Avalue Intelligent Display & System

HID-2146

21.5" Arrow Lake U Medical Panel PC

User Manual

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Instructions for the User

The document combines text and illustrations, providing a comprehensive overview of the system. The information is presented as a sequential steps of actions, allowing the user to learn directly how to use the device. The text provides explanations and instructs the user step-by-step in the practical use of the product, with short, clear instructions in an easy-to-follow sequence.

- Non-patient at least 18 years old with basic reading experience.
- Read and understand "westernized Arabic numbers" when written in Arial font
- Can distinguish human organs and understand hygiene.
- Understand languages as specified in the marketing plan (Ext: Chinese, English….).
- For general function operation and maintenance, no special experiences are required.
- Mechanical tool operation knowledge is needed when installing mounting. Please contact a service technician or your retailer.

Purposes and Applications

HID-2146 is a Medical Panel PC intended for use by healthcare professionals in hospitals, clinics, and other healthcare environments. It provides computing, information display, data access, and user interface functions to support healthcare-related applications.

HID-2146 can be integrated with software, networks, and peripheral devices according to the intended application. Typical applications may include telemedicine, medical imaging, and medical AI systems.

Operating principle

HID-2146 is a Medical Panel PC based on the Intel® Arrow Lake platform. It integrates computing, display, touch, memory, storage, and input/output functions into a single system.
During operation, the processor executes the operating system and installed software applications, processes input data, and displays information through the integrated LCD panel. Users can interact with the system through the touchscreen and connected input devices.
Various input/output and network interfaces are provided for communication with compatible external devices, peripherals, and network systems.

Definitions

Warning! *A WARNING statement provides important information about a potentially hazardous situation which, if not avoided, could result in death or serious injury.*



Caution! *A CAUTION statement provides important information about a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or in damage to the equipment or other property.*



Attention! *Un avertissement fournit des informations importantes sur une situation potentiellement dangereuse qui, si elle n'est pas évitée, peut entraîner la mort ou des blessures graves.*



Précaution! *Une mention ATTENTION fournit des informations importantes sur une situation potentiellement dangereuse qui, si elle n'est pas évitée, peut entraîner des blessures mineures ou modérées pour l'utilisateur ou le patient ou des dommages à l'équipement ou à d'autres biens.*



Note! *A NOTE provides additional information intended to avoid inconveniences during operation.*



Safety Instructions

1. Strictly follow these Instructions for Use, please read these safety instructions carefully.
2. Remind to keep this User's Manual for later reference, and any use of the product requires full understanding and strict observation of all portions of these instructions. Observe all WARNINGS and CAUTIONS as rendered throughout this manual and on labels on the equipment.
3. Repair of the device may also only be carried out by MANUFACTURER.

Warning! *Because of the danger of electric shock, never remove the cover of a device while it is in operation or connected to a power outlet.*



Attention! *En raison du risque de choc électrique, ne retirez jamais le couvercle d'un appareil lorsqu'il est en fonctionnement ou connecté à une prise de courant.*



4. If one of the following situations arises, please refer to the solutions:

Problem	Solution
The power cord or plug is damaged.	Contact manufacturer for further inspection.
Liquid has penetrated equipment.	Try to dry up excess liquid and contact manufacturer for further inspection.
The equipment does not power on.	1. Check the adapter model to see if it is correct. 2. Confirm whether power adapter and power cord is properly connected. 3. If the problem still exists, contact manufacturer for further inspection.
The equipment has been damaged.	1. Power on the equipment to confirm whether the function is still normal. 2. Contact manufacturer for repairment if needed.

5. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning and keep this equipment away from humidity.

Caution! *To avoid short-circuiting and otherwise damaging the device, do not allow fluids to come in contact with the device. If fluids are accidentally spilled on the equipment, remove the affected unit from service as soon as possible and contact the service personnel to verify that patient safety is not compromised.*

Précaution! *Pour éviter tout court-circuit et autrement endommager l'appareil, ne laissez pas de liquides entrer en contact avec l'appareil. Si du liquide est accidentellement renversé sur l'équipement, retirez l'unité affectée du service dès que possible et contactez le personnel d'entretien pour vérifier que la sécurité du patient n'est pas compromise.*

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

Caution! *To prevent overheating, do not cover the openings and place the device in direct sunlight or near radiant heaters.*

Précaution! *Pour éviter la surchauffe, ne couvrez pas les ouvertures et placez l'appareil à la lumière directe du soleil ou à proximité de radiateurs rayonnants.*

7. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet. Position the power cord so that people cannot step on it. Do not place anything over the power cord. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over voltage.

Caution! *Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4° F) or above 60° C (140° F). This may damage the equipment.*



Précaution! *Ne laissez pas cet équipement dans un environnement non contrôlé où la température de stockage est inférieure à -20 ° C (-4 ° F) ou supérieure à 60 ° C (140 ° F). cela pourrait endommager l'équipement.*



8. If your computer is losing dramatic time or the BIOS configuration reset to default, the battery has no power.

Caution! *Do not replace battery yourself. Please contact* MANUFACTURER. *The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.*



Précaution! *Ne remplacez pas la batterie vous-même. Veuillez contacter le FABRICANT. L'ordinateur est équipé d'un circuit d'horloge en temps réel alimenté par batterie. Il existe un risque d'explosion si la batterie n'est pas remplacée correctement. Remplacez uniquement par un type identique ou équivalent recommandé par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.*



9. Improper installation of VESA mounting can result in serious personal injury! VESA mount installation should be operated by professional technician, please contact the service technician or your retail if you need this service.

10. Environmental protection: follow national requirements to dispose of unit.

11. Maintenance: to properly maintain and clean the surfaces, use only the approved products or clean with a dry applicator.

12. Make sure the user not to contact SIP/SOPs and the patient at the same time.

13. When networking with electrical devices, the operator is responsible for ensuring that the resulting system meets the requirements set forth by the following standards:
– EN 60601-1 (IEC 60601-1)
Medical electrical equipment
Part 1: General requirements for safety
– EN 60601-1-1 (IEC 60601-1-1)
Medical electrical equipment
Part 1-1: General requirements for safety
Collateral standard: Safety requirements for Medical electrical systems
– EN 60601-1-2 (IEC 60601-1-2)
Medical electrical equipment
Part 1-2: General requirements for safety
Collateral standard: Electromagnetic compatibility; Requirements and tests



MEDICAL - GENERAL MEDICAL EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE
ANSI/AAMI ES60601-1
CAN/CSA-C22.2 No. 60601-1

14. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore, all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60601-1 certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.

Caution! *Use suitable mounting apparatus to avoid risk of injury.*



Précaution! *Utilisez un appareil de montage approprié pour éviter tout risque de blessure.*



15. Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your country.

Note! *Environmental protection Follow national requirements to dispose of unit.*



Warning! *Do not modify this equipment without authorization of the manufacturer.*



Warning! *To avoid risk of electric shock, this equipment must only be connected to a supply main with protective earth.*



Caution! *This adapter EDAC EM11011M(18) is a forming part of the medical device.*



Attention! *Ne modifiez pas cet équipement sans l'autorisation du fabricant.*



Attention! *Pour éviter tout risque de choc électrique, cet équipement ne doit être connecté qu'à une alimentation avec terre de protection.*



Précaution! *Cet adaptateur EDAC EM11011M(18) fait partie intégrante du dispositif médical.*



16. The design of Internal Smart battery is considered for backup purpose while system accidently loosing main power supply in any situation, it will supply max.6mins of the operating time to keep let user backup the data and shut down the system properly.

Caution! *Do not attempt to disassemble the battery pack. There is danger of excessive temperatures, fire or explosion if the battery is incorrectly replaced. Please contact with*

MANUFACTURER to replace battery packs.

Caution! *Do not use the power adapter that isn't made for the equipment, supplying the equipment with inappropriate voltage may cause harm to the battery (if any) or even worse burn the equipment.*

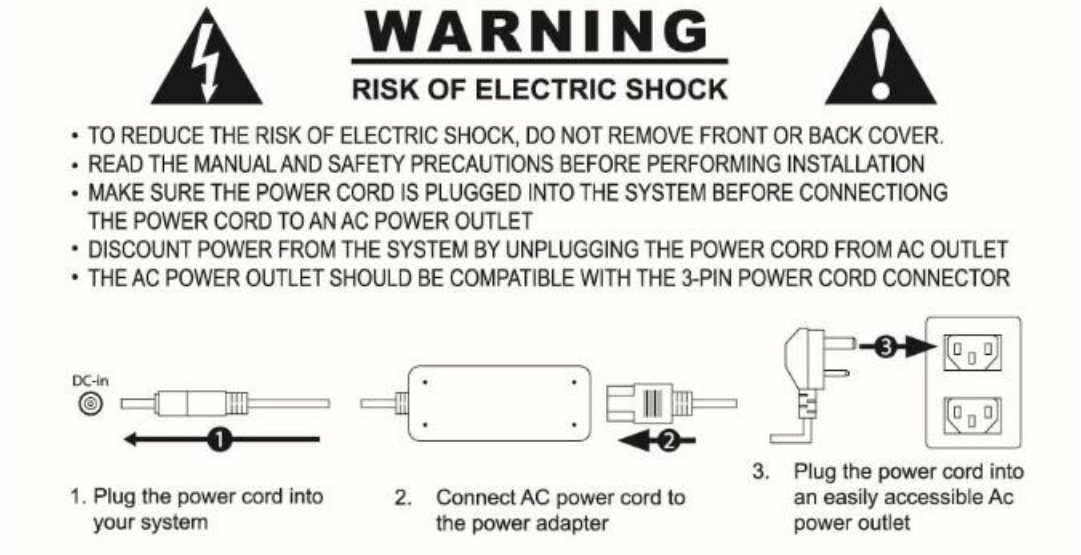


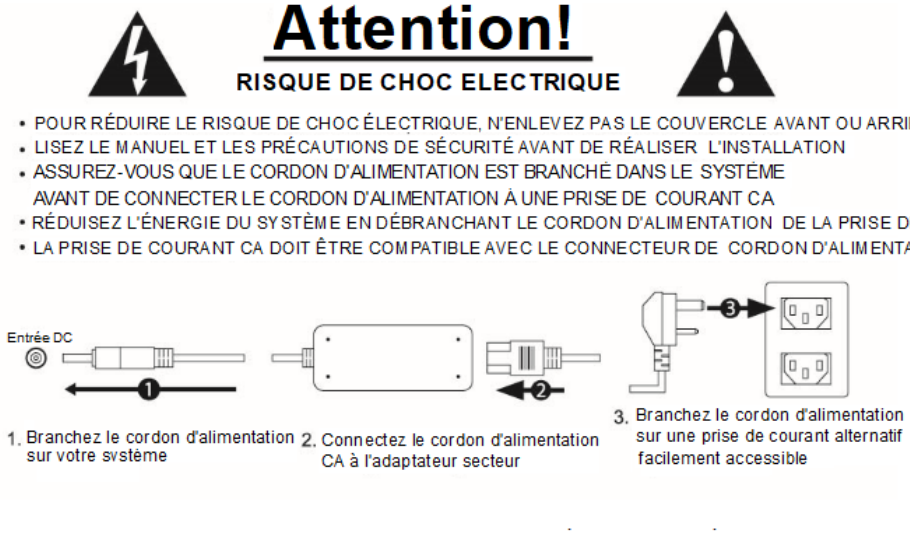
Précaution! *Do not attempt to disassemble the battery pack. There is danger of excessive temperatures, fire or explosion if the battery is incorrectly replaced. Please contact with MANUFACTURER to replace battery packs.*

Précaution! *Do not use the power adapter that isn't made for the equipment, supplying the equipment with inappropriate voltage may cause harm to the battery (if any) or even worse burn the equipment.*



Caution! *Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."*
Attention! *Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions*

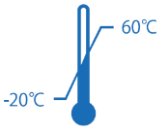
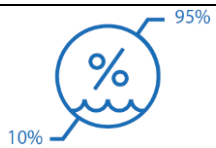
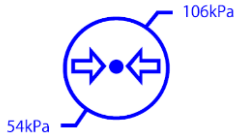




17. The product is not used in Category AP or Category APG in an anesthetic gas environment.

Explanation of Graphical Symbols

	Warning: dangerous voltage
	Caution
	Note
	ISO 7000-1641: Follow operating instructions or Consult instructions for use.
	Direct current.
	Equipotential
	Stand-by
	US Conformance
	Follow the national requirements for disposal of equipment.
	Stacking layer limit
	This side up
	Fragile Packaging

	Beware of water damage, moisture-proof
	Carton recyclable
	Handle with care
	Storage &Transportation Temperature: -20°C ~ 60°C
	Storage &Transportation Humidity: 10% ~ 95%
	Atmospheric Pressure: 54~106kPa

Disposing of your old product

Within the European Union

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household



waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself. The mark on electrical and electronic products only applies to the

current European Union Member States.

Federal Communication Commission Interference Statement

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

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

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

Notice:

(1) A Unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord by used.

(2) Use only shielded cables to connect I/O devices to this equipment.

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

FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Shielded interface cables must be used in order to comply with emission limits.

Additional Information and Assistance

Contact your distributor, sales representative for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages
- This equipment is a source of electromagnetic waves. Before use please, make sure that there are not EMI sensitive devices in its surrounding which may malfunction therefore.

Environmental protection

- Follow national requirements to dispose of unit.

Manufacturer

Avalue Technology Inc.
7F, No.79, Lide St., Zhonghe District, New Taipei City, 235, Taiwan
TEL: +886-2-8226-2345
FAX: +886-2-8226-2777
Web: www.avalue.com
Information: sales@avalue.com

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1. HID-2146 Multi Touch Medical Panel PC

Features

In this chapter, you will get to know all features of our HID-2146 Multi Touch Medical Panel PC.

1.1 Packing List

- 1 x HID-2146 Medical Panel PC
- 1 x Medical Power Adapter
- 1 x Power Cord (Optional)
- 1 x RJ45 to COM Cable

Power cords:

● Utilize a UL-listed detachable power cord, 3-wire, type SJ or equivalent, 18 AWG min., rated 250 Vmin., provided with a hospital-grade type plug 5-15P configuration for 120V application, or 6-15P for 240V application.

● Do not overload wall outlets and extension cords as this may result in fire or electric shock.

● Mains lead protection (U.S.: Power cord): Power cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs and receptacles.

● The power supply cord should be replaced by the designated operator only at all time.

●Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.

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1.2 Specifications

Component	
SBC	HID-2146-B1 Mother Board
Daughter Board	1. IET isolation (5KV) board with 2 USB, 1 COM, 1 LAN
Processor	Intel® Arrow Lake Processors (15W)
CPU Cooler (Type)	Passive
System Memory	Two 262-pin DDR5 up to 5600MHz SO-DIMM socket, supports up to 96GB Max (depending on selected memory module, supported by Raw card version: B/G only)
System Fan	Fanless
I/O Chipset	EC-ITE: IT5782VG
Watchdog Timer	H/W reset, 1sec. – 65535sec./min.1sec. or 1min. step
H/W Status Monitor	CPU & system temperature monitoring and Voltages monitoring
TPM	Onboard NuvoTon NPCT750AADYX support SPI TPM 2.0
Microphone	Internal MIC (Optional)
Speaker	2W x 2 (default) 5W x 4 (optional soundbar)
Camera	Optional camera kit
Wireless LAN	Optional WIFI 7 INTEL BE200.NGWG.NV 802.11abgn+acR2+axR2+be MIMO 2x2 (320 MHz) – Supports Wi-Fi 7 protocol including the new 6-7Ghz band frequency Bluetooth® 5.4 (pending SIG spec maturity)
Bluetooth	Optional Wi-Fi + Bluetooth 5.0 USB Module
Operating System	Win 11/ Linux
Expansion Card	1 x M.2 Key E 2230 support Wi-Fi module (1 x PCIe x1 & USB 2.0 Signal) 1 x M.2 Key B 2280 slot for AI card (PCIe x 2) 2 x M.2 Key M 2280 (PCIe x4) slot for storage NVMe SSD
PCIe	PCI Express [x4]
Battery	Optional backup Li-ion Smart battery 49Wh
Storage	
Other Storage Device	2 x M.2 Key M 2280 (PCIe x4) slot for storage NVMe SSD
Panel	
LCD Panel	21.5" 250 nits FHD LCD
LCD Control Board	LED driving board for DB-LDA001-4-060
Touch Screen	21.5" 10 points PCAP
Touch Controller	EETI EXC81H84

Rear I/O	
Serial Port	1 x RJ45 (8P8C) Type COM1 (RS-232/422/485, selectable by BIOS & JUPMER, RS-485 supports Auto Flow)
USB Port	1 × USB Type-C (Rear I/O) USB 3.1 Gen 2, DisplayPort Alt Mode, and PD output (5V/3A, 15W); PD input not supported2 x USB3.2 on rear I/O 4 x USB2.0 on rear I/O
Video Port	1 x HDMI2.0
LAN Port	2 x Intel® I226LM 2.5 Gigabit Ethernet
Audio Port	Line-out & Mic-in (audio combo jack) via audio board
LAN Port	1 x Intel® I226LM 2.5 Gigabit Ethernet
Wireless LAN Antenna	2 x PCB Antenna
Switch	Side button 5 keys: Power/Brightness up/ Brightness down/ Volume up/ Volume down
Indicator Light	HDD LED (Yellow), Power LED (Green)
Expansion Slots	1 x PCI Express [x4] expansion
DC in Connector	Screw Type DC Jack
Onboard I/O	
COM	COM 1: Support RS232/422/485 selected by BIOS
USB 3.0	pitch 2.54mm connector for 3 USB 2.0
Buzzer	Onboard BUZZER 5V 85dB SMD
Front Panel	JFPT1
RTC Battery	1 x 2 Pin Pitch 1.25mm vertical type battery connector
Battery/Charger	EXT BAT INFO, JBAT_AUX1，2X4pin connector
AT/ATX Selector	1 x 3 pin, pitch 2.54mm pin header for AT/ATX jumper (JAT1)
Clear CMOS	1 x 3 pin, pitch 2.00mm pin header for CMOS clear (JCMOS1)
LVDS/eDP	1 x 20 x 2 pin, pitch 1.25mm wafer connector for LVDS (JLVDS1) 1 x 10 x 2 pin, pitch 1.25mm wafer connector for eDP (JeDP1)
LCD Backlight Brightness	1 x 1 x 3 pin, pitch 2.00mm connector LCD backlight brightness adjustment (PWM/DC)
LCD Backlight	1 x 1 x 5 pin, pitch 2.00mm wafer connector for LVDS backlight (JBL1) 1 x 1 x 5 pin, pitch 2.00mm wafer connector for eDP backlight (JBL2)
BIOS SPI	1 x 2 x 4 pin, pitch 2.00mm connector for BIOS SPI
eSPI	1 x 2 x 6 pin, pitch 2.0mm connector for eSPI debug
EC Debug	1 x 2 x 5 pin, pitch 2.00mm connector for EC SPI
Audio	1 x 2 x 5 pin, pitch 2.00mm connector for front Audio
DC-Input	Lockable DC Jack
Amp Connector	2 x 2 pin, pitch 2.00mm wafer connector for 2W x 2 Speaker 5W x 4 Speaker by optional soundbar

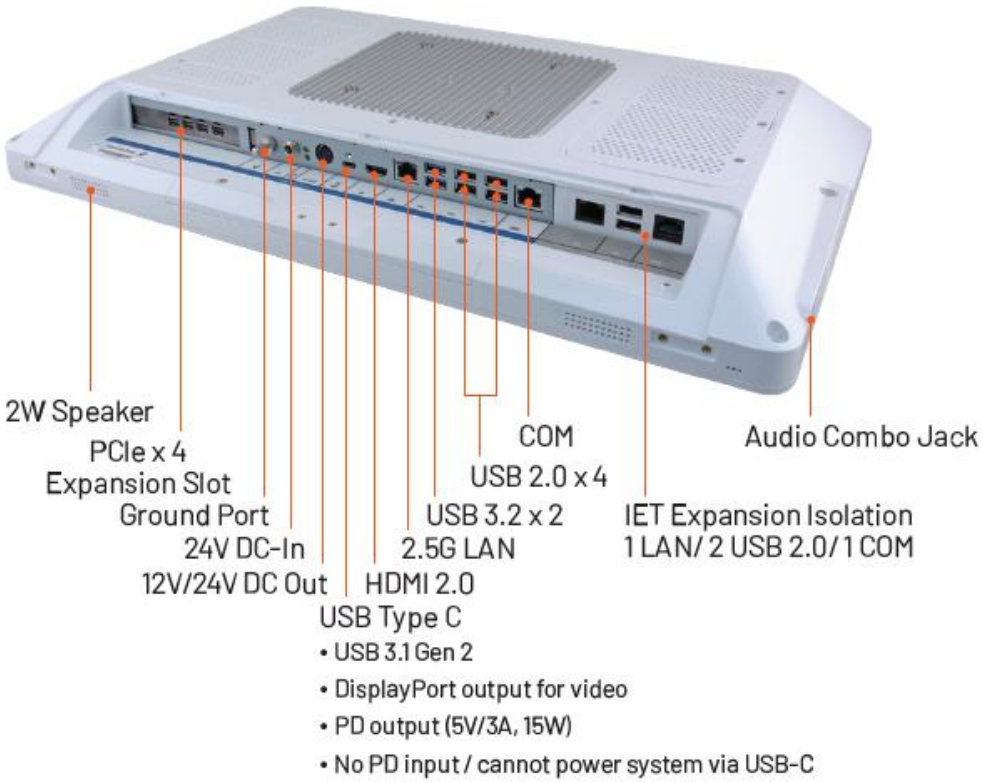
Power Requirement	
DC Input Voltage	24V
DC Output Voltage	12V/24V from Power DIN 4P connector Max output 48W (12V/4A or 24V/2A) DC out 24V follow DC in -Thermal printers 24V -PTZ cameras, which typically require 12V/24 ~ 40W
Power Mode	AT/ATX (Default ATX)
Power Button	Side touch button
Wake on Mode	Wake on LAN (specify condition, ex. S3/S4/S5/G3) No Wake on Ring
Power Connector Type	Lockable DC Jack (by Cable, not on MB)
Power Adapter	EDAC EM11801K 24V/7.5A/180W adapter
Mechanical	
Dimension	510 x 321 x 55mm
Weight	5.4 kg 6.4 kg (with camera & sound bar)
Construction- Front	Plastic
Construction- Rear	Plastic
Thermal Solution	Fanless
Reliability	
Dust and Rain Test	IP65 Front, IP54 Back
Vibration Test	Random Vibration Operation Reference IEC60068-2-64 Testing procedures Test Fh : Vibration boardband random Test 1 Test PSD : 0.00454G²/Hz , 1.5 Grms 2 Test frequency : 5~500 Hz 3 Test axis : X,Y and Z axis 4 Test time : 30 minutes each axis 5 System condition : operation mode 6 Test curve Sine Vibration Test Reference IEC60068-2-6 Testing procedures Test Fc : Vibration sinusoidal 1 Test Acceleration : 2G 2 Test frequency : 5~500 Hz 3 Sweep：1 Oct/ per one minute. (logarithmic) 4 Test axis : X,Y and Z axis 5 Test time :30 min. each axis

	6 System condition : Non-Operating mode 7 Test curve Package Vibration Test: Reference IEC60068-2-64 Testing procedures Test Fh : Vibration boardband random Test 1 Test PSD : 0.026G²/Hz , 2.16 Grms 2 Test frequency : 5~500 Hz 3 Test axis : X,Y and Z axis 4 Test time : 30 minutes each axis 5 Test curve
Mechanical Shock Test	With CF/SSD: 10Grms, IEC 60068-2-27, Half Sine, 11ms
Drop Test	Package drop test Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed Test Ea : Drop Test 1 Test phase : One corner, three edges, six faces 2 Test high : 3 Package weight : 4 Test drawing
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Storage Temperature	-20°C ~ 60°C (14°F ~ 140°F)



Note: Specifications are subject to change without notice.

