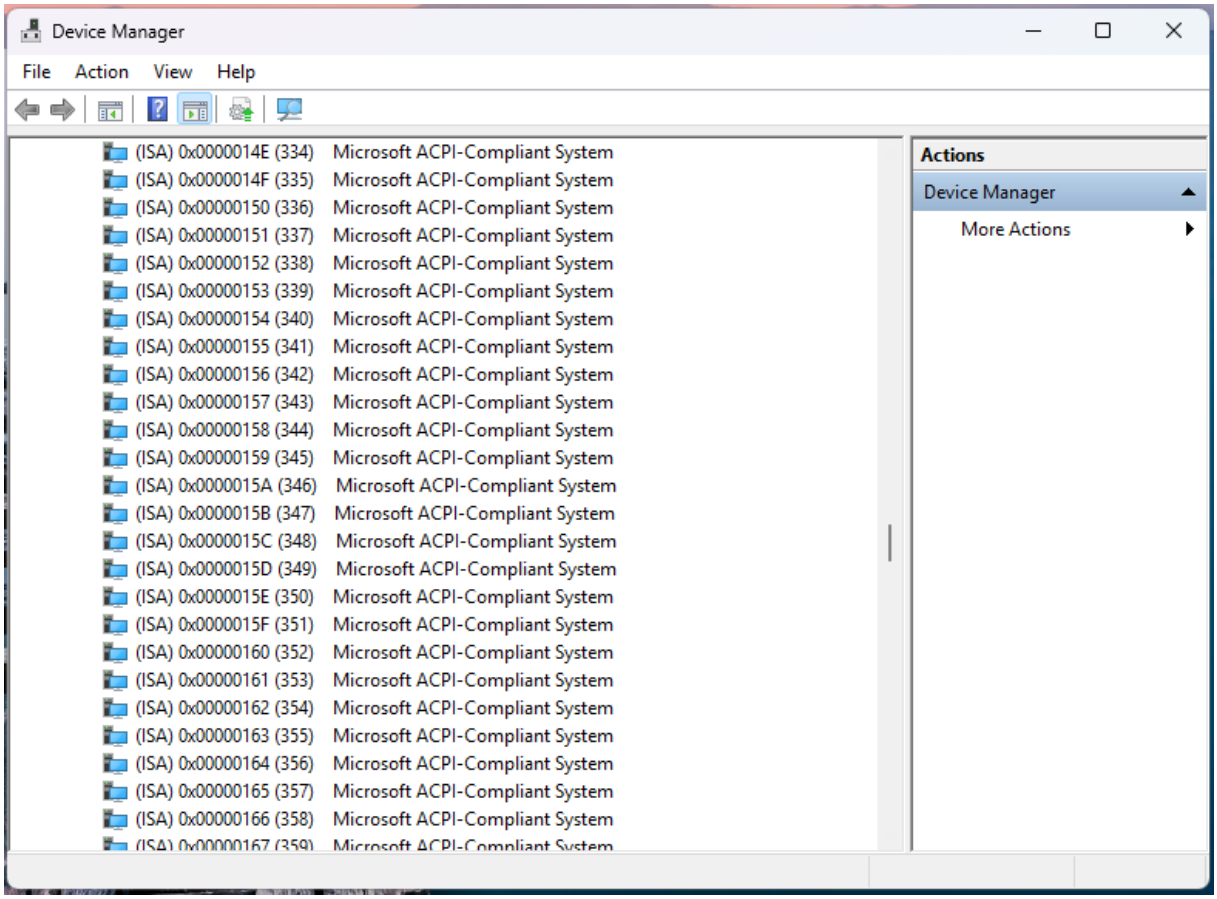

Device Manager
File Action View Help
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Actions
Device Manager
More Actions

