

DLAP-8100 Series

User's Manual

Industrial Edge AI System with 14th/13th/12th Intel® Core™ Processor



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Preface

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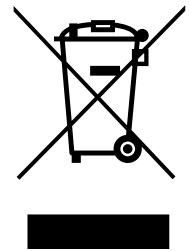
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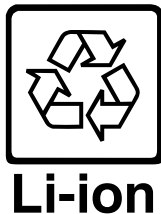
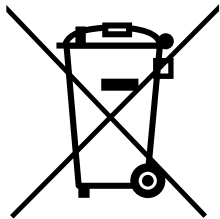
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Battery Labels (for products with battery)



廢電池請回收

California Proposition 65 Warning



WARNING: This product can expose you to chemicals including acrylamide, arsenic, benzene, cadmium, Tris(1,3-dichloro-2-propyl)phosphate (TDCPP), 1,4-Dioxane, formaldehyde, lead, DEHP, styrene, DINP, BBP, PVC, and vinyl materials, which are known to the State of California to cause cancer, and acrylamide, benzene, cadmium, lead, mercury, phthalates, toluene, DEHP, DIDP, DnHP, DBP, BBP, PVC, and vinyl materials, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



NOTE:

Additional information, aids, and tips that help users perform tasks.



CAUTION:

Information to prevent **minor** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.

Informations destinées à prévenir les blessures corporelles mineures, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche.



WARNING:

Information to prevent **serious** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

Informations destinées à prévenir les blessures corporelles graves, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche spécifique.

Revision History

Revision	Description	Date	By
1.0	Initial release	2025-02-24	AL
1.1	Mechanical layouts and connectors and jumpers updated	2025-06-16	AL

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1. Introduction

1.1 Overview

ADLINK's DLAP-8100 Series is an industrial AI edge computing workstation that supports 14th/13th/12th Gen Intel® Core™ i9/i7/i5/i3 embedded processors, an Intel® R680 chipset, DDR5 memory (up to 192GB), and one PCIe Gen4 x16 slot for a full-height, full-length GPU card, providing powerful computing capabilities for AI edge computing applications.

It includes versatile I/O interfaces (2x HDMI, 2x DisplayPort, 6x USB 3.2, and 3x 2.5GbE), as well as one M.2 2230 E-key, one M.2 3052/3042 B-key, and one M.2 NVMe/SATA 2280 M-key with a single-side access design, optimizing ease of maintenance in industrial automation environments.

The DLAP-8100 Series fully meets the performance requirements of industrial customers in vision inspection, motion control, and surveillance applications. Its fanless construction not only overcomes contaminant and noise challenges in harsh industrial automation environments, but the elimination of problematic structural elements that negatively affect MTBF significantly increases the platform's lifecycle expectations.

1.2 Features

- 14th/13th/12th Intel® Core™ i9/i7/i5/i3 embedded processors with R680E chipset
- Up to 192 GB DDR5 3600MHz (4x SODIMM slots)
- 2x DP++, 2x HDMI, 3x 2.5 GbE, 2x COM, 8 DI/8 DO, 4x USB 3.2, 2x USB 3.1, TPM 2.0
- 4x 2.5-inch HDD/SDD tray (3x SATAIII 6 Gb/s and 1x USB-to-SATA)
- 1x M.2 2230 E-key, 1x M.2 3052/3042 B-key, 1x M.2 NVMe/SATA 2280 M-key
- Support 1x FHFL PCI Express GPU cards (e.g., NVIDIA RTX 6000 Ada)
- PCIe x16, x 4, x4, x1 signals with physical x16, x8, x8, x1 slots
- 100-240 AC input

1.3 Packing List

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK. Ensure that the following items are included in the package.

DLAP-8100 Industrial GPU Workstation

- Accessory box
- Wall-mount brackets
- Screw pack

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2. Specifications

2.1 Product Specifications

Model	DLAP-8100
System Core	
Processor	Intel® 14th/13th/12th-Gen Core™ 35W/ 65W LGA1700 CPU
Chipset	R680E
Memory	Up to 192GB DDR5 4800MHz (4x SODIMM slots)
Display	2x DP++ and 2x HDMI
I/O Interface	
Ethernet	3x 2.5GBE with TSN supported (i225)
Serial Ports	COM1/2: RS-232/422/485, COM3/4: RS-232
USB	4x USB 3.2 Gen2 (Type A) 2x USB 3.2 Gen 1 (Type A)
Audio	Line-out, Mic-in
M.2	1x M.2 2230 Key E (PCIe Gen3 x1) 1x M.2 3042/3052 Key B (PCIe Gen3 x1 / USB3) 1x M.2 2280 Key M, NVMe/SATA (PCIe Gen3 x4 / SATA)
DI/O	8-ch DI and 8-ch DO
TPM 2.0	Supported
Storage	
2.5" SATA	3x SATA III (6Gb/s) slots and 1x USB-to-SATA slot for 2.5-inch SSD
Mechanical	
Dimensions	210 (W) x 210 (D) x 350 (H) mm (8.27" x 8.27" x 13.8")
Weight	10 Kg
Mounting	Wall mount
Power Supply	
DC Input	100-240V AC
Environmental	
Operating Temperature	-20°C to 60°C (without PEG card)
Storage Temperature	-40°C to 85°C (-40°F to 185°F) (excluding storage)
Humidity	~95% @ 40°C (104°F) (non-condensing)
Vibration	Operating: 2 Grms, 5-500 Hz, 3 axes (w/ SSD/CFast)
Shock	Operating: 20 Grms, half sine 11ms duration (w/ SSD/CFast)
ESD	Contact ±4KV, Air ±8KV
EMC	EN61000-6-4/-2, CE & FCC Class B
Safety	UL/cUL, CB

2.2 Display Options

With computing and graphic performance enhancement from its 14th/13th/12th Generation Intel processors, the DLAP-8100 controller can support or three independent displays, with configurations as follows.

Table 1: Maximum display resolution configurations

	Port	Resolution
Display Option 1	DisplayPort1	4096x2304@60Hz
Display Option 2	DisplayPort2	4096x2304@60Hz
Display Option 3	HDMI1	3840X2160@60Hz
Display Option 4	HDMI2	3840X2160@60Hz

3. Functional Block Diagram

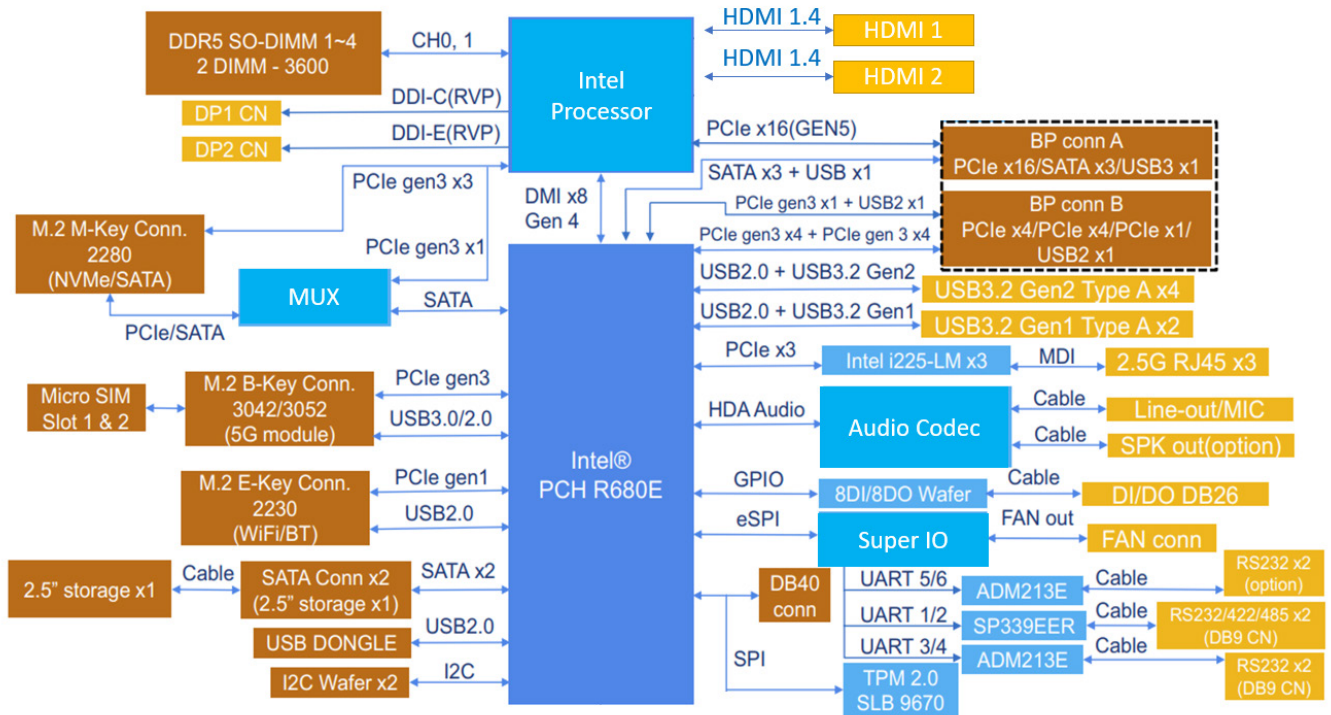


Figure 1: Functional block diagram

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4. Mechanical Layouts

4.1 Connector Locations

4.1.1 DLAP 8100 Connector Locations

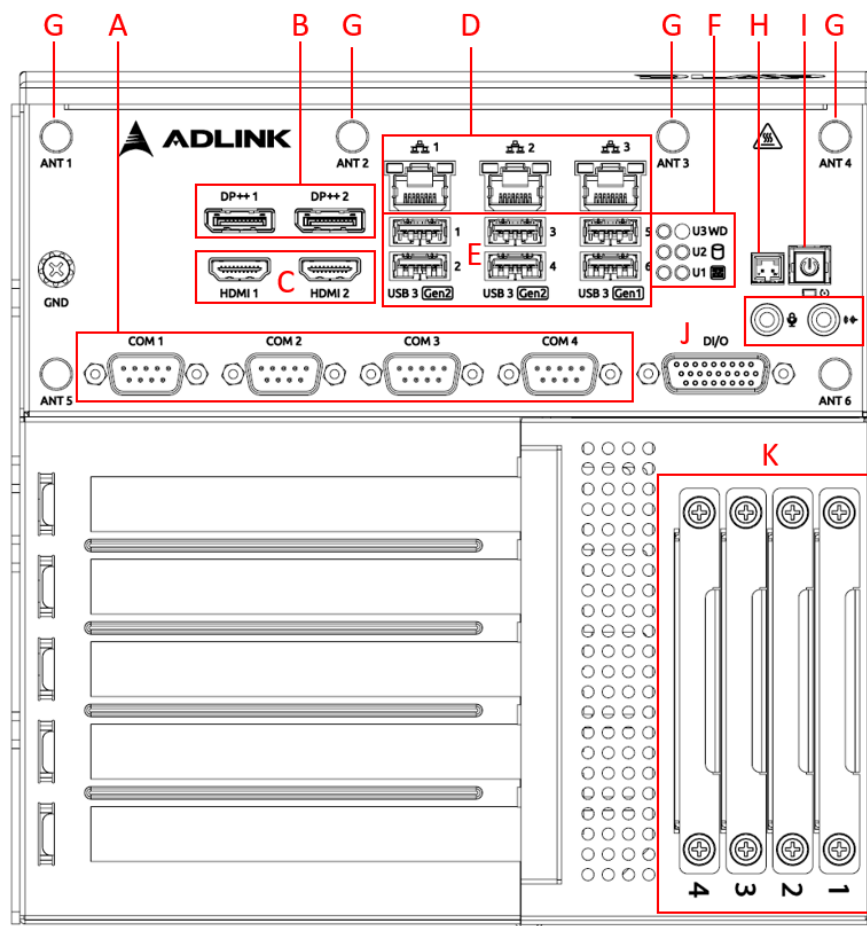


Figure 2: DLAP 8100 connector locations

Table 2: DLAP 8100 connector descriptions

A	4x COM Port (2x RS-232/422/485, 2x RS-232)	G	6x Antenna
B	2x DisplayPort++	H	External Power Button Connector
C	2x HDMI	I	Power Button
D	3x 2.5GbE	J	Digital Input/Output
E	4x USB 3.2, 2x USB 3.1	K	4x SATA tray for 2.5inch SSD
F	LED Indicators		