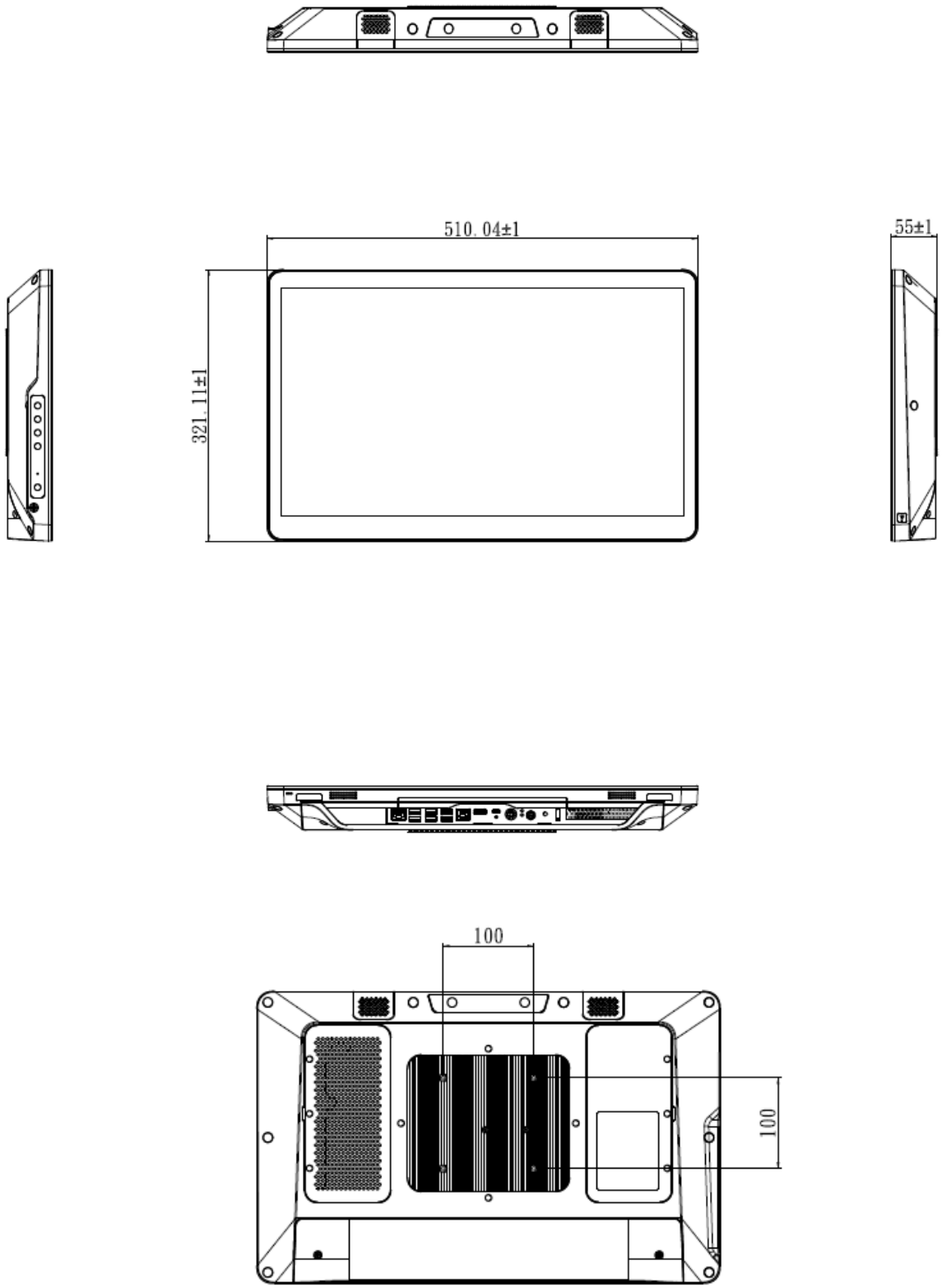
1.3 Rear & Bottom view



I/O port functions description:
Ground Port: for connect hospital ground/earth
2W Speaker: for audio output
PCIe x4 Expansion Slot: for PCIe x4 expansion card
24V DC-IN: for Power adapter DC jack
12V/24V DC Out: for 12V/24V DC power output
USB Type C: USB Type C connector
USB: 2 x USB 3.2, 4 x USB 2.0
2.5G LAN: for 2.5 Gigabit Ethernet network connection
COM: for Mouse/Ethernet..etc serial port device
HDMI 2.0: for digital video and audio output
IET Expansion Isolation: isolated expansion interface providing 1 x LAN, 2 x USB 2.0, and 1 x COM
Audio Combo Jack: for headphone/audio output and microphone input

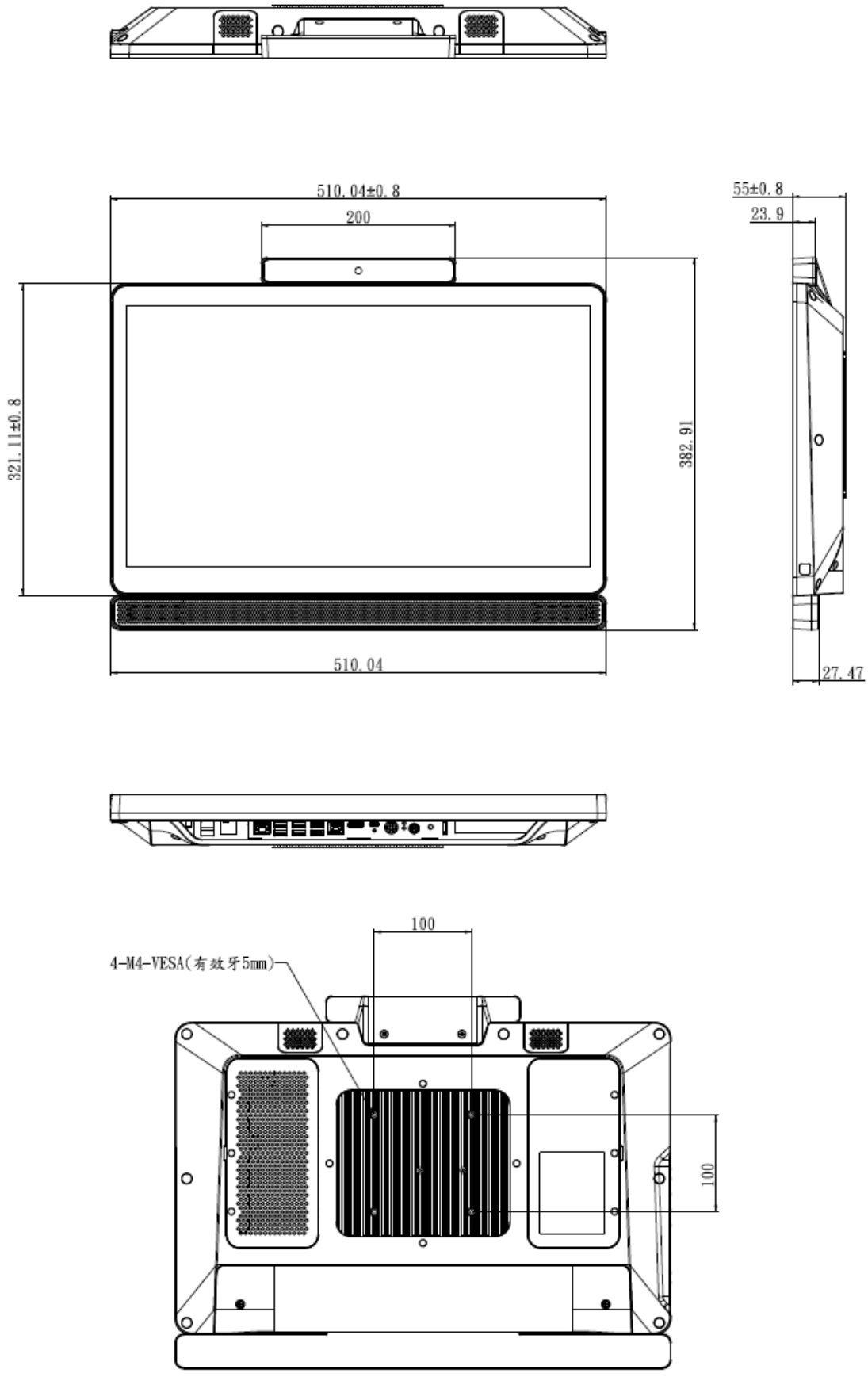
Note! *Equipotential terminal needs to be linked to the hospital ground/earth system before booting the system to protect both operator and system.*

1.4 System Dimensions



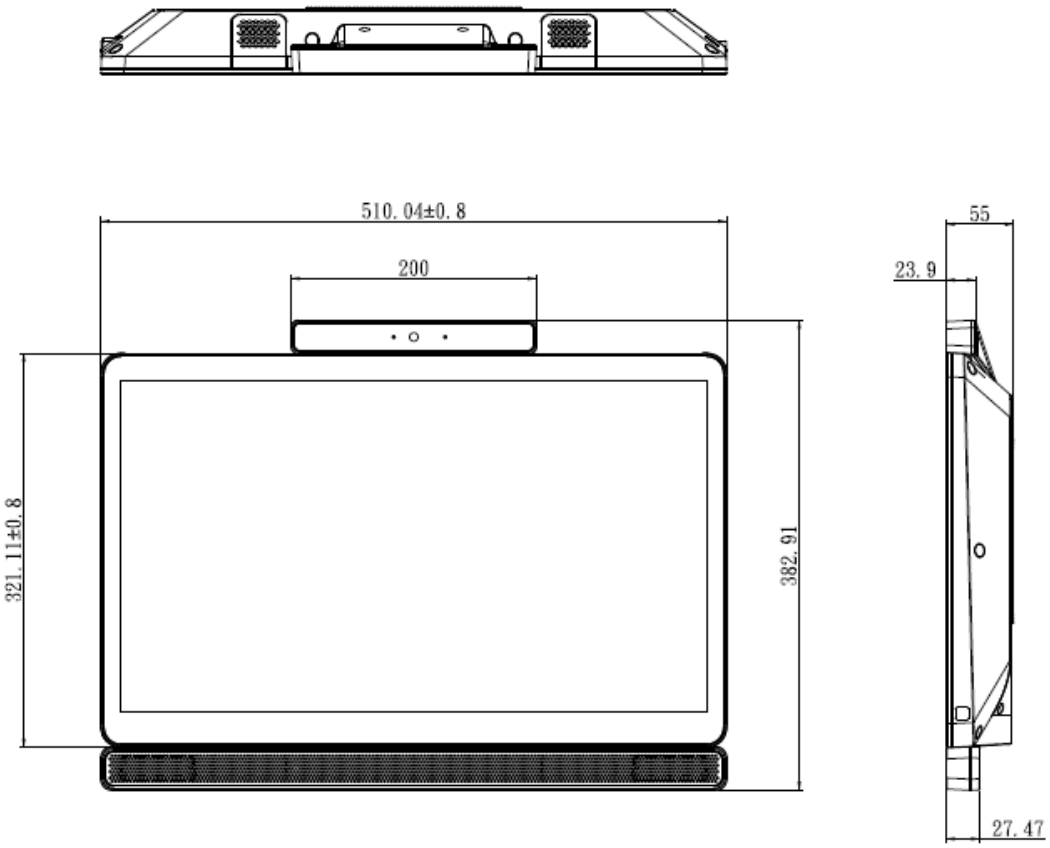
(Unit: mm)

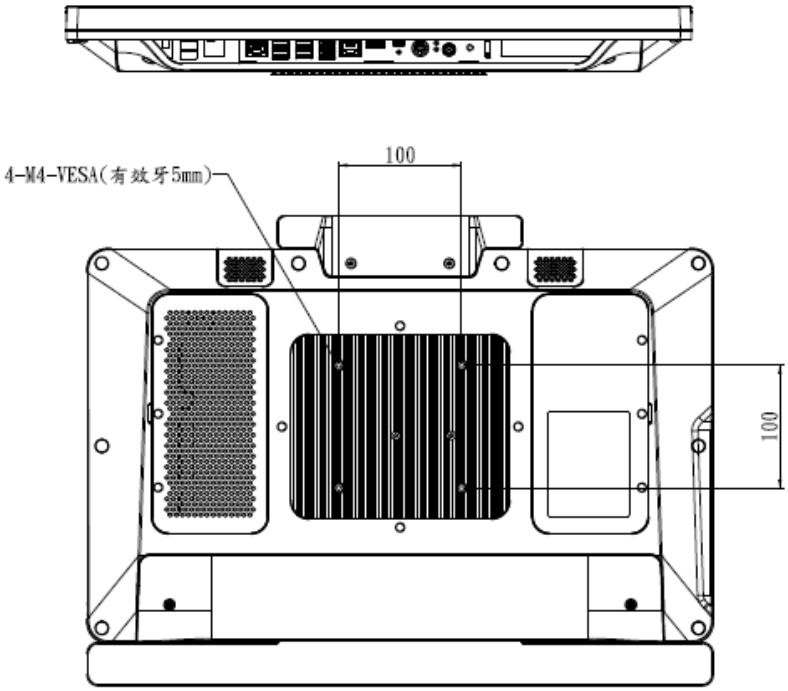
HID-2146 Camera Soundbar



(Unit: mm)

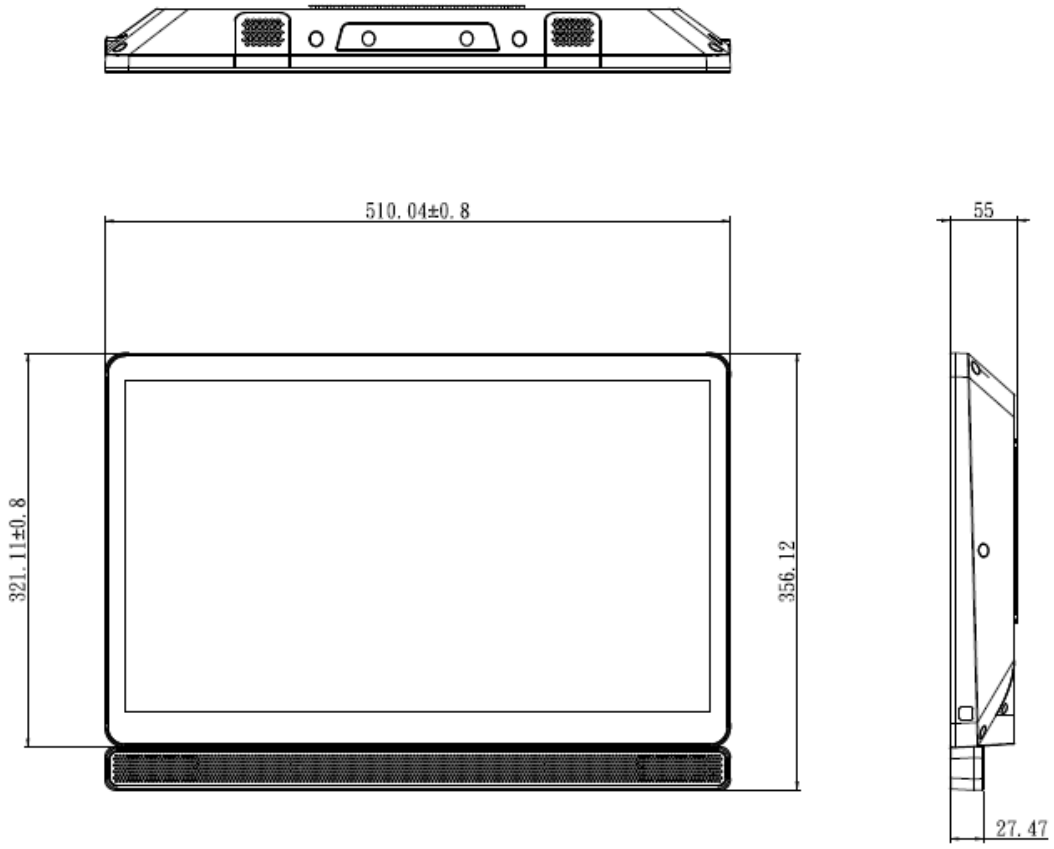
HID-2146 Camera MIC Soundbar

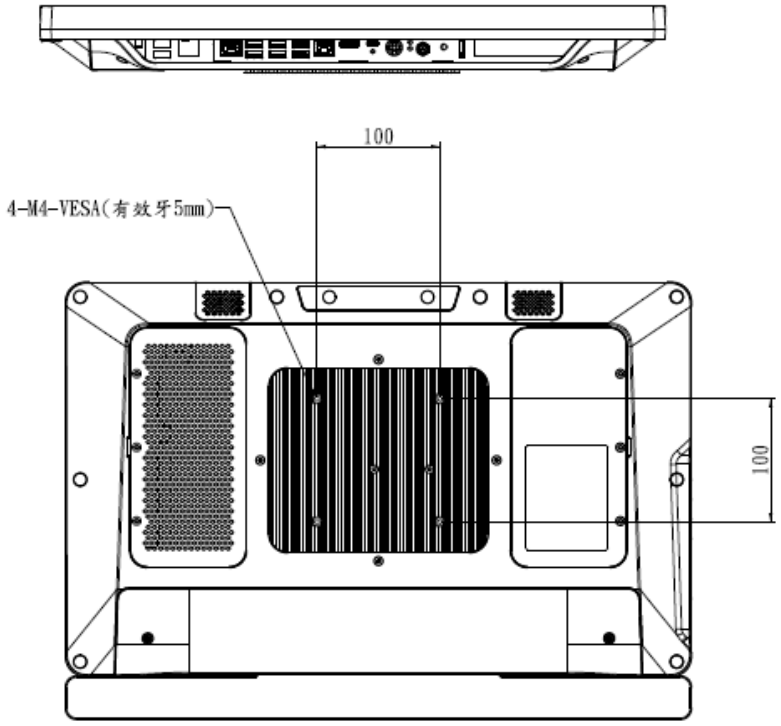




(Unit: mm)

HID-2146 Soundbar





(Unit: mm)

2. Setting Up HID-2146 Multi Touch Panel PCs

This chapter gives instructions on how to set up HID-2146 Multi Touch Panel PC and how to connect different cables.

2.1 VESA Mounting
2.2 Cleaning and Disinfecting

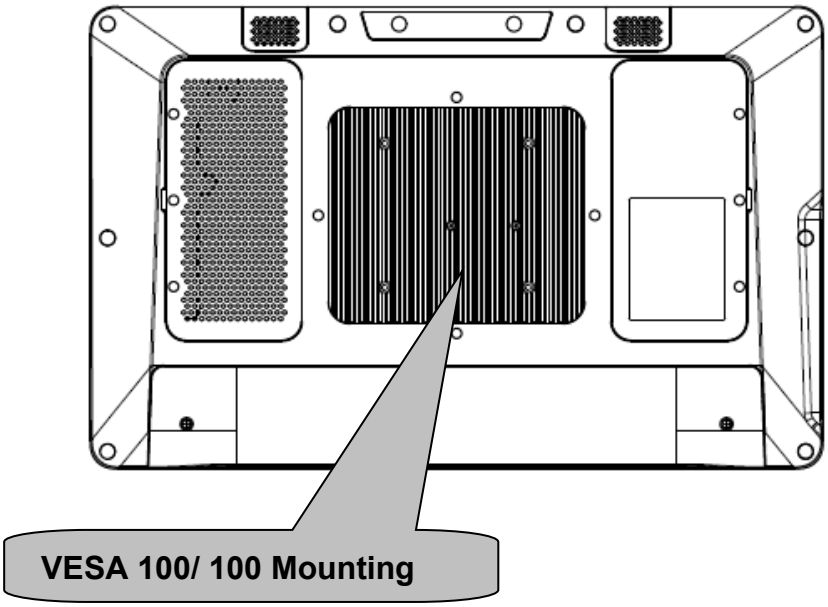
2.1 VESA Mounting

The HID-2146 also provides standard VESA mounting to help system integrators conveniently integrate the panel PC into their system.
Never use mounting brackets except as provided by Avalue to prevent unreliable mounting of the HID-2146. VESA mount installation should be carried out by a professional technician; please contact a service technician or your retailer if you need this service.
Installation instructions follow:

1. First attach the wall-mounting to the heat-sink of the HID-2146, securing it in place with four of the M4 x 6mm screws provided.
2. Mount the on the wall, stand or other flat surface.

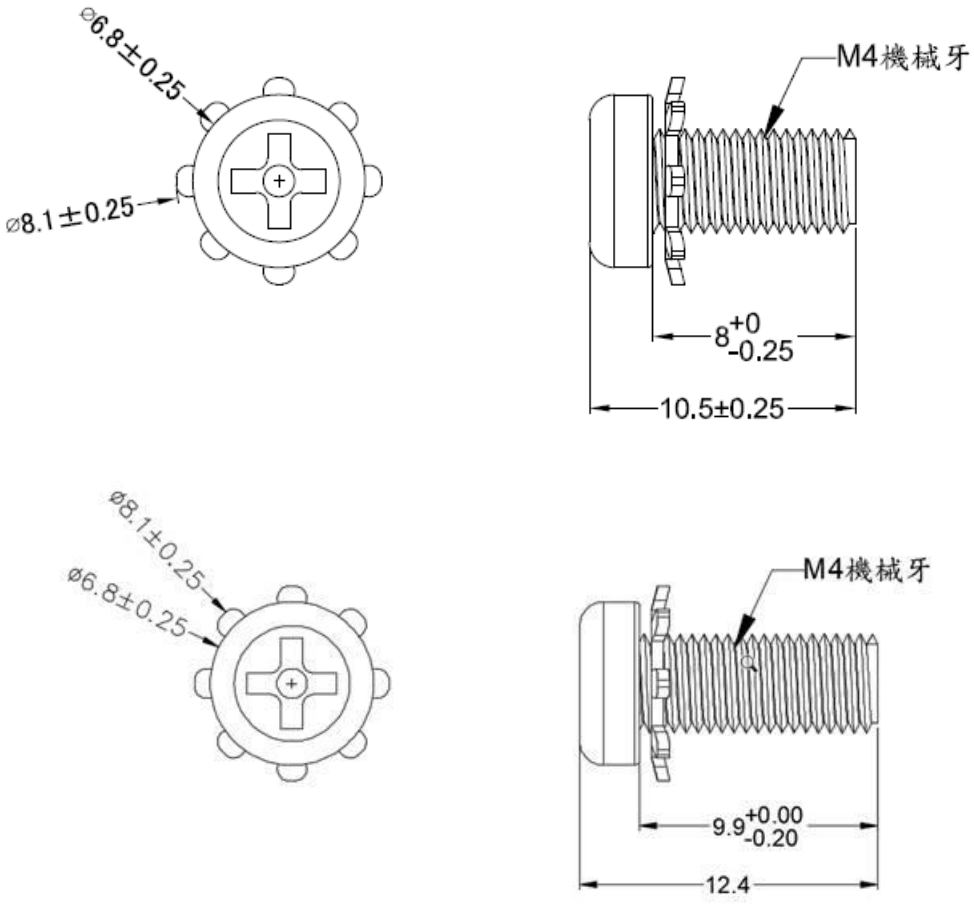
Warning! *Be sure to secure the screws of the mounting bracket tightly. A loose joint between the HID-2146 and mounting bracket may create danger of injury.*

Attention! *Assurez-vous de bien serrer les vis du support de montage. Un joint lâche entre le HID-2146 et le support de montage peut créer un risque de blessure.*



Suggested Screw type for mounting

Note: 4 pieces of M4 x 8mm~10mm screws



Warning! Use suitable mounting apparatus to avoid risk of injury.

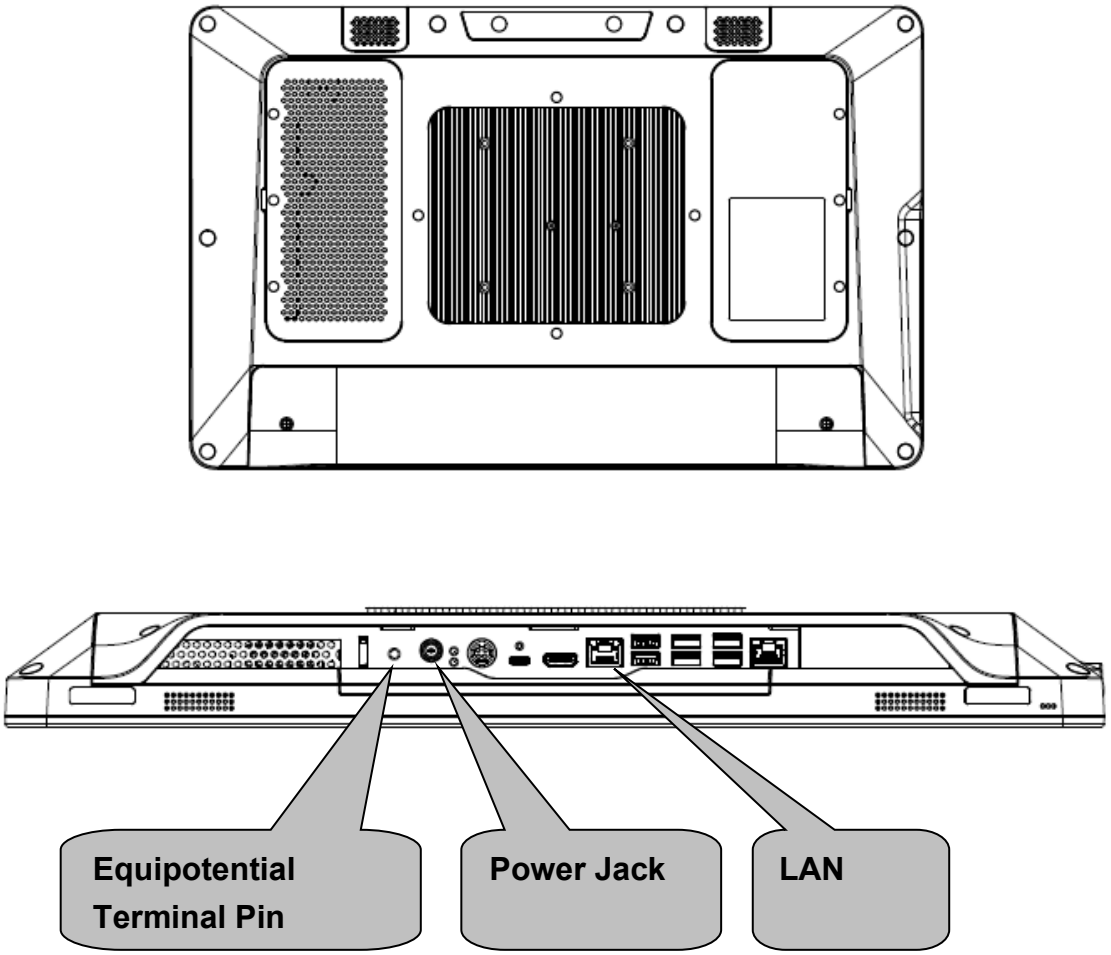


Attention! Utilisez un appareil de montage approprié pour éviter tout risque de blessure.



2.2 Cabling

1. Power Cable
2. Equipotential Terminal Pin



Follow below step Connecting the Ground pin

1. With system ready, find the equipotential terminal on the rear side of the HID-2146. An equipotential terminal is provided to optionally connect to a hospital ground/earth system.
2. Prepare grounding cable and the other terminal links to the hospital ground/ earth system.
3. Grounding cable plug with Equipotential Terminal

Please use shielded LAN cables for compliance with the EN55032 and IEC61000-4-6 standards.

Please follow below steps to connect power cable to system.

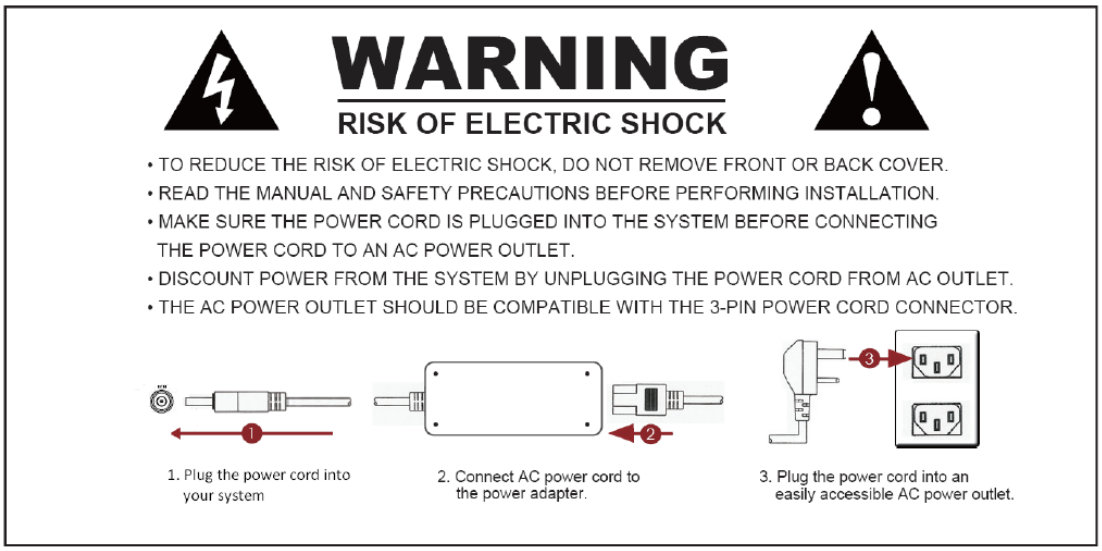
The HID-2146 could only be powered by a DC power adapter (EDAC Model

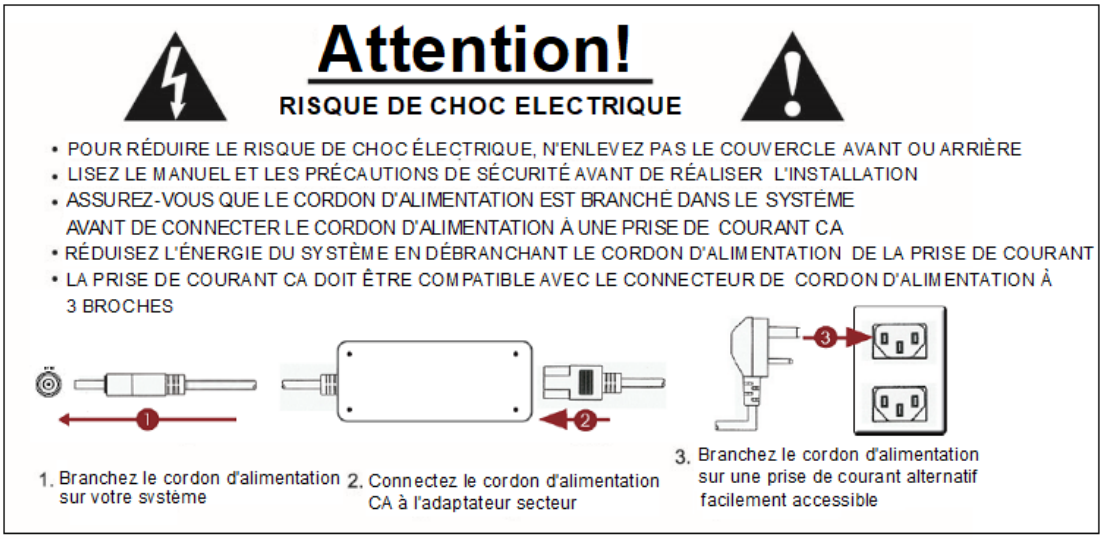
no. EM11011M(18)). Be sure to always handle the power cords by holding the plug ends only.