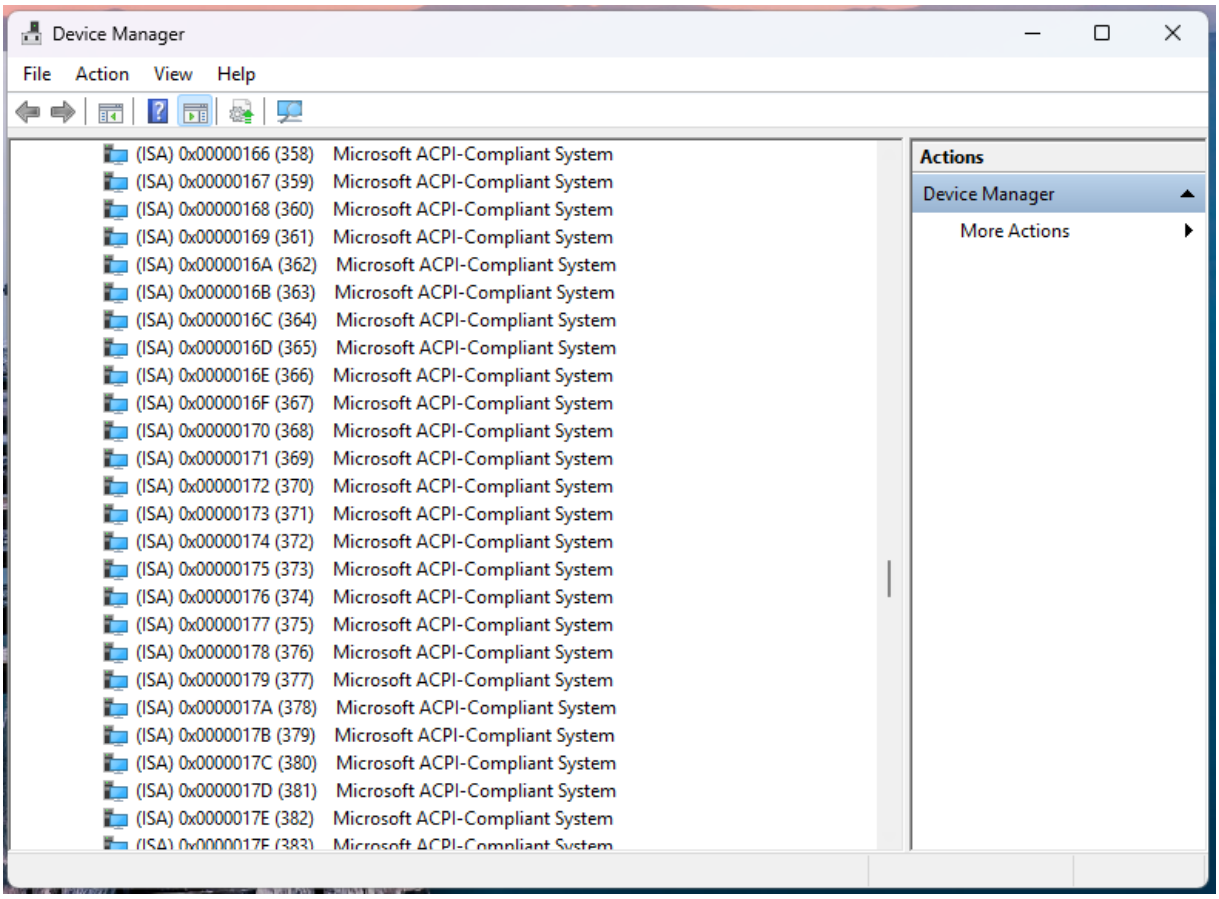

Device Manager
File Action View Help
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Actions
Device Manager
More Actions