4.1.2 PCIe Slot Locations

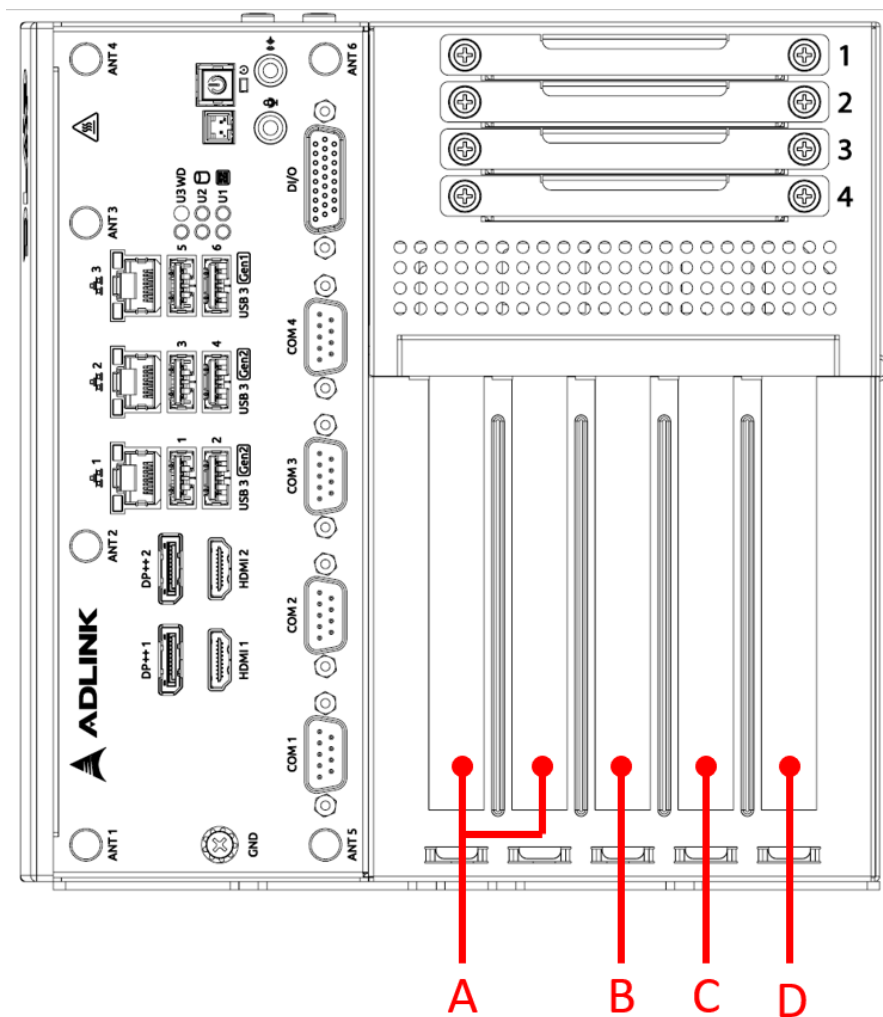
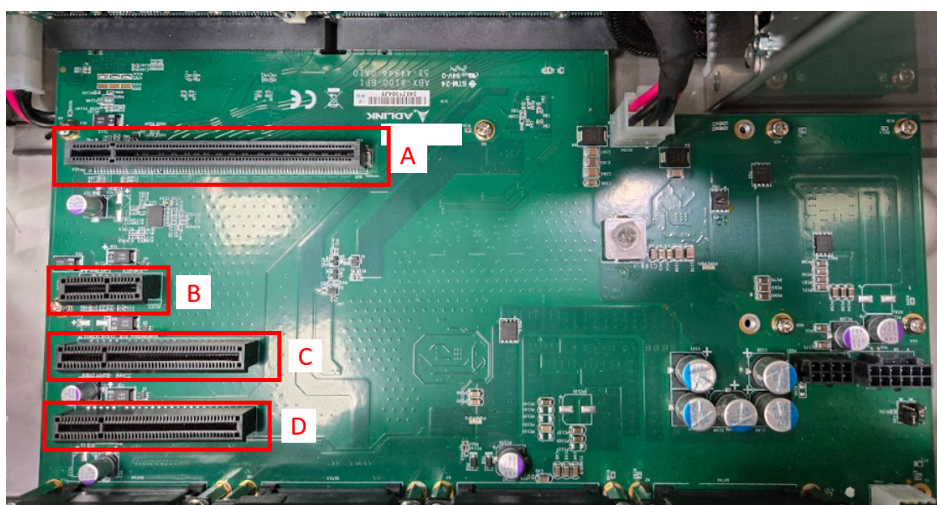


Figure 3: PCIe slot connector locations

Backplane Connector Locations



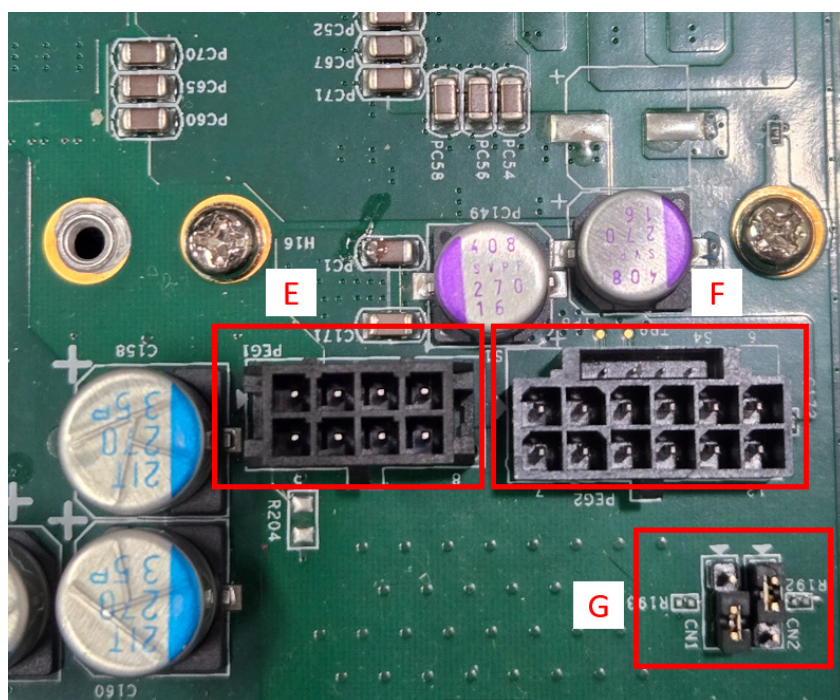
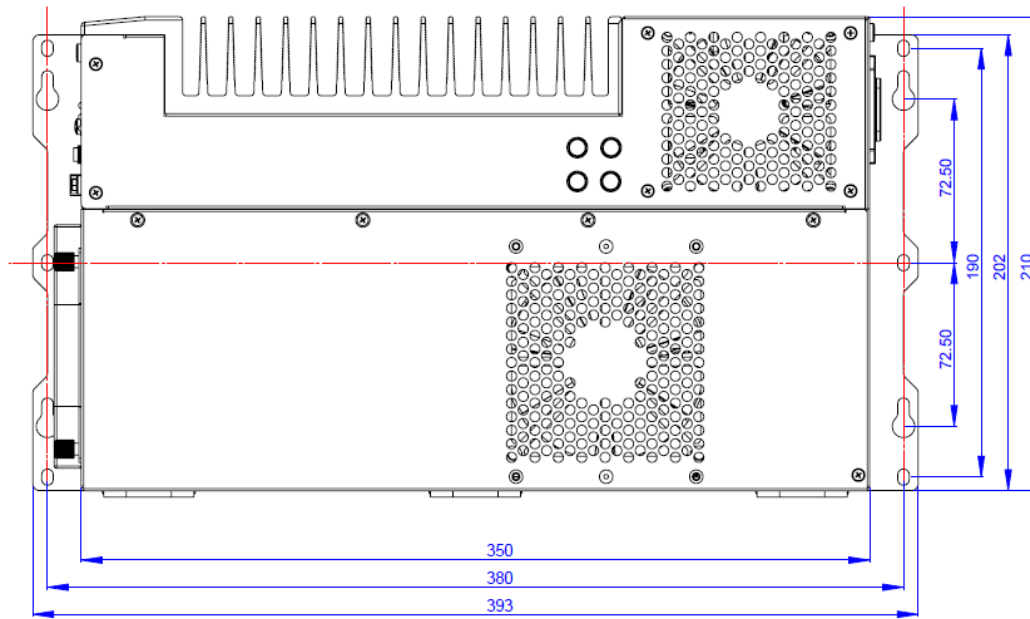


Table 3: Backplane connector descriptions

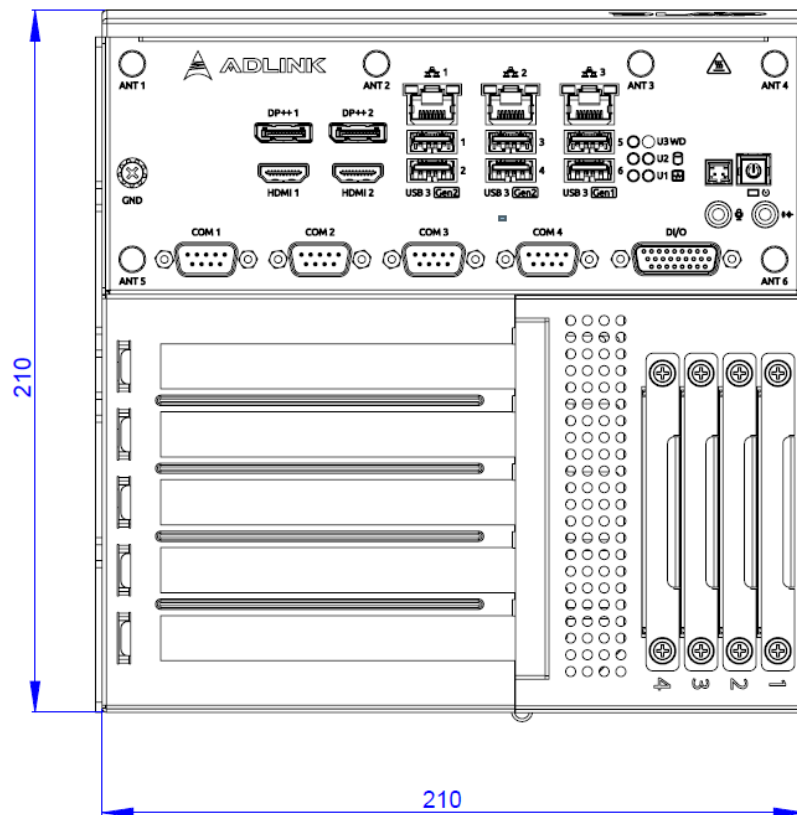
A	1x 2-slot GEN4 PCIe x16
B	1x GEN3 PCIe x1
C	1x GEN3 PCIe x8 (signal x4)
D	1x GEN3 PCIe x8 (signal x4)
E	PEG1: 8-pin ATX for graphic card, max 150W
F	PEG2: 12VHPWR for graphic card, max 450W
G	Jumper for 12VHPWER Power config

4.2 Mechanical Dimensions



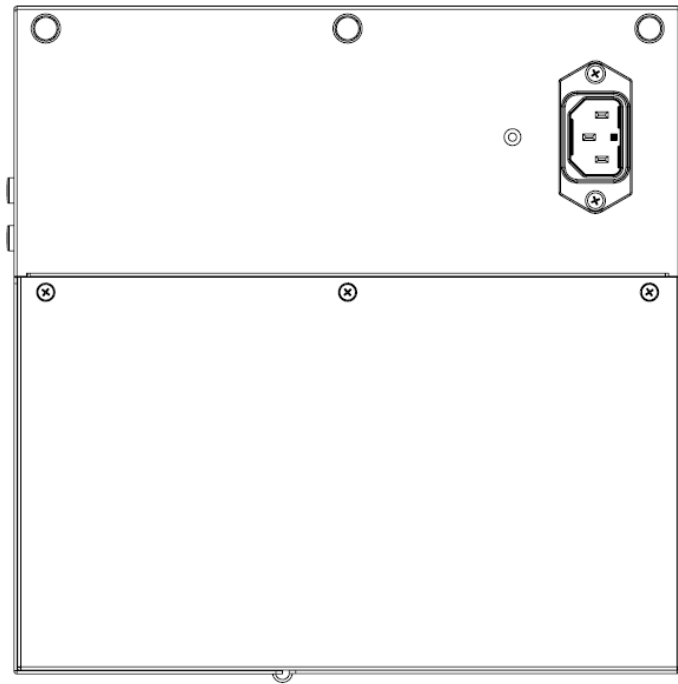
units: mm

Figure 4: DLAP-8100 front view (Wall-mount brackets included)



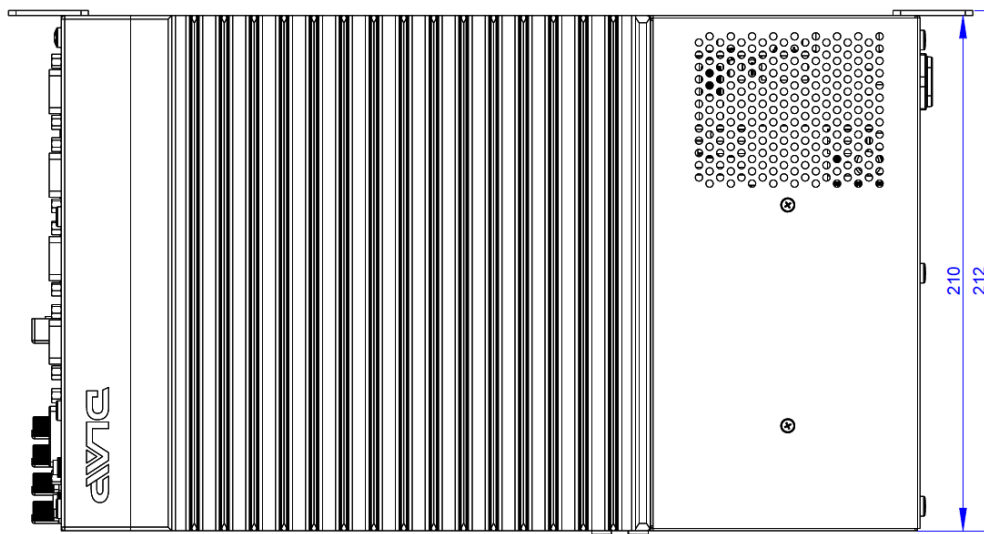
units: mm

Figure 5: DLAP-8100 left side view



units: mm

Figure 6: DLAP-8100 right side view



units: mm

Figure 7: DLAP-8100 top view

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5. Getting Started

5.1 Installing Wall-Mount Brackets

Use the 6 M4 6mm screws included in the accessory box to attach the 2 included wall-mount brackets to the chassis, as indicated by the red circles below.