Follow these procedures in order:

1. Connect the female end of the power adapter to the DC jack of the panel PC.
2. Connect the female end of the power cord to the DC power adapter.
3. Connect the 3-pin male plug of the power cord to an electrical outlet.

External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL standards (e.g. UL 60950-1 for IT equipment and ANSI/AAMI ES60601-1/ IEC 60601-1 series for medical electrical equipment





2.3 Cleaning and Disinfecting

During normal use of HID-2146, the device may become dirty and should be regularly cleaned.

Cleaning Instructions

1. Turn off the computer before starting clean up. This way, you can see any dirt on the screen; the brightness of the monitor may make you miss some areas.
2. Wet a soft, lint-free or microfiber cloth with cleaning agent per manufacturer's instructions or hospital protocol. Wipe the medical PC in a gentle motion to remove dust, oil, or fingerprint smudges.
3. Wipe any moisture excess with a dry lint-free cloth to finish cleaning before turning the computer back on.

Cleaning Tools

Below is a list of some items that may be needed or used when cleaning the medical PC or medical PC peripherals.

Please keep in mind that some components in medical PC components may only be cleaned using a product designed for cleaning that component.

Cleaning agent list: chemical disinfectants which have been tested on the medical PC

No.	Cleaning agent
1	Acetic Acid
2	Acetone
3	Alcohol
4	Alcohol 70%
5	Ammonia
6	Artificial Perspiration (JIS K6772)
7	Boil Water
8	Caustic Soda
9	Cidex
10	Cold Cream Applied
11	Detergent (Kao Mypet) Applied
12	Ethanol
13	Gasoline
14	Glycerine
15	Green tinctured soap
16	Hydrochloric Acid
17	Incidin liquid
18	Incidin plus

19	Isopropyl alcohol
20	Kerosene
21	Lanoline Applied
22	Methanol
23	Mikrozid liquid
24	Nitric Acid
25	Paraffin Oil
26	Propanol
27	Solution of salt
28	Sulfuric Acid
29	Toluene
30	Vaseline Applied
31	Virkon and water (1:100)
32	Windex

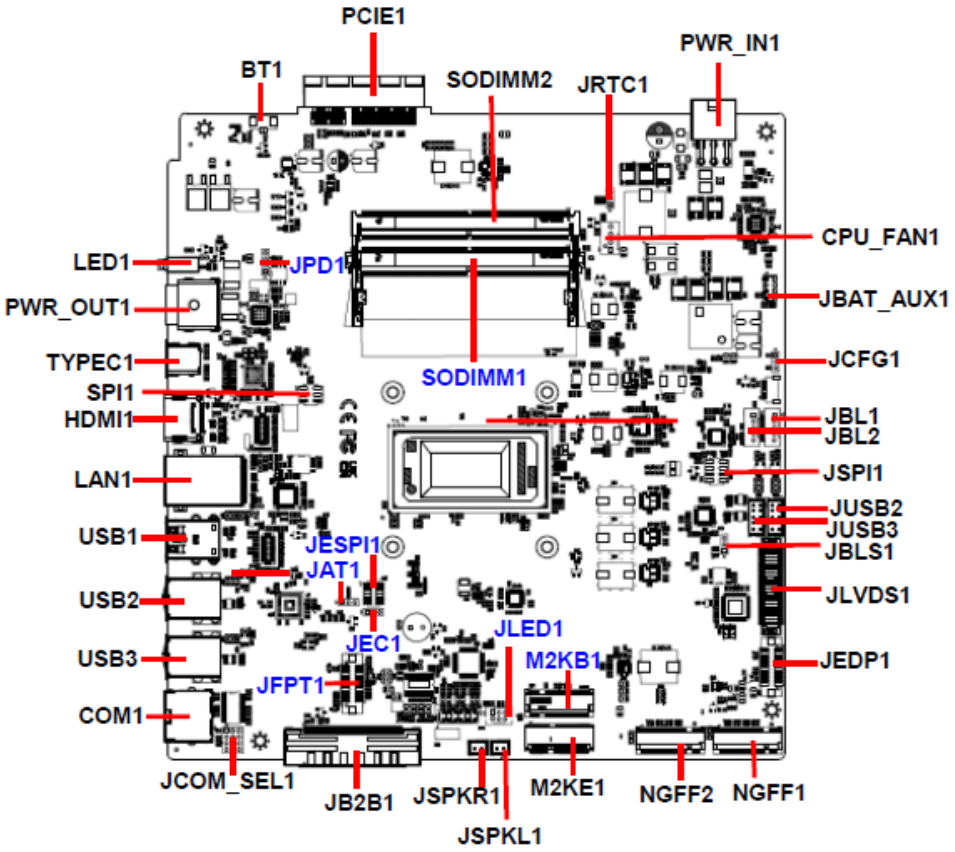
Caution!



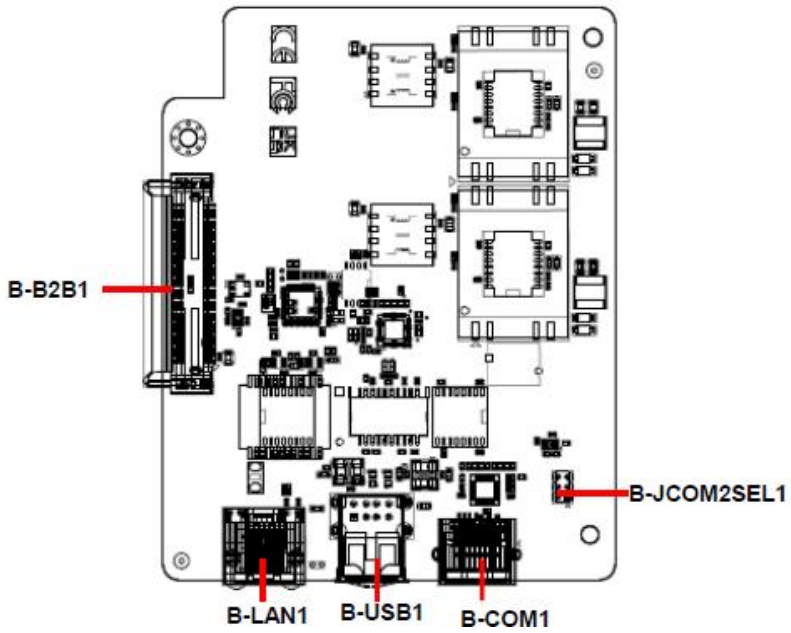
- *Do not immerse or rinse the HID-2146 or its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your Biomed Department regarding the continued safety of the unit before placing it back in operation.*
- *Do not spray cleaning agent on the chassis.*
- *Do not use disinfectants that contain phenol. Do not autoclave or clean the HID-2146 or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.*

3. Hardware Configuration

3.1 HID-2146-B1 MB Overviews



3.2 HID-2146-B1 DB-A Overviews



3.3 HID-2146-B1 MB Jumper and Connector list

Jumpers

Label	Function	Note
JRTC1	Clear CMOS	3 x 1 header, pitch 2.00 mm
JBLS1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.00 mm
JAT1	AT/ATX auto power on select	3 x 1 header, pitch 2.00 mm
JCFG1	CFG select	3 x 1 header, pitch 2.00 mm
JCOM_SEL1	Serial port 1 – RS232/422/485 mode select	4 x 3 header, pitch 2.00 mm

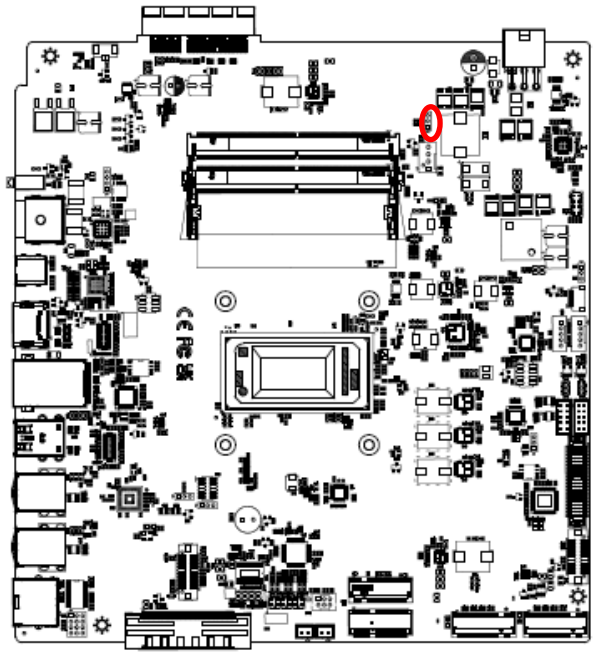
Connectors

Label	Function	Note
SODIMM1/2	2 x 262-Pin DDR5 4800MHz SO-DIMM	
COM1	Serial port 1 connector	
JSPKR1	Speaker_R	2 x 1 wafer, pitch 2.00 mm
JSPKL1	Speaker_L	2 x 1 wafer, pitch 2.00 mm
PCIE1	PCIe slot	
JLVDS1	LVDS/eDP connector	20 x 2 wafer, pitch 1.25 mm Matching Connector: Hirose DF13-40DS-1.25C
TYPEC1	USB Type C connector	
USB1	2 x USB3.2 connector	
USB2/3	4 x USB2.0 connector	
JUSB2	On-board header for USB2.0	5 x 1 wafer, pitch 2.00 mm
JUSB3	On-board header for USB2.0	5 x 1 wafer, pitch 2.00 mm
CPU_FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54mm
LED1	HDD/Power LED indicator	
LAN1	RJ-45 Ethernet	
BT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
JBAT_AUX1	External Battery connector	
M2KB1	M.2 Key B slot	
M2KE1	M.2 Key E slot	
NGFF1/2	M.2 Key M slot 1/2	
JB2B1	B2B connector	40 x 2 wafer, pitch 0.80 mm

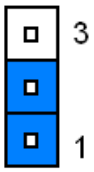
PWR_IN1	DC power-in connector	3 x 2 wafer, pitch 4.20 mm
JESPI1	ESPI connector	6 x 2 header, pitch 1.27 mm
JEC1	EC Debug connector	3 x 1 header, pitch 2.00 mm
JPD1	PD JTAG connector	4 x 1 header, pitch 2.00 mm
JBL1/2	LCD Inverter backlight connector 1/2	5 x 1 wafer, pitch 2.00 mm
JSPI1	SPI connector	4 x 2 header, pitch 2.00 mm
SPI1	Internal Flash connector	3 x 2 header, pitch 2.00 mm
JEDP1	eDP connector	10 x 2 wafer, pitch 1.25 mm
HDMI1	HDMI connector	
PWR_OUT1	12V/24V DC power-out connector	
JLED1	External LED connector	3 x 2 wafer, pitch 2.00 mm
JFPT1	Front Panel connector	10 x 2 wafer, pitch 1.25 mm

3.4 HID-2146-B1 MB Jumpers & Connectors settings

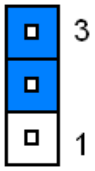
3.4.1 Clear CMOS (JRTC1)



Protect*

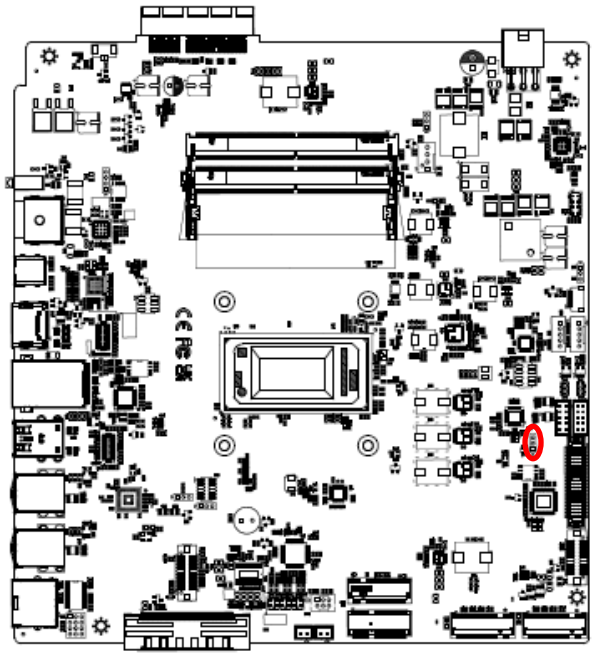


Clear CMOS

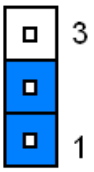


*Default

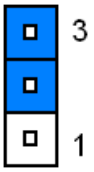
3.4.2 LCD backlight brightness adjustment (JBLS1)



PWM Mode*

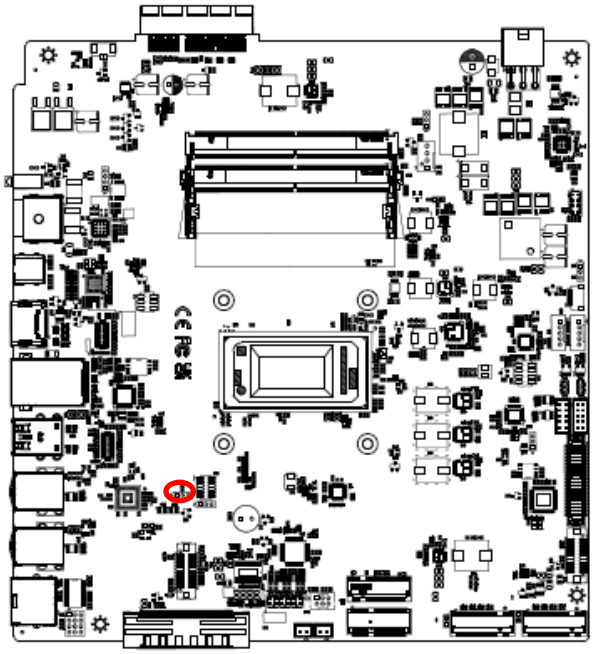


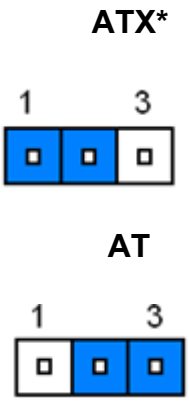
DC Mode



* Default

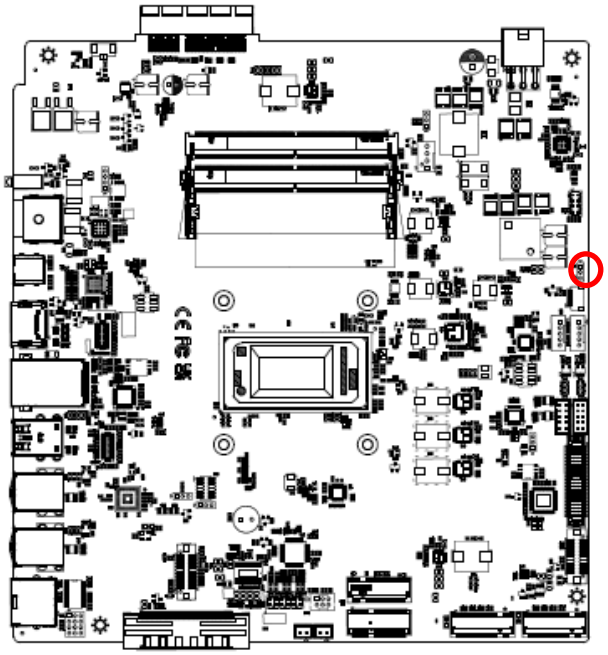
3.4.3 AT/ATX auto power on select (JAT1)

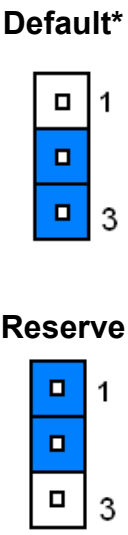




*** Default**

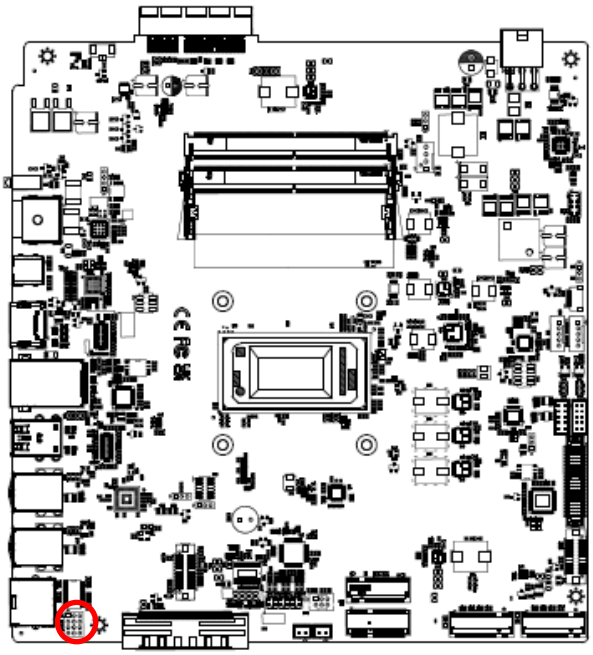
3.4.4 CFG select (JCFG1)



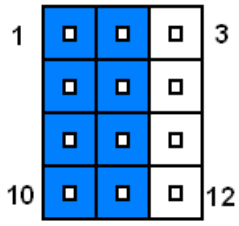


*** Default**

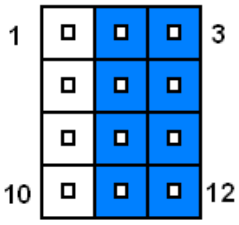
3.4.5 Serial port 1 – RS232/422/485 mode select (JCOM_SEL1)



RS-232*

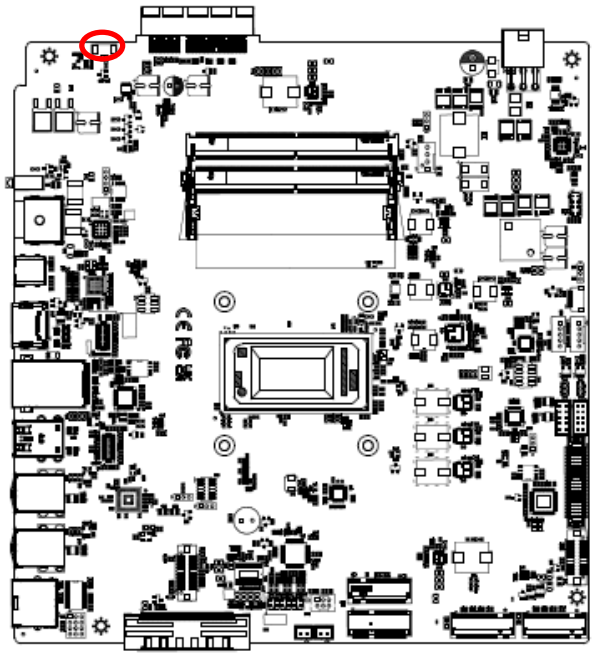


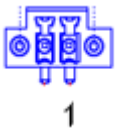
RS422/485



*** Default**

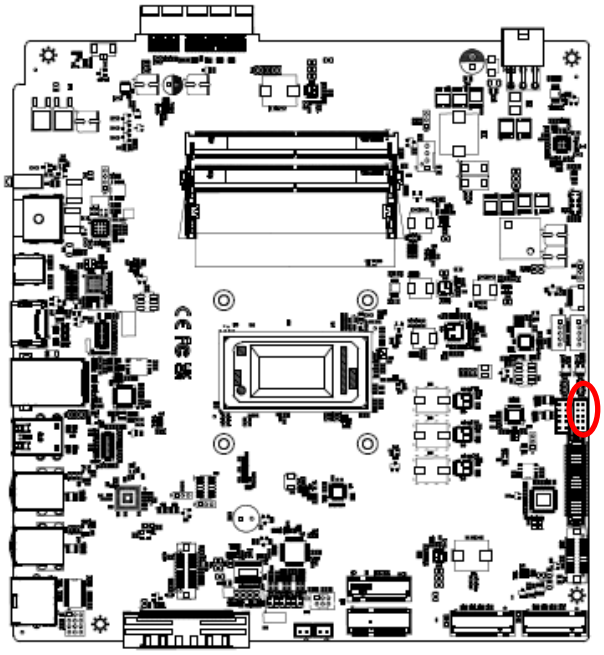
3.4.6 Battery connector (BT1)

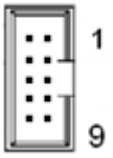




Signal	PIN
+V3.3V_RTC	1
GND	2

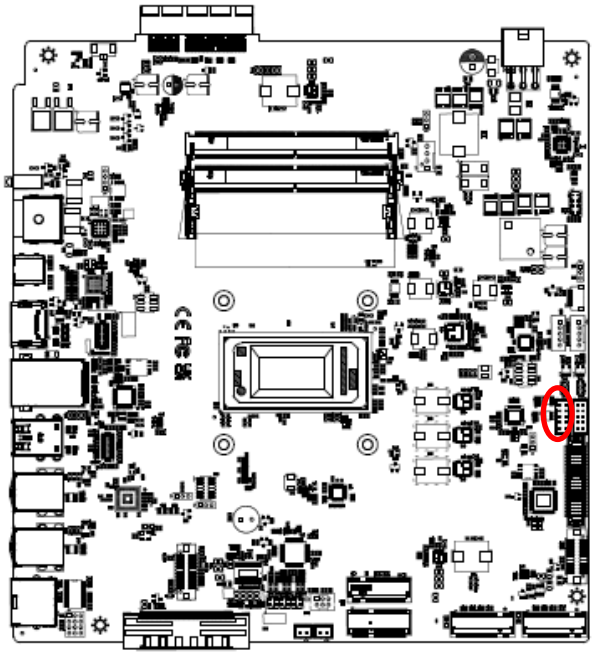
3.4.7 On-board header for USB2.0 (JUSB2)

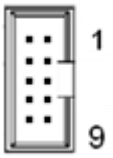




Signal	PIN	PIN	Signal
+5VSB	1	2	+5VSB
HUB1_R_USB4_N	3	4	HUB1_R_USB3_N
HUB1_R_USB4_P	5	6	HUB1_R_USB3_P
GND	7	8	GND
GND	9	10	GND

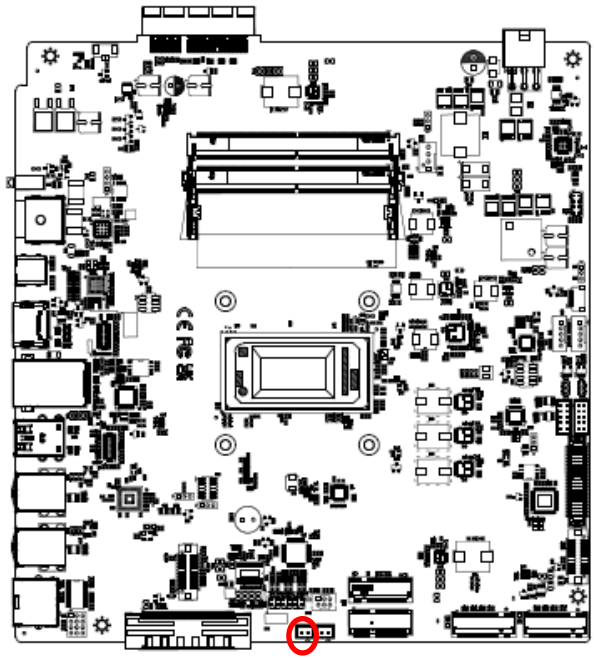
3.4.8 On-board header for USB2.0 (JUSB3)

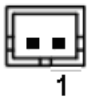




Signal	PIN	PIN	Signal
+5VSB	1	2	+5VSB
HUB1_R_USB2_N	3	4	HUB1_R_USB1_N
HUB1_R_USB2_P	5	6	HUB1_R_USB1_P
GND	7	8	GND
GND	9	10	GND

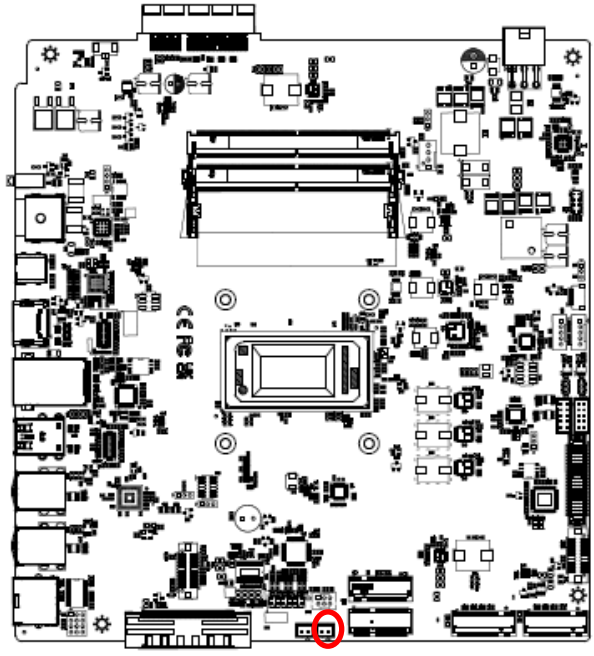
3.4.9 Speaker_R (JSPKR1)

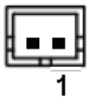




Signal	PIN
SPK_R+	1
SPK_R-	2

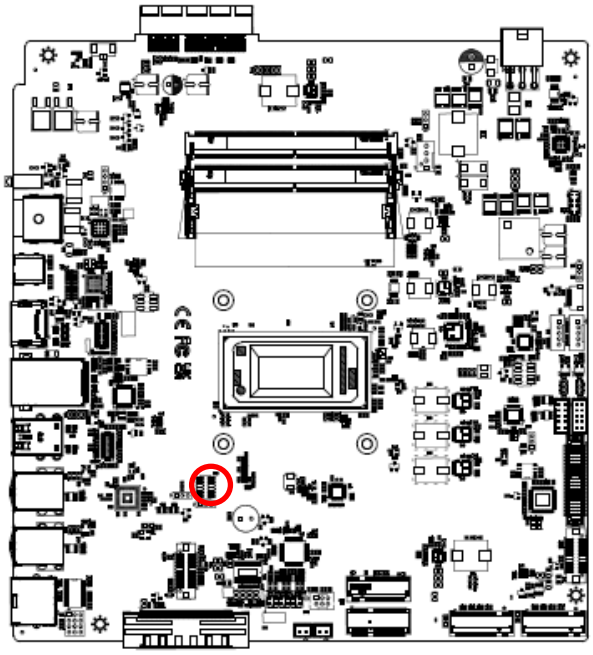
3.4.10 Speaker_L (JSPKL1)

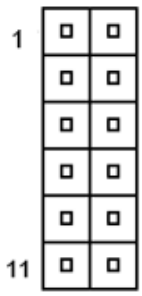




Signal	PIN
SPK_L+	2
SPK_L-	1

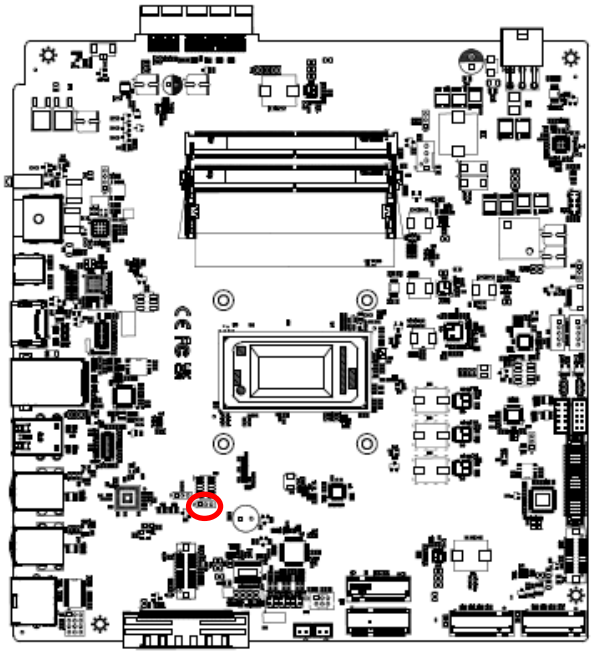
3.4.11 ESPI connector (JESPI1)