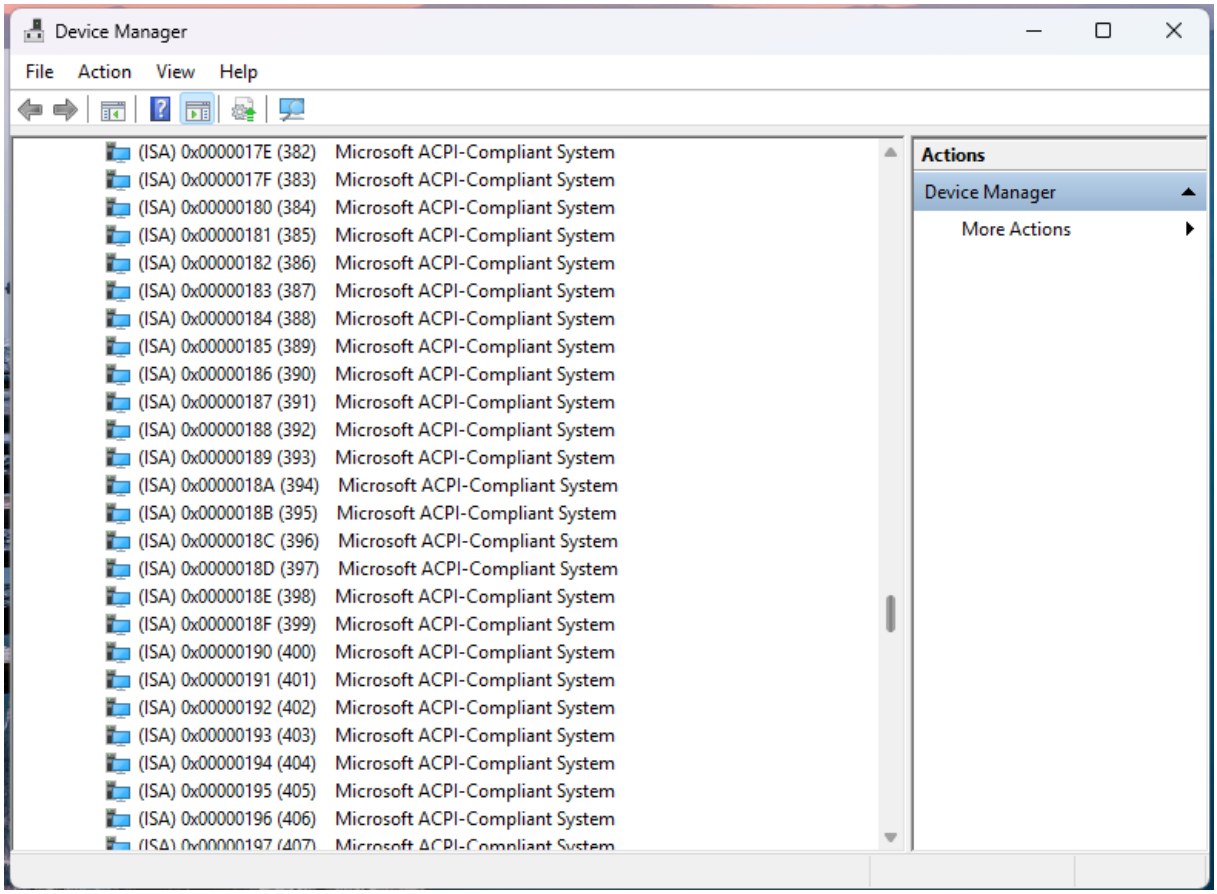

Device Manager
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Actions
Device Manager
More Actions