Utilisez les 6 vis M4 6 mm incluses dans la boîte d'accessoires pour fixer les 2 supports de montage mural inclus au châssis, comme indiqué par les cercles rouges ci-dessous.

wall-mount bracket



wall-mount bracket

5.2 Mounting the Device / Montage de l'Appareil

Mount the device to the wall using the 4 keyhole openings, encircled in red, or the 6 mounting holes, encircled in green, according to the spacing dimensions of the holes in the bracket as shown in Figure 3, DLAP-8100 Front View (wall-mount brackets included).

It is recommended to use 4 M5 16 mm wall-mounted screws (for the keyholes) or 6 M5 16 mm screws (for the mounting holes).

Montez l'appareil sur un mur à l'aide des 4 ou 6 ouvertures de trou de serrure en fonction des dimensions d'espacement des trous dans le support, comme indiqué dans Figure 3 DLAP-8100 Front View (wall-mount brackets).

Il est recommande d'utiliser 4 (pour trou de serrure) ou 6 (pour trous de montage) vis de fixation murale M5 16 mm.

keyhole opening



Mounting holes

5.3 Driver Installation

Download the Windows 10 drivers for your system from the product page at <https://www.adlinktech.com/Products/Industrial PCs Fanless Embedded PCs/IPCSystems/DLAP-8100 Series?lang=zh-Hant> and install them.

The following drivers must be installed:

- Chipset
- Graphics
- Audio
- Ethernet
- Intel ME
- DI/O

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6. Connectors and Jumpers

6.1 Front Panel I/O Connectors

6.1.1 Power Button and LEDs

The power button is a non-latched push button with a blue LED indicator. System is turned on when the button is depressed, and the power LED lights. If the system hangs, depress the button for 5 seconds to turn off the system completely.

System status	Power LED
System turn on	Light ON
Suspend (S3)	Blinking
Hybernation (S4)	Blinking
Power OFF (S5)	Light OFF

6.1.2 LED Status Indicators

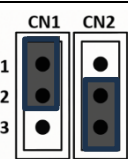
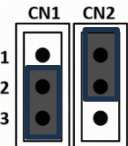
There are three LEDs on the front panel, apart from the power LED, indicating the following operations.

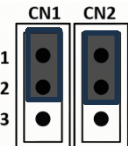
LED Indicator	Color	Description
Watchdog (WD)	Yellow (Top right)	Indicates watchdog timer status. When watchdog timer starts, the LED flashes. When the timer is expired, the LED remains lit..
Hard disk drive (HD)	Orange (Middle right)	Indicates the HDD operating state. When the SATA hard drive or CFast card is active, the LED indicator flashes.
Diagnostic (DG)	Green (Bottom right)	When lit continuously, indicates no physical storage is connected, and if blinking, indicates no memory is installed on either SODIMM socket.
User defined (U1)	Green (Top left)	User defined.
User defined (U2)	Green (Middle left)	User defined.
User defined (U3)	Green	User defined.

6.1.3 PCI Express x16 Slots

One PCI Express x16 slot (x16 data bus) supports expansion with a standard PCIe Gen4 GPU card. Maximum card size: L: 335mm x W: 135mm.

Jumper CN1 & CN2 for PCI Express 12VHPWER connector power limit

12VHPWER power jumper setting	
450W (Default)	
300W	

150W	
------	---

6.1.4 PCI Express x8 Slots

Two PCI Express x8 slots (x4 data bus) support expansion with standard PCIe Gen3 cards.

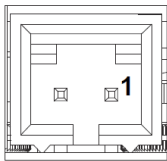
6.1.5 PCI Express x1 Slot

Two PCI Express x1 slots (x1 data bus) support expansion with standard PCIe Gen3 cards.

Note: The total power consumption of all PCIe slots should be under 500 watts within the operating temperature range of -20°C to 50°C.

6.1.6 External Power Button Connector

The DLAP-8100 Series provides an external power button connector to remotely power on/off the platform.



Pin	Signal
1	PWR_BTN-L
2	GND

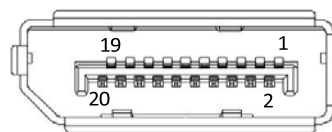
6.1.7 Reset Button

The reset button executes a hard reset for the DLAP-8100.

6.1.8 DisplayPort Connectors

The reset button executes a hard reset for the DLAP-8100.

Pin	Signal	Pin	Signal
1	CN_DDPx0+	11	GND
2	GND	12	CN_DDPx3-
3	CN_DDPx0-	13	CN_DDPx_AUX_SEL
4	CN_DDPx1+	14	CN_DDPx_CONFIG2
5	GND	15	CN_DDPx_AUX+
6	CN_DDPx1-	16	GND
7	CN_DDPx2+	17	CN_DDPx_AUX-
8	GND	18	CN_DDPx_HPD
9	CN_DDPx2-	19	GND
10	CN_DDPx3+	20	+V3.3_DDPx_PWR_CN



6.1.9 Digital I/O Connector

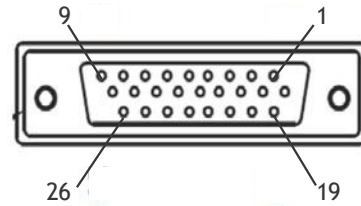
The DLAP-8100 provides 8 channels of non-isolation digital input and 8 channels of non-isolation digital output circuits, with spec and circuits as follows.

8-channel Digital Input

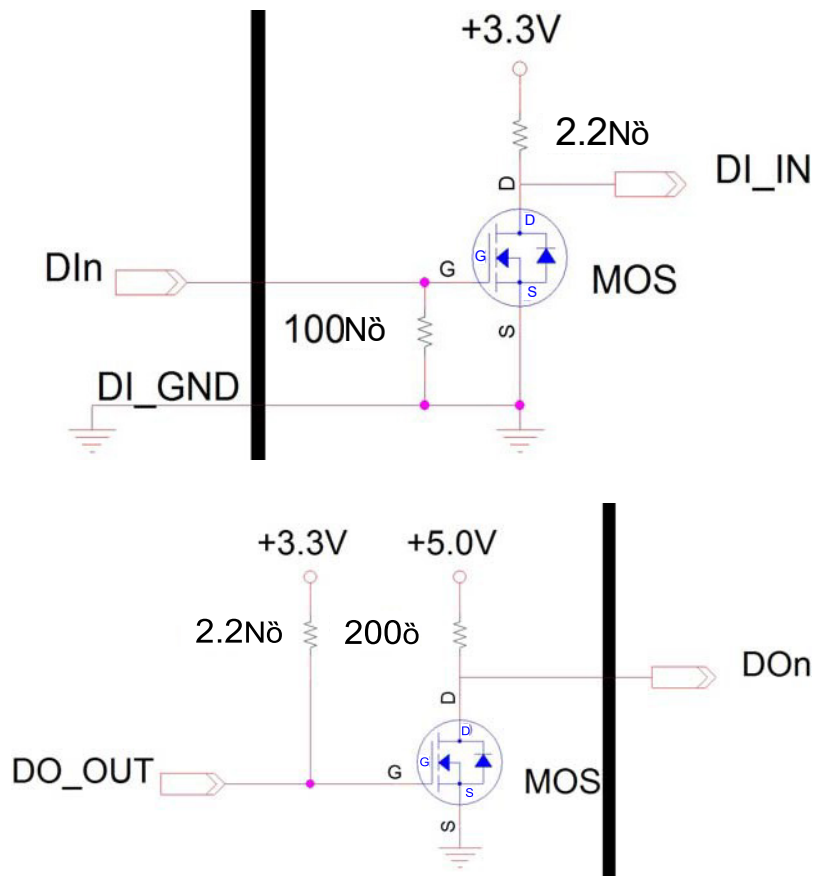
- V_{IH} : 2 to 5.25V
- V_{IL} : 0 to 0.8V

8-channel Digital Output

- Output type: Open drain N-channel
- MOSFET driver with internal pull high of 200 Ω resistance.
- Source/Sink current for all channels: 24mA
- V_{OH} : 2.4 to 5V
- V_{OL} : 0 to 0.5V



Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	DI0	8	DI7	15	N/C	22	DO3
2	DI1	9	GND	16	N/C	23	DO4
3	DI2	10	N/C	17	N/C	24	DO5
4	DI3	11	N/C	18	GND	25	DO6
5	DI4	12	N/C	19	DO0	26	DO7
6	DI5	13	N/C	20	DO1		
7	DI6	14	N/C	21	DO2		



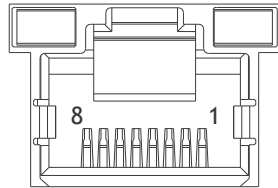
6.1.10 USB 3.1 Ports

The DLAP-8100 Series provides four USB 3.2 Gen 2 ports and two USB 3.2 Gen 1 ports, supporting Type-A USB 3.2 connections on the front panel. All USB 3.2 ports are compatible with SuperSpeed Gen 2, high-speed, full-speed, and low-speed USB devices. USB1 and USB2 provide 1.6A of current, while USB3 and USB4 share 1.6A of current, and USB5 and USB6 share 1.6A of current. The full 1.6A current is available if only one port is used.

6.1.11 Gigabit Ethernet Ports and LEDs

Three Gigabit Ethernet ports on the front panel support Intel I225-LM at 2.5 Gbps.

Speed LED Green/Orange	Active/Link Yellow
---------------------------	-----------------------



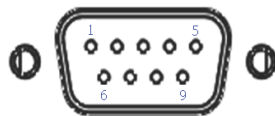
Pin	10BASE-T/100BASE-TX	1000BASE-T
1	TX+	LAN_TX0+
2	TX-	LAN_TX0-
3	RX+	LAN_TX1+
4	—	LAN_TX2+
5	—	LAN_TX2-
6	RX-	LAN_TX1-
7	—	LAN_TX3+
8	—	LAN_TX3-

LED Color	Status	Description
Yellow	OFF	Ethernet port is disconnected.
	ON	Ethernet port is connected with no activity.
	Flashing	Ethernet port is connected and active.

LED Color	Status	Description
Green/Orange	OFF	10/100 Mbps
	Green	1000 Mbps
	Orange	1000 Mbps

6.1.12 COM Port Connectors

The DLAP-8100 provides four COM ports through D-sub 9-pin connectors. The COM1 & COM2 ports support RS-232/422/485 modes by BIOS setting, while COM3 and COM4 support only RS-232.

