DLAP-4000 Series

8th/9th Generation Intel® Core™ i7/i5/i3 Processor
Embedded Computer

User's Manual

Manual Rev.:	1.0
Revision Date:	Dec. 28, 2020
Part No:	50-1Z344-1000

Leading **EDGE COMPUTING**

Revision History

Revision	Release Date	Description of Change(s)
1.0	2020-12-28	Initial release

Preface

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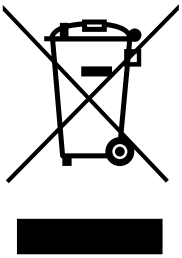

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Battery Labels (for products with battery)

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Trademarks

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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.
ATTENTION: 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.
AVERTISSEMENT: 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.

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1 Introduction

1.1 Overview

ADLINK's DLAP-4000 Series of embedded computing platforms, incorporating Intel® Core™ i7/i5/i3 processors, provides 2 internal SATA trays, 1 M.2 2280 drive, 1 Mini PCIe slot and 1 PCIe x16 slot optimizing easy maintenance in industrial automation environments with the most compact size and optimized thermal design, accommodating the largest graphic cards. The DLAP-4000 series supports DDR4 memory for more powerful computing and the Intel® HD Graphics 630 speeds graphics performance.

1.2 Features

- 8th/9th Gen Intel® Core™ i7/i5/i3 FCLGA1151 processor and H310 chipset
- 2x DDR4 SODIMM socket, supporting up to 32GB DDR4 2666 SODIMM Module
- 1x DisplayPort, 1x HDMI, 1x DVI-D supporting 2 independent displays w/ H310
- 6 External USB ports (4x USB 3.0, 2x USB 2.0)
- Built-in 8-bit GPIO, 1x RS-232/422/485 and 4x RS-232 ports
- Onboard SATA 6Gb/s port for 2.5" HDD/SSD installation, and SATA 6Gb/s
- Built-in 100V AC to 240V AC, 300W/500W Flex ATX PSU

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-4000 Embedded Computer
- Accessory Box
  - US power cord
  - Wall-mount brackets
  - Screw pack

2 Specifications

DLAP-4000					
System Core					
Processor	▶ Intel® Core™ i7-9700E, 2.6GHz, 12M Cache, 65W TDP, LGA1151, DDR4 2666MHz support (8C/8T) ▶ Intel® Core™ i5-9500E, 3.0GHz, 9M Cache, 65W TDP, LGA1151, DDR4 2666MHz support (6C/6T) ▶ Intel® Core™ i3-9100E, 3.1GHz, 6M Cache, 65W TDP, LGA1151, DDR4 2666MHz support (4C/4T) ▶ Intel® Core™ i7-9700TE, 1.8GHz, 12M Cache, 35W TDP, LGA1151, DDR4 2666MHz support (8C/8T) ▶ Intel® Core™ i5-9500TE, 2.2GHz, 9M Cache, 35W TDP, LGA1151, DDR4 2666MHz support (6C/6T) ▶ Intel® Core™ i3-9100TE, 2.2GHz, 6M Cache, 35W TDP, LGA1151, DDR4 2666MHz support (4C/4T) ▶ Intel® Core™ i7-8700, 3.2GHz, 12M Cache, 65W TDP, LGA1151, DDR4 2666MHz support (6C/12T) ▶ Intel® Core™ i5-8500, 3.0GHz, 9M Cache, 65W TDP, LGA1151, DDR4 2666MHz support (6C/6T) ▶ Intel® Core™ i3-8100, 3.6GHz, 6M Cache, 65W TDP, LGA1151, DDR4 2400MHz support (4C/4T) ▶ Intel® Core™ i7-8700T, 2.4GHz 12M Cache, 35W TDP, LGA1151, DDR4 2666MHz support (6C/12T) ▶ Intel® Core™ i5-8500T, 2.1GHz, 9M Cache, 35W TDP, LGA1151, DDR4 2666MHz support (6C/6T) ▶ Intel® Core™ i3-8100T, 3.1GHz, 6M Cache, 35W TDP, LGA1151, DDR4 2400MHz support (4C/4T)				
Chipset	Intel® H310 Chipset				
Memory	Non-ECC DDR4 2666/2400MHz, 2x SO-DIMM, up to 32GB (dependent on CPU) system memory				
PEG Card Support	NVIDIA® Quadro® P2200	NVIDIA® Quadro® RTX 4000	NVIDIA® Quadro® RTX 5000	NVIDIA® Quadro® RTX 6000	NVIDIA® Quadro® RTX 8000

Table 2-1: DLAP-4000 Specifications

DLAP-4000					
I/O Interface					
Display	1x DVI-D connector (rear), resolution up to 1920 x 1200 @ 60 Hz 1x DP connector (rear), resolution up to 4096 x 2304 @ 60 Hz 1x HDMI connector (rear) resolution up to 4096 x 2160 @ 30 Hz Additional display output from PEG cards				
Ethernet	2x GbE (Realtek RTL8111G)				
Serial Ports	1x RS-232/422/485, 4x RS-232				
USB	4x USB 3.1 Gen1 ports, 2x USB 2.0 ports				
DIO	1x 8-bit GPIO				
Mini PCIe	1x Mini PCIe slot (USB 2.0 and PCIe x1)				
M.2	1x M.2 M key (SATA 6Gb/s)				
Expansion	1x PCIe x16 slot				
Audio	Mic-in, Line-out, Line-in				
TPM 2.0	Optional				
Storage					
2.5" SATA	2x 2.5" SATA 6Gb/s internal drive bays				
Mechanical					
Dimensions	220 x 300 x 150 mm (W x D x H)				
Power Supply					
AC Input	100V to 240V AC				
Output Rating	300W	500W	500W	500W	500W
Environmental					
Operating Temperature	0°C to 50°C	0°C to 50°C	0°C to 40°C	0°C to 40°C	0°C to 40°C
Storage Temperature	-20°C to 60°C				
Humidity	5% to 90%, non-condensing				
Vibration	Operating: 1Grms, 5-500Hz, 3 axes (with 2.5" SSD and PEG card) Non-operating: 2Grms, 5-500Hz, 3 axes				
Shock	Operating: 20G, 11ms duration, half sine Non-operating: 30G, 11ms duration, half sine				
EMC	EN55032/35, EN61000-6-2/-4, CE, FCC Part 15B Class B				
Safety	UL/cUL, CB				

Table 2-1: DLAP-4000 Specifications

2.1 DLAP-4000 Functional Block Diagram

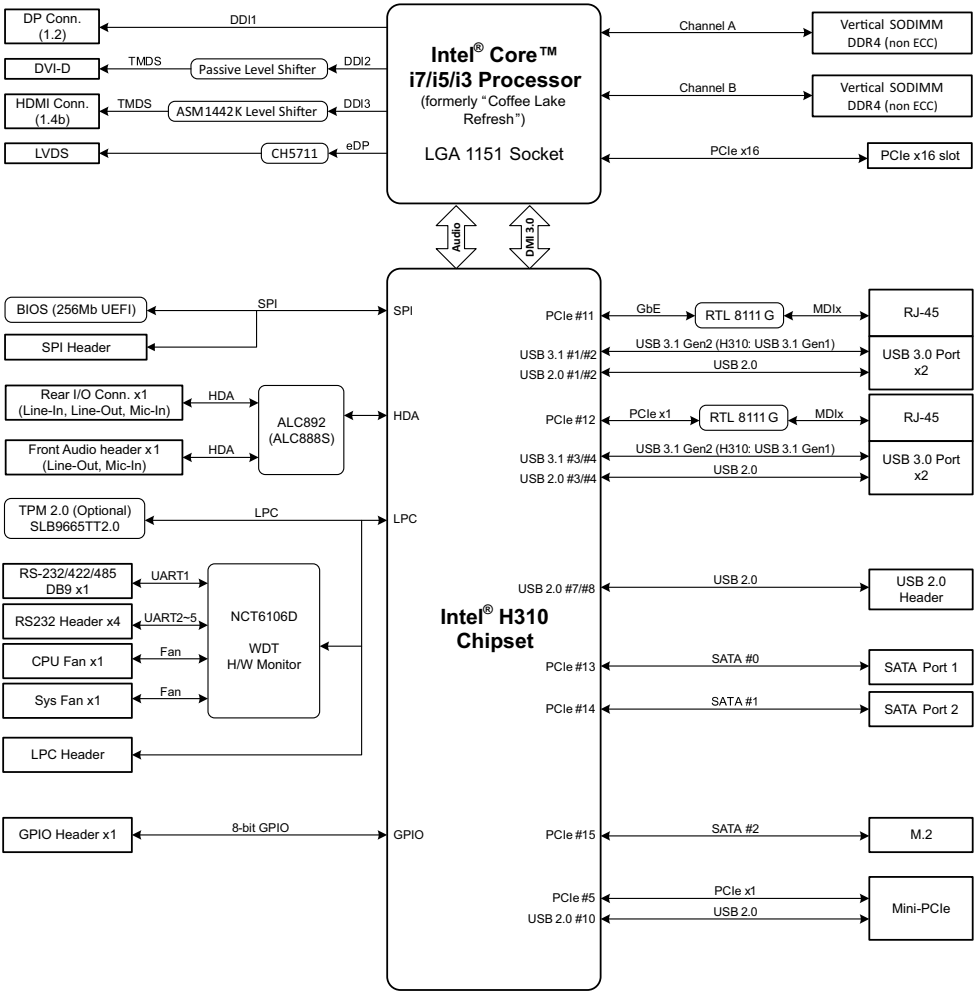

Figure 2-1: DLAP-4000 Functional Block Diagram

2.2 Display Options

With computing and graphic performance enhancement from its 8th & 9th Generation Intel processors, the DLAP-4000 controller can support or two independent displays, with configurations as follows.

	Port	Resolution
Display Option 1	DisplayPort1	4096x2304@60Hz
Display Option 2	HDMI	4096x2160@30Hz
Display Option 3	DVI-D	1920x1200@60Hz

Table 2-2: Maximum Display Resolutions

2.3 Mechanical Dimensions

All dimensions in millimeters (mm).