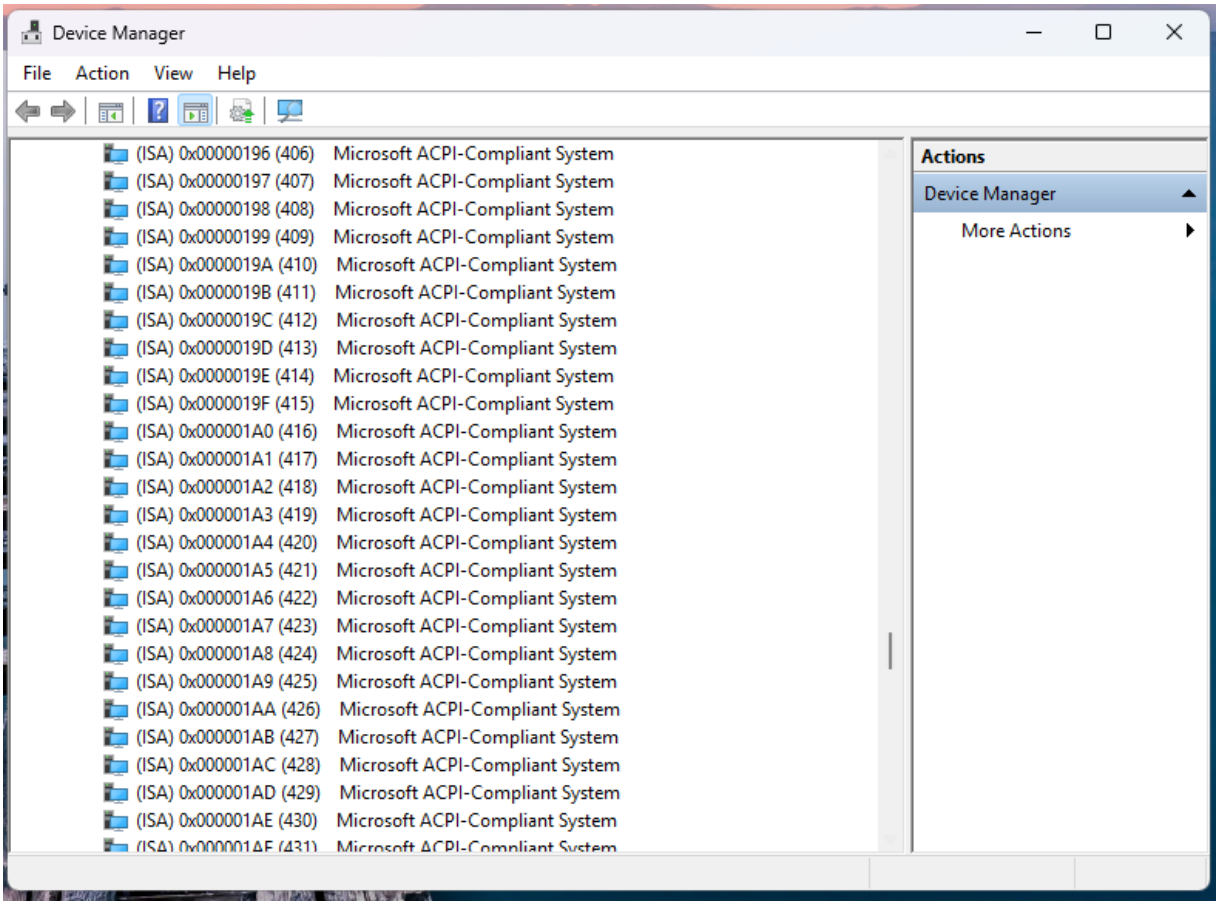

Device Manager
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Actions
Device Manager
More Actions