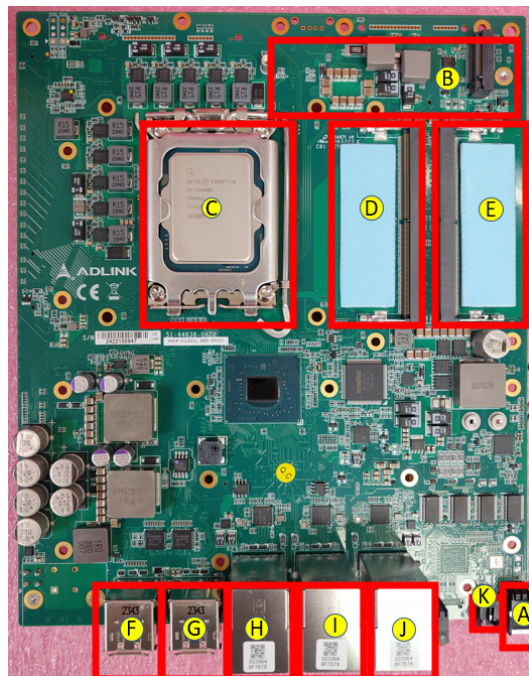


Pin	Signal Name		
	RS-232	RS-422	RS-485
1	DCD#	TXD422-	485DATA-
2	RXD	TXD422+	485DATA+
3	TXD	RXD422+	N/S
4	DTR#	RXD422-	N/S
5	GND	N/S	N/S
6	DSR#	N/S	N/S
7	RTS#	N/S	N/S
8	CTS#	N/S	N/S
9	RI#	N/S	N/S

6.2 Internal I/O Connectors

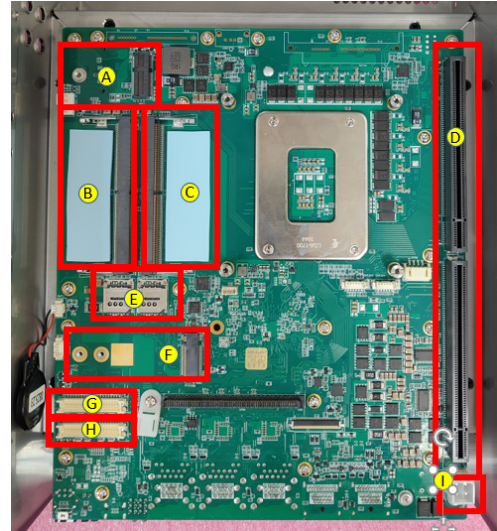
6.2.1 Mainboard Top Connector Locations

A	Power button
B	M.2 M Key
C	CPU Socket
D	DDR5 SODIMM #1
E	DDR5 SODIMM #3
F	HDMI + DP
G	HDMI + DP
H	RJ45 + USB 3.0 x2
I	RJ45 + USB 3.0 x2
J	RJ45 + USB 3.0 x2
K	External Power Connector



6.2.2 Mainboard Bottom Connector Locations

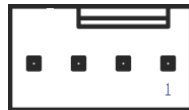
A	M.2 E Key
B	DDR5 SO-DIMM #2
C	DDR5 SO-DIMM #4
D	PCIE GEN4 + Power slot for BP Board
E	SIM connector
F	M.2 B Key
G	Wafer for DIDO + MIC
H	Wafer for COM1, 2, 3, 4
I	External Power Connector for BP board



6.2.3 12V Fan Connector

DC 12V fan module power supply is provided through the connector, to which the optional fan module connects when installed in the chassis.

Pin	Signal
1	FAN_GND
2	P_+12V_FAN
3	SIO_FAN_IN
4	SIO_FAN_OUT



6.2.4 Clear CMOS Jumper

Upon encountering an abnormal condition preventing the DLAP- 8100 from booting, the jumper can clear the BIOS content stored in CMOS and restore default settings. To clear CMOS, short pin #1 to pin #2 for a minimum of 3 seconds, and then remove the jumper to return to normal mode (replace to pins #2 and #3, default).



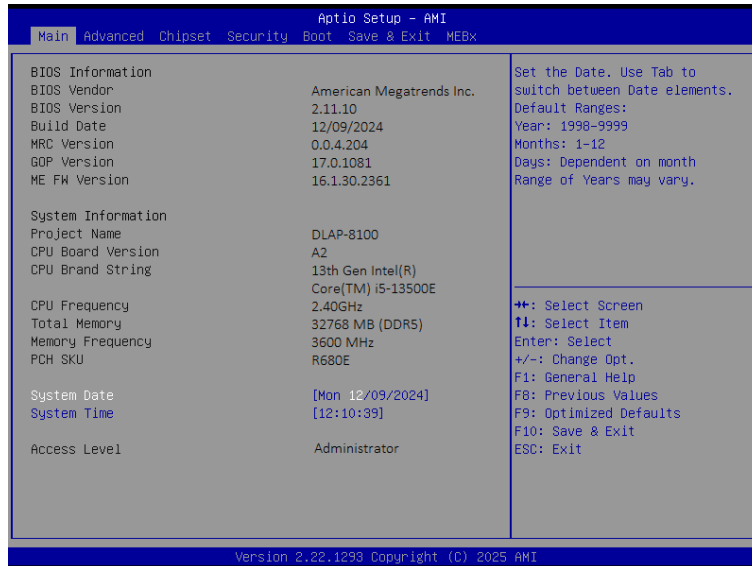
6.2.5 USIM Slot

The USIM slot connects to the Mini PCIe and M.2 slots.

7. BIOS Settings

7.1 Main

Changing BIOS settings may lead to incorrect controller behavior and possible inability to boot.



Contains basic system information for DLAP-8100



WARNING:

Changing BIOS settings may lead to incorrect controller behavior and possible inability to boot. In such a case, Section 6.2.4: 'Clear CMOS Jumper' provides instructions on clearing the CMOS and restoring default settings.

BIOS Information

Shows the current system BIOS Vendor, BIOS Version, Build Date, MRC Version, GOP Version, and ME FW Version.

System Time/System Date

Allows adjustment of system time and date, as follows.

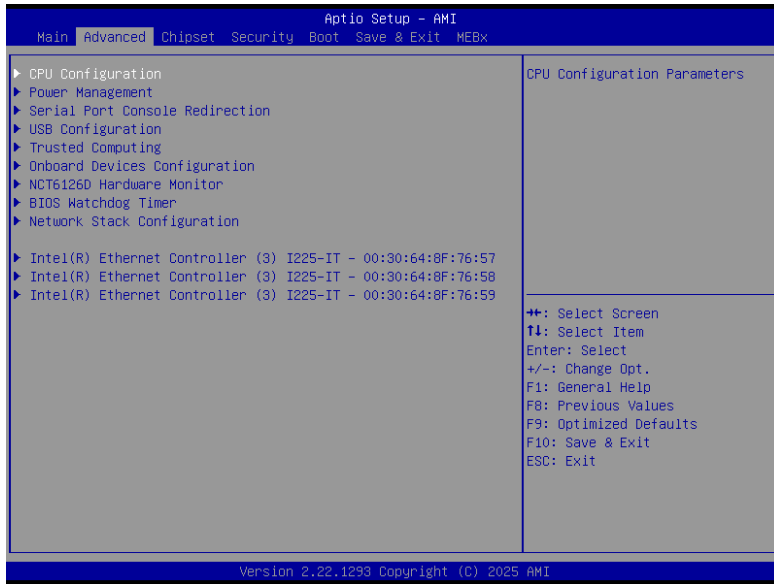
1. Highlight System Time or System Date using the up and down <Arrow> keys
2. Enter new values using the keyboard and select <Enter>
3. Select < Tab > to move between fields.



NOTE:

The date must be entered in MM/DD/YY format, and the time in HH:MM:SS format. The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. appears as 17:30:00.

7.2 Advanced



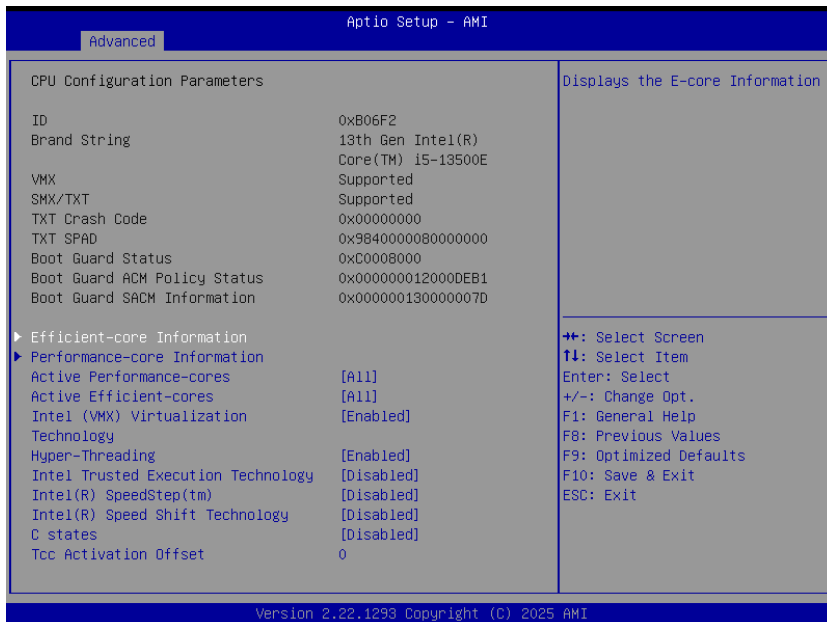
Accesses advanced options of the DLAP-81000



NOTE:

Setting incorrect or conflicting values in Advanced BIOS Setup may cause system malfunction.

7.2.1 Advanced > CPU Configuration



Efficient-Core Information

Displays the E-core information.

Performance-Core Information

Displays the P-core information.

Active Performance-cores

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

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.

Intel (VMX) Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Hyper-Threading

Enabled for Windows XP and Linux (optimized for Hyper-Threading Technology) and disabled for other operating systems (not optimized for Hyper-Threading Technology). When disabled, only one thread per enabled core is active.

Intel Trusted Execution Technology

Enables utilization of additional hardware capabilities provided by Intel(R) Trusted Execution Technology. Changes require a full power cycle to take effect.

Intel® SpeedStep™

Allows support for more than two frequency ranges.

Intel® Speed Shift Technology

Enables or disables Intel® Speed Shift Technology support. Enabling this feature will expose the CPPC v2 interface to allow hardware-controlled P-states.

C States

Enable/Disable CPU Power Management. Allows CPU to go to C states when it is not 100% utilized.

TCC Activation Offset

The offset from the factory-set TCC activation temperature at which the Thermal Control Circuit (TCC) must be activated. TCC will be activated at: TCC Activation Temp - TCC Activation Offset. The TCC Activation Offset range is from 0 to 63.

7.2.2 Advanced > Power Management

**State After G3**

Specifies the state to which the system should transition when power is re-applied after a power failure (G3 state).

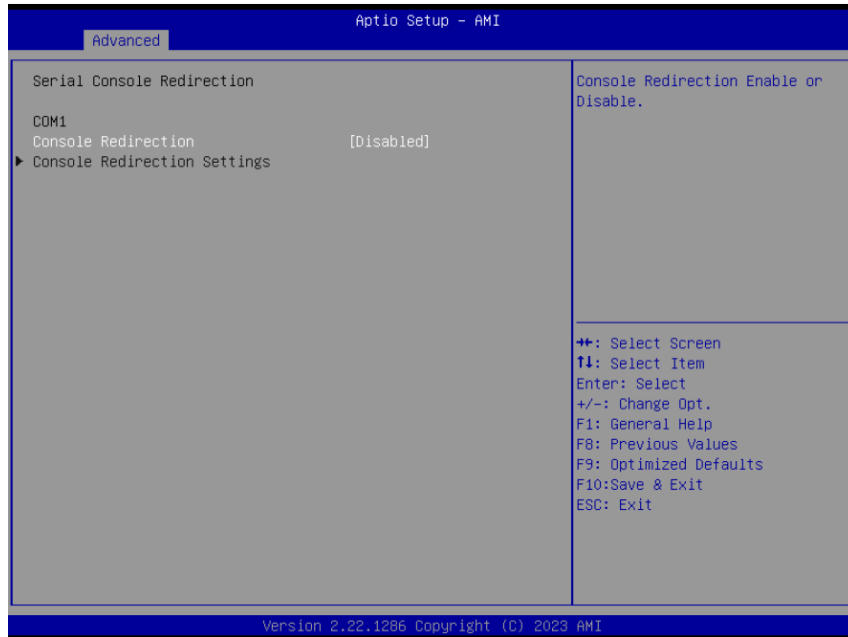
RTC Wake System from S5

Enable or disable System wake on alarm event. Select FixedTime for the system to wake at the hr::min::sec specified. Select DynamicTime for the system to wake at the current time + Increase minute(s).

PCIe Wake

Enables or disables PCI Express wake capability.