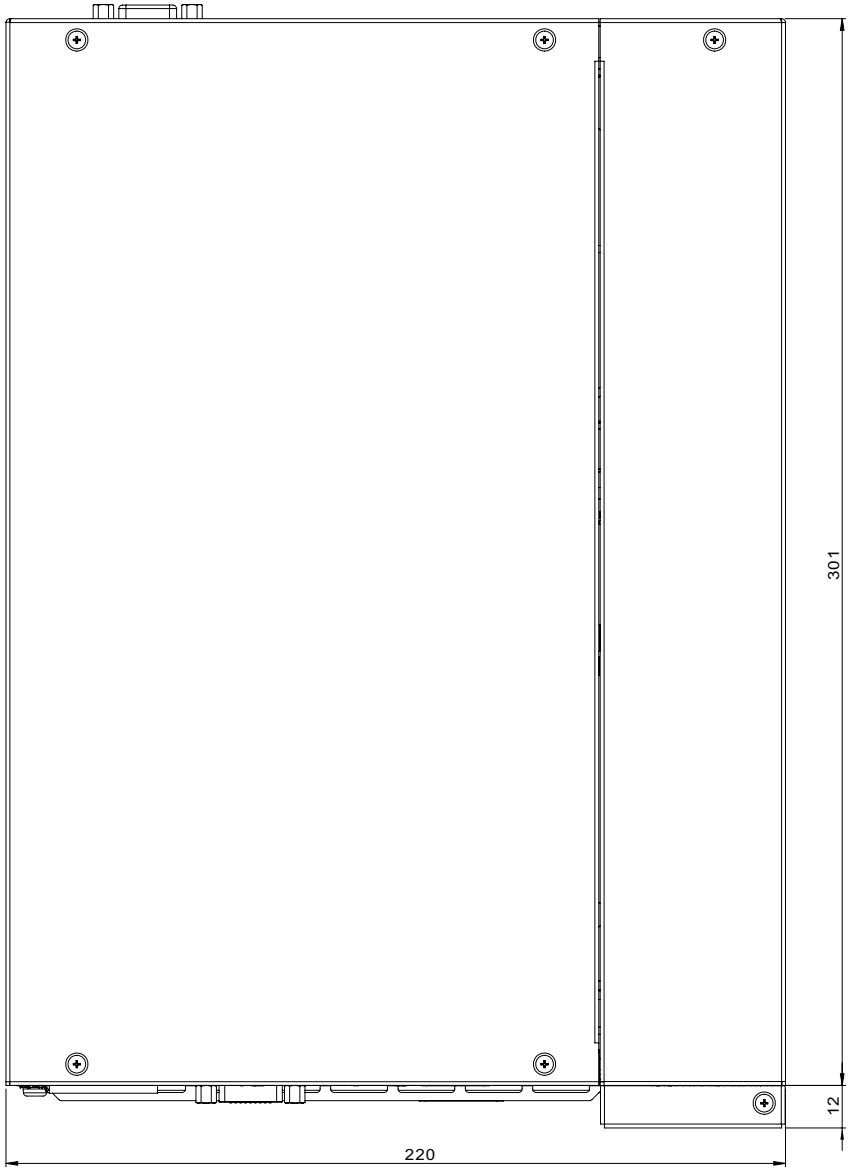

Figure 2-2: DLAP-4000 Top View

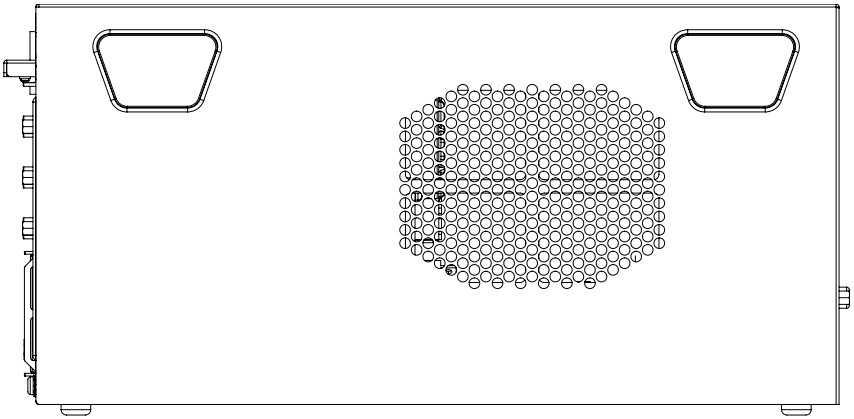

Figure 2-3: DLAP-4000 Right Side View

Figure 2-4: DLAP-4000 Left Side View

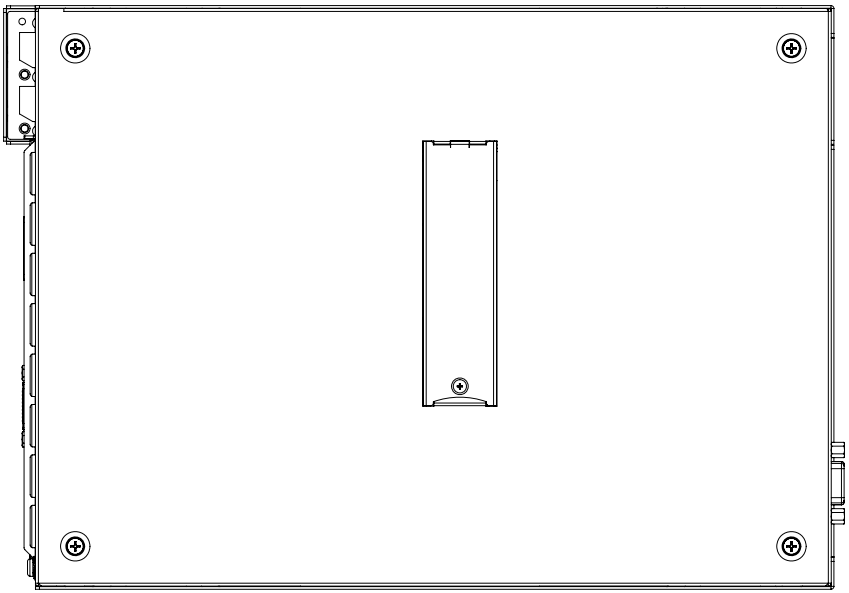

Figure 2-5: DLAP-4000 Bottom View

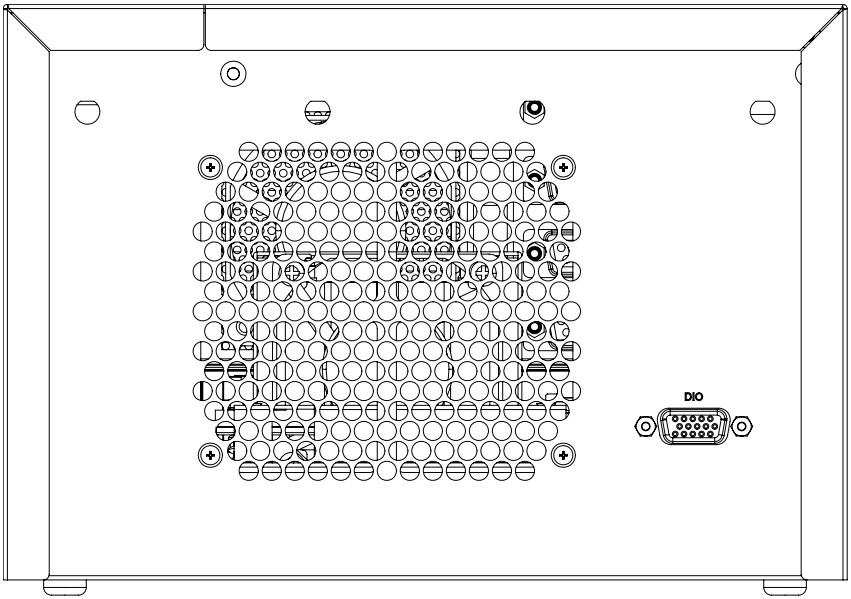

Figure 2-6: DLAP-4000 Rear View

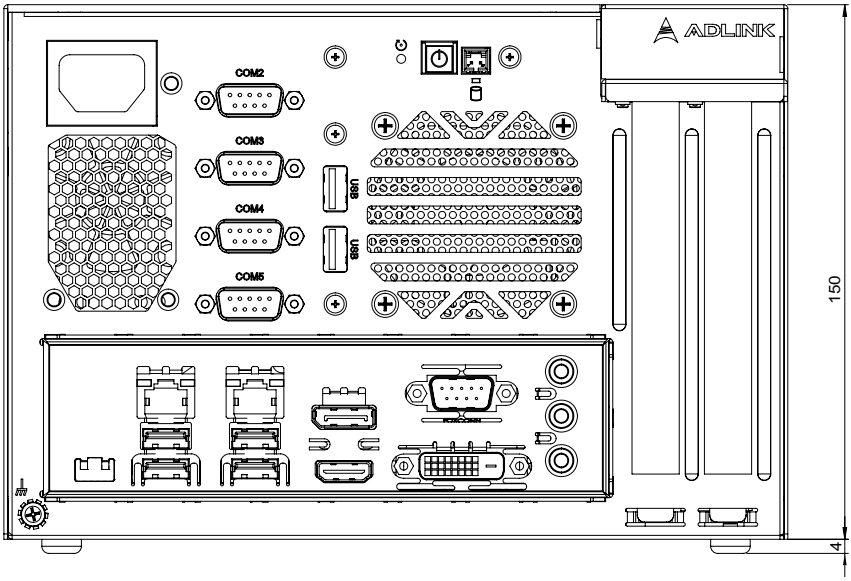

Figure 2-7: DLAP-4000 Front View

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3 System Layout

3.1 Front Panel

The DLAP-4000 Series provides the following front panel access features.

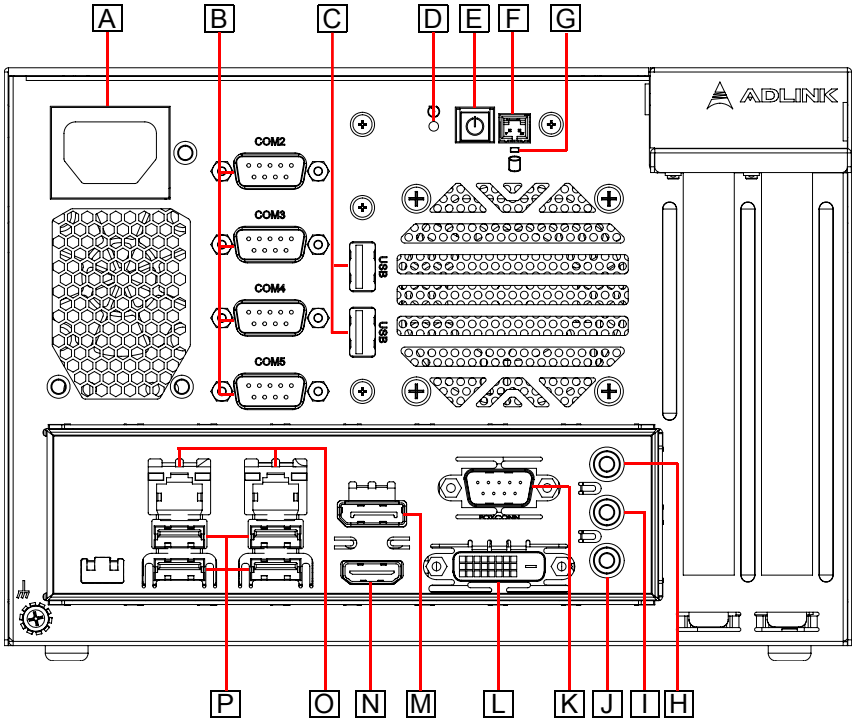

Figure 3-1: Front Panel I/O

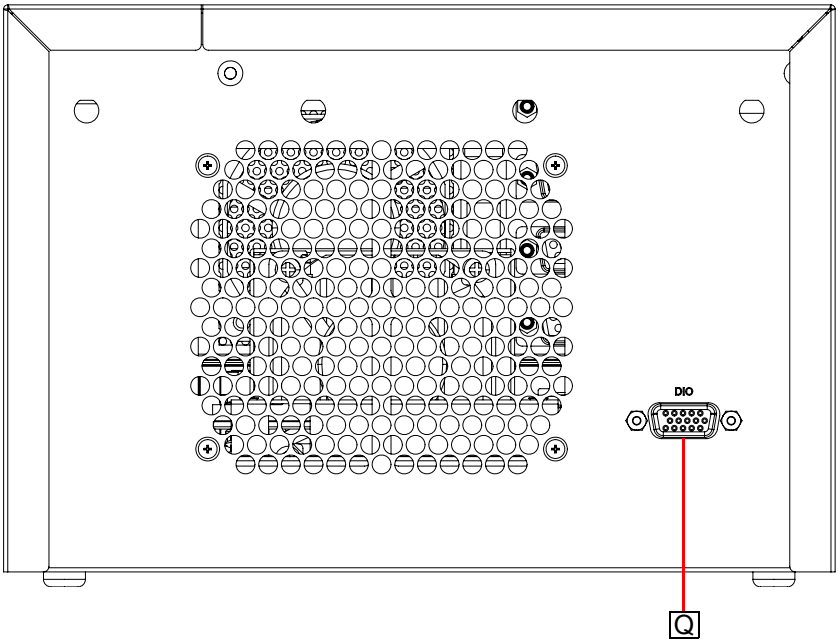

Figure 3-2: Rear Panel I/O

A	AC Power Input	**J**	Mic In
B	COM Port (RS-232) x4	**K**	COM Port (RS-232/422/485)
C	USB 2.0 Type-A x2	**L**	DVI-D
D	Reset	**M**	DisplayPort
E	Power	**N**	HDMI
F	Extended Power Connector	**O**	Gigabit Ethernet x2
G	Storage Indicator	**P**	USB 3.0 Type A x4
H	Line In	**Q**	8-bit GPIO
I	Line Out		

Table 3-1: Front/Rear Panel I/O Legend

3.1.1 Power Button

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.