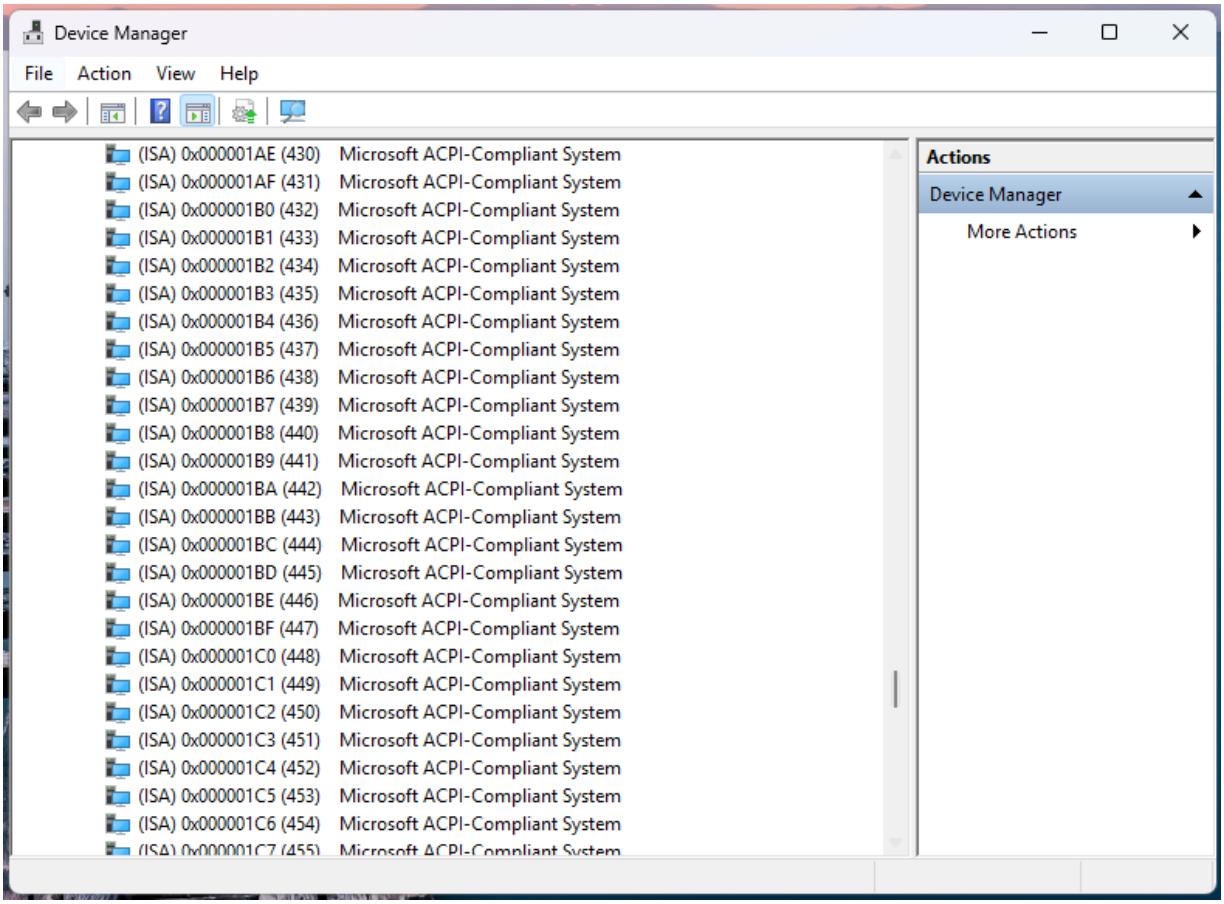

Device Manager
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Actions
Device Manager
More Actions