7.2.3 Advanced> Serial Console Configuration



COM1

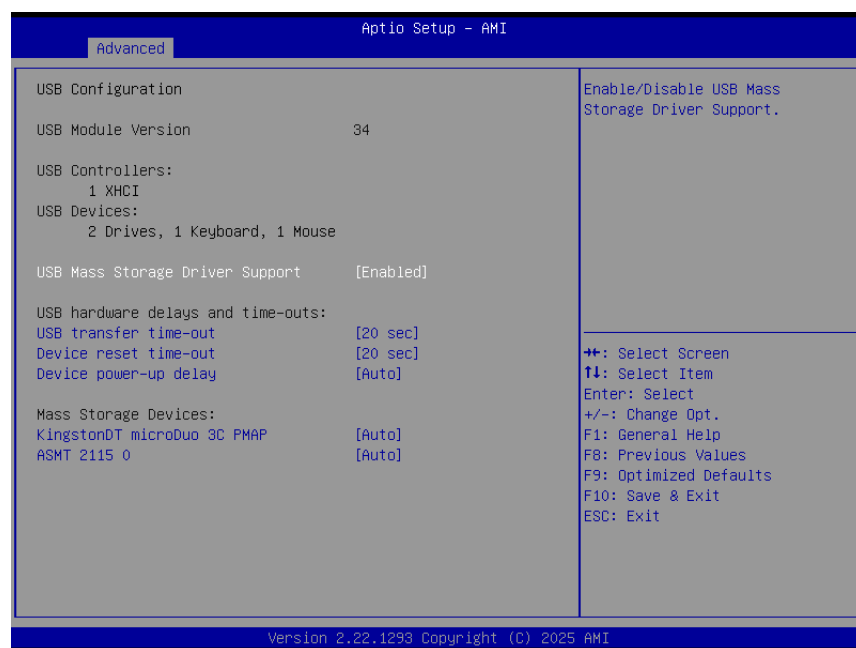
Console Redirection

Enables or disables SIO COM1 Console Redirection.

Console Redirection Settings

Specifies how the host computer and the remote computer (in use) exchange data. Both computers should have the same or compatible settings.

7.2.4 Advanced > USB Configuration



USB Mass Storage Driver Support

Enables or disables USB mass storage driver support.

USB Transfer Time-Out

The time-out value for Control, Bulk, and Interrupt transfers.

Device Reset Time-Out

The USB mass storage device Start Unit command time-out.

Device Power-Up Delay

The maximum time the device will take before it properly reports itself to the Host Controller. When set to **Auto**, the default value is 100ms for Root ports, and the delay for Hub ports is taken from the Hub descriptor.

7.2.5 Advanced > TPM 2.0 Configuration



Security Device Support

Enables or disables BIOS support for the security device. The OS will not show the Security Device, and the TCG EFI protocol and INT1A interface will not be available.

SHA256 PCR Bank

Enables or disables the SHA256 PCR Bank.

Pending Operation

Schedules an operation for the Security Device. The computer will reboot during restart to change the state of the Security Device.

Platform Hierarchy

Enables or disables the Platform Hierarchy.

Storage Hierarchy

Enables or disables the Storage Hierarchy.

Endorsement Hierarchy

Enables or disables the Endorsement Hierarchy.

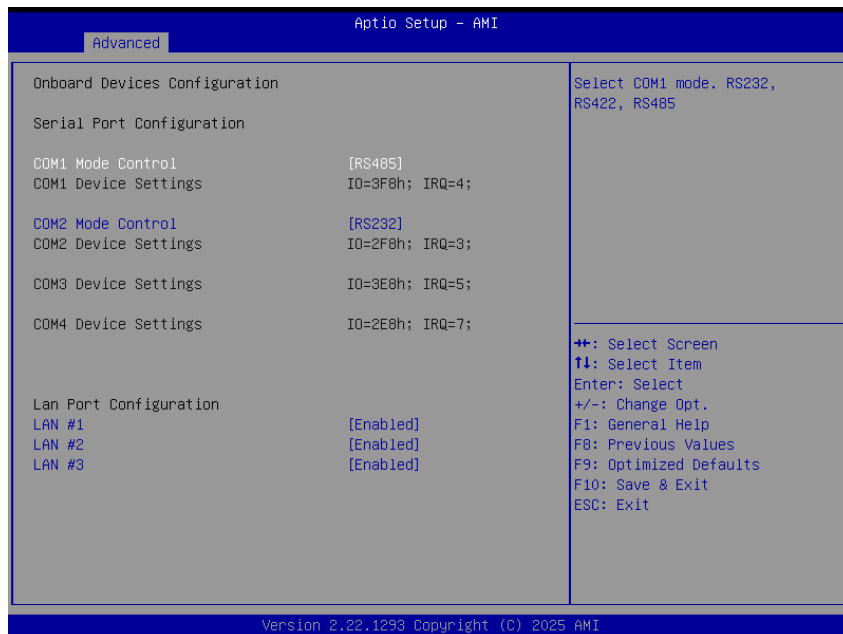
TPM 2.0 Interface Type

Select the Communication Interface to TPM 20 Device.

PH Randomization

Enables or Disables Platform Hierarchy randomization. DO NOT ENABLE THIS QUESTION IN PRODUCTION PLATFORMS. THIS IS FOR DEVELOPMENT TESTING. OVERRIDE Change-PlatformAuth ELINK for production platforms supporting TXT.

7.2.6 Advanced > Onboard Devices Configuration



COM1 Mode Control

Selects the COM1 mode from RS232, RS422, or RS485.

COM2 Mode Control

Selects the COM2 mode from RS232, RS422, or RS485.

LAN #1 (Intel I225)

Enables or disables I225 LAN1.

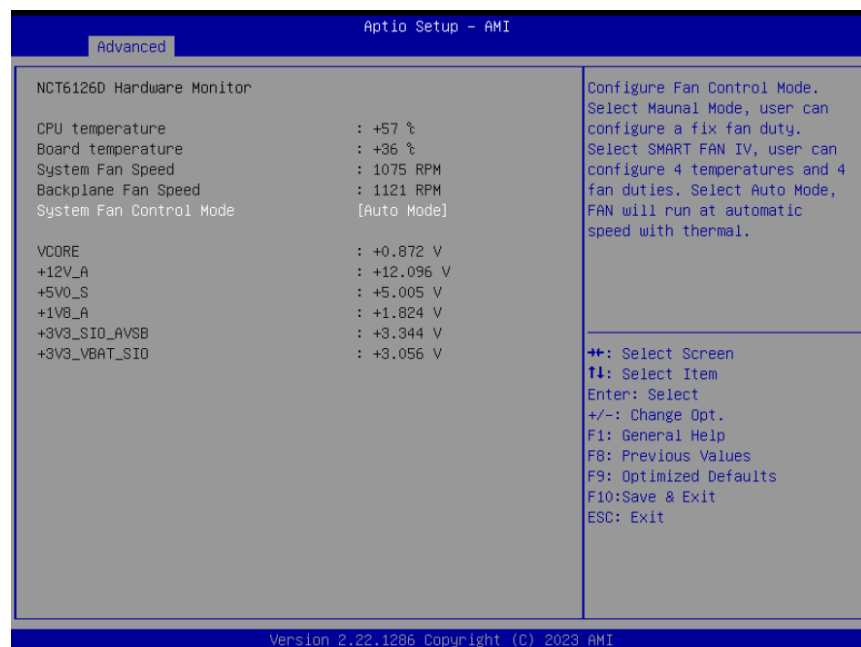
LAN #2 (Intel I225)

Enables or disables I225 LAN2.

LAN #3 (Intel I225)

Enables or disables I225 LAN3.

7.2.7 Advanced > NCT6126D HW Monitor



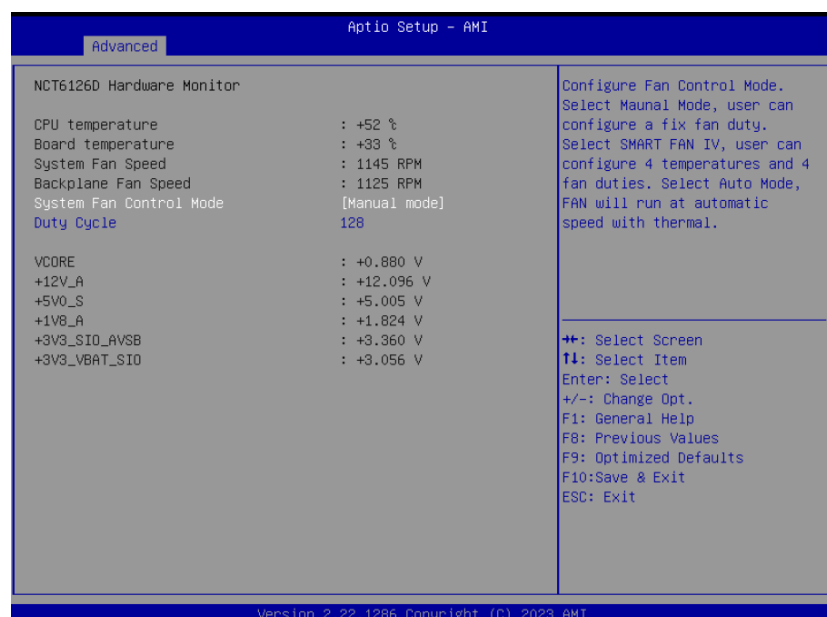
Displays CPU/board temperatures, system/backplane fan speeds, and various voltages.

System Fan Control Mode

Configures the fan control mode from among Manual Mode, Auto Mode, and SMART FAN IV.

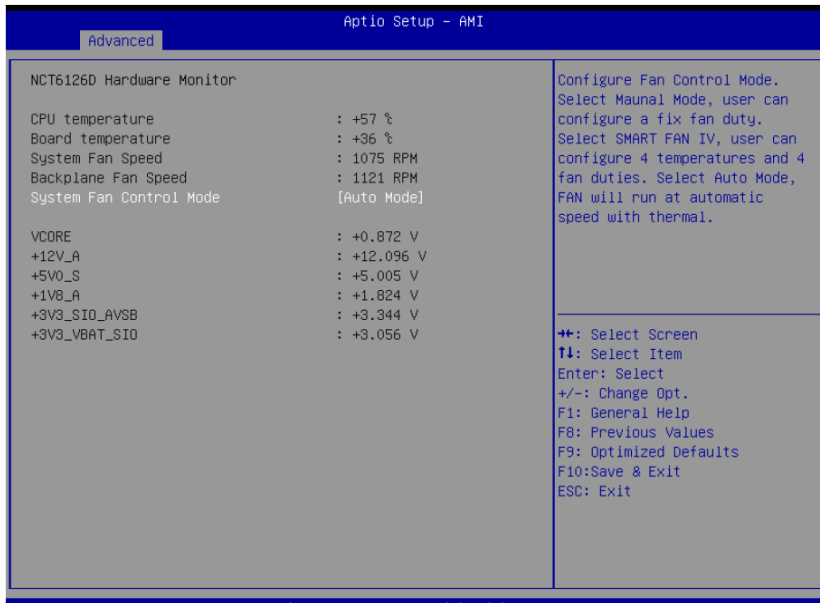
Manual Mode

Allows the configuration of a set fan duty cycle.



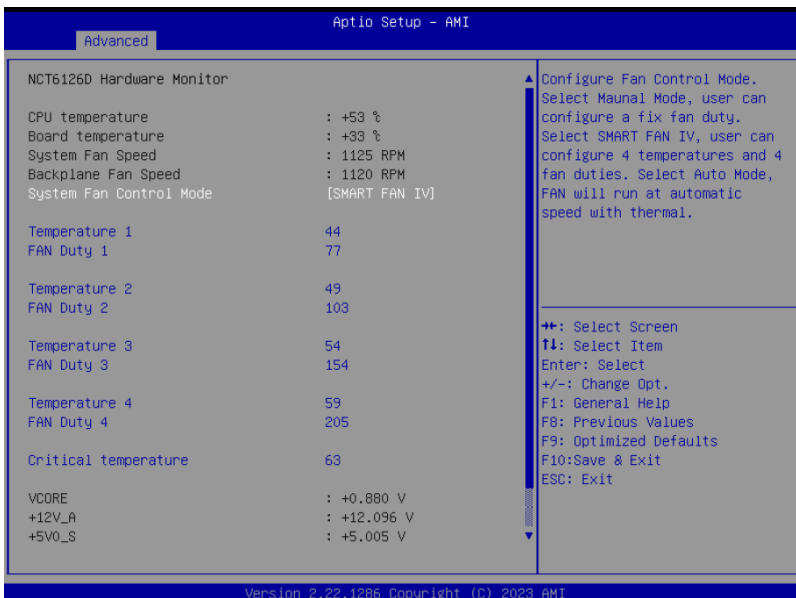
Auto Mode

Fan runs at an automatic speed for optimal thermal solution.



SMART FAN IV

Four temperatures and four fan duties can be user-configured.



7.2.8 Advanced > BIOS Watchdog Timer



BIOS POST Watchdog

Disabled: Disables the watchdog timer

Second Mode: Enables watchdog timer in second mode

Minute Mode: Enables watchdog timer in minute mode.