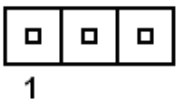




Signal	PIN	PIN	Signal
ESPI_IO0_80P	1	2	+3.3VSB
ESPI_IO1_80P	3	4	RST_SOCKET#
ESPI_IO2_80P	5	6	ESPI_CS#
ESPI_IO3_80P	7	8	CN_CLK_80P
ESPI_CS1#	9	10	GND
ESPI_RST#	11	12	ESPI_ALERT1#

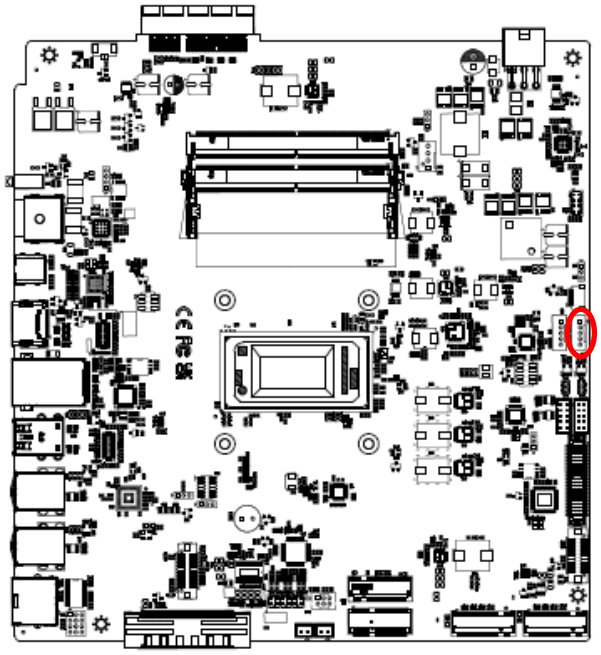
3.4.12 EC Debug connector (JEC1)





Signal	PIN
EC_SMDAT_DEBUG	1
EC_SMCLK_DEBUG	2
GND	3

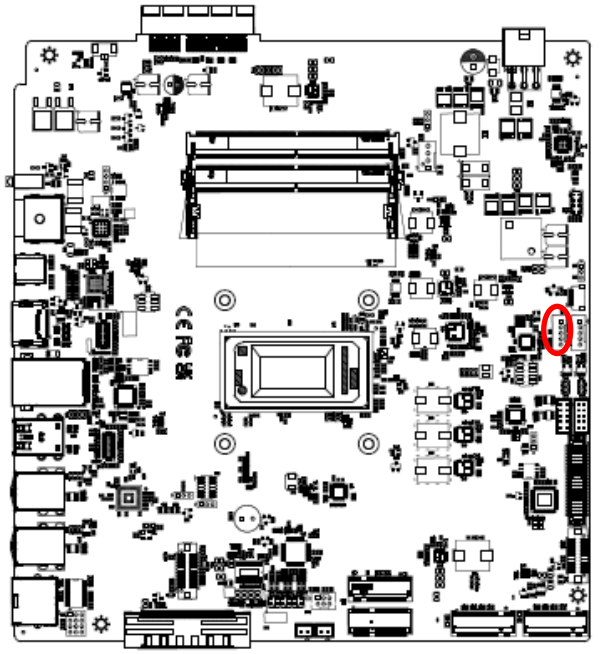
3.4.13 LCD Inverter backlight connector 1 (JBL1)





Signal	PIN
+12V	1
GND	2
LVDS_SW_BKLTEN	3
LVDS_BKLADJ	4
+5V	5

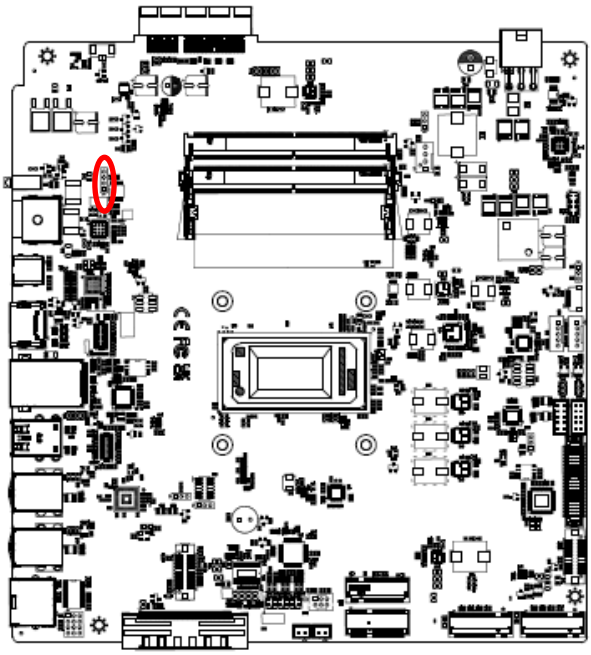
3.4.14 LCD Inverter backlight connector 2 (JBL2)





Signal	PIN
+12V	1
GND	2
EDP_BKLTEN	3
EDP_BKLADJ	4
+5V	5

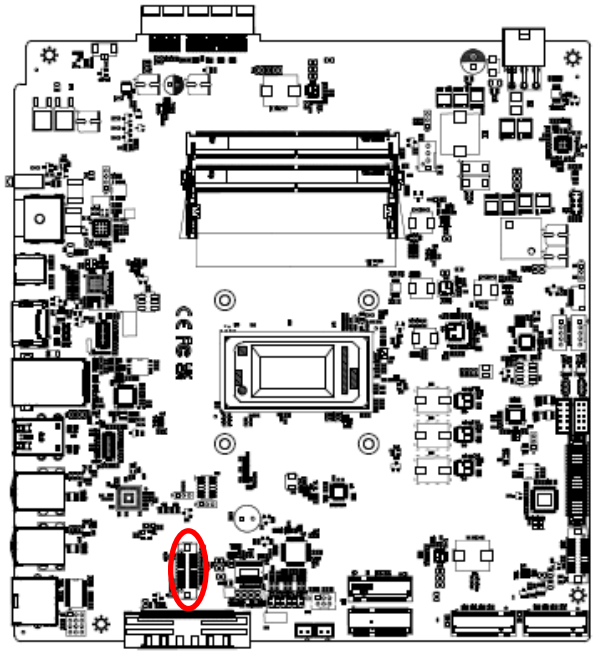
3.4.15 PD JTAG connector (JPD1)

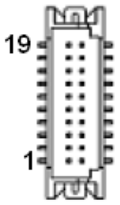




Signal	PIN
GND	4
EEPROM_I2C_SDA	3
EEPROM_I2C_SCL	2
LDO_3V3	1

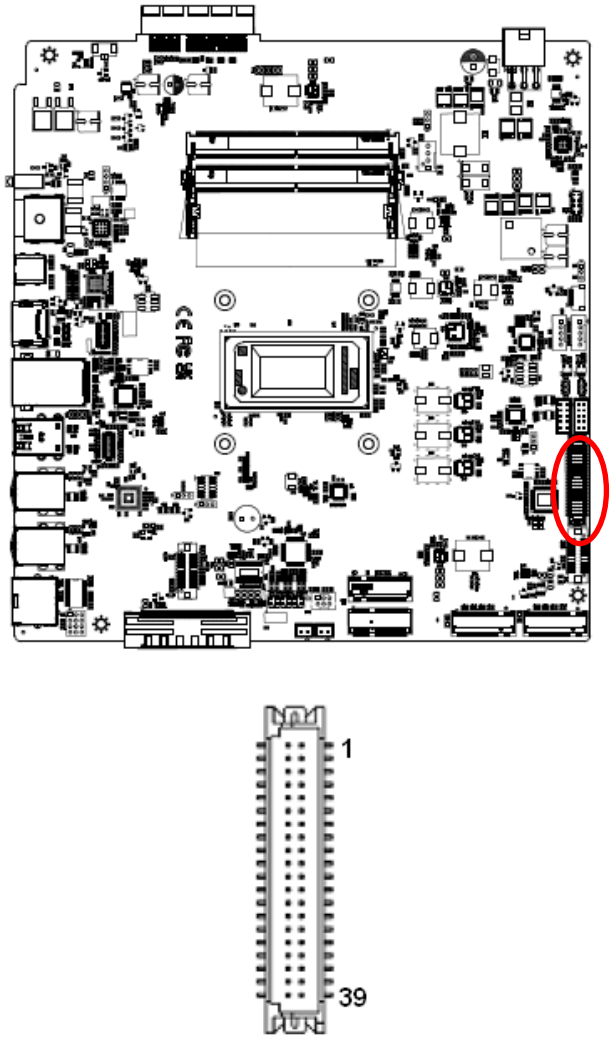
3.4.16 Front Panel connector (JFPT1)





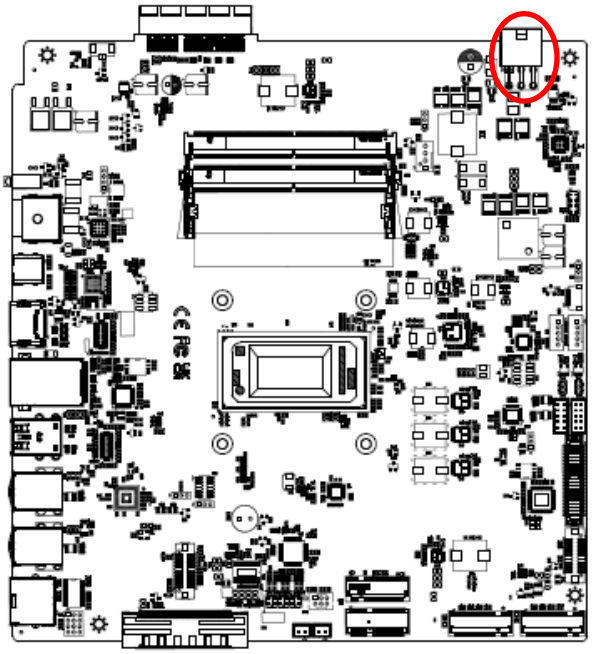
Signal	PIN	PIN	Signal
JFP_SMCLK5	19	20	JFP_SMDAT5
+5V	17	18	PS_ON#
TOUCH_LED_#	15	16	PWR_LED-
BATTERY_2_B#	13	14	EXT_PWRBTN#
BATTERY_2_O#	11	12	TOUCH_ON_OFF
BATTERY_1_B#	9	10	VOLUME_DN
BATTERY_1_O#	7	8	VOLUME_UP
READ_LIGHT	5	6	BLK_BRI_DN#
BKL_ON_OFF	3	4	BLK_BRI_UP#
+3.3V	1	2	GND

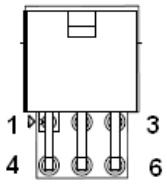
3.4.17 LVDS connector (JLVDS1)



Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
+5V	6	5	+3.3V
GND	8	7	GND
LVDS_DATAP0	10	9	LVDS_DATAP1
LVDS_DATAN0	12	11	LVDS_DATAN
GND	14	13	GND
LVDS_DATAP2	16	15	LVDS_DATAP3
LVDS_DATAN2	18	17	LVDS_DATAN3
GND	20	19	GND
LVDS_DATAP4	22	21	LVDS_DATAP5
LVDS_DATAN4	24	23	LVDS_DATAN5
GND	26	25	GND
LVDS_DATAP6	28	27	LVDS_DATAP7
LVDS_DATAN6	30	29	LVDS_DATAN7
GND	32	31	GND
LVDS_CLK1P	34	33	LVDS_CLK2P
LVDS_CLK1N	36	35	LVDS_CLK2N
GND	38	37	GND
+12V	40	39	+12V

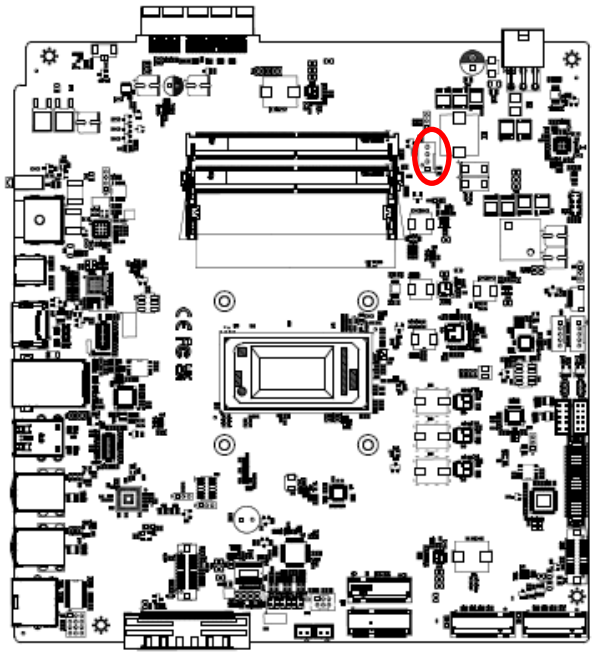
3.4.18 DC power-in connector (PWR_IN1)





Signal	PIN	PIN	Signal
GND	1	4	+VIN_24V
GND	2	5	+VIN_24V
GND	3	6	+VIN_24V

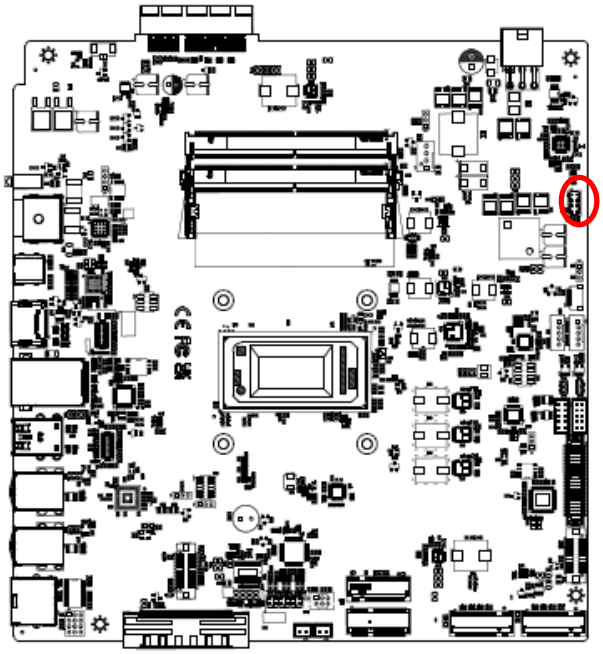
3.4.19 CPU fan connector (CPU_FAN1)

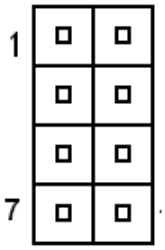




Signal	PIN
+3.3V	4
CPUFANIN	3
+12V	2
GND	1

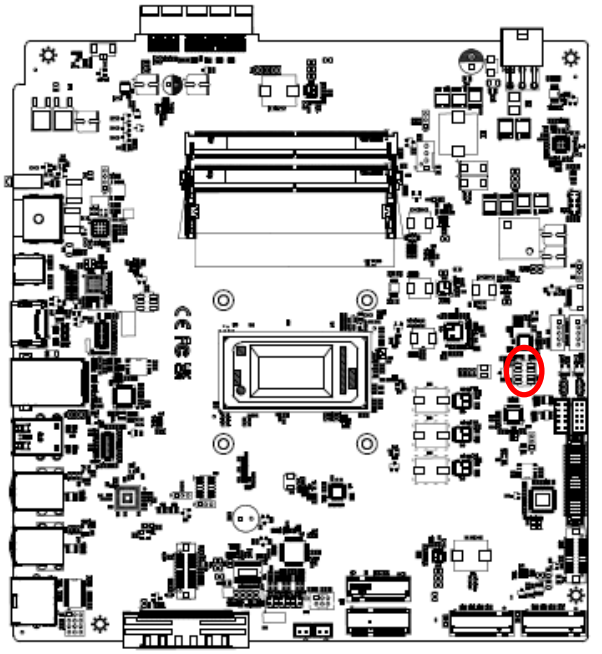
3.4.20 External Battery connector (JBAT_AUX1)

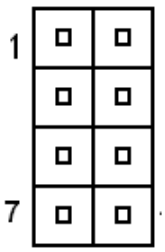




Signal	PIN	PIN	Signal
BAT_SMCLK5	1	2	DB_AC_SENCE
BAT_SMDAT5	3	4	BAT1_PRSNT
+3.3VSB	5	6	BAT2_PRSNT
GND	7	8	CHARGER_DISABLE

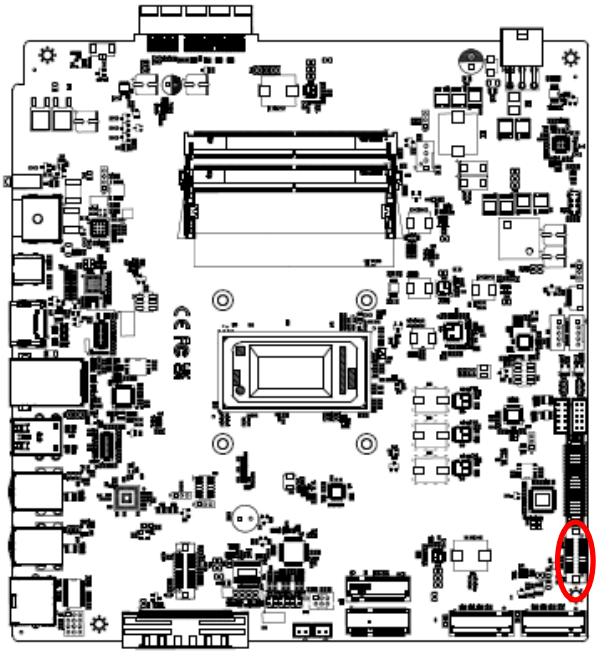
3.4.21 SPI connector (JSPI1)

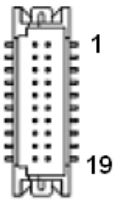




Signal	PIN	PIN	Signal
+1.8VSB	1	2	GND
SPI0_CS0#	3	4	SPI0_BIOS_CLK
SPI0_BIOS_MISO	5	6	SPI0_BIOS_MOSI
BIOS_HOLD#	7	8	BIOS_WP#

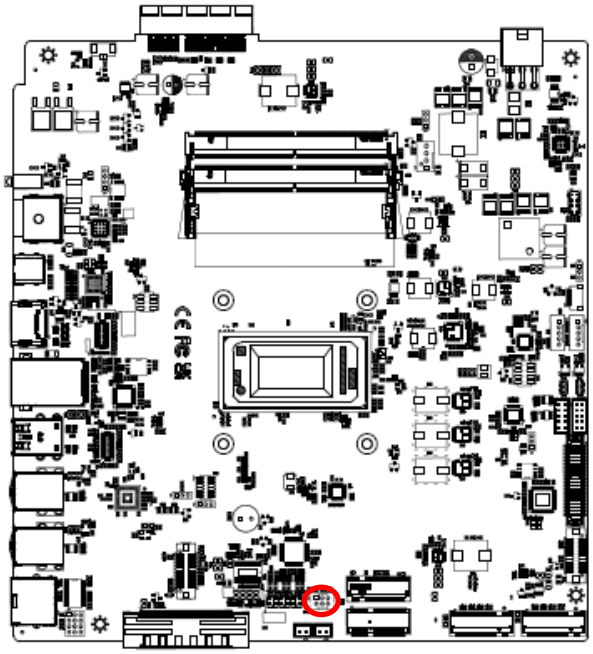
3.4.22 eDP connector (JeDP1)

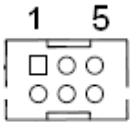




Signal	PIN	PIN	Signal
GND	2	1	GND
EDP_TXN3	4	3	EDP_TXN0
EDP_TXP3	6	5	EDP_TXP0
NC	8	7	GND
GND	10	9	EDP_TXN1
EDP_AUXN	12	11	EDP_TXP1
EDP_AUXP	14	13	GND
GND	16	15	EDP_TXN2
EDP_HPD	18	17	EDP_TXP2
EDP_VCC_PAL	20	19	EDP_VCC_PAL

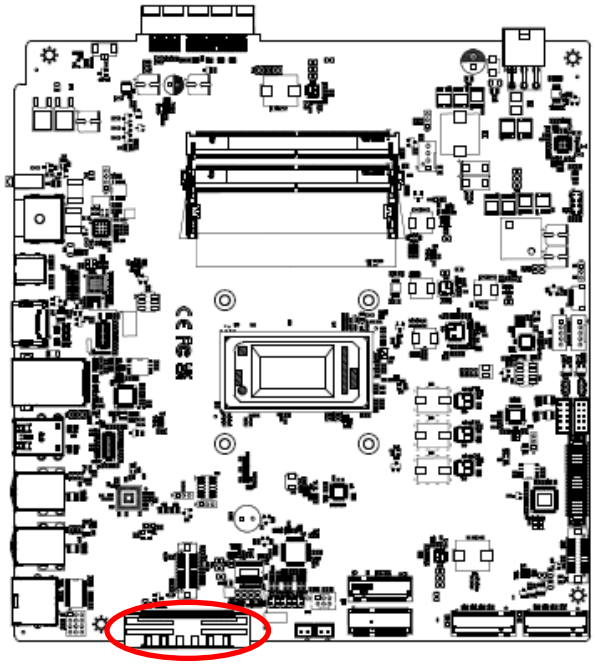
3.4.23 External LED connector (JLED1)

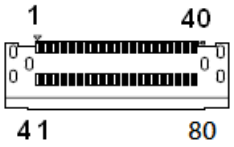




Signal	PIN	PIN	Signal
+3.3VSB	1	2	LED_R_EN#
+3.3VSB	3	4	LED_G_EN#
+5VSB	5	6	LED_Y_EN#

3.4.24 B2B connector (JB2B1)

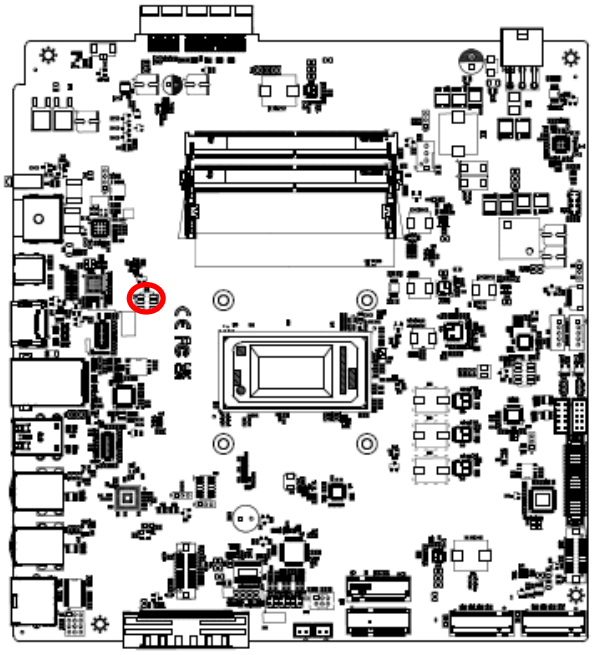


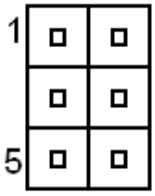


Signal	PIN	PIN	Signal
GND	1	41	GND
GND	2	42	GND
+12VSB	3	43	GND
+12VSB	4	44	GND
GND	5	45	GND
+3.3VSB	6	46	+5VSB
+3.3VSB	7	47	+5VSB
+3.3VSB	8	48	+5VSB
PS_ON_B2B	9	49	+5VSB
RST_CHIP#	10	50	+5VSB

Signal	PIN	PIN	Signal
PCH_SLP_S3#	11	51	GND
GND	12	52	USB_DP5
SINC	13	53	USB_DN5
DSRC#	14	54	GND
CTSC#	15	55	SMB_SCL_S0
RTSC#	16	56	SMB_SDA_S0
DCDC#	17	57	GND
CTRC#	18	58	B2B_BOARD_ID
RIC#	19	59	B2B_GPIO2
SOUTC	20	60	B2B_GPIO1
GND	21	61	B2BPCIE_WAKE#
NC	22	62	RST_SOCKET#
NC	23	63	CLK_IET_U_REQ0#
NC	24	64	GND
NC	25	65	PCIE_TXN7
NC	26	66	PCIE_TXP7
NC	27	67	GND
NC	28	68	PCIE_RXN7
NC	29	69	PCIE_RXP7
GND	30	70	GND
NC	31	71	CLK_IET_N0
NC	32	72	CLK_IET_P0
NC	33	73	GND
NC	34	74	NC
NC	35	75	NC
NC	36	76	NC
NC	37	77	NC
NC	38	78	NC
NC	39	79	NC
NC	40	80	NC

3.4.25 Internal Flash connector (SPI1)





Signal	PIN	PIN	Signal
+1.8VSB	1	2	GND
EE_CS#	3	4	EE_CLK
EE_DO	5	6	EE_DI

3.5 HID-2146-B1 DB-A Jumper and Connector list

Jumpers

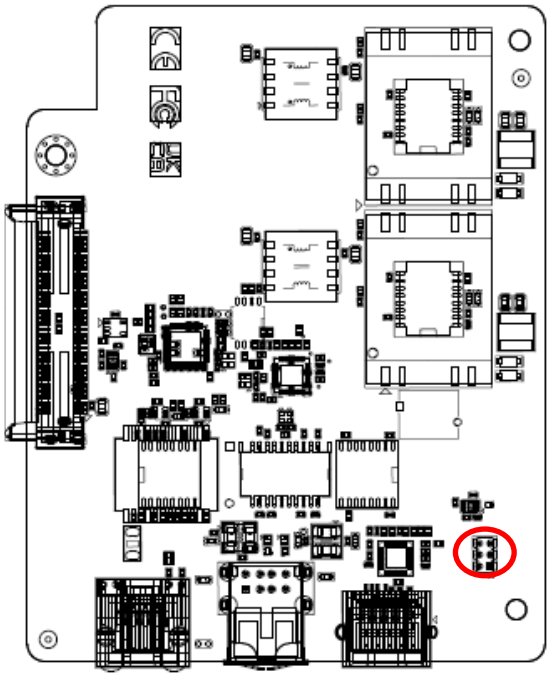
Label	Function	Note
B-JCOM2SEL1	COM2 in RS-232/422/485 mode	3 x 2 header, pitch 2.00 mm

Connectors

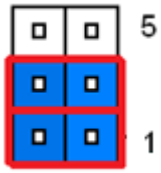
Label	Function	Note
B-USB1	2 x USB connector	
B-COM1	Serial port 1 connector	
B-LAN1	RJ-45 Ethernet	
B-B2B1	B2B connector	40 x 2 wafer, pitch 0.80 mm

3.6 HID-2146-B1 DB-A Connectors settings

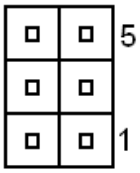
3.6.1 COM2 in RS-232/422/485 mode (B-JCOM2SEL1)