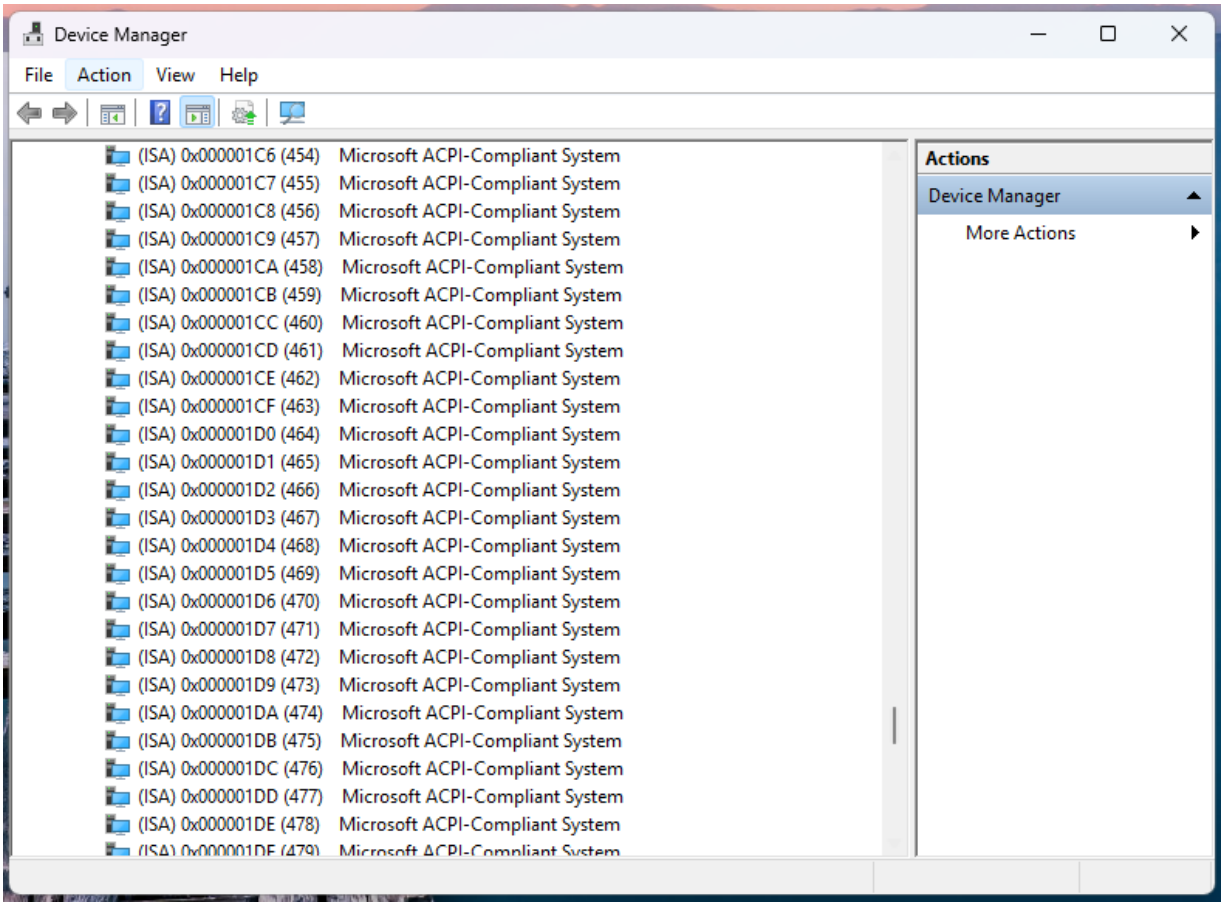

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Actions
Device Manager
More Actions