3.1.2 Storage Indicator

The Storage Indicator indicates the HDD/SSD operating state. When the storage is active, the LED indicator flashes red.

3.1.3 Reset Button

The reset button executes a hard reset for the DLAP-4000.

3.1.4 Extended Power Connector

An external connector is provided for the power buttons, with pin definitions as shown.

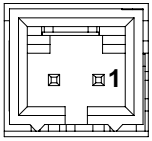

Figure 3-3: Extended Power Connector Pin Definition

Pin	Signal	Description
1	EXT_PWRBTN	Power switch
2	GND	Ground

Table 3-2: Extended Power Connector Pin Definition

3.1.5 DisplayPort Connector

The DLAP-4000 provides one DisplayPort connector for connection to an external monitor.

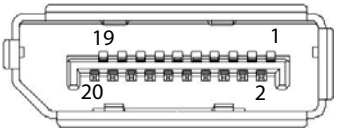

Figure 3-4: DisplayPort Connector Pin Definition

Pin	Signal	Pin	Signal
1	DP1_CON_DP0	2	GND
3	DP1_CON_DN0	4	DP1_CON_DP1
5	GND	6	DP1_CON_DN1
7	DP1_CON_DP2	8	GND
9	DP1_CON_DN2	10	DP1_CON_DP3
11	GND	12	DP1_CON_DN3
13	DP1_HDMI_DNG_DET	14	DP_CFG2
15	DP1_CON_AUXP	16	GND
17	DP1_CON_AUXN	18	DP1_CON_HPD
19	GND	20	+3.3V

Table 3-3: DisplayPort Pin Definition

3.1.6 HDMI Connector

The DLAP-4000 provides one HDMI connector for connection to an external monitor.

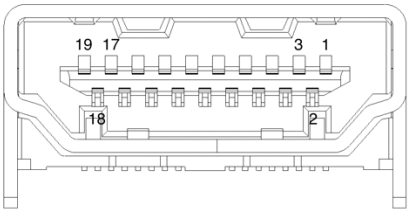

Figure 3-5: HDMI Connector Pin Definition

Pin	Signal	Pin	Signal
1	HDMI1_CON_DP2	2	GND
3	HDMI1_CON_DN2	4	HDMI1_CON_DP1
5	GND	6	HDMI1_CON_DN1
7	HDMI1_CON_DP0	8	GND
9	HDMI1_CON_DN0	10	HDMI1_CON_CKP
11	GND	12	HDMI1_CON_CKN
13	N/C	14	DP_CFG2
15	HDMI1_DDC_CLK	16	HDMI1_DDC_DATA
17	GND	18	+5V
19	HDMI1_CON_HPD		

Table 3-4: HDMI Pin Definition

3.1.7 DVI-D Connector

The DLAP-4000 provides one DVI-D connector for connection to an external monitor.

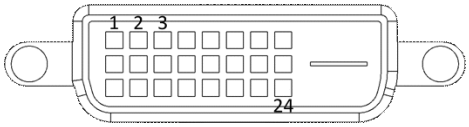

Figure 3-6: DVI-D Connector Pin Definition

Pin	Signal	Pin	Signal	Pin	Signal
1	DVI1_CON_DN2	9	DVI1_CON_DN1	17	DVI1_CON_DN0
2	DVI1_CON_DP2	10	DVI1_CON_DP1	18	DVI1_CON_DP0
3	GND	11	GND	19	GND
4	N/C	12	N/C	20	N/C
5	N/C	13	N/C	21	N/C
6	DVI1_DDC_CLK	14	+5V	22	GND
7	DVI1_DDC_DATA	15	GND	23	DVI1_CON_CKP
8	N/C	16	DVI1_B_HPD	24	DVI1_CON_CKN

Table 3-5: DVI-D Connector Pin Definition

3.1.8 USB 2.0 Ports

The DLAP-4000 provides two USB 2.0 ports supporting Type A USB connection on the front panel. All USB ports are compatible with high-speed, full-speed and low-speed USB devices. The DLAP-4000 supports multiple boot devices, including USB flash drive, USB external hard drive, USB floppy, USB CD-ROM and others. The boot priority and boot device can be configured in BIOS.

3.1.9 USB 3.1 Ports

The DLAP-4000 provides four USB 3.1 Gen1 ports supporting Type A USB 3.1 connection on the front panel. All USB 3.1 ports are compatible with SuperSpeed Gen2, high-speed, full-speed, and low-speed USB devices.

3.1.10 Gigabit Ethernet Ports

Dual 10/100/1000Mbit/s LAN Ethernet controllers based on Realtek RTL8111G, supporting PXE and WOL over both LANs.

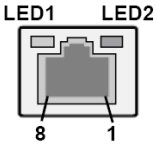

Figure 3-7: Ethernet Port and LEDs

Pin	10BASE-T 100BASE-TX	1000BASE-T
1	TX+	LAN_MDI0+
2	TX-	LAN_MDI0-
3	RX+	LAN_MDI1+
4	—	LAN_MDI2+
5	—	LAN_MDI2-
6	RX-	LAN_MDI1-
7	—	LAN_MDI3+
8	—	LAN_MDI3-

Table 3-6: Ethernet Port Pin Definition

LED1 (Link/Activity)		LED2 (Speed)	
Status	**Description**	**Status**	**Description**
Off	10 Mb connection	Off	No Link
Orange	100 Mb connection	Green	Linked
Green	1 Gb connection	Blinking	Data Activity

Table 3-7: Active/Link LED Indicators

3.1.11 COM Port Connectors

The DLAP-4000 provides five COM ports through D-sub 9-pin connectors. The COM1 port support RS-232/422/485 modes by BIOS setting, while COM2 to COM5 support only RS-232.

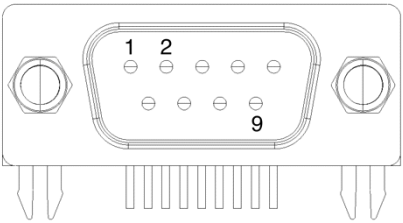

Figure 3-8: COM Port Pin Definition

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

Table 3-8: D-Sub 9-pin Signal Function of COM Ports

3.1.12 8-bit GPIO Connector

The DLAP-4000 provides 8-bit GPIO through D-sub 15-pin connectors. Each GPIO can be defined as Input or Output by BIOS settings.

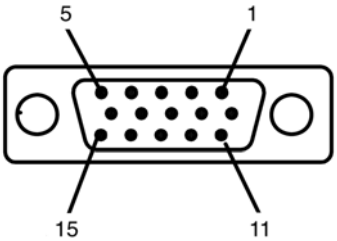

Figure 3-9: 8-bit GPIO Connector Pin Definition

Pin	Signal	Pin	Signal
1	GPIO0	2	GPIO4
3	GPIO1	4	GPIO5
5	GPIO2	6	GPIO6
7	GPIO3	8	GPIO7
9	SMBCLK	10	SMBDATA
11	GND	12	+3.3VDC
13	N/S	14	N/S
15	N/S		