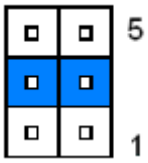
RS232*



RS422

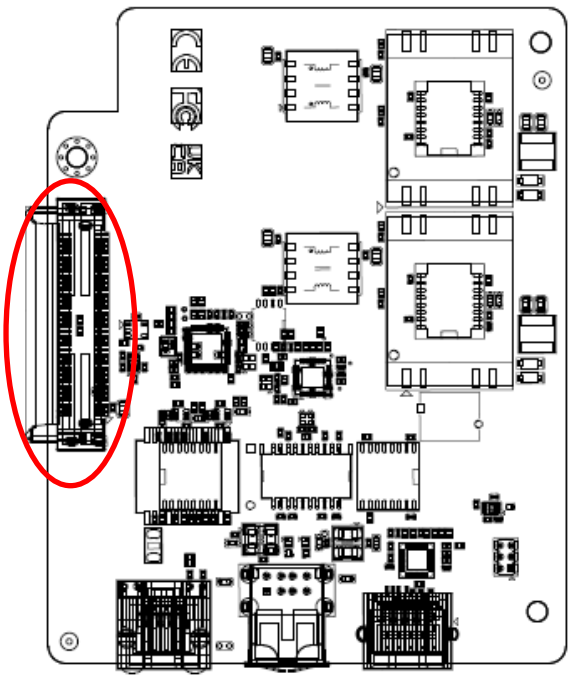


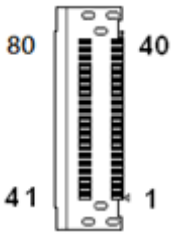
RS485



***Default**

3.6.2 B2B connector (B-B2B1)



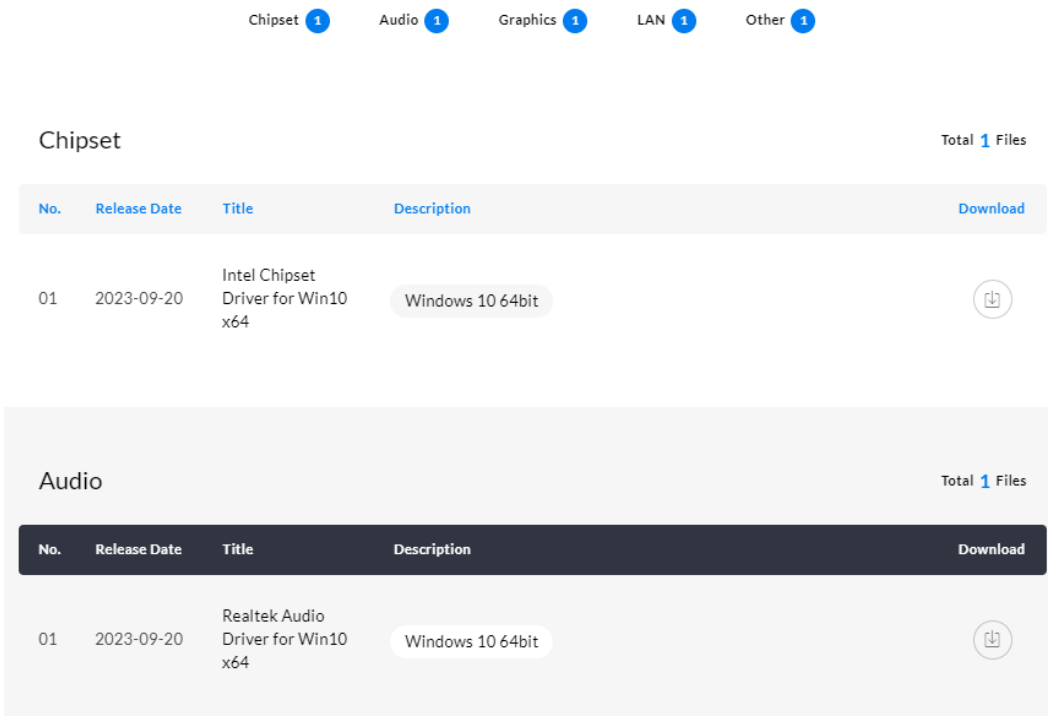


Signal	PIN	PIN	Signal
NC	80	40	NC
NC	79	39	NC
NC	78	38	NC
NC	77	37	NC
NC	76	36	NC
NC	75	35	NC
NC	74	34	NC
NC	73	33	NC
B_CLK_IET_P0	72	32	NC
B_CLK_IET_N0	71	31	NC

Signal	PIN	PIN	Signal
GND	70	30	NC
B_PCIE_RXP1	69	29	NC
B_PCIE_RXN1	68	28	NC
GND	67	27	NC
B_PCIE_TXP1	66	26	NC
B_PCIE_TXN1	65	25	NC
GND	64	24	NC
B_CLK_IET_U_REQ0#	63	23	NC
B_RST_SOCKET#	62	22	NC
B_B2BPCIE_WAKE#	61	21	GND
NC	60	20	B_SOUTC
NC	59	19	B_RIC#
B_B2B_BOARD_ID	58	18	B_DTRC#
GND	57	17	B_DCDC#
NC	56	16	B_RTSC#
NC	55	15	B_CTSC#
GND	54	14	B_DSRC#
B_USB_DN5	53	13	B_SINC
B_USB_DP5	52	12	GND
GND	51	11	NC
+5VSB	50	10	B_RST_CHIP#
+5VSB	49	9	B_PS_ON_B2B
+5VSB	48	8	+3.3VSB
+5VSB	47	7	+3.3VSB
+5VSB	46	6	+3.3VSB
GND	45	5	GND
GND	44	4	+12VSB
GND	43	3	+12VSB
GND	42	2	GND
GND	41	1	GND

4. Drivers Installation

All the drivers are available on Avalue Downloads Area (https://www.avalue.com/en/support/download). Type the model name and press Enter to find all the relevant software, utilities, and documentation.



(For reference only)

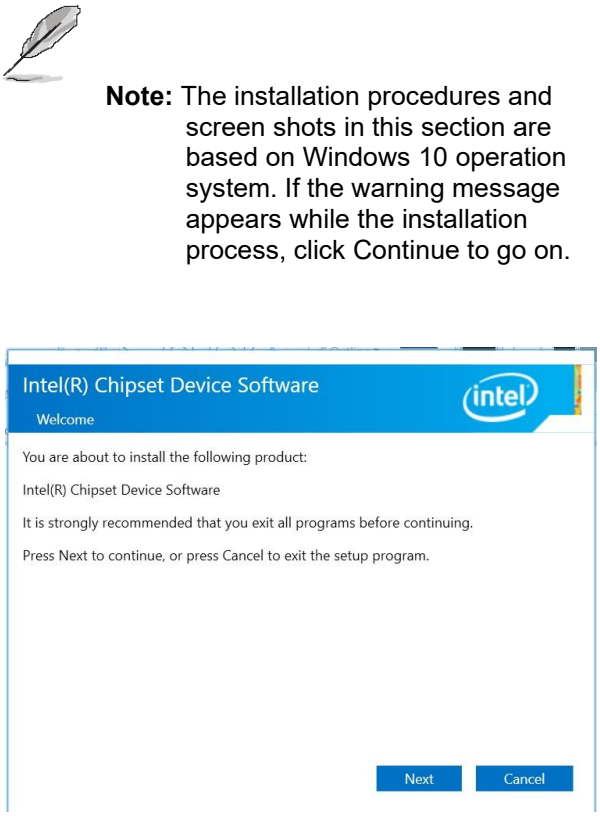
Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver

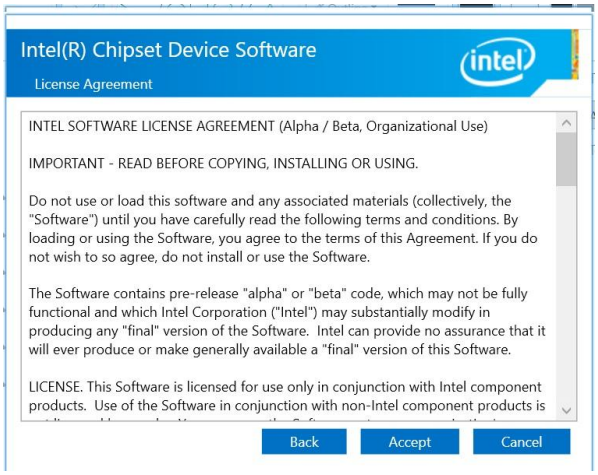
All drivers can be found on the Avalue Official Website:

www.avalue.com.

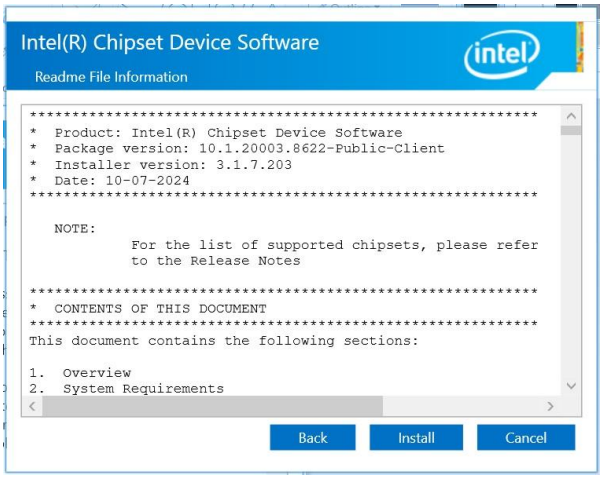
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



Step1. Click **Next**.



Step 2. Click **Accept**.



Step 3. Click **Install**.

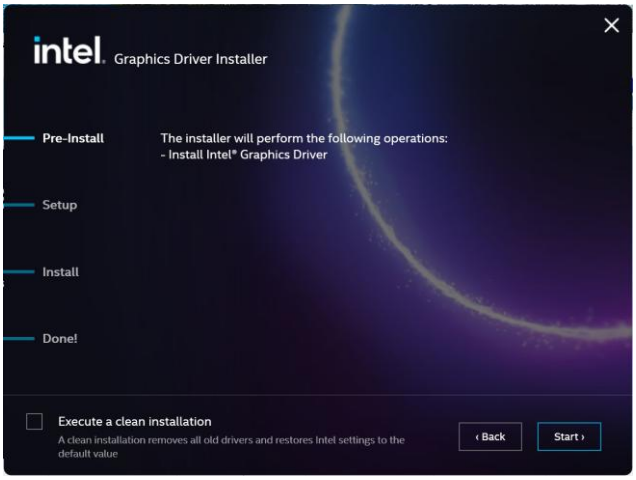


Step 4. Click Finish to complete setup.

4.2 Install VGA Driver

All drivers can be found on the Avalue Official Website: www.avalue.com.

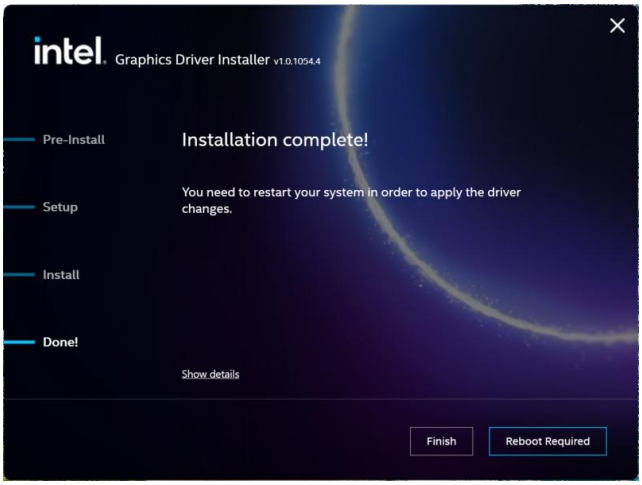
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.



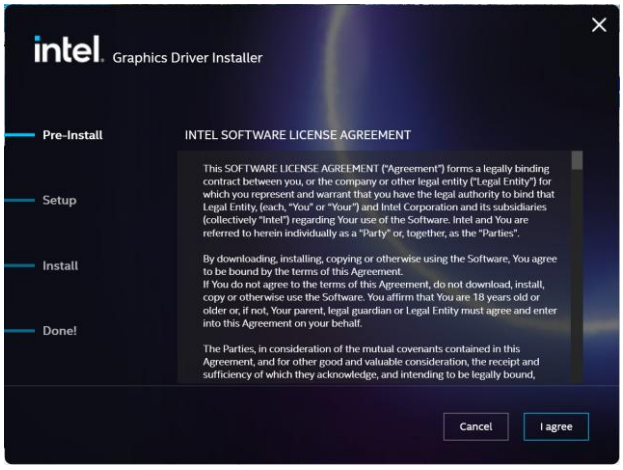
Step 3. Click **Start**.



Step 1. Click **Begin installation**.



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



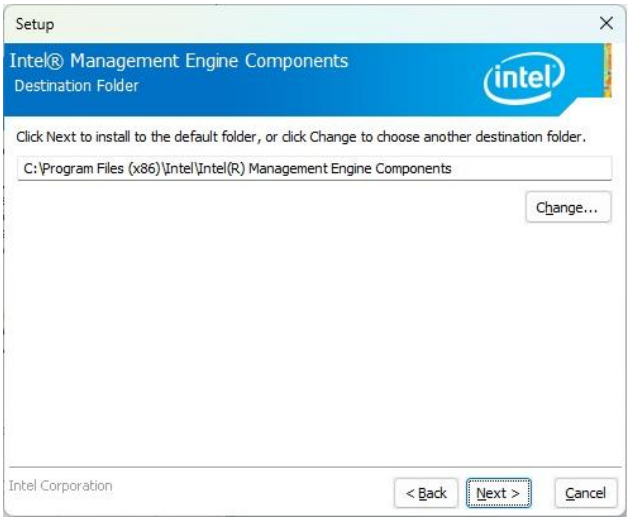
Step 2. Click **I agree**.

4.3 Install ME Driver

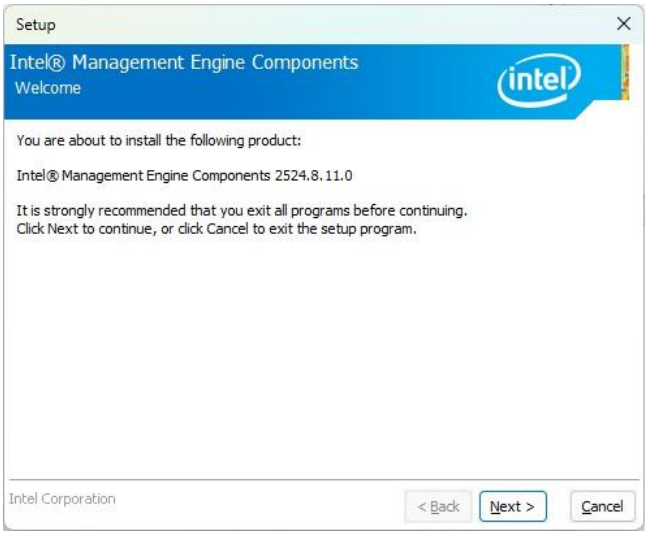
All drivers can be found on the Avalue Official Website:

www.avalue.com.

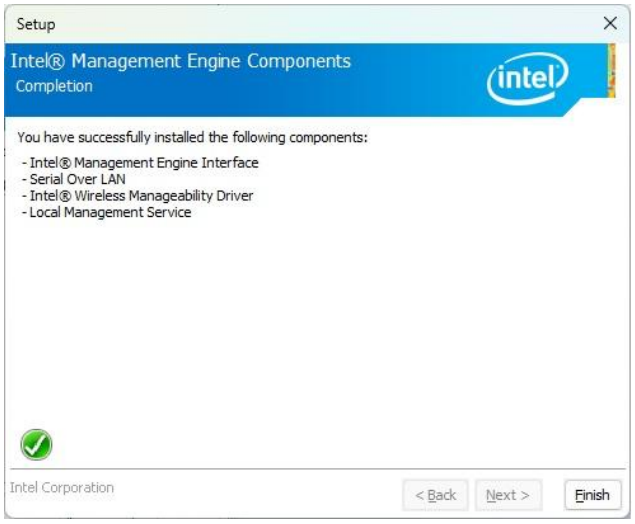
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.



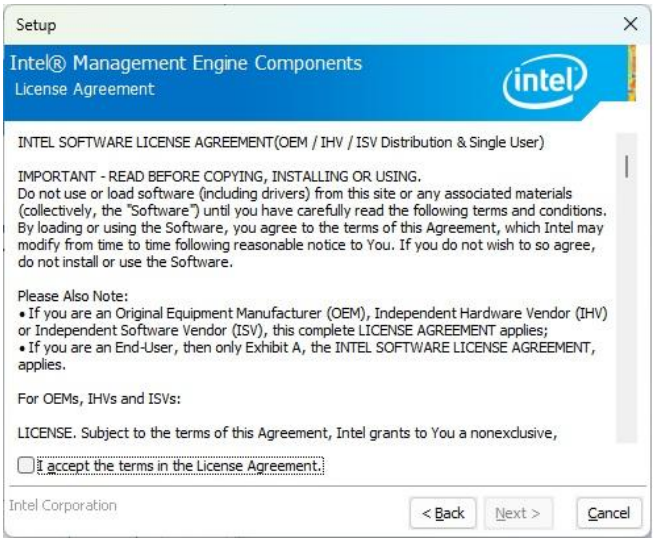
Step 3. Click **Next**.



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



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



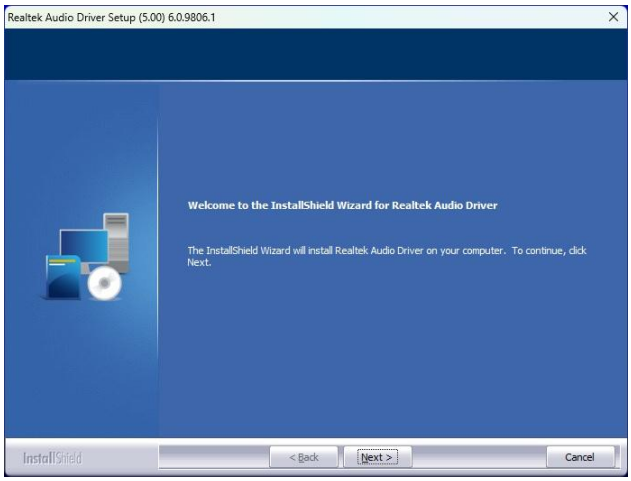
Step 2. Click **Next**.

4.4 Install Audio Driver

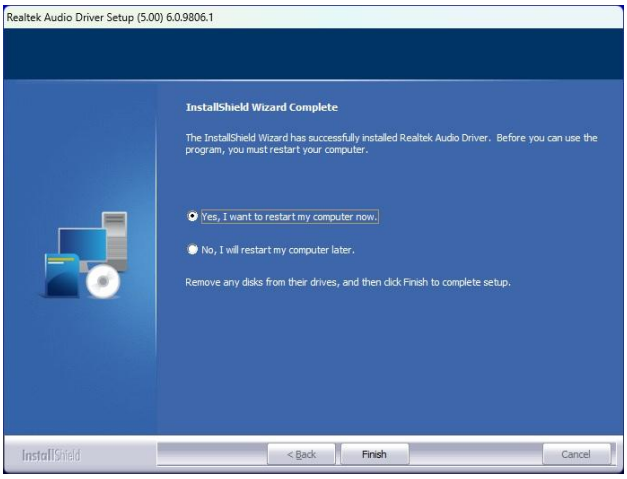
All drivers can be found on the Avalue Official Website:

www.avalue.com.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.



Step 1. Click **Next**.



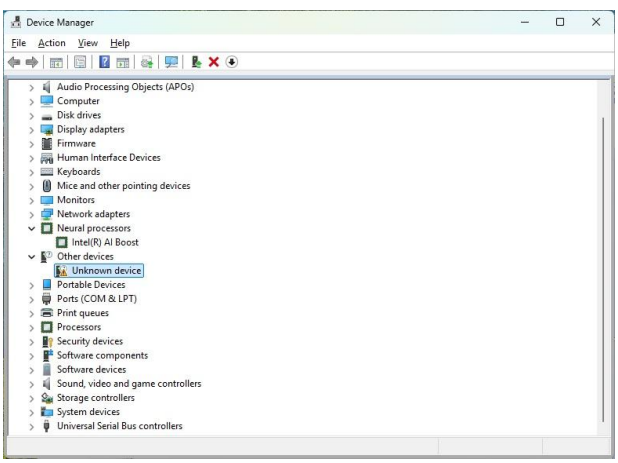
Step 2. Click **Finish** to complete setup.

4.5 Install Serial IO Driver

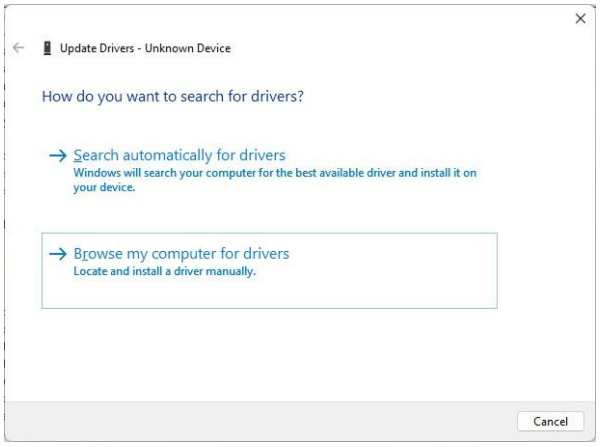
All drivers can be found on the Avalue Official Website:

www.avalue.com.

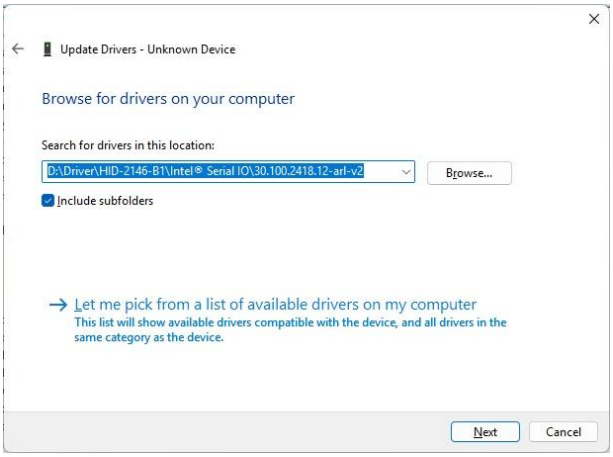
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.



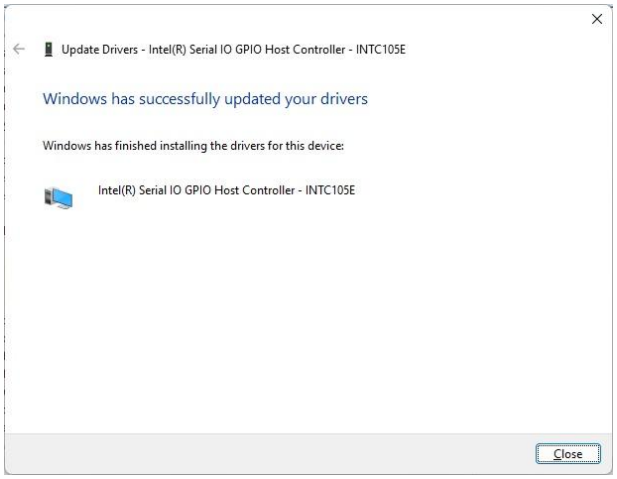
Step 1. Click **Other devices**.



Step 2. Click **Browse my computer for drivers**.



Step 3. Click **Next**.



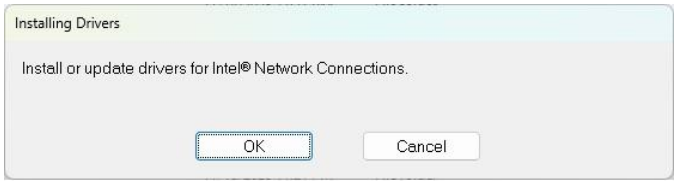
Step 4. Setup completed.

4.6 Install Ethernet Driver

All drivers can be found on the Avalue Official Website:

www.avalue.com.

Note: The installation procedures and screen shots in this section are based on Windows 10 operation system.



Step 1. Click **OK**.

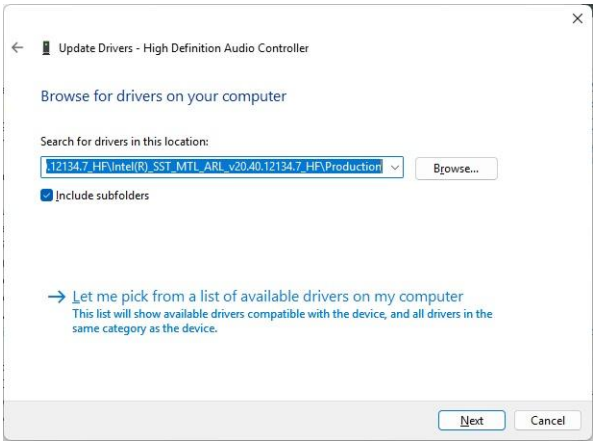


Step 2. Setup completed.

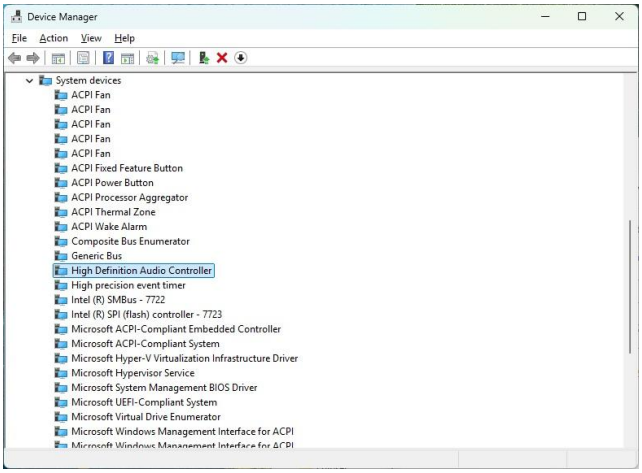
4.7 Install ISST Driver

All drivers can be found on the Avalue Official Website: www.avalue.com.

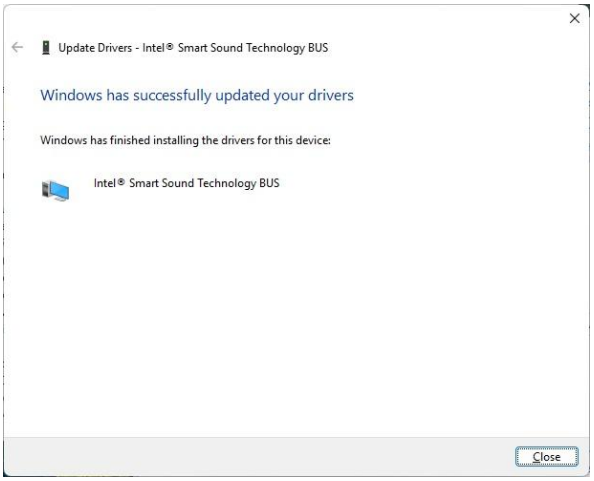
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



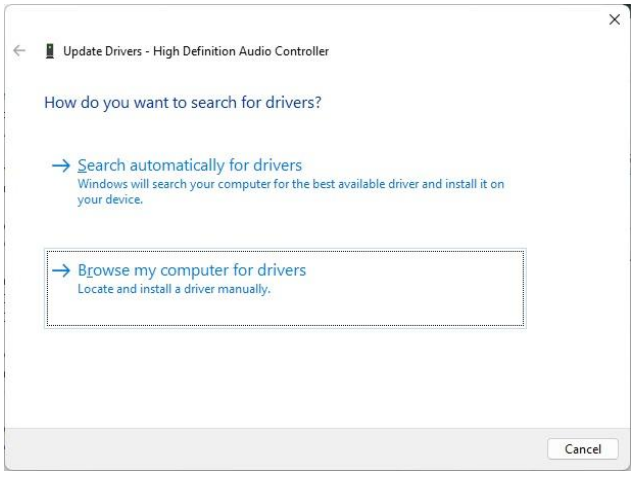
Step 3. Click **Next**.



Step1. Click **High Definition Audio Controller**.



Step 4. Setup completed.