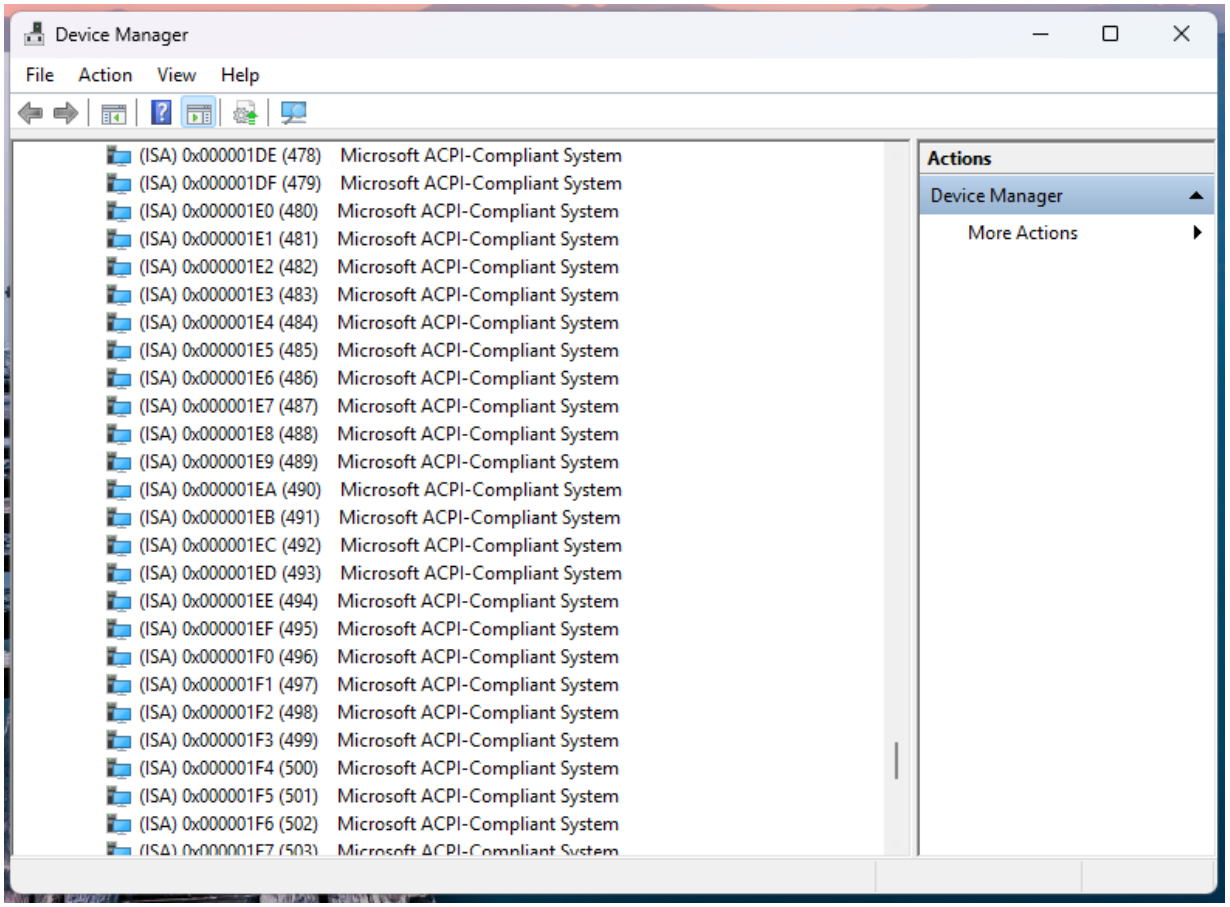

Device Manager
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Actions
Device Manager
More Actions