Table 3-9: 8-bit GPIO Pin Definition

3.2 Internal I/O Connectors

3.2.1 Mainboard Connector Locations

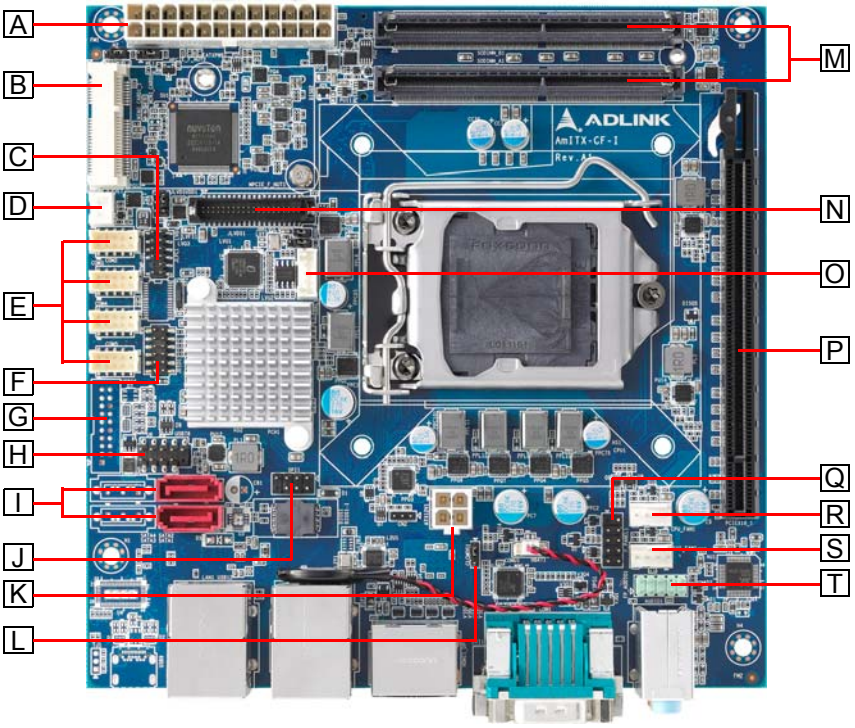

Figure 3-10: Mainboard Front Connectors

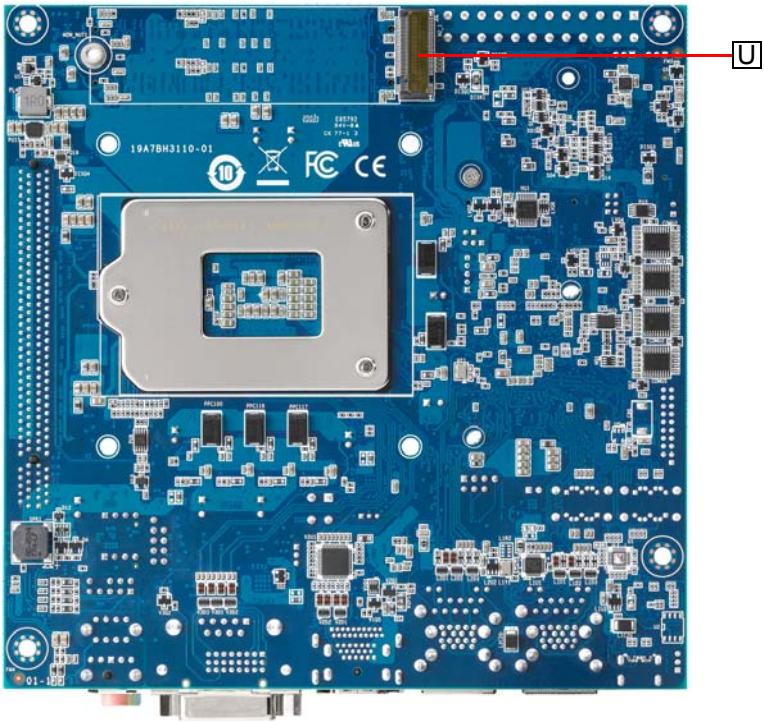

Figure 3-11: Mainboard Rear Connectors

A	ATX Power Connector	**L**	Clear CMOS (CLCMOS1)
B	Mini PCIe	**M**	2x DDR4 SODIMM
C	Debug Header	**N**	LVDS
D	Case Open	**O**	LVDS Inverter Power Connector
E	4x COM	**P**	PCIe x16
F	8-bit GPIO	**Q**	Front Panel Header
G	USB 3.1 Gen 1	**R**	CPU Fan
H	USB 2.0 Header	**S**	System Fan
I	4x/2x SATA Connector	**T**	Audio Header
J	SPI Header	**U**	M.2
K	ATX 12V Power Connector		

Table 3-10: Mainboard Connector Legend

3.2.2 Mini PCIe Connector

The internal Mini PCIe connector (Rev. 1.2) supports full size Mini PCIe cards.

3.2.3 SATA Connectors

The SATA connectors support transfers up to 6.0Gb/s (600MB/s).

3.2.4 M.2 Connector

The M.2 connector supports an M.2 2280 SATA SSD.

3.2.5 Clear CMOS (CLCMOS1)

Upon encountering an abnormal condition preventing the DLAP-4000 from booting, the jumper can clear the BIOS content stored in CMOS and restore default settings. To clear CMOS, short pin #2 to pin #3 for a minimum of 3 seconds, and then remove the jumper to return to normal mode (replace to pins #1 and #2, default).

CLCMOS1	Clear CMOS
1-2	Normal (default)
2-3	Clear CMOS

Table 3-11: Clear CMOS (CLCMOS1)

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4 Getting Started

4.1 Attach AC Power Cord

Locate the AC power cord shown below that is included in the Accessory Pack. Insert it into the AC Power Input “A” shown in **Figure 3-1** on page 13 and connect it to an AC power source.

WARNING:

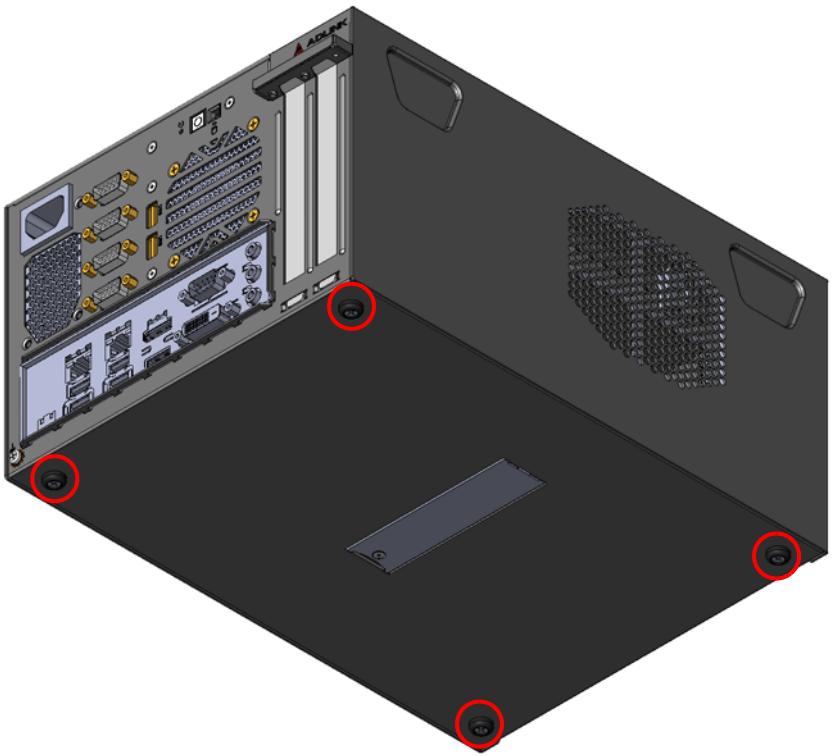
Before providing power, ensure the voltage and polarity provided are compatible with the AC input. Improper input voltage and/or polarity can be responsible for system damage.
AVERTISSEMENT: Avant d'alimenter, assurez-vous que la tension et la polarité fournies sont compatibles avec l'entrée CA. Une tension d'entrée et / ou une polarité incorrectes peuvent être responsables de dommages au système.

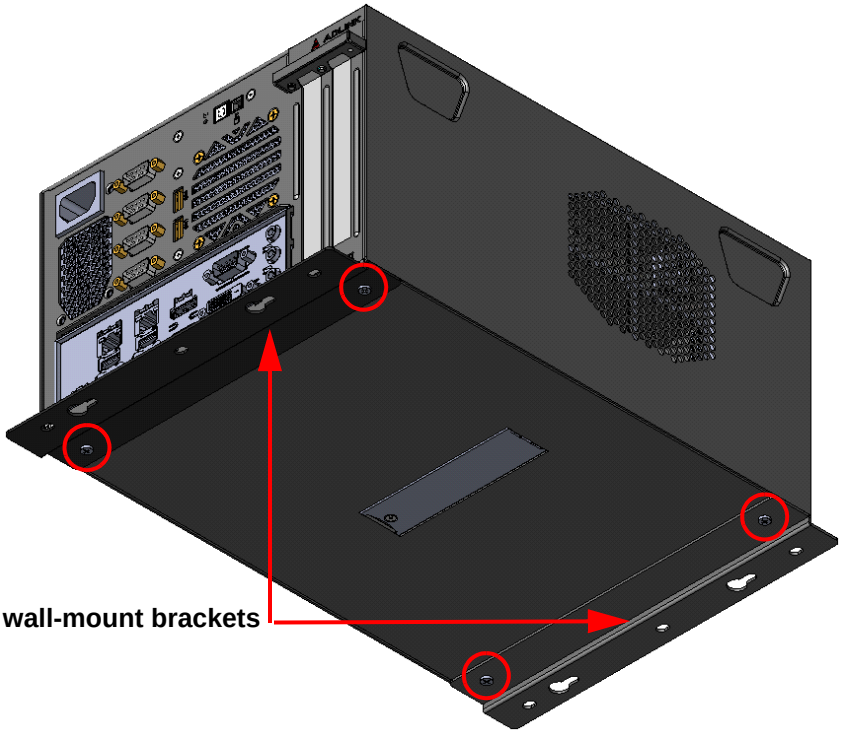
4.2 Mounting the DLAP-4000

4.2.1 Install the Wall-mount Brackets

Remove the 4 footpads as indicated by the red circles below and use the 4 M4 6mm screws included in the screw pack to attach the 2 included wall-mount brackets to the chassis.

Retirez les 4 repose-pieds comme indiqué par les cercles rouges ci-dessous et utilisez les 4 vis M4 6 mm incluses dans Accessory Pox pour fixer les 2 supports de montage mural inclus au châssis.

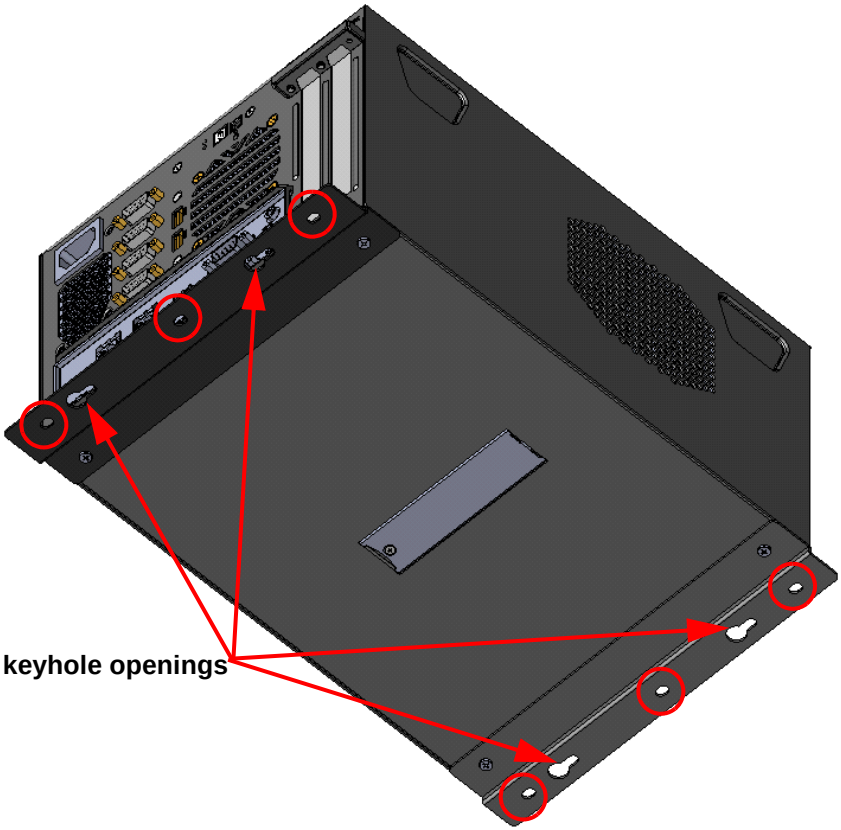



wall-mount brackets

4.2.2 Mounting the Device / Montage de l'Appareil

Mount the device to a wall using the 4 keyhole openings indicated or the 6 mounting holes circled in red, according to the spacing dimensions of the holes in the bracket as shown in Figure 4-1 DLAP-4000 Wall-mount Brackets.

Montez l'appareil sur un mur à l'aide des 4 ouvertures de trou de serrure en fonction des dimensions d'espacement des trous dans le support, comme indiqué dans Figure 4-1 DLAP-4000 Wall-mount Brackets.