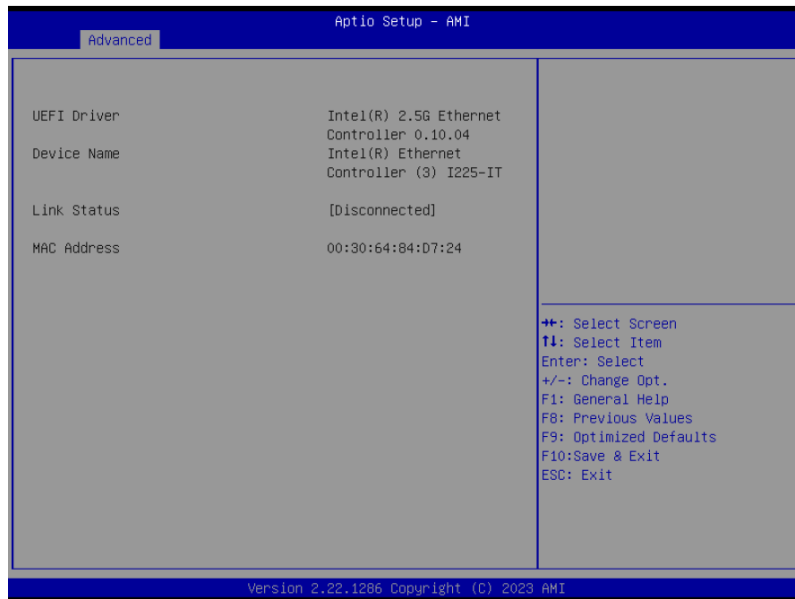
7.2.9 Advanced > Network Stack Configuration



Network Stack

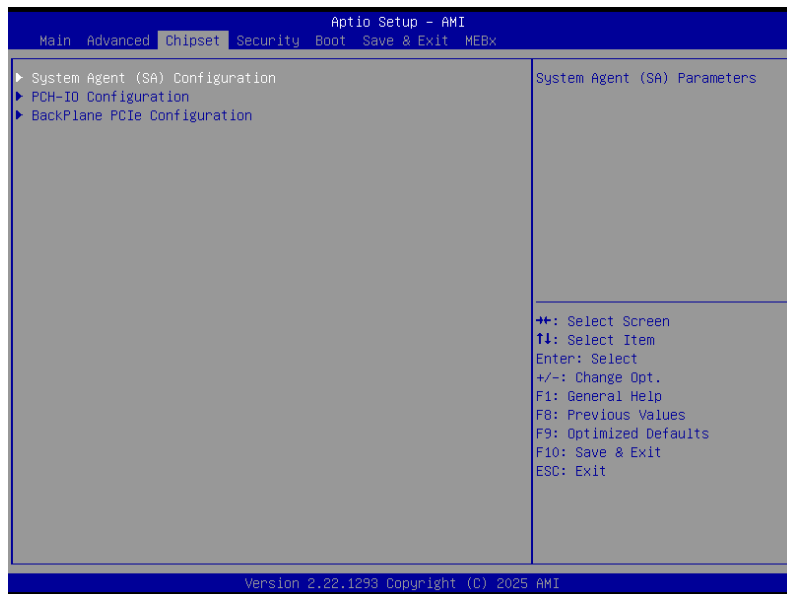
Enables/disables UEFI Network Stack.

7.2.10 Advanced > Intel® Ethernet Controller (3) I225-IT



Displays UEFI Driver, Device Name, Link Status, and MAC Address.

7.3 Chipset



NOTE:

Setting incorrect or conflicting values in Chipset BIOS setup may cause system malfunction.

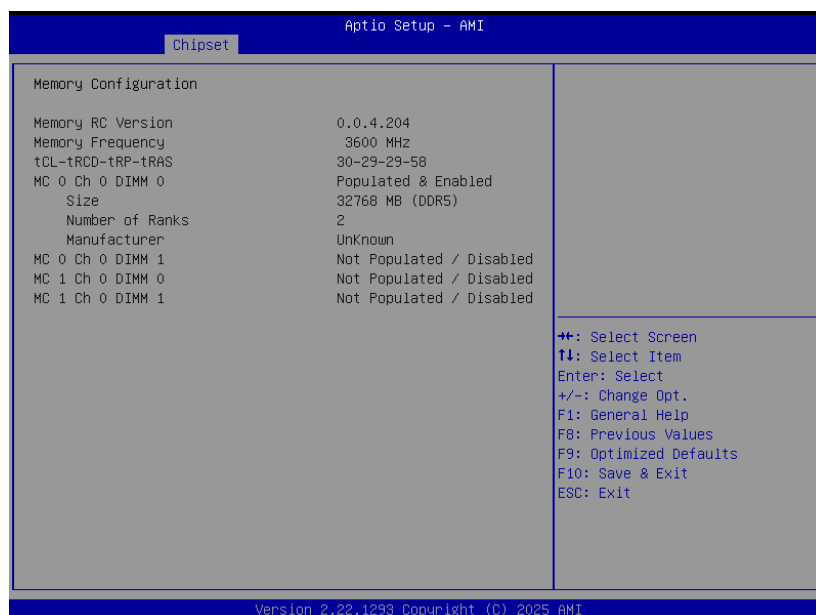
7.3.1 Chipset > System Agent (SA) Parameters



System Agent (SA) Parameters

Displays and configures the VT-d capability, and provides settings for memory, graphics, DMI/OPI, and VMD configuration.

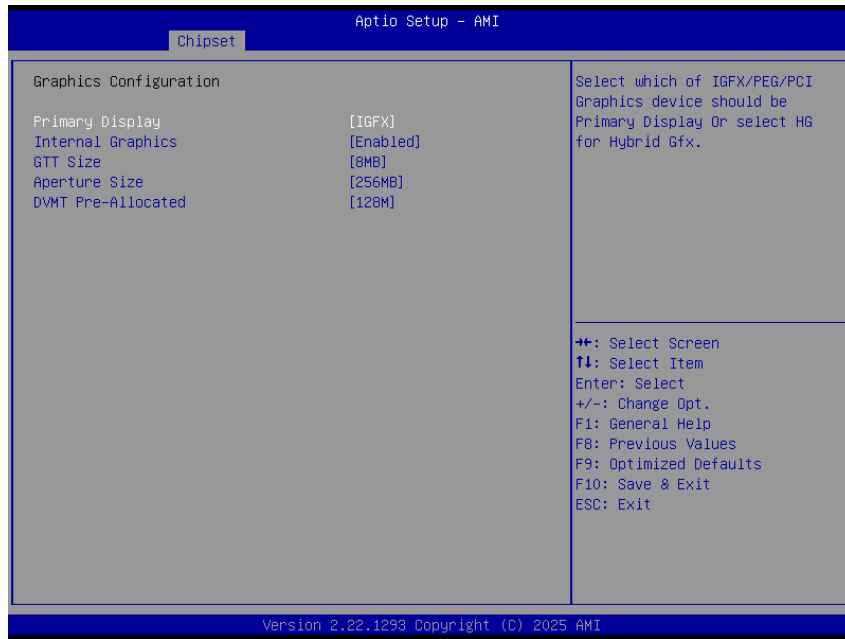
7.3.2 Chipset > Memory Configuration



Memory Configuration

Displays memory speed, size, manufacturer, and configuration.

7.3.3 Chipset > Graphics Configuration



Primary Display

Select which of IGFX/PEG/PCI Graphics device should be the Primary Display.

Internal Graphics

Keeps IGFX enabled based on setup options.

GTT Size

Selects the GTT size.

Aperture Size

Selects the aperture size.

DVMT Pre-Allocated

Selects the DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.

7.3.4 Chipset > DMI/OPI Configuration



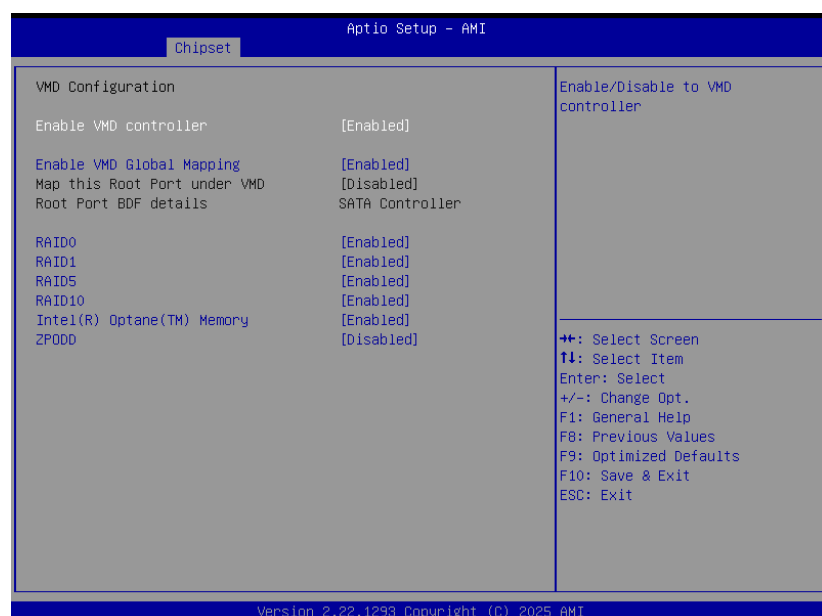
DMI/OPI Configuration

Displays DMI link speed and width.

DMI Max Link Speed

Sets DMI Speed to Gen1/Gen2/Gen3/Gen4.

7.3.5 Chipset > VMD Setup Menu



Enable VMD Controller

Enable/Disable VMD controller.

Enable VMD Global Mapping

Enable/Disable VMD Global Mapping.

RAID0

Enable/disable RAID0 support.

RAID1

Enable/disable RAID1 support.

RAID5

Enable/Disable RAID5 support.

RAID10

Enable/Disable RAID10 support.

Intel® Optane™ Memory

Enable/Disable System Acceleration with Intel® Optane™ Memory feature.

ZPODD

Enables/disables ZPODD. The option is only needed to be enabled when ZPODD is connected in VMD mode.

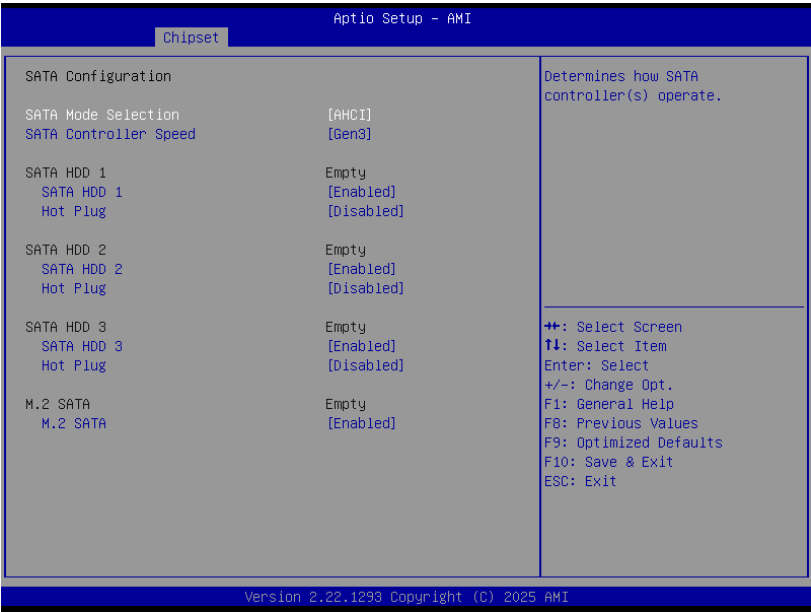
7.3.6 PCH-IO Configuration



PCH-IO Configuration

Configures SATA, NVMe, and security.

7.3.7 SATA Configuration



SATA Mode Selection
Determines how the SATA controller(s) operate.

SATA Controller Speed
Sets the maximum speed that the SATA controller can support.

SATA HDD 1/2/3
Enables or disables SATA ports.
Enables or disables hot plug.

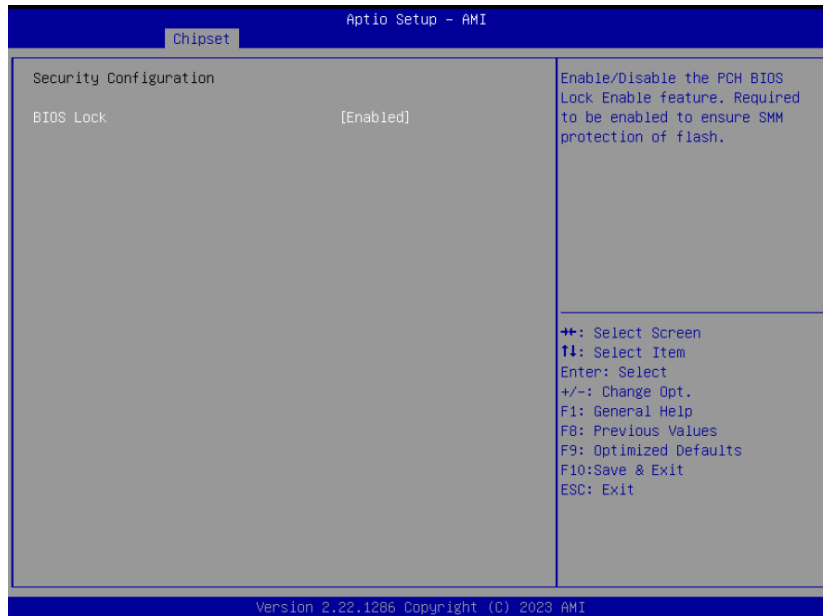
M.2 SATA
Enables/disables M.2 SATA.