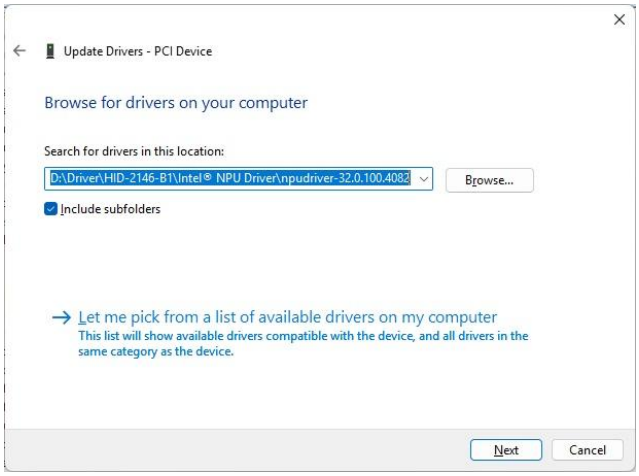


Step 2. Click **Browse my computer for drivers**.

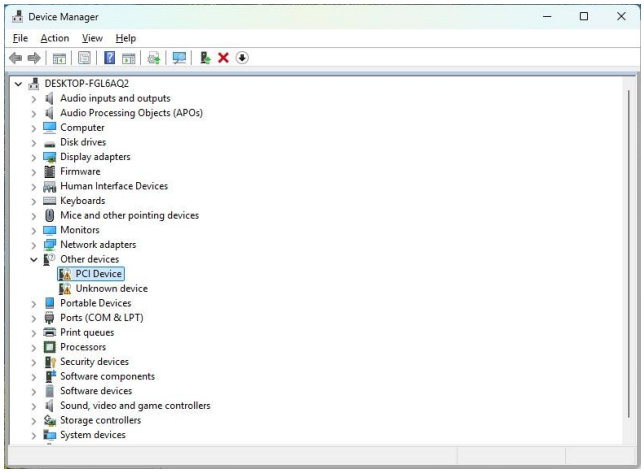
4.8 Install NPU Driver

All drivers can be found on the Avalue Official Website: www.avalue.com.

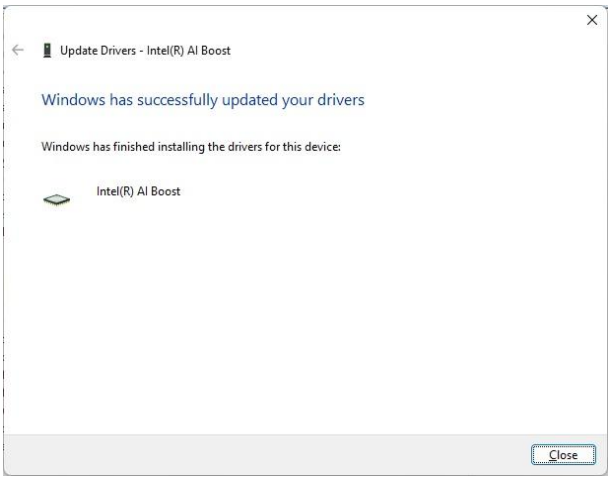
Note: The installation procedures and screen shots in this section are based on Windows 10 operation system. If the warning message appears while the installation process, click Continue to go on.



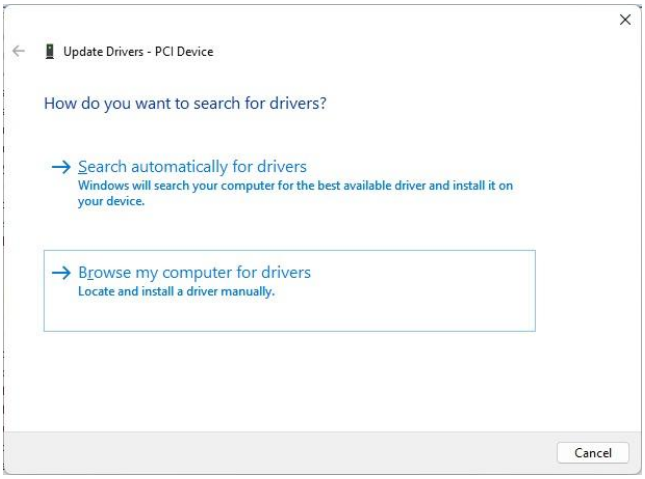
Step 3. Click **Next**.



Step1. Click **Other devices**.



Step 4. Setup completed.



Step 2. Click **Browse my computer for drivers**.

5.BIOS Setup

5.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

5.2 Starting Setup

AMI BIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <ESC> or <Del> immediately after switching the system on, or
By pressing the < ESC> or <Del> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <ESC> or <Del> to enter SETUP

If the message disappears before you 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.

5.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values
F3 key	Optimized defaults
F4 key	Save & Exit Setup

- **Navigating Through The Menu Bar**
  Use the left and right arrow keys to choose the menu you want to be in.



Note: Some of the navigation keys differ from one screen to another.

- **To Display a Sub Menu**
  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

5.4 Getting Help

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> or the <Enter> key again.

5.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

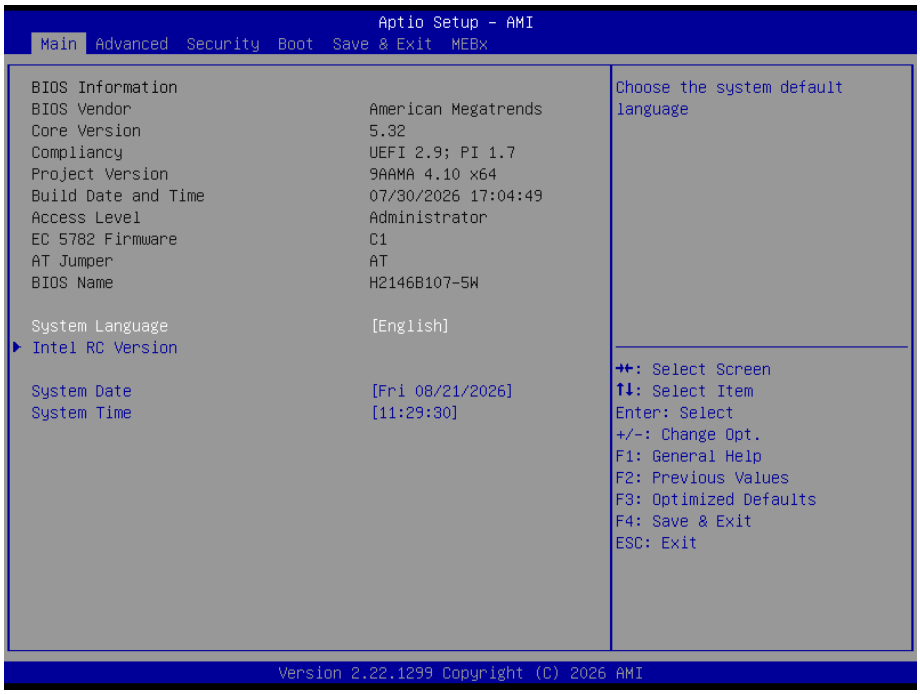
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

5.6 BIOS setup

Once you enter the Aptio Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

5.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.





5.6.1.1 System Language

This option allows choosing the system default language.

5.6.1.2 System Date

Use the system date option to set the system date. Manually enter the Month, day and year.

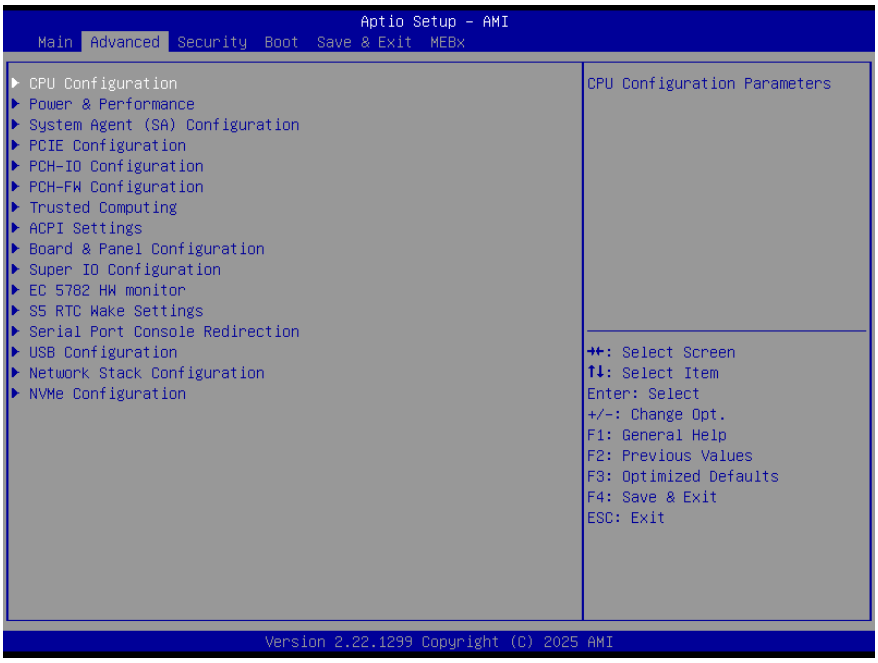
5.6.1.3 System Time

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com) to download the latest product and BIOS information.

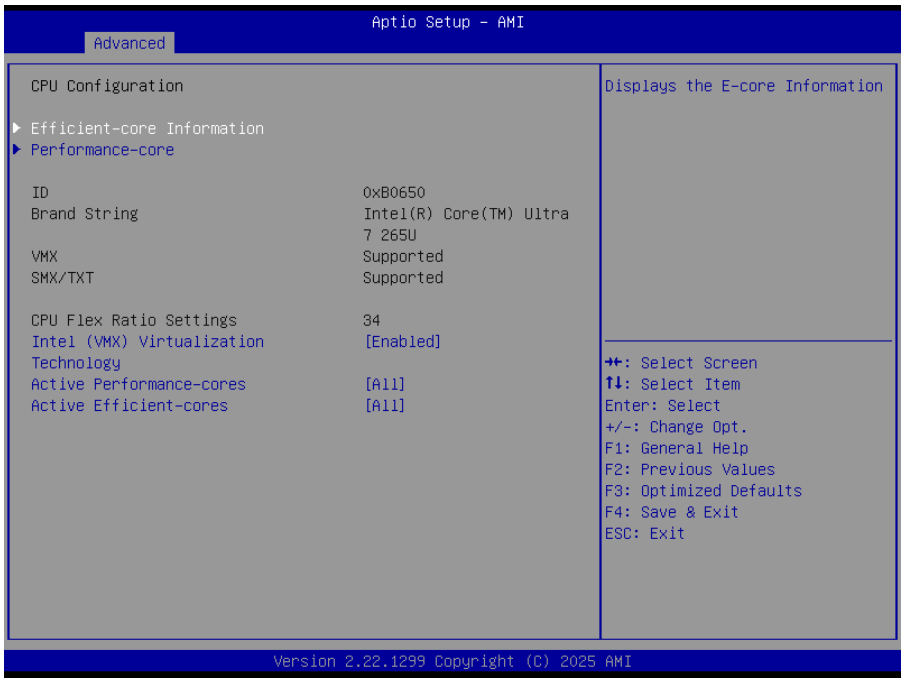
5.6.2 Advanced Menu

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.



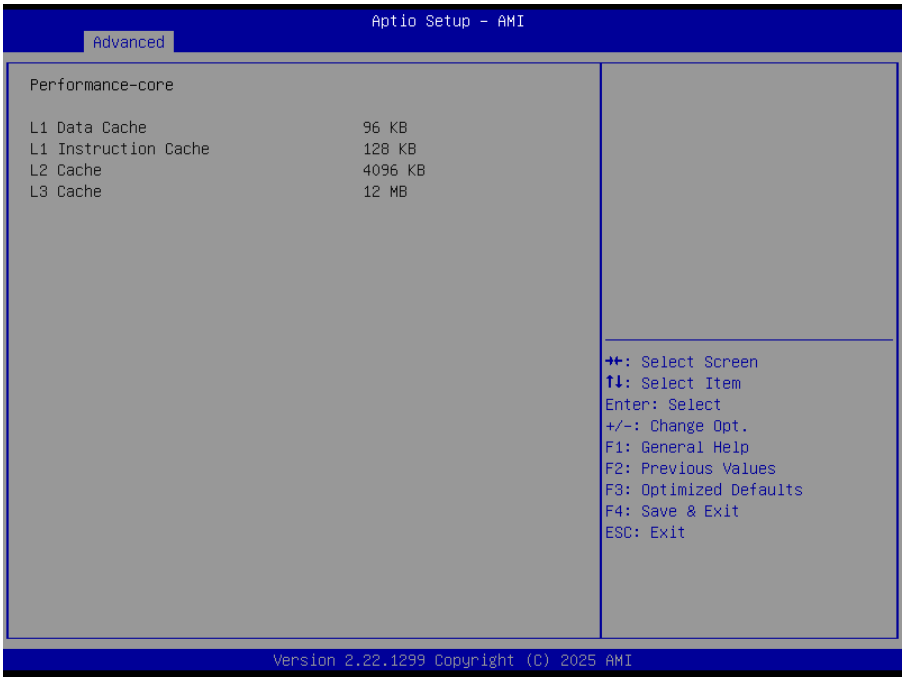
5.6.2.1 CPU Configuration

Use the CPU configuration menu to view detailed CPU specification and configure the CPU.

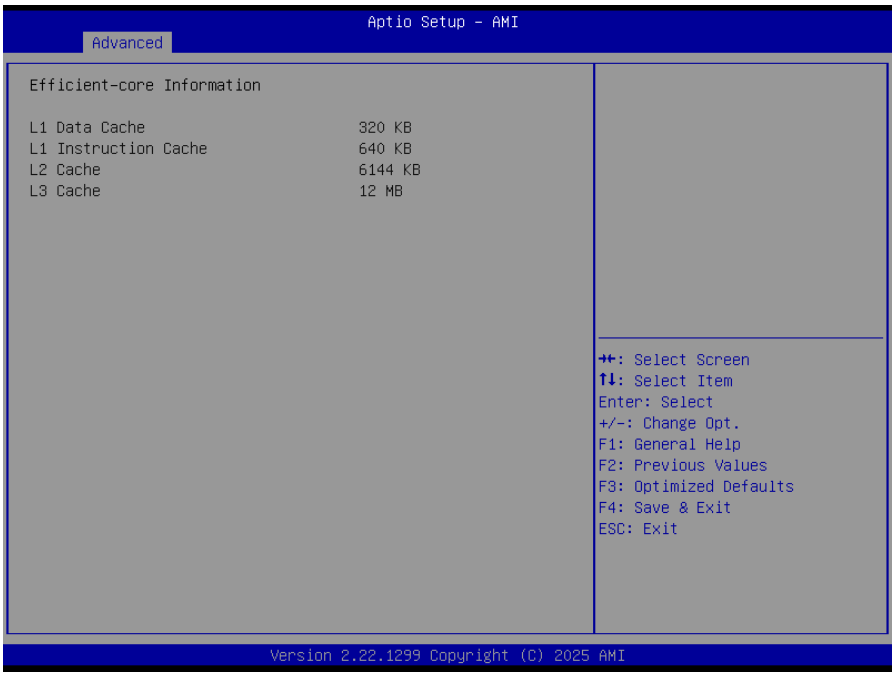


Item	Options	Description
Intel (VMX) Virtualization Technology	Disabled Enabled**[Default]**	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Active Performance-cores	All**[Default]** 7 6 5 4 3 2 1	Number of P-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.
Active Efficient-cores	All**[Default]**/31/30/29/28/27/26/25/24/23/22/21/20/19/18/17/16/15/14/13/12/11/10/9/8/7/6/5/4/3/2/1/0	Number of E-cores to enable in each processor package. Note: Number of Cores and E-Cores are looked at together. When both are {0,0}, Pcode will enable all cores.

5.6.2.1.1 Performance-core Information



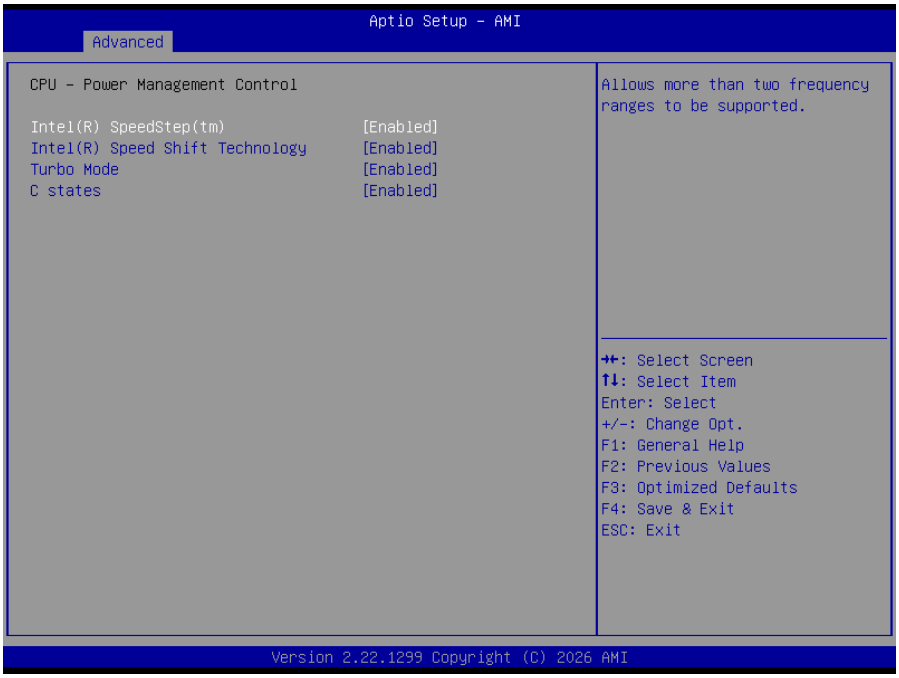
5.6.2.1.2 Efficient-core Information



5.6.2.2 Power & Performance

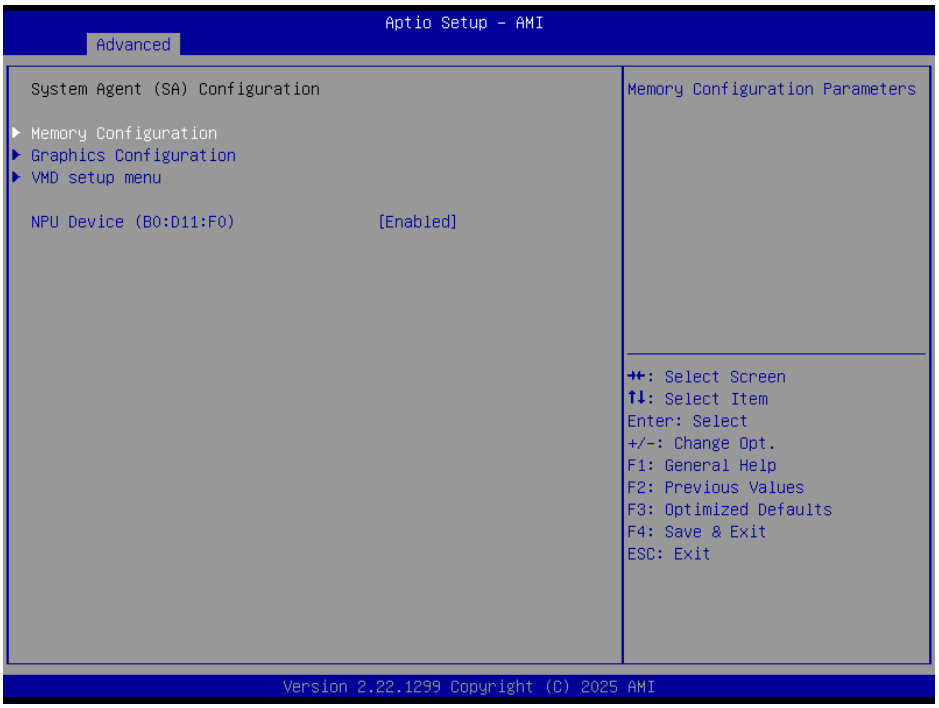


5.6.2.2.1 CPU – Power Management Control



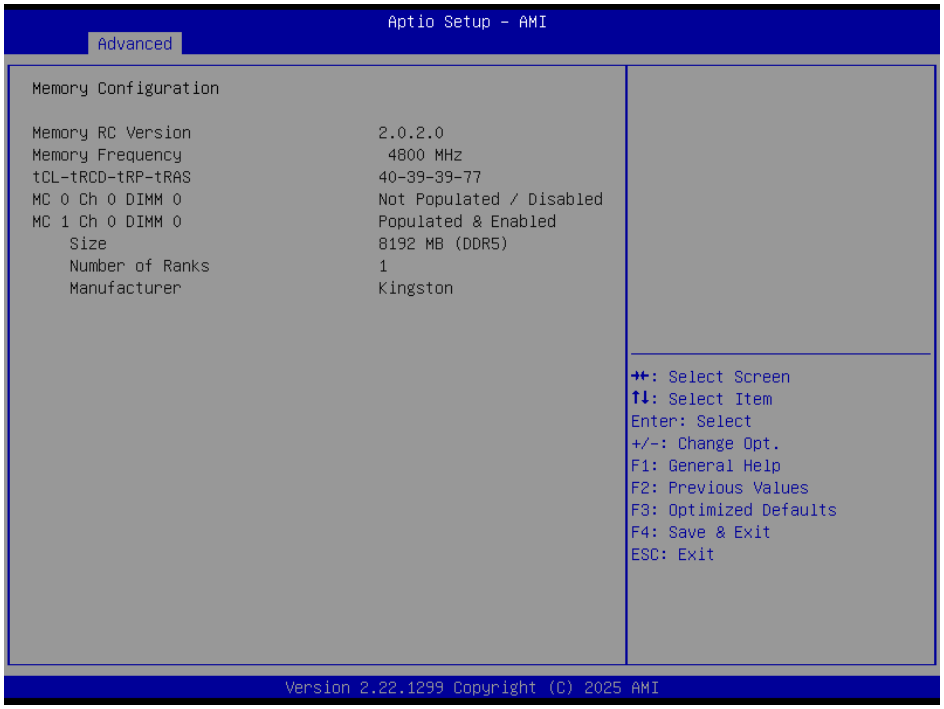
Item	Option	Description
Intel® SpeedStep™	Enabled**[Default]**, Disabled	Allows more than two frequency ranges to be supported.
Intel® Speed Shift Technology	Enabled**[Default]**, Disabled	Eanble/Disable Intel® Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware controlled P-states.
Turbo Mode	Enabled**[Default]**, Disabled	Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.
C States	Enabled**[Default]**, Disabled	Enable/Disable CPU Power Management.

5.6.2.3 System Agent (SA) Configuration



Item	Option	Description
NPU Device (B0:D11:F0)	Disabled, Enabled**[Default]**	Enable/Disable NPU (Neural Processing Unit) Device.

5.6.2.3.1 Memory Configuration

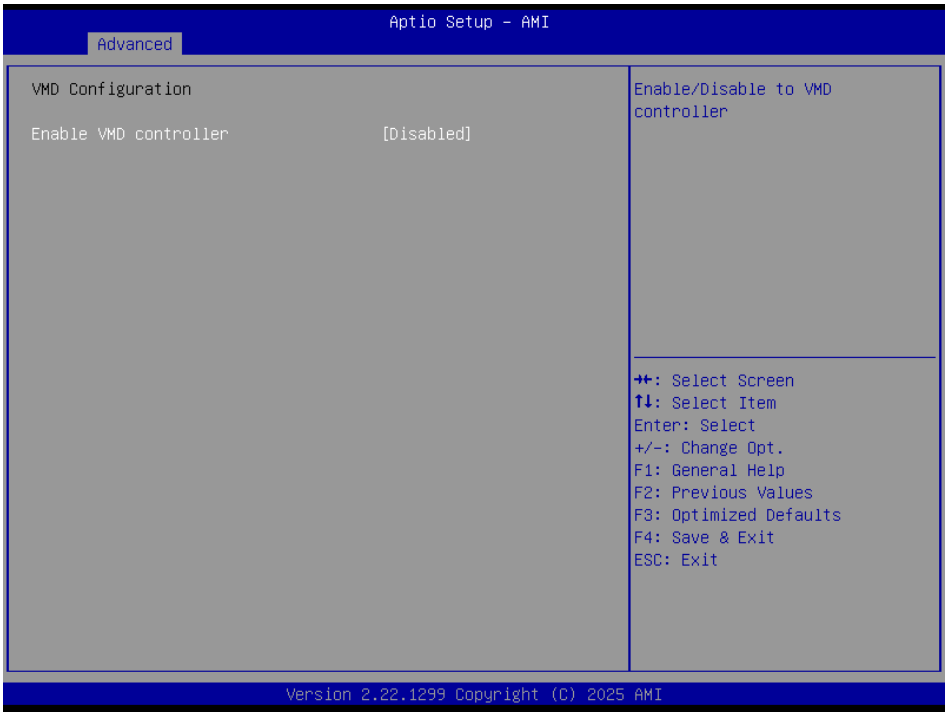


5.6.2.3.2 Graphics Configuration



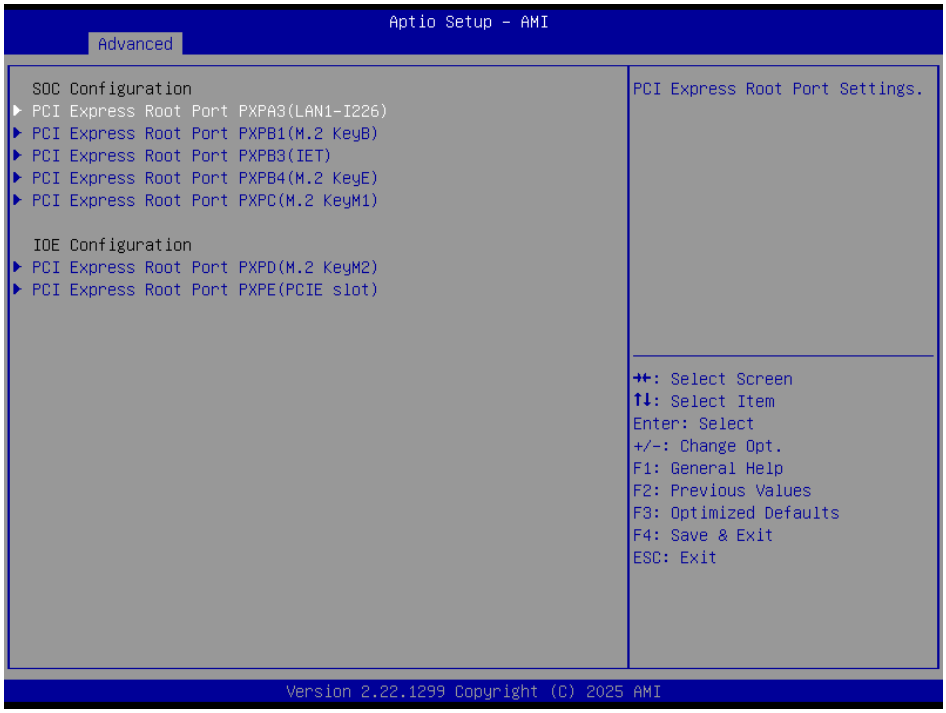
Item	Option	Description
Primary Display	Auto IGFX HG**[Default]**	Select AUTO set IGD to be Primary Display if no external Graphics Device connected otherwise external Graphics Device detected on first PCIe port will be Primary Display or Select IGFX for IGD to be Primary Display Or Select HG for Hybrid Gfx.