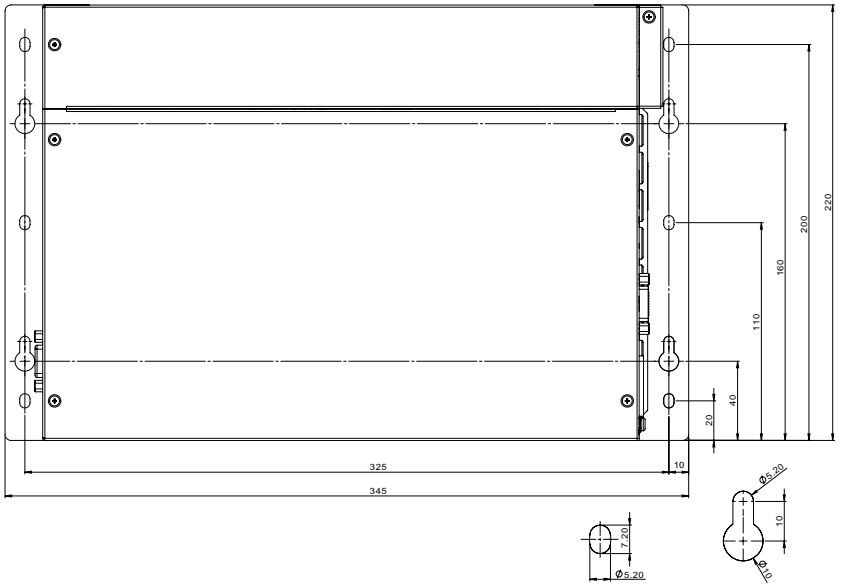
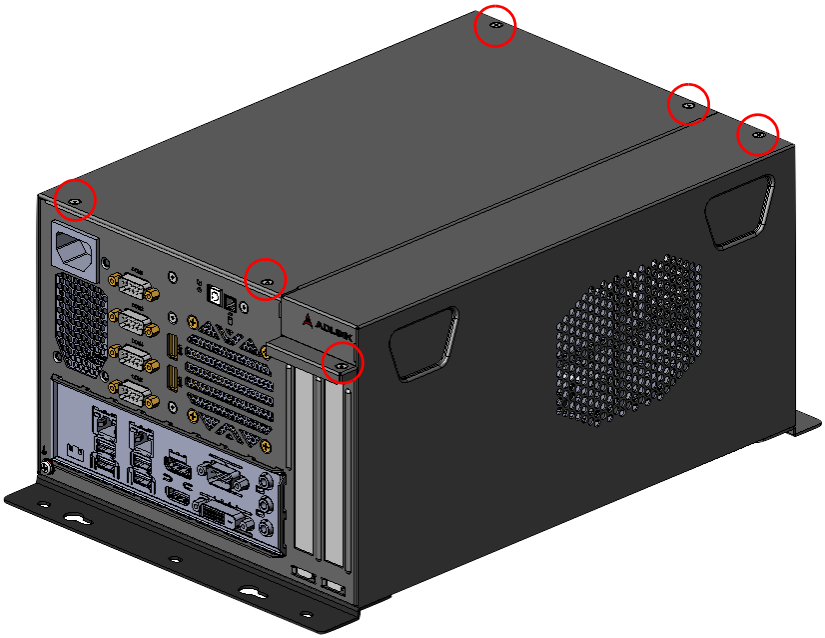


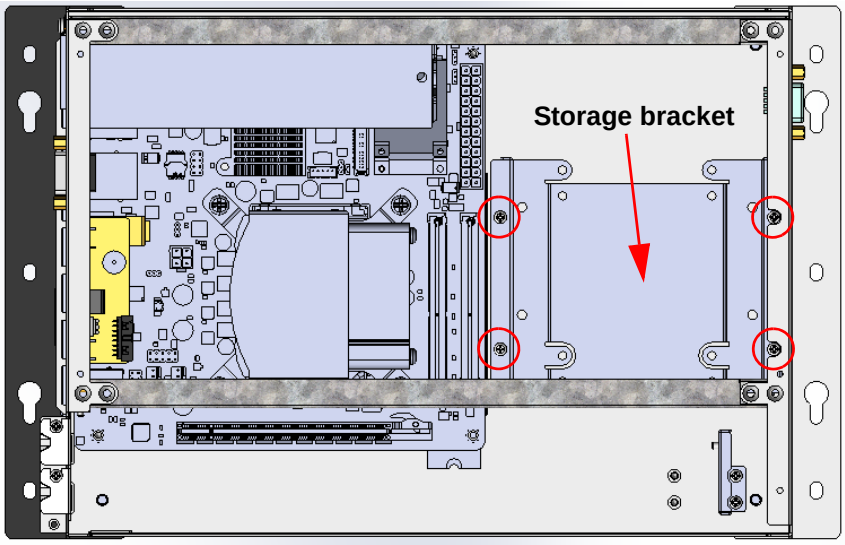
Figure 4-1: DLAP-4000 Wall-mount Brackets

4.3 Installing 2.5"/3.5" Storage

1. Remove the 6 screws indicated and remove the 2 top panels.



2. Remove the 4 screws indicated and remove the storage bracket from the chassis.



3. Use M3 4mm screws included in the Screw Pack to attach a 2.5” HDD/SSD, and #6-32 6.35mm screws to attach a 3.5” HDD.

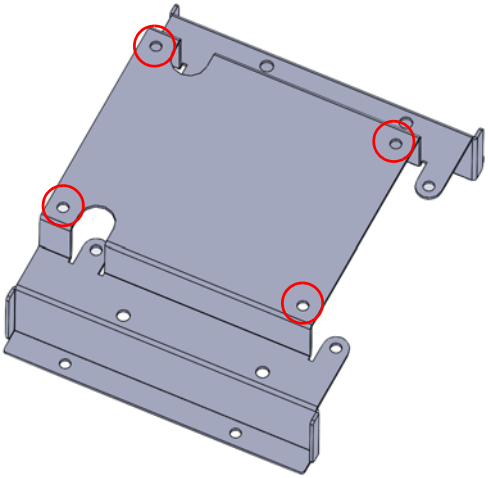


Figure 4-2: Holes for 1st storage (2.5” HDD/SSD)

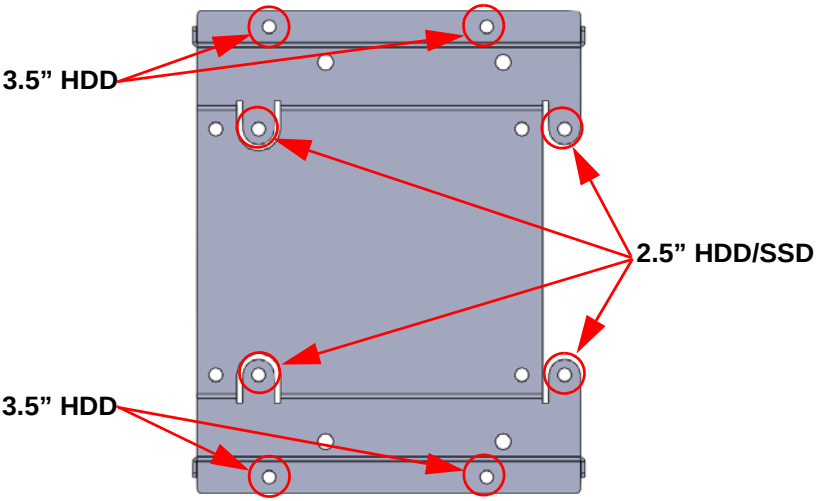


Figure 4-3: Holes for 2nd storage (2.5” HDD/SSD or 3.5” HDD)

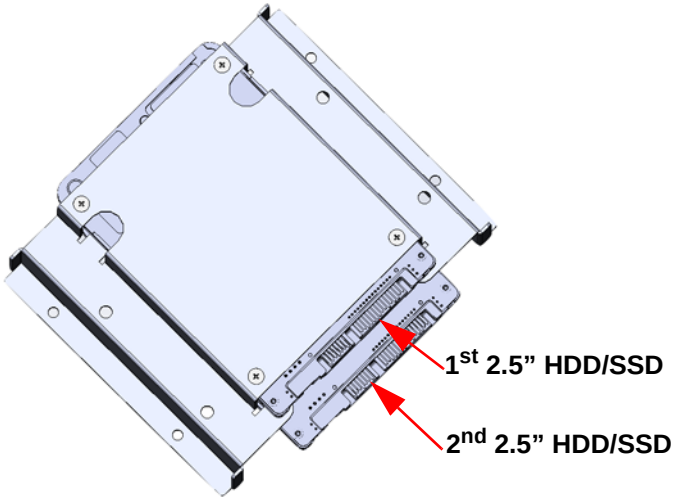


Figure 4-4: Storage bracket with 2x 2.5” HDD/SSD

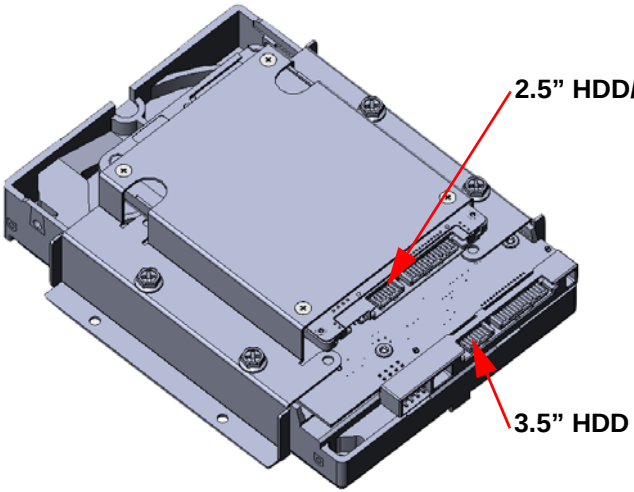
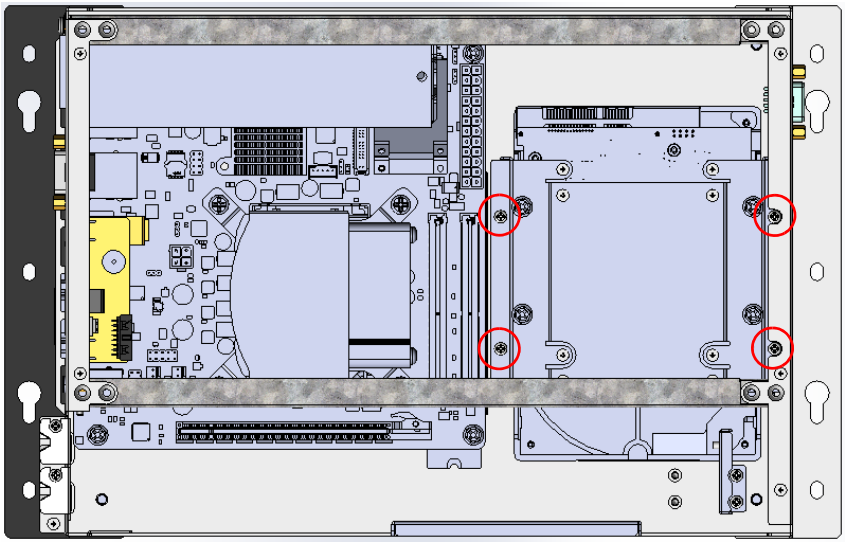