7.3.8 NVMe Configuration



Displays NVMe device status.

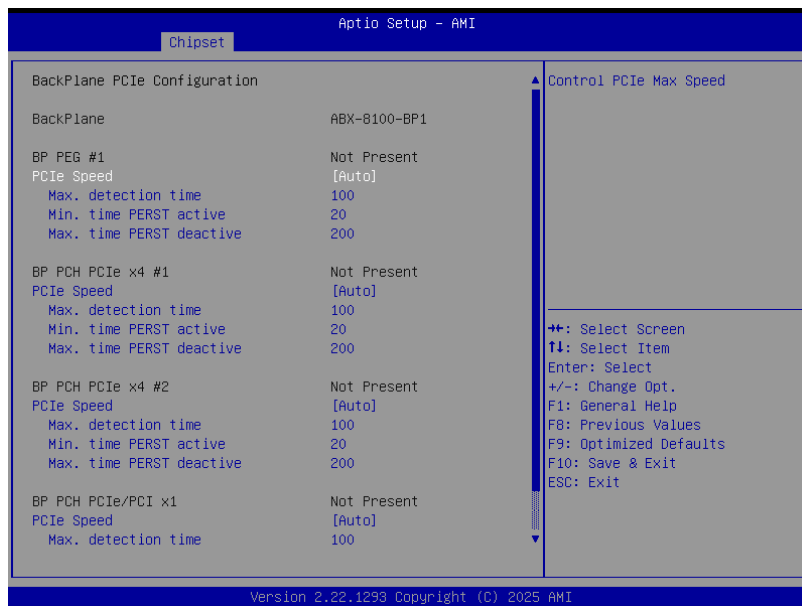
7.3.9 Chipset > Security Configuration



BIOS Lock

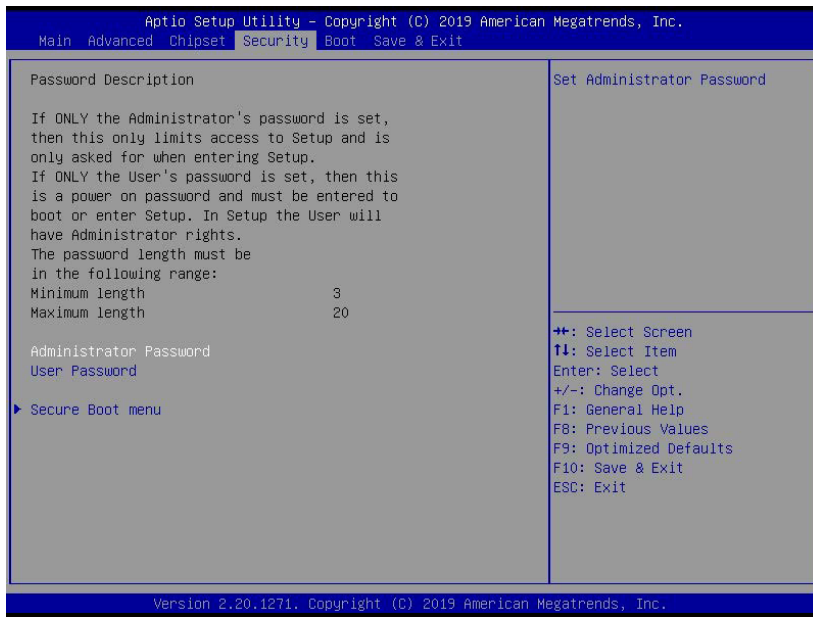
Enables or disables the PCH BIOS Lock. It is required to be enabled to ensure SMM flash protection.

7.3.10 Chipset > BackPlane PCIe Configuration



Displays BackPlane model name, slot information, speed control, and time tunings.

7.4 Security



If only the Administrator password is set, access is limited, and the password is requested on Setup.
If the User password is set, it acts as a power-on password and must be entered to boot or access setup.

Administrator Password

Sets the Administrator password.

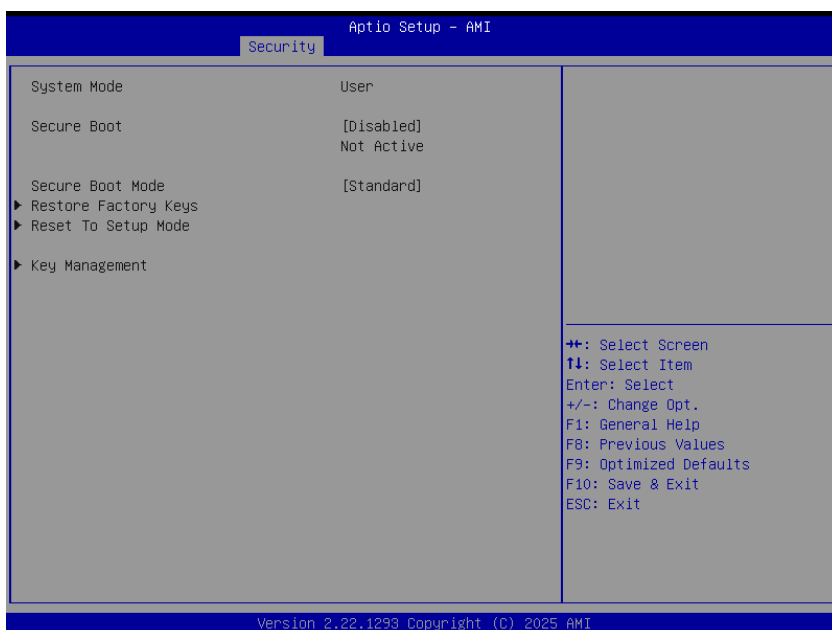
User Password

Sets the User password.

Secure Boot Menu

Configures Secure Boot.

7.4.1 Security > Secure Boot Menu



Secure Boot Control

Active if Secure Boot is enabled, the Platform Key (PK) is enrolled, and the system is in User mode. A mode change requires a platform reset.

Secure Boot Mode

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

Restore Factory Keys

Force system to user mode. Install factory default secure boot key databases.

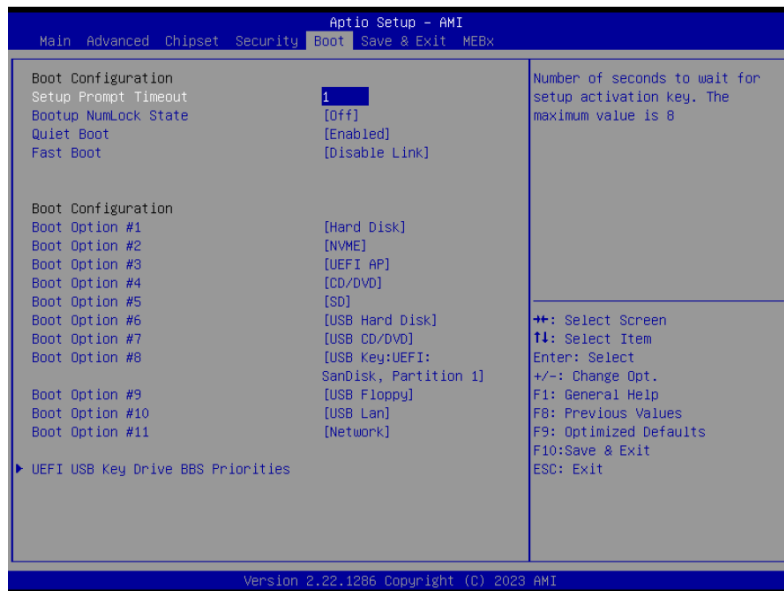
Reset to Setup Mode

Delete all secure boot key databases from NVRAM.

Key Management

Enables expert users to modify Secure Boot Policy variables without full authentication.

7.5 Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key. The maximum value is 8.

Bootup Num-Lock State

Sets the keypad Num Lock status following boot.

Quiet Boot

Option	Description
Disabled	Directs BIOS to display POST messages
Enabled	Directs BIOS to display the OEM logo.

Fast Boot

Option	Description
Disabled	Directs BIOS to perform all POST tests.
Enabled	Directs BIOS to skip certain POST tests to boot faster.

While enabling Fast Boot can reduce system ready time, certain prerequisites may reduce its effectiveness.

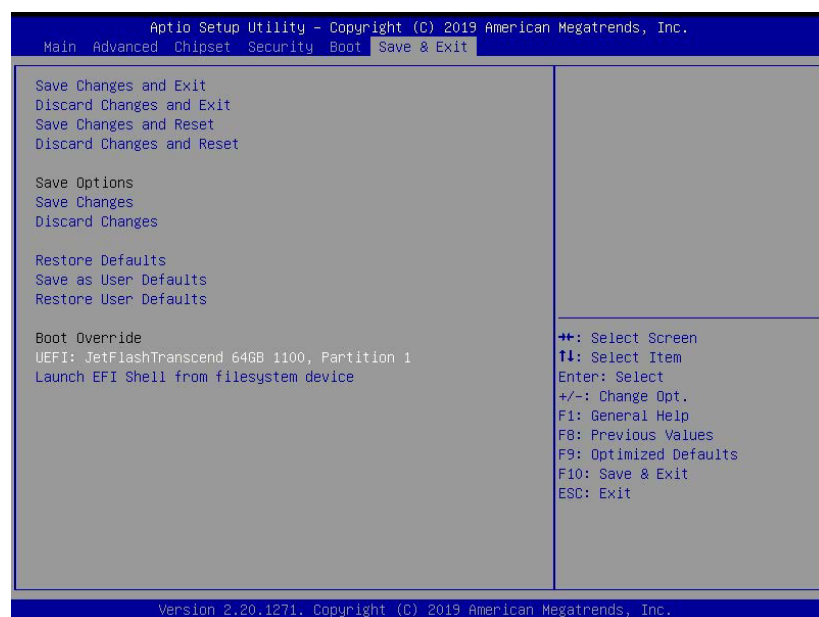
Boot Configuration

Specifies the priority of boot devices, all of which are detected during POST and displayed. Select the desired device by clicking on "Target Boot Option #."

UEFI USB Hard Drive Disk Drives BBS Priorities

Specifies the boot device priority sequence for available UEFI USB drives.

7.6 Save & Exit



Save Changes and Exit

Exits system setup after saving the changes.

Discard Changes and Exit

Exits system setup without saving any changes.

Save Changes and Reset

Resets the system setup after saving changes.

Discard Changes and Reset

Resets system setup without saving any changes.

Save Changes

Saves the changes made so far to the setup options.

Discard Changes

Discards the changes made so far to the setup options.

Restore Defaults

Restores all BIOS options to their default settings, designed for maximum system stability but lower performance. Select "Restore Defaults" if the computer encounters system configuration problems.

Save as User Defaults

Saves all changes made so far as User Defaults.

Restore User Defaults

Restores user defaults to all setup options.

Launch EFI Shell from Filesystem Device

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

8. Appendix A BIOS Settings

The Basic Input/Output System (BIOS) is a program that provides a basic level of communication between the processor and peripherals. In addition, the BIOS contains code for various advanced features specific to the DLAP-8100. The BIOS setup program includes menus for configuring settings and enabling features of the DLAP-8100. Most users do not need to use the BIOS setup program, as the DLAP-8100 ships with default settings that work well for most configurations.

Enter the BIOS setup by pressing **DEL** when the system is powered on and the POST (Power-On Self-Test) message is displayed. The DLAP-8100 controller also supports a one-time Boot Menu, allowing you to select the boot device. Enter the Boot Menu by pressing **F7** during POST.



NOTE:

- BIOS options listed are for reference only.
 - Different configurations can affect BIOS behavior.
 - Displayed material may reflect only the BIOS version corresponding to initial release and may differ from that of the purchased motherboard.
 - Users are welcome to download the latest BIOS version from our official website.
-

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9. Appendix C Watchdog Timer (WDT) Function Library

This appendix describes the use of the watchdog timer (WDT) function library for the DLAP-8100 controller. The watchdog timer is a hardware mechanism designed to reset the system if the operating system or an application stall. After activation, the watchdog timer in the application must be periodically reset before it expires. Once the watchdog timer expires, a hardware-generated signal is sent to reset the system.