5.6.2.3.3 VMD Configuration

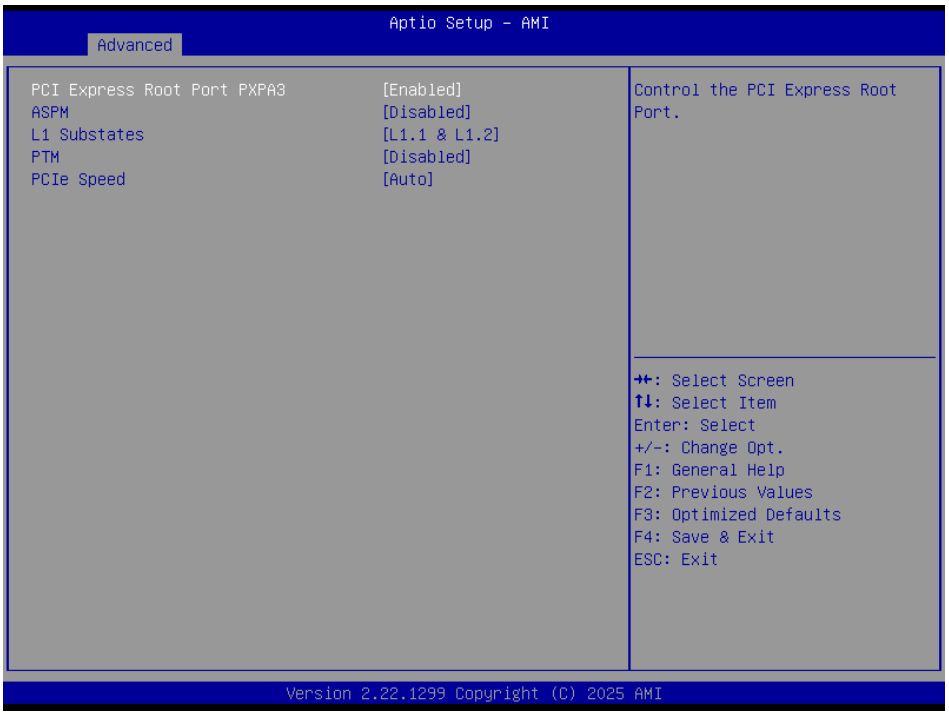


Item	Option	Description
Enable VMD controller	Disabled**[Default]** Enabled	Enable/Disable to VMD controller.

5.6.2.4 PCIE Configuration



5.6.2.4.1 PCI Express Root Port PXPA3(LAN1-I226)



Item	Option	Description
PCI Express Root Port PXPA3	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

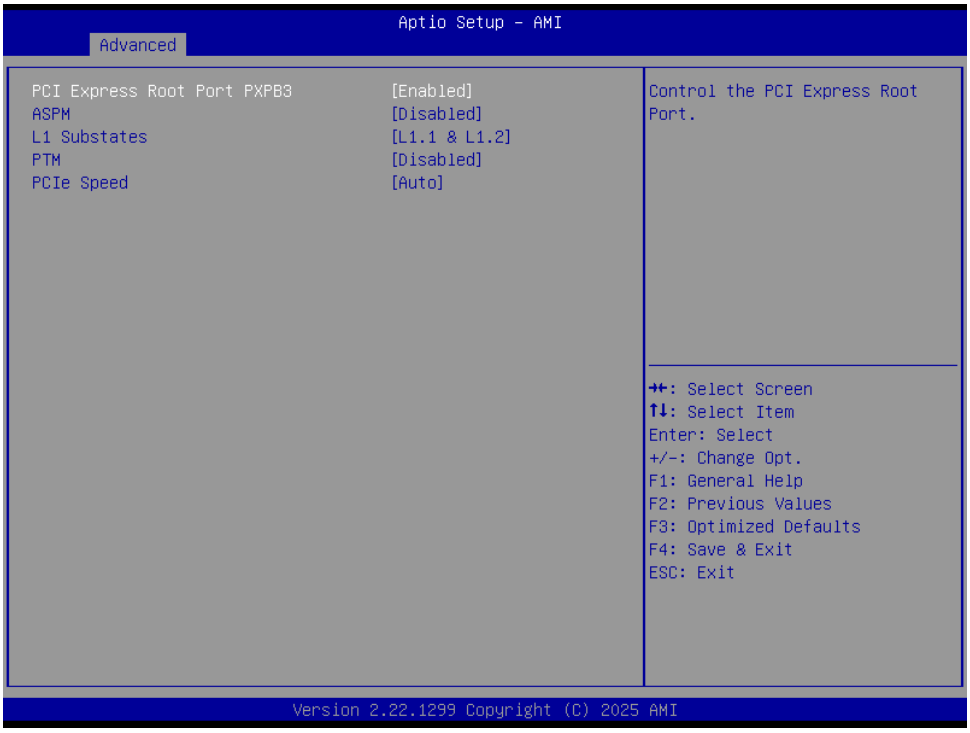
5.6.2.4.2 PCI Express Root Port PXPB1(M.2 KeyB)



Item	Option	Description
PCI Express Root Port PXPB1	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.

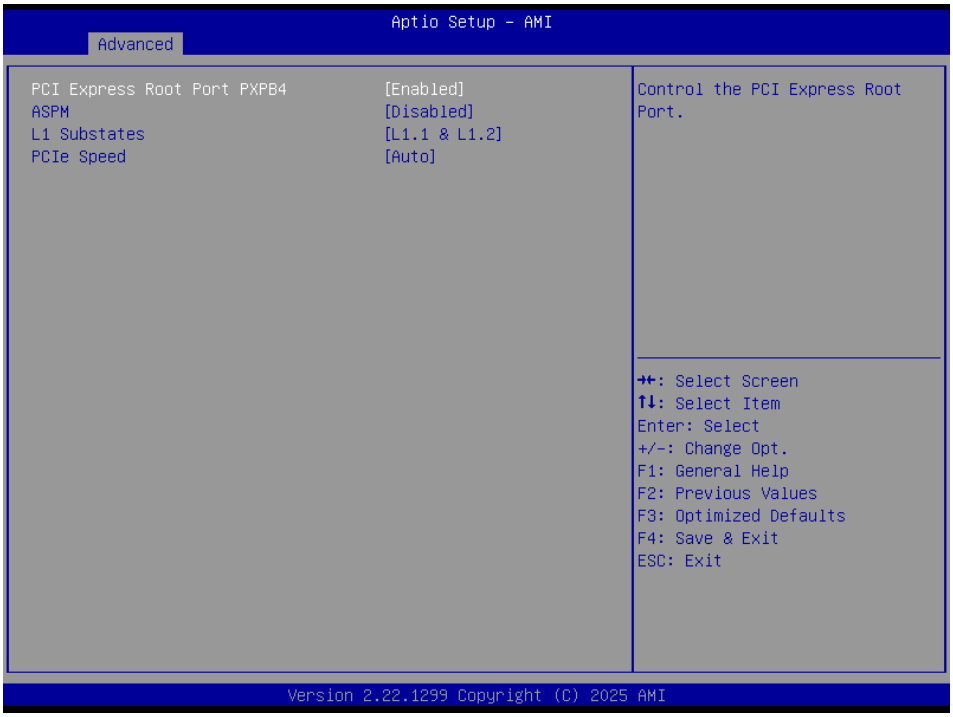
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.4.3 PCI Express Root Port PXPB3(IET)



Item	Option	Description
PCI Express Root Port PXPB3	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PTM	Disabled**[Default]**, Enabled	Enable/Disable Precision Time Measurement.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.4.4 PCI Express Root Port PXPB4(M.2 KeyE)



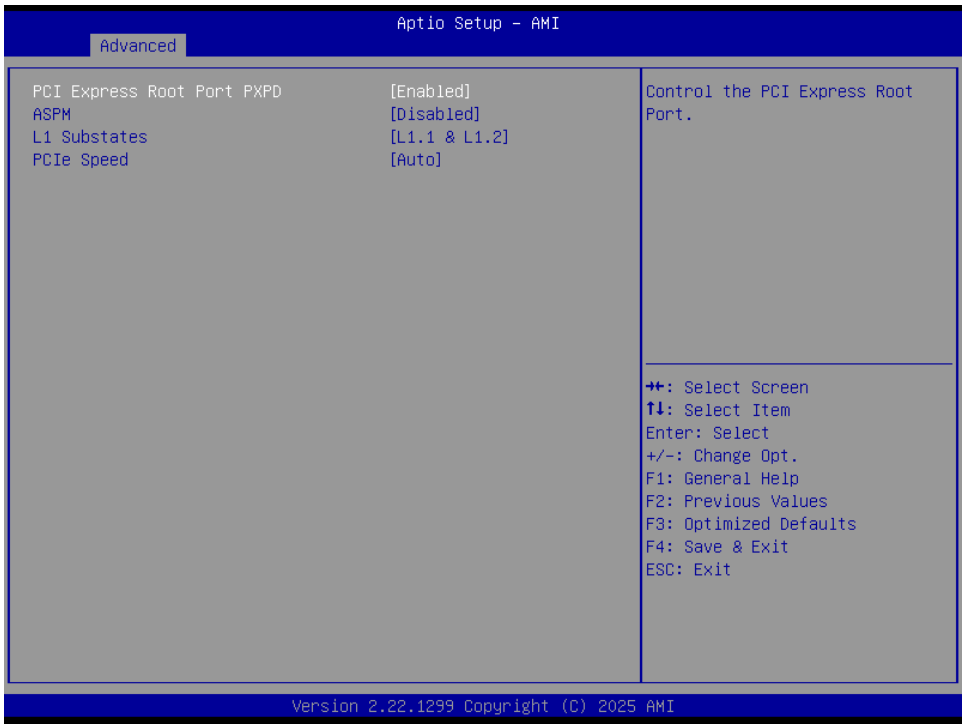
Item	Option	Description
PCI Express Root Port PXPB4	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.4.5 PCI Express Root Port PXPC(M.2 KeyM1)



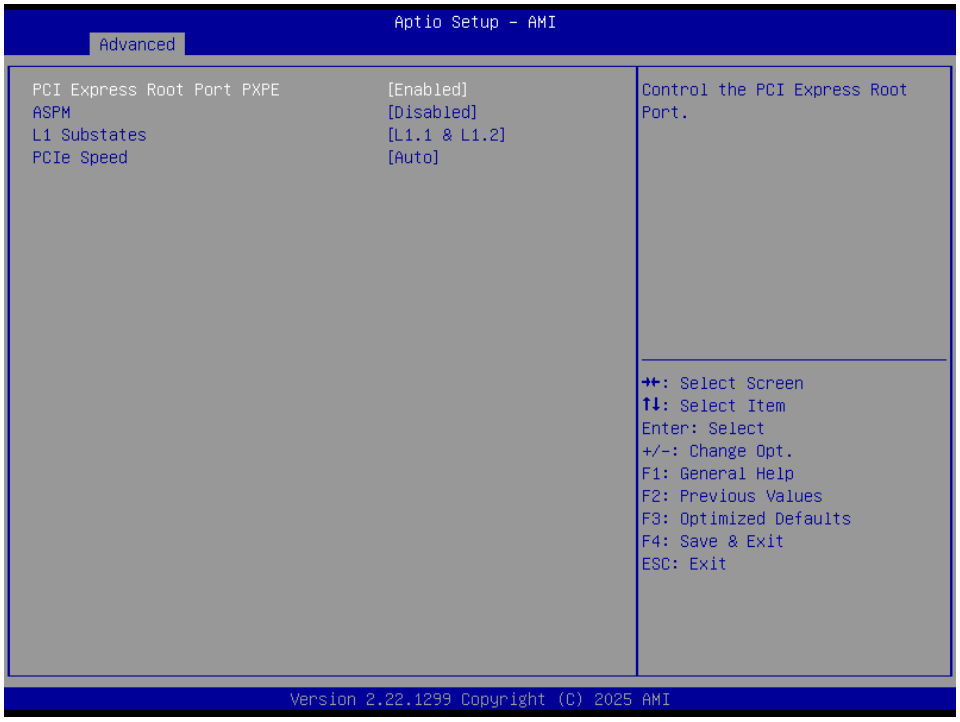
Item	Option	Description
PCI Express Root Port PXPC	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.4.6 PCI Express Root Port PXPD(M.2 KeyM2)



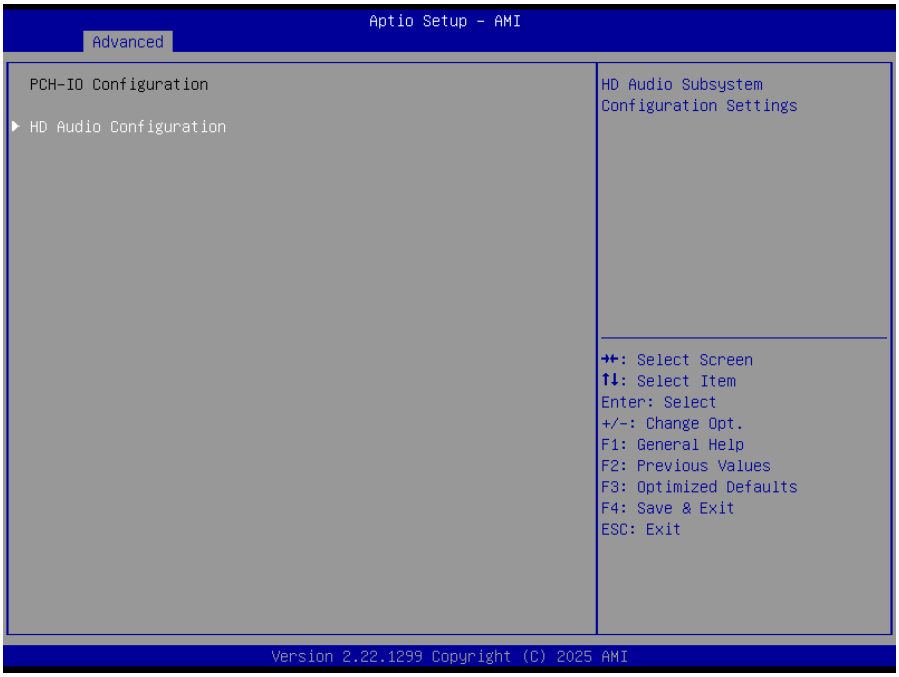
Item	Option	Description
PCI Express Root Port PXPD	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.4.7 PCI Express Root Port PXPE(PCIE slot)

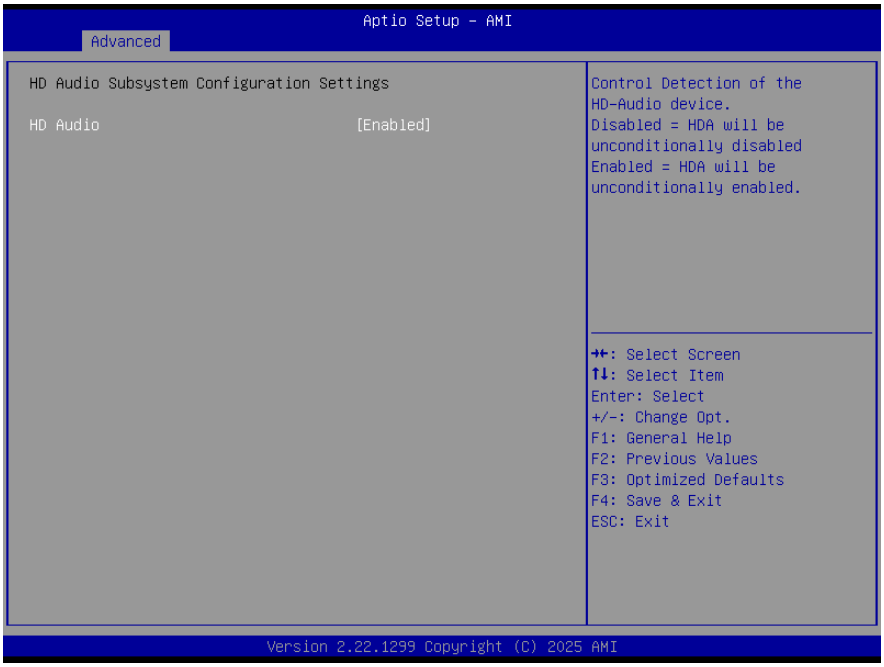


Item	Option	Description
PCI Express Root Port PXPE	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]**, L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM.
L1 Substates	Disabled L1.1 L1.1 & L1.2**[Default]**	PCI Express L1 Substates settings.
PCIe Speed	Auto**[Default]** Gen1 Gen2 Gen3 Gen4 Gen5	Configure PCIe Speed.

5.6.2.5 PCH-IO Configuration

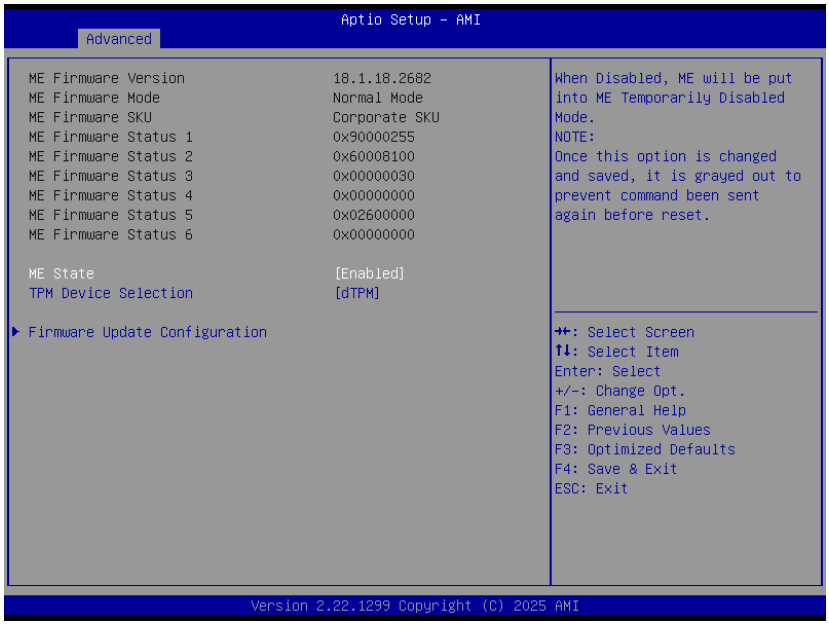


5.6.2.5.1 HD Audio Configuration



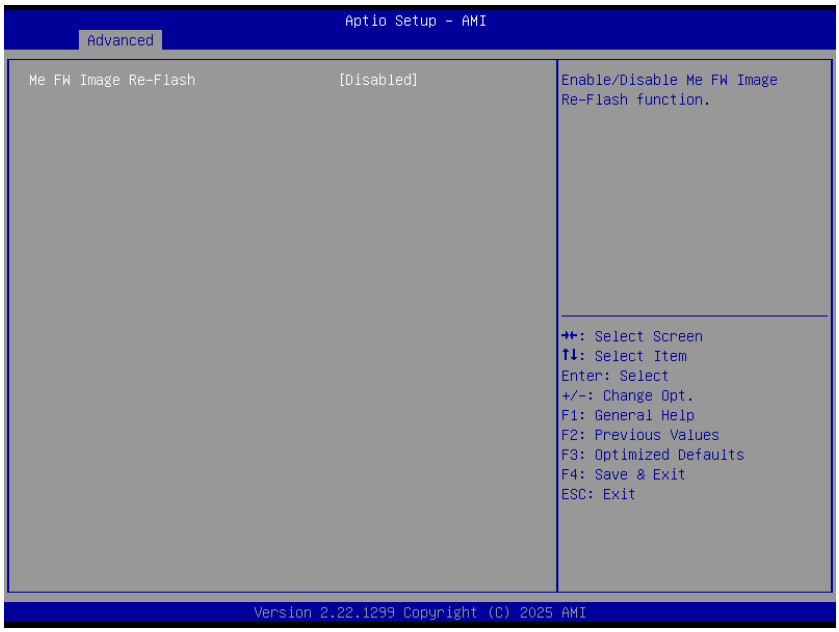
Item	Option	Description
HD Audio	Disabled Enabled**[Default]**,	Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled.

5.6.2.6 PCH-FW Configuration



Item	Option	Description
ME State	Disabled, Enabled**[Default]**	When Disabled ME will be put into ME Temporarily Disabled Mode.
TPM Device Selection	dTPM**[Default]** PTT	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 data saved on it will be lost.

5.6.2.6.1 Firmware Update Configuration



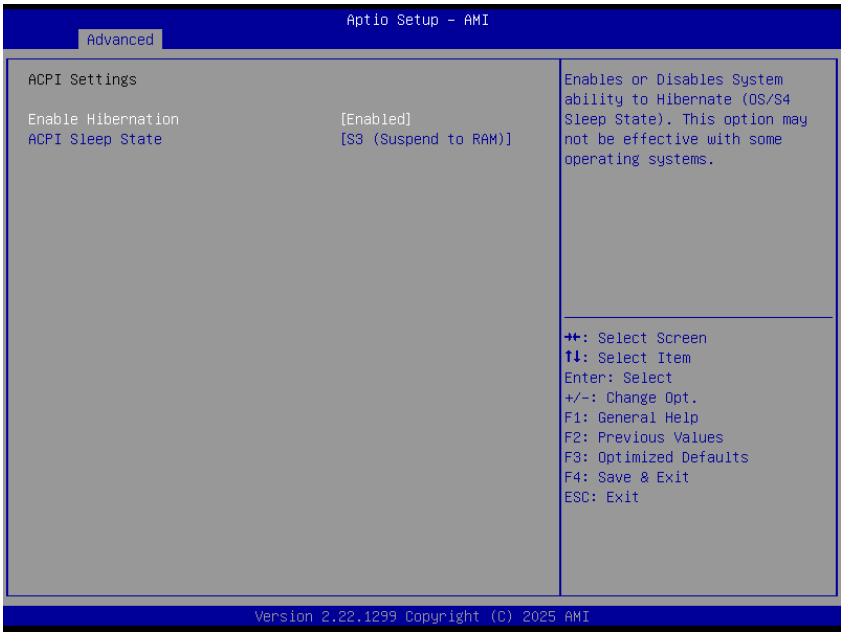
Item	Option	Description
ME FW Image Re-Flash	Disabled**[Default]**, Enabled	Enable/Disable Me FW Image Re-Flash function.

5.6.2.7 Trusted Computing



Item	Options	Description
Security Device Support	Disable, Enable**[Default]**	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

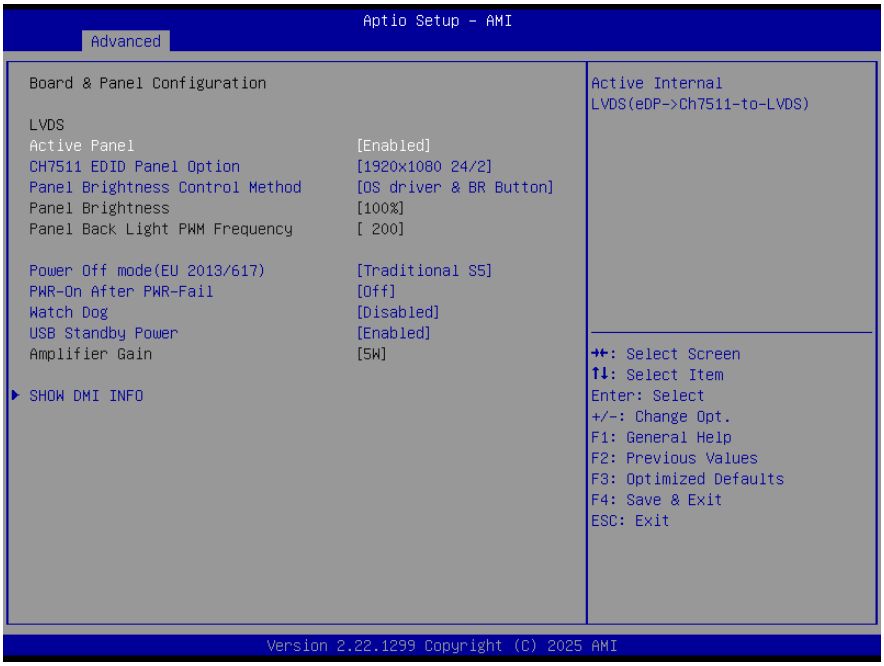
5.6.2.8 APCI Settings



Item	Options	Description
Enable Hibernation	Disabled Enabled**[Default]**,	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some OS.

ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM)**[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

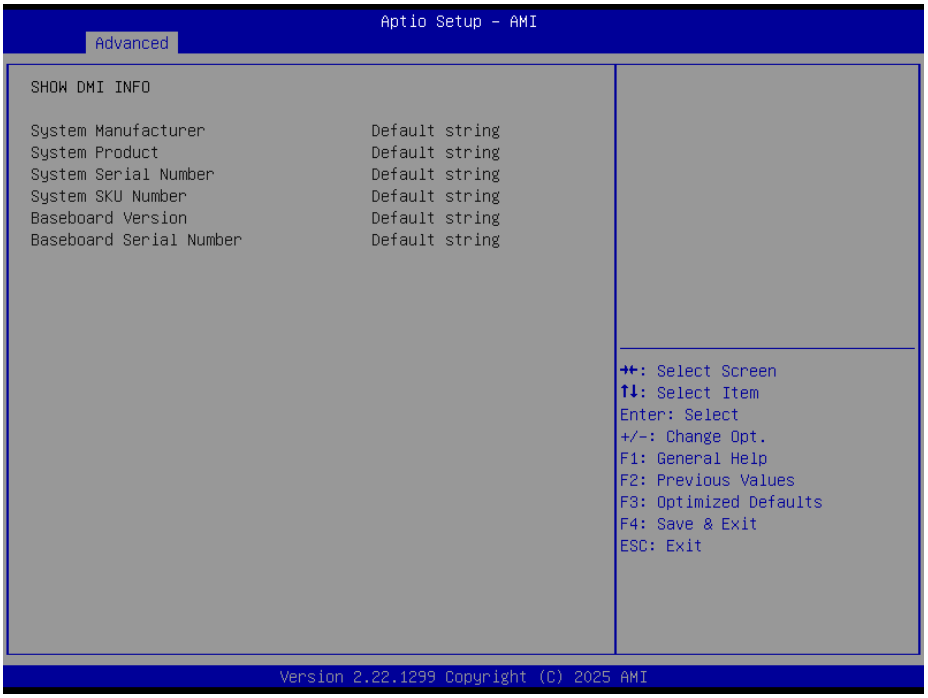
5.6.2.9 Board & Panel Configuration



Item	Option	Description
Active Panel	Disabled Enabled**[Default]**	Active Internal LVDS(eDP->Ch7513-to-LVDS).
CH7511 EDID Panel Option	1024x768 24/1 800x600 18/1 1024x768 18/1 1366x768 18/1 1024x600 18/1 1280x800 18/1 1920x1200 24/2 1920x1080 18/2 1280x1024 24/2 1440x900 18/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2**[Default]**	Port-EDP to LVDS(Chrotel 7511) Panel EDID Option.
Panel Brightness Control Method	BIOS OS driver & BR Button**[Default]**	Panel Brightness Control Method. 1.BIOS 2.OS Driver & Brightness Button.
Power Off mode(EU 2013/617)	Traditional S5**[Default]** Off mode with WOLan1 Off mode w/o WOL(ErP)	Power Off mode(EU 2013/617).
PWR-On After PWR-Fail	Off**[Default]** On Last state	AC loss resume.
Watch Dog	Disabled**[Default]**	Select WatchDog.