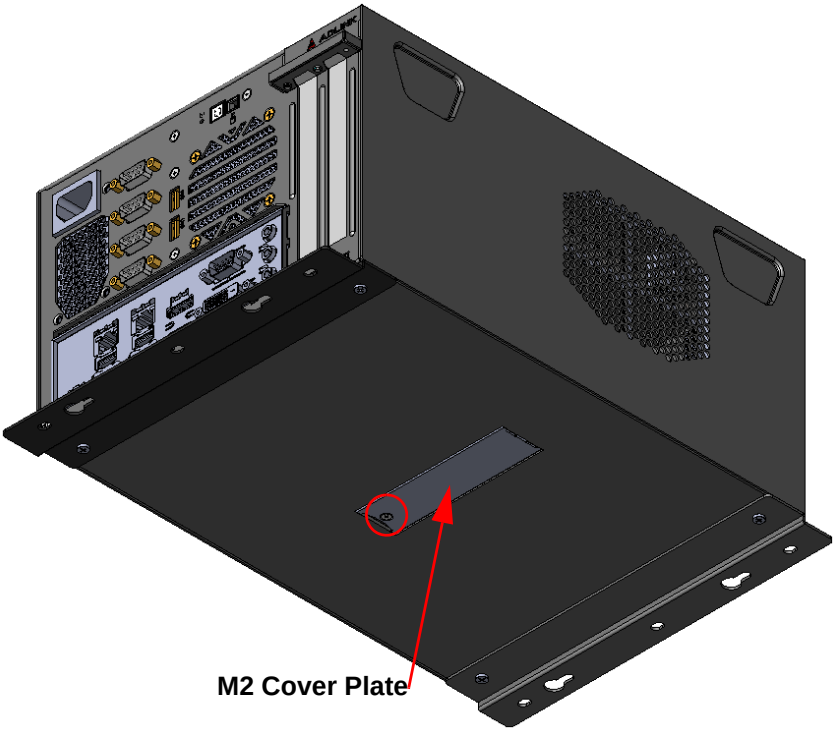
Figure 4-5: Storage bracket with 2.5” + 3.5” Drives

4. Use the 4 screws indicated to attach the storage backet to the chassis.

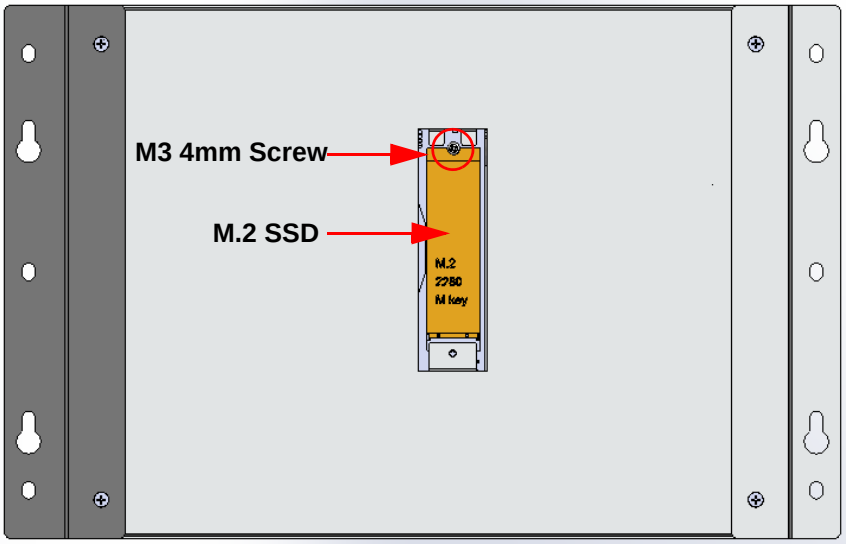


4.4 Installing M.2 Storage

1. Remove the screw and cover plate to access the M.2 storage area.



2. Use the M3 4mm screw included in the Screw Pack to install an M.2 SSD.



4.5 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-4000_Series and install.

The following drivers must be installed:

- Chipset
- Graphics
- Audio
- Ethernet
- Intel ME
- COM Ports
- IRST

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Appendix A BIOS Setup

BIOS can be configured via a setup utility that is invoked during BIOS boot phase. The BIOS configuration is kept in NVRAM which is the same hardware part as BIOS is stored. All settings will be remained after system is un-powered. In this section, BIOS setup menu will be described.

A.1 BIOS Setup Menu

The BIOS setup utility is invoked by pressing <ESC> or <DEL> keys. User can change BIOS settings during setup utility runs. A reset of system is required in order to make new settings take effect.

In BIOS setup utility, there are several hot keys are designed for specific purpose. Hot keys are listed as below.

- <F1>: General help in setup menu
- <F8>: Load previous BIOS values
- <F9>: Load BIOS default in setup utility
- <F10>: Save & Exit setup utility

Menu Selection Bar

The Menu Selection Bar is located at the top of the screen. It displays the top level available menus to the user:

- Main Menu
- Advanced Menu
- Chipset Menu
- Security Menu
- Boot Menu
- Save & Exit Menu

Menu Conventions

The appearance of setup menu listed in this chapter is a sample to describe the item list. It is shown on VT100 terminal via serial console. Followings are the menu conventions.

- Using color

  The mandatory BIOS setup fields are in black. The BIOS setup fields currently not used are in grey. The display only strings are in black.

- Using brackets

  Editable menu options are marketed with squares '[' and ']' to distinguish them from display only fields that can't be modified.

A.2 Menu Structure

This section presents the six primary menus of the BIOS Setup Utility. Use the following table as a quick reference for the contents of the BIOS Setup Utility. The subsections in this section describe the submenus and setting options for each menu item. The default setting options are presented in bold, and the function of each setting is described in the right hand column of the respective table.

Main	Advanced
- BIOS Information	- CPU Configuration ►
- Memory Information	- PCH-FW Configuration ►
- Power Type	- ACPI Settings ►
- System Date	- NCT6106D Super IO Configuration ►
- System Time	- NCT6106D HW Monitor ►
	- S5 RTC Wake Settings ►
	- Serial Console Redirection ►
	- Intel TXT Information ►
	- USB Configuration ►
	- CSM Configuration ►
	- Network Stack Configuration ►

Chipset	Security
- System Agent (SA) Configuration ►	- Administrator Password
- PCH-IO Configuration ►	- User Password
	- Secure Boot ►

Boot	Save & Exit
- Setup Prompt Timeout	- Save Changes and Exit
- Bootup NumLock State	- Discard Changes and Exit
- Quiet Boot	- Save Changes and Reset
- Support Native Priorities	- Discard Changes and Reset
- Boot Option #1	- Save Changes
- Boot Option #2	- Discard Changes
- Boot Option #3	- Restore Defaults
- Boot Option #4	- Launch EFI Shell from filesystem device
- Boot Option #5	
- Boot Option #6	
- Boot Option #7	


NOTE:

- ► indicates a submenu
- Gray text indicates info only
- **Bold text** indicates a default setting

A.3 Main Menu

The Main Menu provides read-only information about your system and also allows you to set the System Date and Time. Refer to the tables below for details of the submenus and settings.

Feature	Options	Description
BIOS Information		
BIOS Vendor	American Megatrends	
Core Version	5.13 0.45 x64	
Compliancy	UEFI 2.7; PI 1.6	
Project Version	AmITX-CF-I-xxxx_xxxxx	
Build Date and Time	Info only	
Access Level	Administrator	
Memory Information		
Total Memory	Info only	
Memory Frequency	Info only	
Power Type	x Mode	
System date	xxx mm/dd/yyyy	Set the Date. Use <Tab> to switch between Date elements.
System Time	hh:mm:ss	Set the Time. Use <Tab> to switch between Time elements.

A.4 Advanced Menu

This menu contains the settings for most of the user interfaces in the system.

Feature	Description
CPU Configuration	CPU Configuration Parameters.
PCH-FW Configuration	Configure Management Engine Technology Parameters.
ACPI Setting	System ACPI Parameters.
NCT6106D Super IO Configuration	System Super IO Chip Parameters.
NCT6106D HW Monitor	Monitor hardware status.
S5 RTC Wake Settings	Enable system to wake from S5 using RTC alarm.
Serial Port Console Redirection	Serial Port Console Redirection.
Intel TXT Information	Display Intel TXT Information.
USB Configuration	USB Configuration Parameters.
CSM Configuration	CSM configuration: Enable/Disable, Option ROM execution settings, etc.
Network Stack Configuration	Network Stack Setting.

A.4.1 CPU Configuration

Feature	Options	Description
CPU Configuration		
Type	Info only	
ID	Info only	
Speed	Info only	
L1 Data Cache	Info only	
L1 Instruction Cache	Info only	
L2 Cache	Info only	
L3 Cache	Info only	
L4 Cache	Info only	

Feature	Options	Description
VMX	Info only	
SMX/TXT	Info only	
C6DRAM	Disabled ***Enabled***	Enabled/Disabled moving of DRAM contents to PRM memory when CPU is in C6 state.
Software Guard Extensions (SGX)	Disabled Enabled ***Software Controlled***	Enabled/Disabled Software Guard Extensions (SGX).
Select Owner EPOCH input type	***No Change in Owner ECOPHs*** Change to New Random Owner ECOPHs Manual User Defined Owner OPCHs	There are three Owner EPOCH modes (Each EPOCH is 64bit): no change in owner epoch, change to new random owner epoch and manually entered by user. After generating new epoch via 'Change to New Random Owner EPOCHs', the selection reverts back to 'No Change in Owner Epochs', this is to ensure Epoch stays same.
Intel (VMX) Virtualization Technology	Disabled ***Enabled***	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Active Processor Cores	***All*** 1 2 3 4 5	Number of cores to enable in each processor package.
Hyper-Threading	Disabled ***Enabled***	Enabled for Windows and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology)

Feature	Options	Description
Intel Trusted Execution Technology	***Disabled*** Enabled	Enable utilization of additional hardware capabilities provided by Intel Trusted Execution Technology.
Intel SpeedStep	Disabled ***Enabled***	Allows more than two frequency ranges to be supported.
Turbo Mode	Disabled ***Enabled***	Enable/Disable processor Turbo Mode (requires Intel Speed Step or Intel Speed Shift to be available and enabled)
C states	Disabled ***Enabled***	Enable/Disable CPU Power Management. Allows CPU to go to C States when it's not 100% utilized.
Enhanced C-state	Disabled ***Enabled***	Enable/Disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.
Package C state limit	C0/C1 C2 C3 C6 C7 C7S C8 C9 C10 Cpu Default ***Auto***	Maximum Package C State Limit Setting. CPU Default: Leaves to Factory default value. Auto: Initializes to deepest available Package C State Limit.

A.4.2 PCH-FW Configuration

Feature	Options	Description
ME Firmware Version	Info only	
ME Firmware Mode	Info only	
ME Firmware SKU	Info only	
ME Firmware Status 1	Info only	
ME Firmware Status 2	Info only	
ME State	Enabled	
ME Lock Control	***Lock*** UnLock	ME UnLock switch function. Note: This function will automatic recover setting from UnLock to Lock after power-on system.

A.4.3 ACPI Settings

Feature	Options	Description
ACPI Settings		
Enable Hibernation	Disabled ***Enabled***	Enable s or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
ACPI Sleep State	Suspend Disabled ***S3 (Suspend to RAM)***	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
S3 Video Repost	***Disabled*** Enabled	Enable or Disable S3 Video Repost.
PCIE# Wake from S5	***Disabled*** Enabled	Enable or disable PCIE to wake the system from S5.