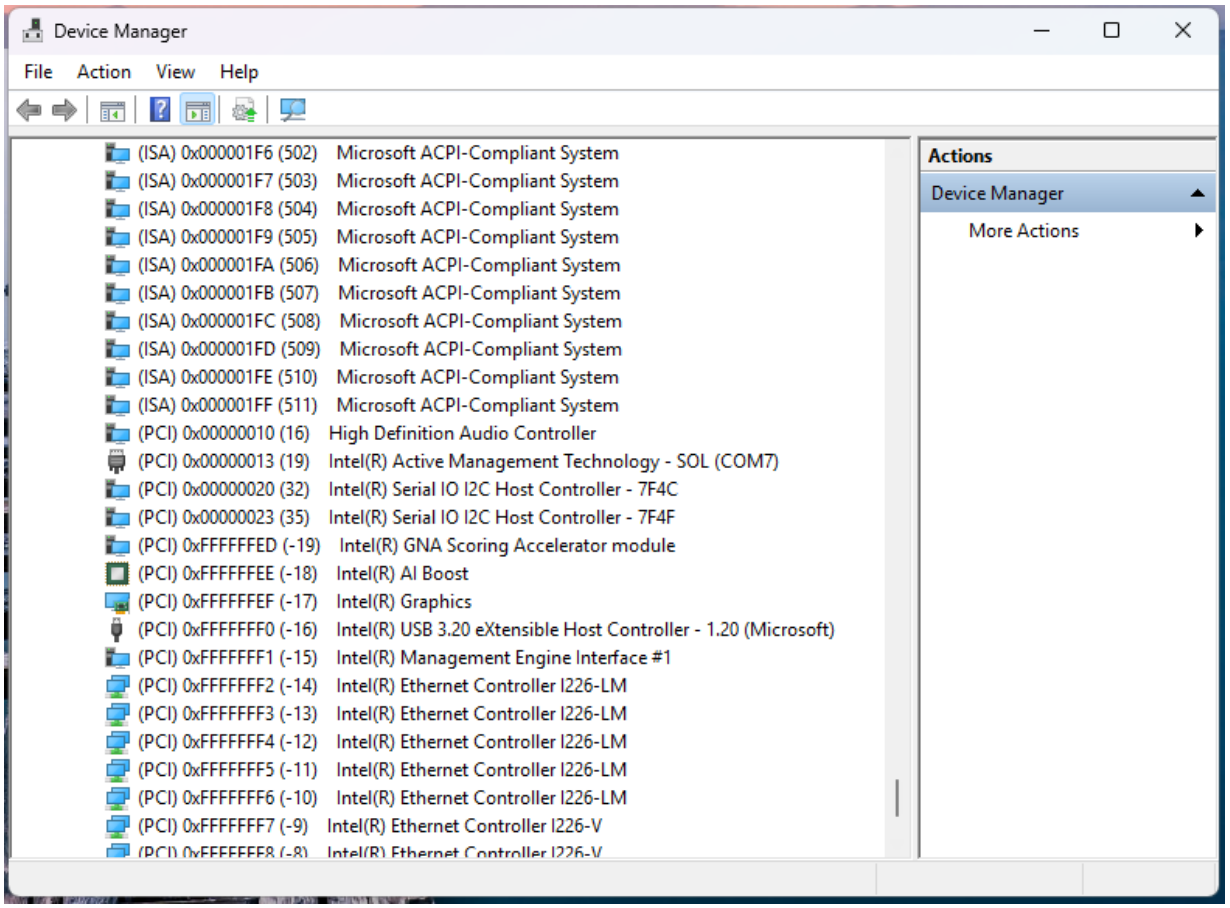

Device Manager
File Action View Help
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Actions
Device Manager
More Actions


Device Manager
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Actions
Device Manager
More Actions


Device Manager
File Action View Help
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Actions
Device Manager
More Actions


Device Manager
File Action View Help
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Actions
Device Manager
More Actions


Device Manager
File Action View Help
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Actions
Device Manager
More Actions


Device Manager
File Action View Help
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(PCI) 0x00000010 (16) High Definition Audio Controller
(PCI) 0x00000013 (19) Intel(R) Active Management Technology - SOL (COM7)
(PCI) 0x00000020 (32) Intel(R) Serial IO I2C Host Controller - 7F4C
(PCI) 0x00000023 (35) Intel(R) Serial IO I2C Host Controller - 7F4F
(PCI) 0xFFFFFFED (-19) Intel(R) GNA Scoring Accelerator module
(PCI) 0xFFFFFFEE (-18) Intel(R) AI Boost
(PCI) 0xFFFFFFEF (-17) Intel(R) Graphics
(PCI) 0xFFFFFFF0 (-16) Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
(PCI) 0xFFFFFFF1 (-15) Intel(R) Management Engine Interface #1
(PCI) 0xFFFFFFF2 (-14) Intel(R) Ethernet Controller I226-LM
(PCI) 0xFFFFFFF3 (-13) Intel(R) Ethernet Controller I226-LM
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(PCI) 0xFFFFFFF7 (-9) Intel(R) Ethernet Controller I226-V
Actions
Device Manager
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