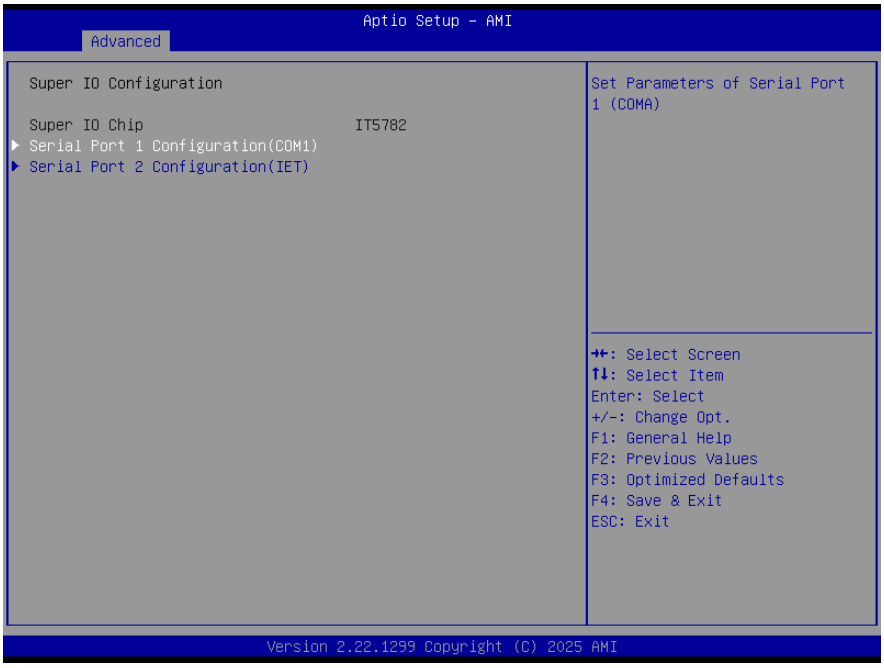
	30 sec 40 sec 50 sec 1 min 2 min 10 min 30 min	
USB Standby Power	Disabled Enabled**[Default]**	Enable/Disabled USB Standby Power during S3/S4/S5.

5.6.2.9.1 SHOW DMI INFO



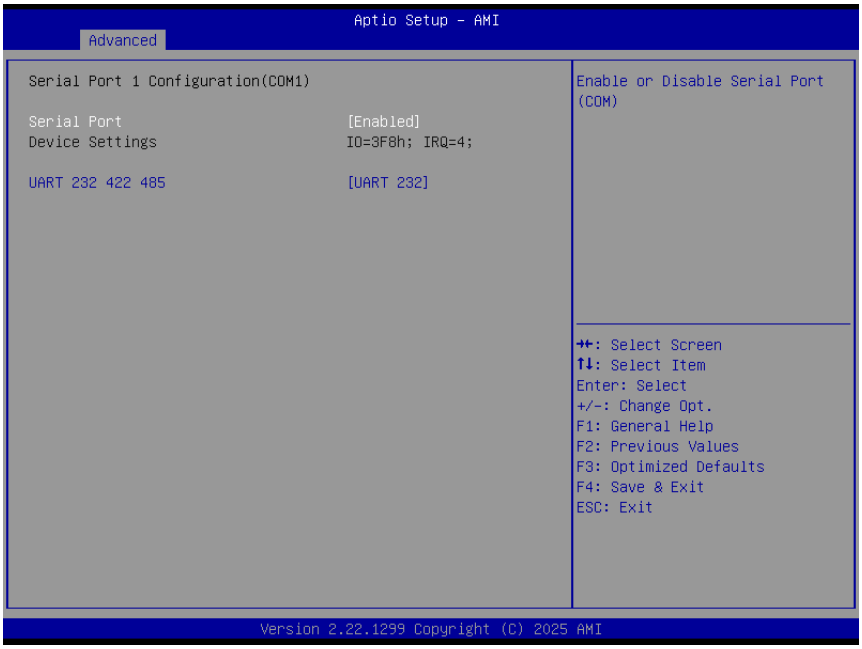
5.6.2.10 Super IO Configuration

You can use this item to set up or change the Super IO configuration for serial ports. Please refer to 5.6.2.10.1 ~ 5.6.2.10.2 for more information.



Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).

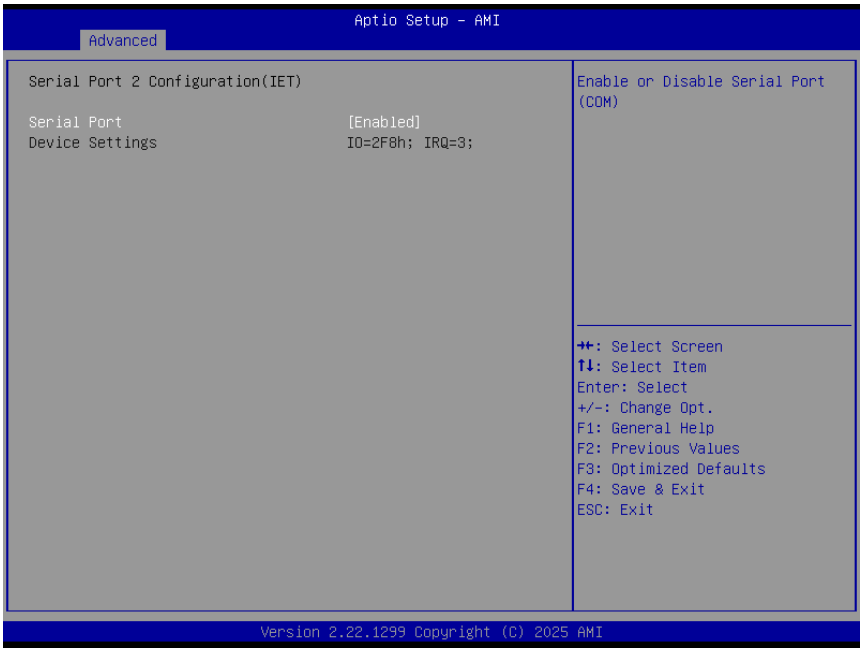
5.6.2.10.1 Serial Port 1 Configuration



Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

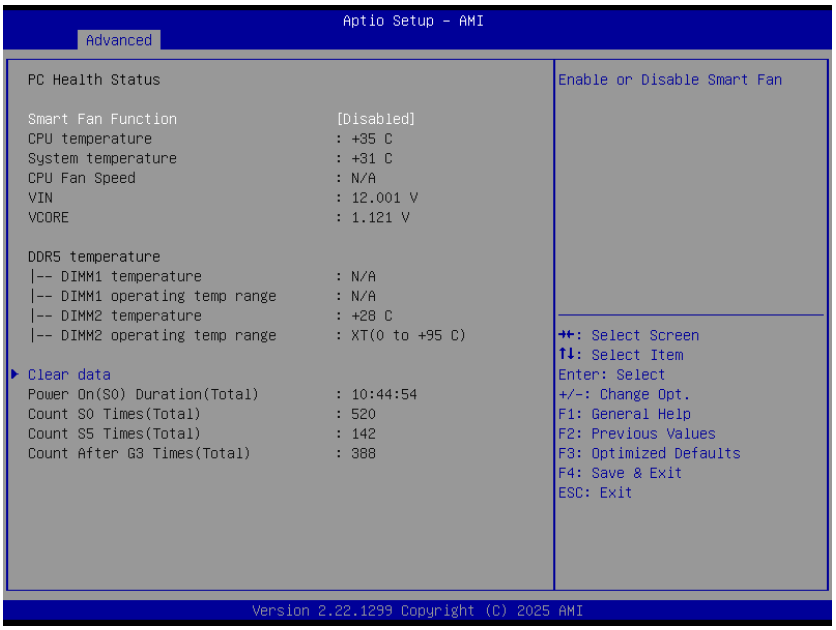
UART 232 422 485	UART 232**[Default]** UART 422 UART 485	Change the Serial Port as RS232/422/485.

5.6.2.10.2 Serial Port 2 Configuration



Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

5.6.2.11 EC 5782 HW monitor



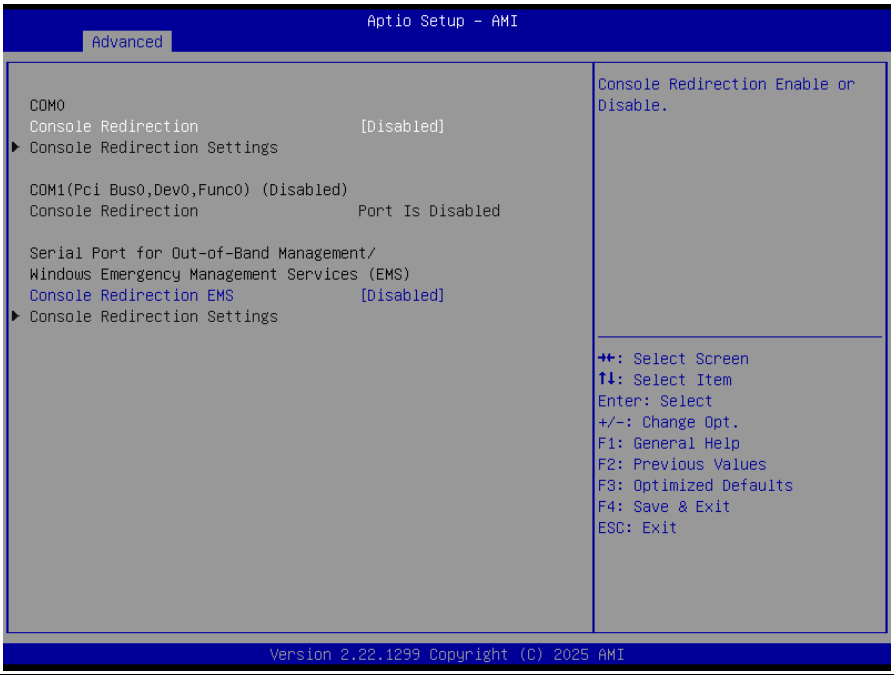
Item	Option	Description
Smart Fan Function	Disabled**[Default]**, Enabled	Enable or Disable Smart Fan.

5.6.2.12 S5 RTC Wake Settings



Item	Options	Description
Wake system from S5	Disabled**[Default]**, Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select Dynamic Time, System will wake on the current time + Increase minute(s).

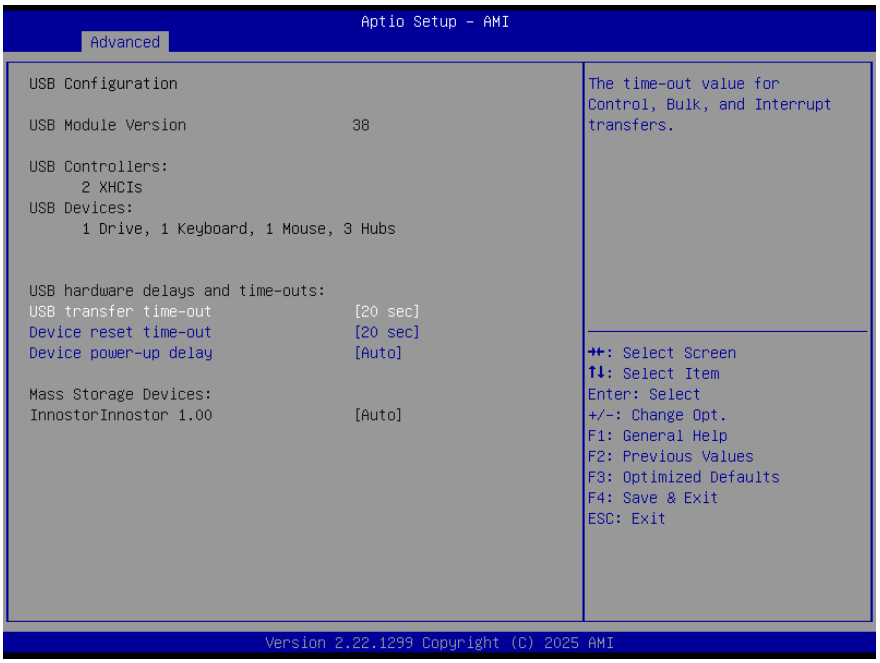
5.6.2.13 Serial Port Console Redirection



Item	Options	Description
Console Redirection	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.
Console Redirection EMS	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.

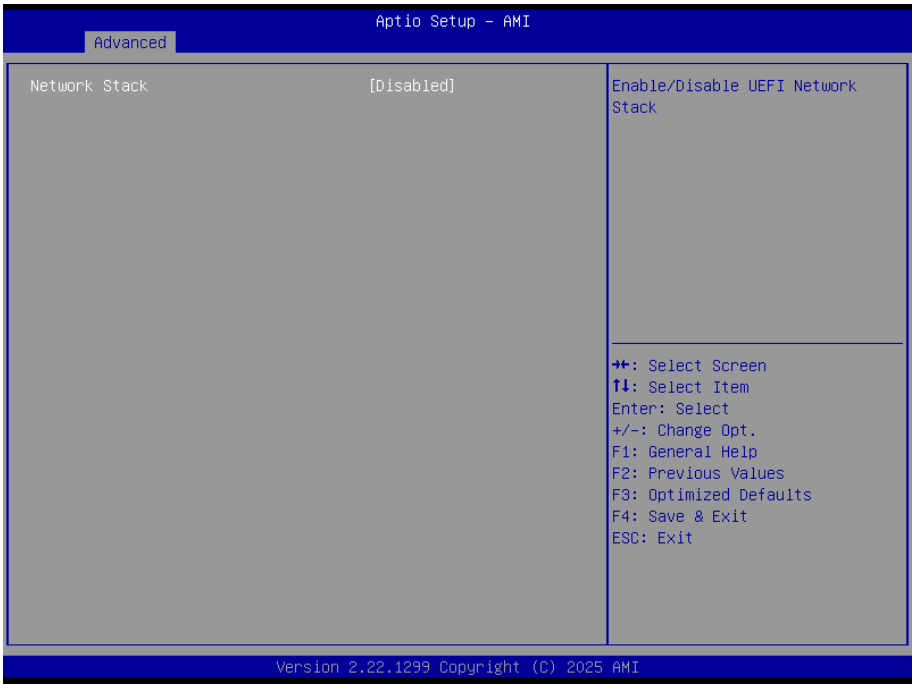
5.6.2.14 USB Configuration

The USB Configuration menu helps read USB information and configures USB settings.



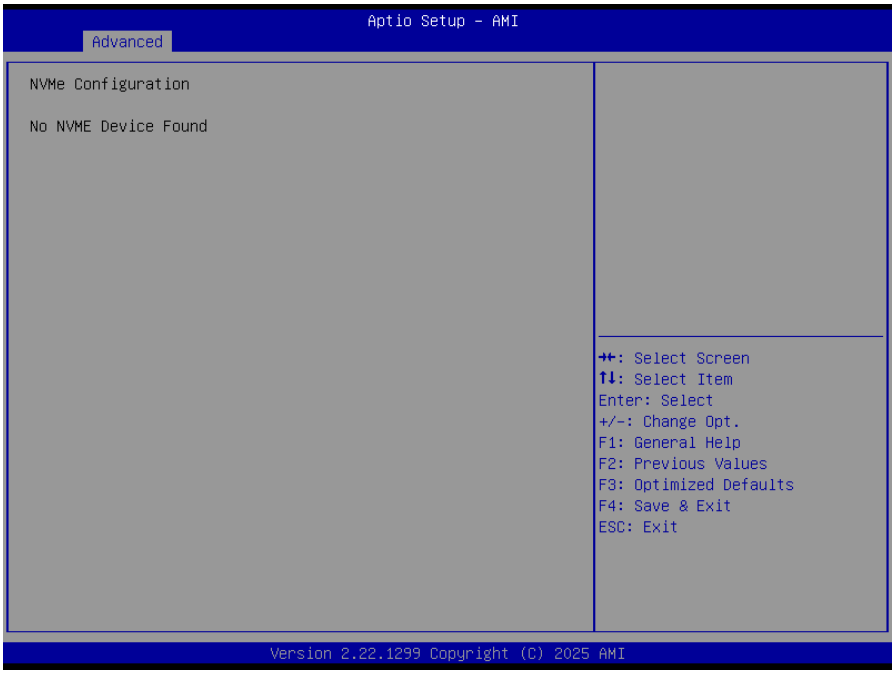
Item	Options	Description
USB transfer time-out	1 sec 5 sec 10 sec 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec**[Default]** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	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 100ms, for a Hub port the delay is taken form Hub descriptor.

5.6.2.15 Network Stack Configuration



Item	Options	Description
Network Stack	Enabled Disabled**[Default]**	Enable/Disable UEFI Network Stack.

5.6.2.16 NVMe Configuration



5.6.3 Security



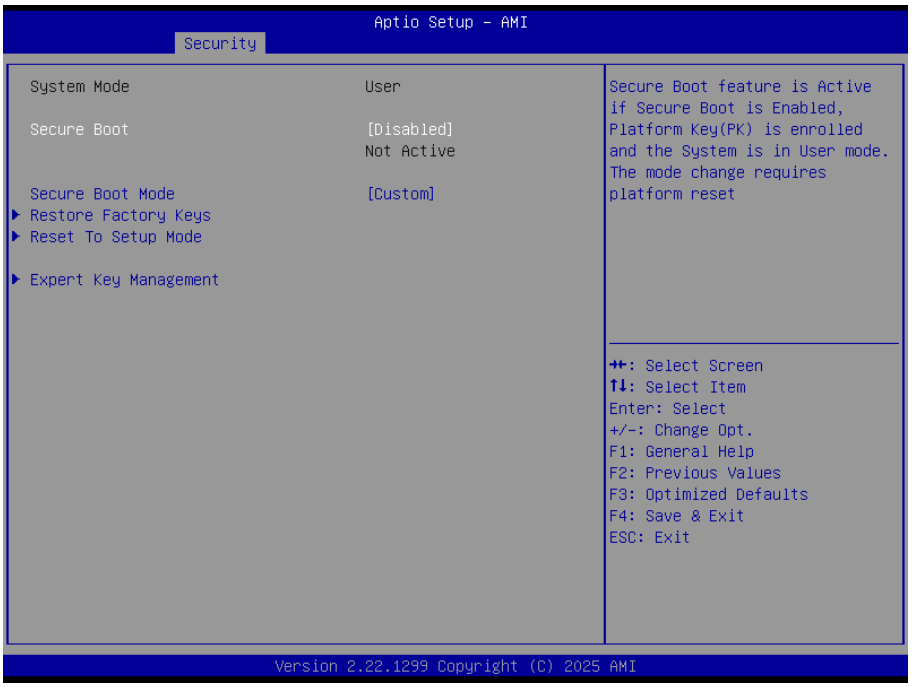
- **Administrator Password**

Set setup Administrator Password

- **User Password**

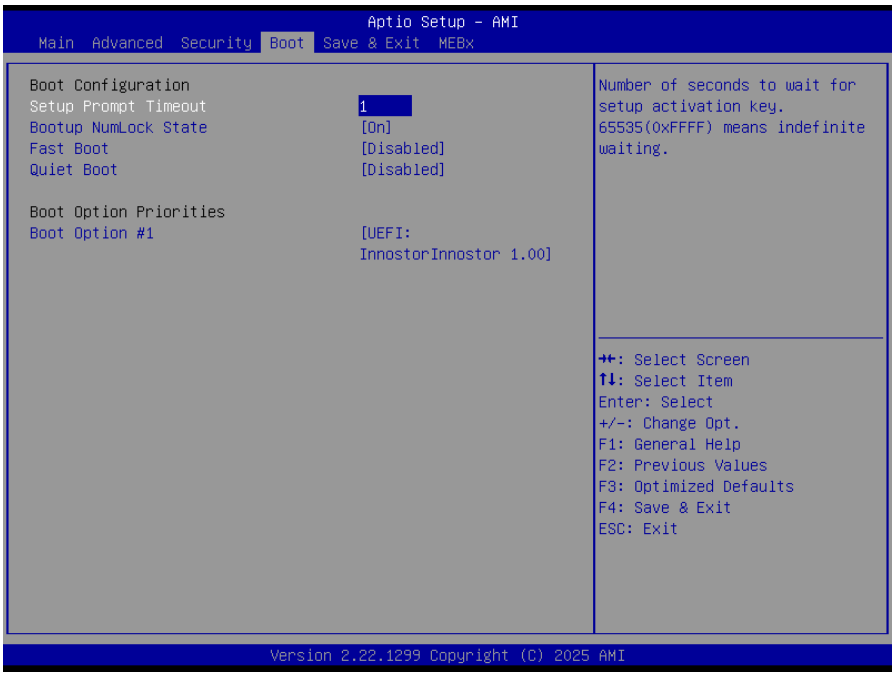
Set User Password

5.6.3.1 Secure Boot



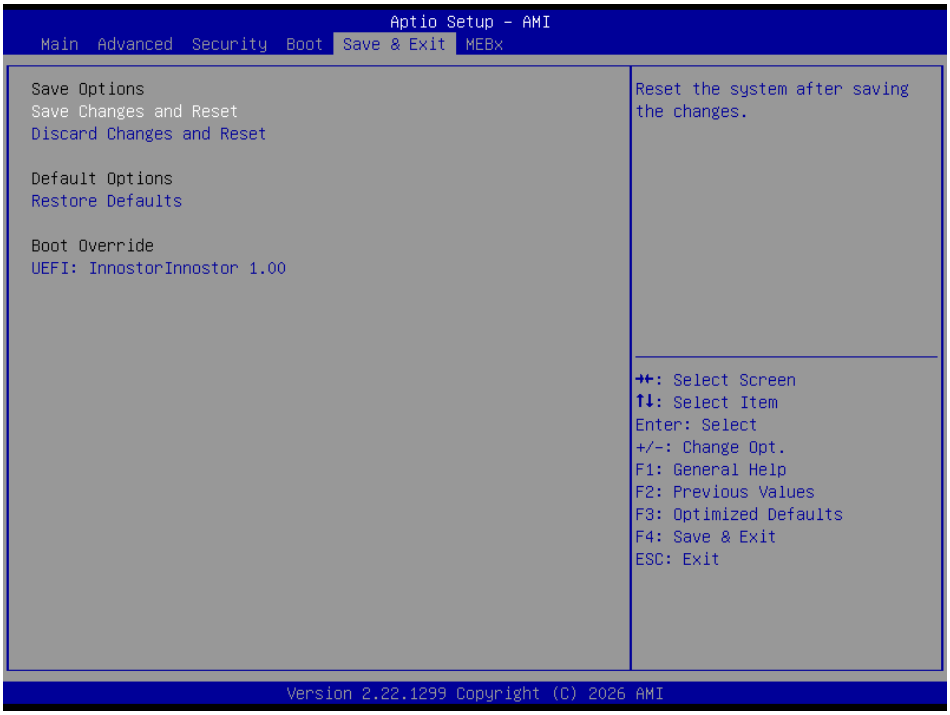
Item	Option	Description
Secure Boot	Disabled**[Default]** Enabled	Secure Boot feature is Active if Secure Boot is Enable, Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset.
Secure Boot Mode	Standard Custom**[Default]**	Secure Boot mode selector: Standard/Custom. In Custom mode Secure Boot Variables can be configured without authentication.

5.6.4 Boot



Item	Option	Description
Setup Prompt Timeout	1~ 65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the keyboard NumLock state
Fast Boot	Disabled**[Default]** Enabled	Enable/Disable fast path thru the MRC.
Quiet Boot	Disabled**[Default]** Enabled	Enables or disables Quiet Boot option
Boot Option #1	Set the system boot order.	

5.6.5 Save and Exit



5.6.5.1 Save Changes and Reset

Reset the system after saving the changes.

5.6.5.2 Discard Changes and Reset

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and reboots the controller.

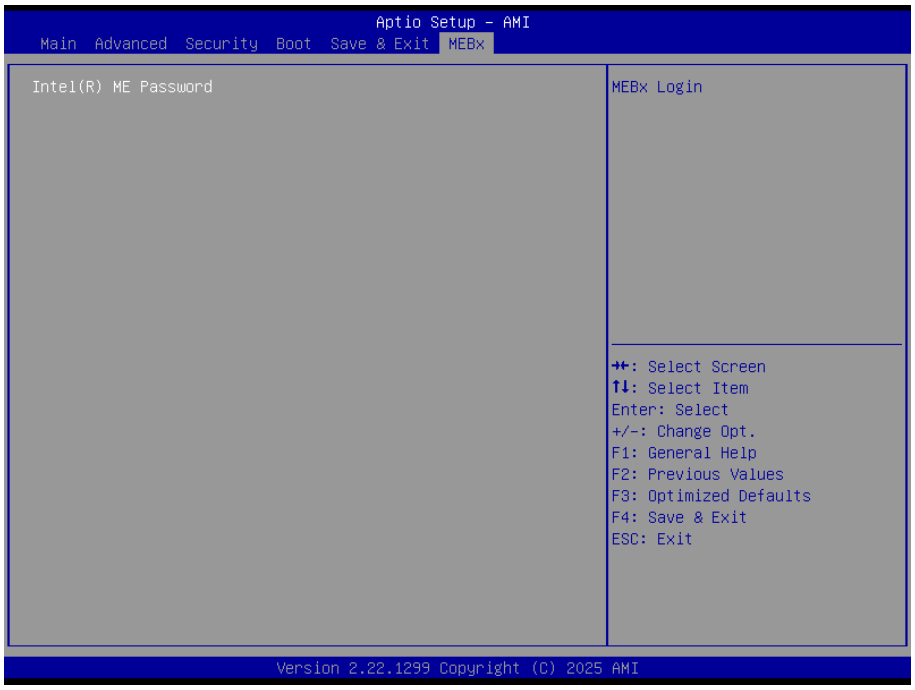
5.6.5.3 Restore Defaults

This option restores all BIOS settings to the factory default. This option is useful if the controller exhibits unpredictable behavior due to an incorrect or inappropriate BIOS setting.

5.6.5.4 Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

5.6.5 MEBx


Aptio Setup – AMI
Main Advanced Security Boot Save & Exit MEBx
Intel(R) ME Password
MEBx Login
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1299 Copyright (C) 2025 AMI

6. General Safety Guide

For your own safety and that of your equipment, always take the following precautions.
Disconnect the power plug (by pulling the plug, not the cord), from your computer if any of the following conditions exists:
The power cord or plug becomes frayed or otherwise damaged
You spill something into the case
Your computer has been dropped or the case has been otherwise damaged
You suspect that your computer needs service or repair
You want to clean the computer or screen
You want to remove/install any parts

Thermal

The HID-2146 is a fanless design system, heat is dispatch through rear metal heatsink which is located at VESA mount area.. When using your HID-2146 systems, it is normal for the metal heatsink to get warm. The rear metal heatsink of the HID-2146 functions as a cooling surface that transfers heat from inside the computer to the cooler air outside. Do not block this heatsink by any soft material.

Disconnect the power

The only way to disconnect power completely is to unplug the adapter power cord.
Make sure at least one end of the power cord is within easy reach so that you can unplug the computer when you need to.

Warning! *Your AC cord came equipped with a three-wire grounding plug (a plug that has a third grounding pin). This plug will fit only a grounded AC outlet. If you are unable to insert the plug into an outlet because the outlet is not grounded, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug.*



Warning! *Never push objects of any kind into this product through the openings in the case. Doing so may be dangerous and result in fire or a dangerous electric shock.*



Attention! *Votre cordon secteur est équipé d'une fiche de mise à la terre à trois fils (une fiche dotée d'une troisième broche de mise à la terre). Cette fiche ne s'adaptera qu'à une prise secteur mise à la terre. Si vous ne parvenez pas à insérer la fiche dans une prise car la prise n'est pas mise à la terre, contactez un électricien agréé pour remplacer la prise par une prise correctement mise à la terre. N'annulez pas l'objectif de la fiche de mise à la terre.*



Attention! *N'introduisez jamais d'objets d'aucune sorte dans ce produit par les ouvertures du boîtier. Cela pourrait être dangereux et provoquer un incendie ou un choc électrique dangereux.*



Never place anything on system case before turn off computer.
Never turn on your computer unless all of its internal and external parts are in place.
Operating the computer when it is open or missing parts can be dangerous and can damage your computer.

Proper Handling

Handle your HID-2146 with care. It is made of metal, glass, and plastic and has sensitive electronic components inside.
Don't use a damaged HID-2146, such as one with a cracked screen, as it may cause injury.
Setup HID-2146 on a stable work surface.
Do not push objects into the ventilation openings.
To lift or move your system, hold its sides.
When you move your system, do not hit the surface of the glass.