A.4.4 NCT6106D Super IO Configuration

Feature	Options	Description
NCT6106D Super IO Configuration		
Super IO Chip	NCT6106D	
Serial Port 1 Configuration		Set Parameters of Serial Port 1.
Serial Port 2 Configuration		Set Parameters of Serial Port 2.
Serial Port 3 Configuration		Set Parameters of Serial Port 3.
Serial Port 4 Configuration		Set Parameters of Serial Port 4.
Serial Port 5 Configuration		Set Parameters of Serial Port 5.
WatchDog Count Mode	***Second*** Minute	WatchDog Count Mode Selection.
WatchDog TimeOut Value	0	Fill WatchDog Timeout Value, 0 means disabled.
Chassis Opened Warning	***Disabled*** Enabled	Select whether to enable Chassis Intrusion Detection. Chassis Intrusion Detection is a utility that can tell whether someone has opened the case (intruded into the chassis). Note: If chassis tamper occurs, you can only enter setup to clear this error.
ErP/EuP S5 Support	***Disabled*** Enabled	Enable/Disable ErP/EuP S5 Support. Note: When MEBx is enable Activate Network Access, this function can not set enable that will cause ME fail on next boot.

A.4.4.1 Serial Port 1 Configuration

Feature	Options	Description
Serial Port 1 Configuration		
Serial Port	Disabled ***Enabled***	Enable or Disable Serial Port (COM).
Device Setting	IO=3F8h; IRQ=4;	
Change Settings	***Auto*** IO=3F8h; IRQ=4 IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select optimal settings for Super IO Device.
COM Mode Select	***RS232*** RS485 Half Duplex RS422 Full Duplex	Configure the COM Port Mode.

A.4.4.2 Serial Port 2 Configuration

Feature	Options	Description
Serial Port 2 Configuration		
Serial Port	Disabled ***Enabled***	Enable or Disable Serial Port (COM).
Device Setting	IO=2F8h; IRQ=3;	
Change Settings	***Auto*** IO=2F8h; IRQ=3 IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select optimal settings for Super IO Device.

A.4.4.3 Serial Port 3 Configuration

Feature	Options	Description
Serial Port 3 Configuration		
Serial Port	Disabled ***Enabled***	Enable or Disable Serial Port (COM).
Device Setting	IO=3E8h; IRQ=5;	
Change Settings	***Auto*** IO=3E8h; IRQ=5 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E0h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	Select optimal settings for Super IO Device.

A.4.4.4 Serial Port 4 Configuration

Feature	Options	Description
Serial Port 4 Configuration		
Serial Port	Disabled ***Enabled***	Enable or Disable Serial Port (COM).
Device Setting	IO=2E8h; IRQ=5;	
Change Settings	***Auto*** IO=2E8h; IRQ=5 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E0h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	Select optimal settings for Super IO Device.

A.4.4.5 Serial Port 5 Configuration

Feature	Options	Description
Serial Port 4 Configuration		
Serial Port	Disabled ***Enabled***	Enable or Disable Serial Port (COM).
Device Setting	IO=2E0h; IRQ=10;	
Change Settings	***Auto*** IO=2E0h; IRQ=10 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E0h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	Select optimal settings for Super IO Device.

A.4.5 NCT6106D HW Monitor

Feature	Options	Description
PC Health Status		
Smart Fan		Smart Fan Function page.
SYS temperature	Info only	
CPU temperature (PECI)	Info only	
SYS_Fan Speed	Info only	
CPU_Fan Speed	Info only	
VCORE	Info only	
+12V	Info only	
+5V	Info only	
+5VSB	Info only	
AVCC	Info only	
3VSB	Info only	
3VCC	Info only	
VBAT	Info only	

A.4.5.1 Smart Fan

Feature	Options	Description
Smart Fan Function	Disabled ***Enabled***	Smart Fan Function Enable/Disable.
Smart Fan Mode Configuration		Smart Fan Mode Configuration.

Smart Fan Mode Configuration – SMART FAN IV Mode

Feature	Options	Description
Smart Fan Mode Configuration		
SYS Smart Fan Mode	SMART FAN IV Mode	SYS Smart Fan Mode.
FAN Temperature 1	25	Input the SYS Smart Fan IV Temperature 1.
FAN PWM 1	80	Input the SYS Smart Fan IV PWM 2 Value.
FAN Temperature 2	40	Input the SYS Smart Fan IV Temperature 2.
FAN PWM 2	130	Input the SYS Smart Fan IV PWM 2 Value.
FAN Temperature 3	55	Input the SYS Smart Fan IV Temperature 3.
FAN PWM 3	190	Input the SYS Smart Fan IV PWM 3 Value.
FAN Temperature 4	62	Input the SYS Smart Fan IV Temperature 4.
FAN PWM 4	255	Input the SYS Smart Fan IV PWM 4 Value.
FAN Tolerance of Target Temp	5	Fan Tolerance of Target Temp.
FAN Critical Temperature	90	Input the SYS Smart IV Critical Temperature.
FAN Critical Temperature Tolerance	1	Input Tolerance of Critical Temperature (Range:0-7).
CPU Smart Fan Mode	SMART FAN IV Mode	CPU Smart Fan Mode.
FAN Temperature 1	25	Input the CPU Smart Fan IV Temperature 1.
FAN PWM 1	80	Input the CPU Smart Fan IV PWM 2 Value.
FAN Temperature 2	40	Input the CPU Smart Fan IV Temperature 2.
FAN PWM 2	130	Input the CPU Smart Fan IV PWM 2 Value.

Feature	Options	Description
FAN Temperature 3	55	Input the CPU Smart Fan IV Temperature 3.
FAN PWM 3	190	Input the CPU Smart Fan IV PWM 3 Value.
FAN Temperature 4	62	Input the CPU Smart Fan IV Temperature 4.
FAN PWM 4	255	Input the CPU Smart Fan IV PWM 4 Value.
FAN Tolerance of Target Temp	5	Fan Tolerance of Target Temp.
FAN Critical Temperature	90	Input the CPU Smart IV Critical Temperature.
FAN Critical Temperature Tolerance	1	Input Tolerance of Critical Temperature (Range:0-7).

Smart Fan Mode Configuration – Manual Mode

Feature	Options	Description
Smart Fan Mode Configuration		
SYS Smart Fan Mode	Manual Mode	SYS Smart Fan Mode.
SYS expect PWM Output Voltage	255	SYS Fan expect PWM Output Voltage.
CPU Smart Fan Mode	Manual Mode	SYS Smart CPU Mode.
CPU expect PWM Output Voltage	255	SYS CPU expect PWM Output Voltage.

A.4.6 S5 RTC Wake Settings

Feature	Options	Description
Wake System From S5	***Disabled*** Enabled	Enable or disable System wake on alarm event.

A.4.7 Serial Port Console Redirection

Feature	Options	Description
COM1		
Console Redirection	***Disabled*** Enabled	Console Redirection Enable or Disable.
Console Redirection Settings		The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

A.4.7.1 Console Redirection Settings

Feature	Options	Description
COM1		
Console Redirection Settings		
Terminal Type	VT100 VT100+ VT-UTF8 ***ANSI***	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode.
Bits per second	9600 19200 38400 57600 ***115200***	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
Data Bits	7 ***8***	Data Bits.
Parity	***None*** Even Odd Mark Space	A parity bit can be sent with the data bits to detect some transmission errors.
Stop Bits	***1*** 2	Stop bits indicate the end of a serial data packet.

Feature	Options	Description
Flow Control	***None*** Hardware RTS/ CTS	Flow control can prevent data loss from buffer overflow.
VT-UTF8 Combo Key Support	Disabled ***Enabled***	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.
Recorder Mode	***Disabled*** Enabled	With the mode enabled only text will be sent. This is to capture Terminal data.
Resolution 100x31	***Disabled*** Enabled	Enables or disables extended terminal resolution.
Putty KeyPad	***VT100*** LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.

A.4.8 Intel TXT Information

Feature	Options	Description
Intel TXT information		
Chipset	Info only	
BiosAcm	Info only	
CPU Txt	Info only	
Error Code	Info only	
Class Code	Info only	
Major Code	Info only	
Minor Code	Info only	

A.4.9 USB Configuration

Feature	Options	Description
USB Configuration		
USB Module Version	Info only	
USB Controllers	Info only	
USB Devices	Info only	

Feature	Options	Description
Legacy USB Support	Disabled ***Enabled*** Auto	Enable/Disable Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep SUB devices available only for EFI applications.
XHCI Hand-Off	Disabled ***Enabled***	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Disabled ***Enabled***	Enable/Disable USB Mass Storage Driver Support.

A.4.10 CSM Configuration

Feature	Options	Description
Compatibility Support Module Configuration		
CSM Support	Disabled ***Enabled***	Enable/Disable CSM Support.
CSM16 Module Version	Info only	
Option ROM execution		
Network	Do not launch ***UEFI*** Legacy	Controls the execution of UEFI and Legacy PXE OpROM.
Storage	Do not launch ***UEFI*** Legacy	Controls the execution of UEFI and Legacy Storage OpROM.
Video	Do not launch ***UEFI*** Legacy	Controls the execution of UEFI and Legacy Video OpROM.
Other PCI device	Do not launch ***UEFI*** Legacy	Controls the execution of UEFI and Legacy other device OpROM.

A.4.11 Network Stack Configuration

Feature	Options	Description
Network Stack	***Disabled*** Enabled	Enable/Disable UEFI Network Stack.
Ipv4 PXE Support	***Disabled*** Enabled	Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available.
Ipv6 PXE Support	***Disabled*** Enabled	Enable/Disable IPv6 PXE boot support. If disabled, IPv4 PXE boot support will not be available.
PXE boot wait time	0	Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the values.
Media detect count	1	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the values.

A.5 Chipset

Feature	Options	Description
System Agent (SA) Configuration		System Agent(SA) Parameters.
PCH-IO Configuration		PCH Parameters.

A.5.1 System Agent (SA) Configuration

Feature	Options	Description
System Agent (SA) Configuration		
SA PCIe Code Version	Info only	
VT-d	Info only	
Memory Configuration		Memory Configuration Parameters
Graphics Configuration		Graphics Configuration
PEG Port Configuration		PEG Port Options
VT-d	Disabled ***Enabled***	VT-d capability

A.5.1.1 Memory Configuration

Feature	Options	Description
Memory Configuration	Info only	
Memory RC Version	Info only	
Memory Frequency	Info only	
Memory Timings (tCL-tRCD-tRP-tRAS)	Info only	
DIMM_A1	Info only	
DIMM_B1	Info only	
Max TOLUD	***Dynamic*** 1GB 1.25GB 1.5GB 1.75GB 2GB 2.25GB 2.5GB 2.75GB 3GB 3.25GB 3GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

A.5.1.2 Graphics Configuration

Feature	Options	Description
Graphics Configuration		
Primary Display	***Auto*** IGFX PEG PCIE	Select which of IGFX/PEG/PCIE Graphics device should be Primary Display.
Internal Graphics	***Auto*** Disabled Enabled	Keep IGFX enabled based on the setup options.
PSMI Support	***Disabled*** Enabled	PSMI Enable/Disable.
DVMT Pre-Allocated	0M ***32M*** 64M 4M 8M 12M 16M 20M 24M 28M 32M F7 36M 40M 44M 48M 52M 56M	Select DVMT5.0 Pre-Allocated (Fixed) Total Graphic Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	128M ***256M*** MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.
LCD Control		LCD Control

LCD Control

Feature	Options	Description
LCD Control		
LVDS Control	Enabled ***Disabled***	Enable/Disable LVDS.
LVDS Panel Type	640x480@60Hz 18bits Single 800x480@60Hz 18bits Single 800x600@60Hz 18bits Single ***1024x768@60Hz 18bits Single*** 1280x1024@60Hz 24bits Dual 1366x768@60Hz 18bits Single 1440x900@60Hz 24bits Dual 1680x1050@60Hz 24bits Dual 1920x1080@60Hz 24bits Dual 1920x1200@60Hz 24bits Dual	Select LCD Panel Type.
LVDS Brightness Control	255	Adjust Brightness of LVDS (from 1~225).
LVDS Back Light PWM Frequency	***200 Hz*** 250 Hz 333 Hz 500 Hz 1K Hz 11.6K Hz 15.6K Hz 23.3K Hz	Adjust LVDS Back Light PWM Frequency.