9.1 WDT with API/Windows

The WDT API library files and a demo program (incl. source code) can be downloaded here:

https://www.adlinktech.com/Products/Industrial_PCs_Fanless_Embedded_PCs/IPCSystems/DLAP-8100_Series

To use the WDT function library for the DLAP-8100, include the header file WDT.h and the linkage library WDT.lib in your C++ project.

9.1.1 InitWDT

Initializes the watchdog timer function. Must be called before the invocation of any other WDT function.

Syntax

C/C++

```
BOOL InitWDT()
```

Parameters

None

Return codes

TRUE If watchdog timer has successfully initialized.

FALSE If watchdog timer fails to initialize.

9.1.2 SetWDT

Sets the timeout value of the watchdog timer. This function takes two parameters: one to indicate the timeout ticks and the other to specify the unit. ResetWDT or StopWDT should be called before the expiration of watchdog timer, or the system will reset.

Syntax

C/C++

```
BOOL SetWDT(BYTE tick, BYTE unit)
```

Parameters

- **tick**
Specify the number of ticks for watchdog timer. A valid value is 1 - 255.
- **unit**
Specifies the timeout ticks of the watchdog timer.

Value	Description
0	The unit for one tick is one second. For example, when one tick is specified as 100 and the unit as 0, the timeout value is 100 seconds.
1	The unit for one tick is one minute. For example, when one tick is specified as 100 and the unit as 1, the timeout value is 100 minutes.

Return codes

TRUE If timeout value of watchdog timer has successfully set.

FALSE If timeout value of watchdog timer fails to set.

9.1.3 StartWDT

Start the watchdog timer function. Once StartWDT is invoked, the watchdog timer starts. RESETWDT or StopWDT should be called before the expiration of the watchdog timer, or the system will reset.

Syntax

C/C++

```
BOOL StartWDT()
```

Parameters

None

Return codes

TRUE If the watchdog timer has successfully started.

FALSE If the watchdog timer fails to start.

9.1.4 ResetWDT

Reset the watchdog timer. The invocation of ResetWDT allows restoration of the watchdog timer to the initial timeout value specified in the SetWDT function. ResetWDT or StopWDT should be called before the expiration of the watchdog timer, or the system will reset.

Syntax

C/C++

```
BOOL ResetWDT()
```

Parameters

None

Return codes

TRUE If the watchdog timer has successfully reset.

FALSE If the watchdog timer fails to reset.

9.1.5 StopWDT

Stops the watchdog timer.

Syntax

C/C++

```
BOOL StopWDT()
```

Parameters

None

Return codes

TRUE If the watchdog timer has successfully stopped.

FALSE If the watchdog timer fails to stop.

9.2 WDT with DOS/Linux

Under Linux, program the WDT function using the same LPC I/O registers according to the sample program below:

```
#include <dos.h>

#include <stddef.h>

#include <stdio.h>

/* Config LPC IO NCT6102D to enter config mode */ EnterConfig(void)
{
    outp(0x4E, 0x87); outp(0x4E, 0x87);
}

/* Config LPC IO to exit config mode */ ExitConfig(void)
{ outp(0x4E, 0xAA);
}

/* Read byte from LPC IO register */ unsigned char r_reg(unsigned char
regoffset)

{ outp(0x4E, regoffset); return inp(0x4F); }

/* Write byte to LPC IO register */
void w_reg(unsigned char regoffset, unsigned char data)
{ outp(0x4E, regoffset); outp(0x4F, data);
}

main(void)
{
    unsigned int    count;
    /* print program title */
    printf("-----MXC-6400 WDT Demo-----
- --- \n");
    printf("Init and config GPIO ports<<<<<<<<<<<<<<<<<<<<<<<<<\n");
    printf("-----
----\n");
    EnterConfig();
    /* config WDT registers */ w_reg(0x07,0x08);

    /* enable keyboard interrupt to reset WDT timeout value */
    w_reg(0xF2,r_reg(0xF2)|0x40);
    /* set unit as second */ w_reg(0xF0,r_reg(0xF0)&~0x04);

    /* start the Watchdog */ w_reg(0x30,0x01);

    /* set timeout value as 30 seconds */
    /* WDT start automatically while timeout value is set
    */ w_reg(0xF1,0x1E);

    printf("-----
----\n");
```

```
printf("WDT is set and counting down now.<<<<<<<<<<<<<<<<<<\n");
printf("-----\n");
for(count=30;count!=0;count--)
{ printf("Countdown %2d : .\n",count);
/* reset WDT timeout value to 10 seconds */
/* w_reg(0x73,0x0A); */ sleep(1);
}
/* disable WDT */
/* WDT stop while timeout value is set to zero */ w_reg(0x30,0x00);
printf("WDT is disable. Program is terminating."); ExitConfig();
return 0;
}
```

10. Appendix D Digital Input/Output with Function Library

DI/O provides input/output support for inter-device communications. Simple programming guides enable easy transmission of digital signals between the system and attached peripherals.

DI/O with API/Windows

Matrix DI/O API library files and a demo program (including source code) can be downloaded from https://www.adlinktech.com/Products/Industrial_PCs_Fanless_Embedded_PCs/IPCSystems/DLAP-8100_Series?lang=zh-Hant.

To use the DI/O function library for the DLAP-8100 series, include the header file awl.h and the linkage library awl.lib in your C++ project.

The DI/O functions are as follows:

AwlDioGetValue

Reads the digital logic state of a digital input line.

Syntax

C/C++

```
int __stdcall AwlDioGetValue(int Index)
```

Parameter(s)

Index

Indexes the digital logic state of the DLAP-8100 digital input channels 1 to 8 (bit 0 to 7).

Return codes

0: Operation success

-1: Operation failed

AwlDioSetValue

Sets the digital logic state of the digital output line.

AwlDioGetValue

Reads the digital logic state of a digital input line.

Syntax

C/C++

```
Int __stdcall AwlDioSetValue(int Index, int Value);
```

Parameter(s)

Index

Indexes the digital logic state of the DLAP-8100 digital input channels 1 to 8 (bits 0 to 7).

Value

Sets the digital logic state of the DLAP-8100 digital output channels 1 to 8 (bits 0 to 7) to 0 or 1.

Return Codes

0: Operation successful

-1: Operation failed

Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

S'il vous plaît prêter attention stricte à tous les avertissements et mises en garde figurant sur l'appareil , pour éviter des blessures ou des dommages.

- ▶ Read these safety instructions carefully.
- ▶ Keep the User's Manual for future reference.
- ▶ Read the Specifications section of this manual for detailed information on the recommended operating environment.
- ▶ When installing/mounting or uninstalling/removing device; or when removal of a chassis cover is required for user servicing (See "Getting Started"):
 - [> Turn off power and unplug any power cords/cables.
 - [> Reinstall all chassis covers before restoring power.
- ▶ To avoid electrical shock and/or damage to device:
 - [> Keep device away from water or liquid sources.
 - [> Keep device away from high heat or humidity.
 - [> Keep device properly ventilated (do not block or cover ventilation openings).
 - [> Always use recommended voltage and power source settings.
 - [> Always install and operate device near an easily accessible electrical outlet.
 - [> Secure the power cord (do not place any object on/over the power cord) and connect it to a socket-outlet with earthing connection.
 - [> Only install/attach and operate device on stable surfaces and/or recommended mountings.
- ▶ If the device will not be used for long periods of time, turn off and unplug from its power source.
- ▶ Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools.
- ▶ A Lithium-type battery may be provided for uninterrupted backup or emergency power.

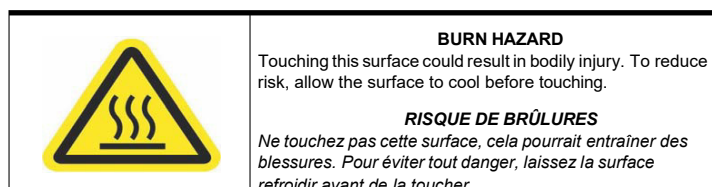


CAUTION:

Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately.

Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- ▶ The device must be serviced by authorized technicians when:
 - [> The power cord or plug is damaged.
 - [> Liquid has entered the device interior.
 - [> The device has been exposed to high humidity and/or moisture.
 - [> The device is not functioning or does not function according to the User's Manual.
 - [> The device has been dropped and/or damaged and/or shows obvious signs of breakage.
- ▶ Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up.
 - [> The equipment is not intended to be installed or used in a home, school, or public area accessible to the general population.
 - [> The knurled thumb screws with slotted heads for each Node module should be tightened with a tool after both initial installation and subsequent use.
- ▶ It is recommended that the device be installed only in a server room or computer room where access is:
 - [> Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefore, and any precautions required.
 - [> Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location.
- ▶ Please use an approved power source certified by IEC or UL. If you need an adapter, optional accessories, or further assistance, please contact ADLINK for more information.



- ▶ Lisez attentivement ces consignes de sécurité
- ▶ Conservez le manuel de l'utilisateur pour pouvoir le consulter ultérieurement
- ▶ Lisez la section Spécifications de ce manuel pour des informations détaillées sur l'environnement d'exploitation recommandé
- ▶ Lors de l'installation/montage ou de la désinstallation/retrait de l'appareil ; ou lorsque le retrait d'un boîtier est nécessaire pour l'entretien par l'utilisateur (voir Mise en route) :
 - ▶ Éteignez l'alimentation et débranchez tous les cordons/câbles d'alimentation.
 - ▶ Réinstallez tous les panneaux du boîtier avant de remettre l'alimentation sous tension.
- ▶ Pour éviter les chocs électriques et/ou d'endommager l'appareil :
 - ▶ Tenez l'appareil à l'écart de toute source d'eau ou de liquide
 - ▶ Tenez l'appareil à l'écart d'une forte chaleur ou d'une humidité élevée
 - ▶ Maintenez l'appareil correctement ventilé (n'obstruer ou ne couvrez pas les ouvertures de ventilation)
 - ▶ Utilisez toujours les réglages de tension et de source d'alimentation recommandés
 - ▶ Installez et utilisez toujours l'appareil près d'une prise de courant facilement accessible
 - ▶ Fixez le cordon d'alimentation (ne placez aucun objet sur/au-dessus du cordon d'alimentation) et connectez-le à une prise de courant avec mise à la terre
- ▶ N'essayez jamais de réparer l'appareil, qui doit être réparé uniquement par du personnel technique qualifié et utilisant des outils appropriés.
 - ▶ Lors de l'installation/montage ou de la désinstallation/retrait d'un périphérique, ou lorsque le retrait d'un couvercle de châssis est requis pour l'entretien par l'utilisateur :
 - ▶ Coupez l'alimentation et débranchez tous les cordons/câbles d'alimentation.
- ▶ Réinstallez tous les capots du châssis avant de rétablir l'alimentation. Installez/fixez et utilisez l'appareil uniquement sur des surfaces stables et/ou des supports recommandés.
- ▶ Si l'appareil n'est pas utilisé pendant une longue période, éteignez-le et débranchez-le de sa source d'alimentation.
- ▶ Une batterie de type lithium peut être fournie pour une alimentation de secours ou de secours ininterrompue.
 - ▶ L'appareil doit être réparé par des techniciens agréés lorsque :
 - ▶ Le cordon d'alimentation ou la fiche est endommagé.
 - ▶ Du liquide est entré dans l'appareil. € L'appareil a été exposé à une humidité élevée et/ou à l'humidité.
 - ▶ L'appareil ne fonctionne pas ou ne fonctionne pas conformément au manuel de l'utilisateur.
- ▶ L'appareil est tombé et/ou a été endommagé et/ou présente des signes évidents de casse.
- ▶ Débranchez le cordon d'alimentation avant de desserrer les vis moletées et fixez toujours les vis moletées avec un tournevis avant de démarrer le système.
 - ▶ L'équipement n'est pas destiné à être installé ou utilisé dans une maison, une école ou une zone publique accessible au grand public.
 - ▶ Les vis à molette avec têtes fendue pour chaque module Node doivent être serrées avec un outil après l'installation initiale et lors de l'utilisation suivante.
- ▶ Il est recommandé d'installer l'appareil uniquement dans une salle de serveurs ou une salle informatique dont l'accès est :
 - ▶ Réservé au personnel de service qualifié ou aux utilisateurs familiers avec les restrictions appliquées à l'emplacement, les raisons de celles-ci et les précautions requises.
 - ▶ Autorisé uniquement par l'utilisation d'un outil ou d'une serrure et d'une clé, ou d'autres moyens de sécurité, et contrôlé par l'autorité responsable du lieu.
- ▶ Veuillez utiliser une source d'alimentation approuvée et certifiée par la norme IEC ou UL. Si vous avez besoin d'un adaptateur, d'accessoires en option ou d'une assistance supplémentaire, veuillez contacter ADLINK pour plus d'informations.

Getting Services

Ask an Expert: <https://www.adlinktech.com/en/Askexpert>

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