A.5.2 PEG Port Configuration

Feature	Options	Description
PEG Port Configuration		
PEG 0:1:0	Not Present	
Enable Root Port	Disabled Enabled ***Auto***	Enable or Disable the Root Port
Max Link Speed	***Auto*** Gen1 Gen2 Gen3	Configure PEG [Bus, Dev, Fun] Max Speed
PEG0 Hotplug	***Disabled*** Enabled	Enable or Disable PCI Express hot plugging.
Extra Bus Reserved	0	Extra bus reserved (0-7) for bridges behind this Root Bridge
Reserved Memory	10	Reserved Memory for this Root Bridge.
Reserved I/O	4	Reserved I/O (4K/8K/12K/16K/20K) Range for this Root Bridge
Detect Non-Compliance Device	Disable ***Enable***	Detect Non-Compliance PCI Express Device in PEG.

A.5.3 PCH-IO Configuration

Feature	Options	Description
PCH-IO Configuration		
PCI Express Configuration		PCI Express Configuration settings
SATA and RST Configuration		SATA Device Options Settings
USB Configuration		USB Configuration settings
HD Audio Configuration		HD Audio Subsystem Configuration Settings
LAN1 Controller	Disabled ***Enabled***	Control the PCI Express Root Port.
LAN1 PXE OpROM	***Disabled*** Enabled	Enable or disable boot option for LAN1 Controller.

Feature	Options	Description
LAN2 Controller	Disabled ***Enabled***	Control the PCI Express Root Port.
LAN2 PXE OpROM	***Disabled*** Enabled	Enable or disable boot option for LAN2 Controller.
Restore AC Power Loss	Power On ***Power Off*** Last State	Specify what state to go to when power is re-applied after a power failure (G3 state).
GPIO Group Control	***Disabled*** Enabled	Configure the digital GPIO pins.
GPIO 1 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 2 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 3 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 4 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 5 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 6 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.
GPIO 7 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.

Feature	Options	Description
GPIO 8 Control	***Input*** Output High Output Low	Configure Digital I/O Pin.

A.5.3.1 PCI Express Configuration

Feature	Options	Description
PCI Express Configuration		
PCIE Device Initial Delay	1	The PCIE device initial delay mini second.
PCI Express Root Port 5 (Mini-PCIe)		
PCI Express Root Port 5 (Mini-PCIe)	Disabled ***Enabled***	Control the PCI Express Root Port.
ASPM 5	***Disabled*** L0s L1 L0sL1 Auto	Set the ASPM Level: Force L0s – Force all links to L0s State Auto – BIOS auto configure Disable – Disables ASPM
PCIe Speed	***Auto*** Gen1 Gen2 Gen3	Configure PCIe Speed.
PCI Express Root Port 11 (LAN1)		
PCI Express Root Port 12 (LAN2)		

A.5.3.2 SATA Configuration

Feature	Options	Description
SATA Configuration		
SATA Controller(s)	***Enabled*** Disabled	Enable/Disable SATA Device.
SATA Mode Selection	***AHCI*** Intel RST Premium	Determines how SATA controllers operate.
Serial ATA Port 1	Info only	
Software Preserve		
Port 1	Disabled ***Enabled***	Enable or Disable SATA Port.
Serial ATA Port 2	Info only	
Software Preserve		
Port 2	Disabled ***Enabled***	Enable or Disable SATA Port.
Serial ATA Port 5	Info only	
Software Preserve		
Port 5	Disabled ***Enabled***	Enable or Disable SATA Port.

A.5.3.3 USB Configuration

Feature	Options	Description
USB Configuration		
XHCI Compliance Mode	***Disabled*** Enabled	Options to disable Compliance Mode. Default is to disable Compliance Mode. Change to enabled for Compliance Mode testing.
USB12 Standby Power	Disabled ***Enabled***	Enable/Disable USB Standby Power.
USB34 Standby Power	Disabled ***Enabled***	Enable/Disable USB Standby Power.
USB78 Standby Power	Disabled ***Enabled***	Enable/Disable USB Standby Power.

A.5.3.4 HD Audio Configuration

Feature	Options	Description
HD Audio Configuration		
HD Audio	Disabled ***Enabled***	Control Detection of the HD-Audio device. Disabled = HAD will be unconditionally disabled. Enabled = HAD will be unconditionally enabled.

A.6 Security

Feature	Options	Description
Administrator Password		Set Administrator Password
User Password		Set User Password
Secure Boot menu		Secure Boot configuration

A.6.1 Secure Boot

Feature	Options	Description
System Mode		
Secure Boot	***Disabled*** Enabled	Secure Boot feature is Active if Secure Boot is Enabled,Platform Key(PK) is enrolled and the System is in User mode.The mode change requires a platform reset
Secure Boot Mode	Standard ***Custom***	In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication
Restore Factory Keys	Yes No	Force System to User Mode. Install factory default Secure Boot key databases.
Reset to Setup Mode	Yes No	Delete all Secure key databases from NVRAM.
Key Management		Enables expert users to modify Secure Boot Policy variables without full authentication

A.6.1.1 Key Management

Feature	Options	Description
Vendor Keys	Modified	
Factory Key Provision	***Disable*** Enable	Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode.

Feature	Options	Description
Restore Factory Keys	Yes No	Force System to User Mode. Install factory default Secure Boot key databases
Reset to Setup Mode	Yes No	Delete all Secure key databases from NVRAM.
Export Secure Boot variables	Yes No	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device.
Enroll Efi Image	Yes No	Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).
Device Guard Ready		
Remove “UEFI CA” from DB	Yes No	Device Guard ready system must not list ‘Microsoft UEFI CA’ Certificate in Authorized Signature database (db).
Restore DB defaults	Yes No	Restore DB variable to factory defaults.
Secure Boot variable	Size | Keys | Key Source	
Platform Key (PA)	0 | 0 | No Keys	Enroll Factory Defaults or load certificates from a file: Public key Certificate: EFI_SIGNATURE _LIST EFI_CERT_X509 (DER) EFI_CERT_RSA2048 (bin) EFI_CERT_SHAXXX Authenticated UEFI Variables EFI PE/COFF Image (SHA256) Key Source: Factory, External, Mixed
Key Exchange Keys	0 | 0 | No Keys	
Authorized Signatures	0 | 0 | No Keys	
Forbidden Signatures	0 | 0 | No Keys	
Authorized TimeStamps	0 | 0 | No Keys	
OsRecovery Signatures	0 | 0 | No Keys	

A.7 Boot

Feature	Options	Description
Boot Configuration		
Setup Prompt Timeout	1	Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.
Bootup NumLock State	***On*** Off	Select the keyboard NumLock state.
Quiet Boot	Disabled ***Enabled***	Enable or disables Quiet Boot option.
Support Native Resolution	Disabled ***Enabled***	Enable or disable Support Native Resolution.
Driver Option Priorities		
Boot Mode	LEGACY ***UEFI***	Automatically set CSM's item so LEGACY or UEFI.
FIXED BOOT ORDER Priorities		
Boot Option #1	Hard Disk	Set the system boot order
Boot Option #2	CD/DVD	Set the system boot order
Boot Option #3	USB Hard Disk	Set the system boot order
Boot Option #4	USB CD/DVD	Set the system boot order
Boot Option #5	USB Key	Set the system boot order
Boot Option #6	USB Floppy	Set the system boot order
Boot Option #7	Network	Set the system boot order

A.8 Save & Exit

Feature	Options	Description
Save Options		
Save Changes and Exit	Yes No	Exit system setup after saving the changes.
Discard Changes and Exit	Yes No	Exit system setup without saving any changes.
Save Changes and Reset	Yes No	Reset the system after saving the changes.
Default Options		
Restore Defaults	Yes No	Restore/Load Default values for all the setup options.
Boot Override		
Launch EFI Shell from filesystem device		Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices.

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Important 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.

- 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.
- The device can be operated at an ambient temperature of 45ºC with DC input, and 35ºC with adapter input.
- It is recommended that the device be installed in Information Technology Rooms that are in accordance with Article 645 of the National Electrical Code and NFPA 75.
- 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).
  - Only install/attach and operate device on stable surfaces and/or recommended mountings.
  - The power cord must be connected to a socket or outlet with a ground connection.
- 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.

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

- This equipment is not suitable for use in locations where children are likely to be present.
- 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
- 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 therefor, 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

BURN HAZARD

Hot surface! Do not touch! Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

Consignes de Sécurité Importante

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.

- *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.*
- *L'appareil peut être utilisé à une température ambiante de 45°C avec entrée CC pour les série MVP-61; 35ºC avec entrée adaptateur pour la série MVP-61.*
- *Il est recommandé d'installer l'appareil dans des salles de technologie de l'information conformes à l'article 645 du National Electrical Code et à la NFPA 75.*
- *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 le cordon d'alimentation).*
  - *Installez/fixez et utilisez l'appareil uniquement sur des surfaces stables et/ou sur les fixations recommandées.*
  - *Le cordon d'alimentation doit être connecté à une prise ou à une prise de courant avec mise à la terre.*

- Si l'appareil ne doit pas être utilisé pendant de longues périodes, éteignez-le et débranchez-le de sa source d'alimentation
- *N'essayez jamais de réparer l'appareil, qui ne doit être réparé que par un personnel technique qualifié à l'aide d'outils appropriés*
- *Une batterie de type Lithium peut être fournie pour une alimentation de secours ininterrompue ou d'urgence.*

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

- *Cet équipement ne convient pas à une utilisation dans des lieux pouvant accueillir des enfants.*
- *L'appareil doit être entretenu par des techniciens agrees lorsque:*
- *Le cordon d'alimentation ou la prise est endommagé(e)*
- *Un liquide a pénétré à l'intérieur de l'appareil.*
- *L'appareil a été exposé à une forte humidité et/ou de la buée.*
- *L'appareil ne fonctionne pas ou ne fonctionne pas selon le manuel de l'utilisateur.*
- *L'appareil est tombé et/ou a été endommagé et/ou présente des signes évidents de dommage.*
- *Débranchez le cordon d'alimentation avant de desserrer les vis à oreilles et serrez toujours les vis à oreilles avec un tournevis avant de mettre le système en marche.*
- *Il est recommandé d'installer l'appareil uniquement dans une salle de serveurs ou une salle informatique où l'accès est:*
  - *Réservé au personnel de service qualifié ou aux utilisateurs familiarisés avec les restrictions appliquées à l'emplacement, aux raisons de ces restrictions et toutes les précautions requises*
  - *Uniquement autorisé par l'utilisation d'un outil, d'une serrure et d'une clé, ou d'un autre moyen de sécurité, et contrôlé par l'autorité responsable de l'emplacement.*

	***RISQUE DE BRÛLURES*** ***Partie chaude!*** *Ne touchez pas cette surface, cela pourrait entraîner des blessures. Pour éviter tout danger, laissez la surface refroidir avant de la toucher.*

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Getting Service

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