MXE-310 Series

User's Manual

Rugged, Compact Edge Solutions Powered by Intel® 13th Gen Core™



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Leading **EDGE COMPUTING**

Preface

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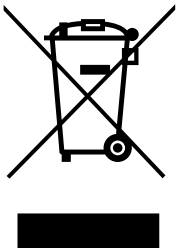
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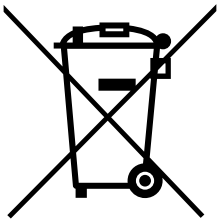
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Battery Labels (for products with battery)









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Revision History

Revision	Description	Date	By
1.0	Initial release	2025-03-13	AL

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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, laperte de don- nées 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.

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1. Introduction

ADLINK's new Matrix MXE-310 Series compact embedded industrial platform, based on the 13th Gen Intel® Core processors, delivers the most reliable I/O design for maximum connectivity. Featuring a full aluminum alloy enclosure with industry-class construction, it is the embedded system of choice for industrial automation and applications requiring reliability in harsh environments.

The MXE-310 Series includes 1x HDMI, 1x DisplayPort, 1x USB Type-C (USB 3.2, DP, Power Delivery 5V, 3A), 4x USB ports, 2x Gigabit LAN ports, 2x 3-in-1 RS-232/422/485 serial ports, and a built-in fTPM. Additional value and convenience are provided through a modular design with three independent slots for flexible system integration and expansion.

Users have the option to add a variety of communications modules, including Wi-Fi, 4G/5G LTE, GPS expansion modules, and M.2 2280 M-key storage. The Matrix's proven rugged construction assures operation in harsh environments, with operating shock tolerance up to 30 G, 3 Grms vibration resistance, and optionally available extended operating temperature ranges.

1.1 Packing List

- MXE-310 computer unit
- Wall mount bracket
- Screws for DIN rail, wall mount, and storage
- Quick Start Guide

1.2 Optional Accessories

- 120W AC to DC power adapter 31-62163-1010-A0

Latest revisions of the datasheet, user's manual, BIOS, drivers, and board support packages, can be downloaded from the product webpage on the ADLINK web site: www.adlinktech.com

1.3 Features

Dimension	180 (W) x 130 (D) x 70 (H) mm
CPU	13th Gen Intel® Core processors (i7/i5/i3)
Motherboard	SBC35-RPL
DRAM	Up to 64GB DDR5 4800MHz
Display	1x HDMI 2.1 (4096 x 2160 @ 60Hz) 1x DP 1.4a 1x USB Type-C support DP 1.4a
COM	2x RS-232/422/485 2x RS-232 (Rear side)
USB	1x USB 3.2 Gen2 (5V/1A) 3x USB 2.0 (5V/0.5A)
Ethernet	LAN1: Intel® I219-V via RJ45 connector, with 10/100/1000 Mbps LAN2: Intel® I225-V via RJ45 connector, with 10/100/1000/2500 Mbps
GPIO	8DI, 8DO
Expansion Slot	1x M.2 B-Key, 1x M.2 E-Key, 1x M.2 M-Key
Audio	High-Definition Audio. Line-in, Line-out, and Mic-in (Realtek® ALC888S)
Button	Power button, reset button

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2. Specifications

2.1 Core System

CPU	13th Gen Intel® Core processors (i3/i5/i7), 15W & 28W
Memory	Dual-channel DDR5 SO-DIMMs 4800MHz, up to 64GB

2.2 I/O Interface

Expansion Slot	M.2 Key-M supports NVMe SSDs at PCIe Gen3 x4 speed (2280 size). M.2 Key-B supports 3042 size cards with USIM slots for SIM cards, featuring USB3.0+USB2.0 interfaces (no PCIe support). M.2 Key-E supports PCIe x1 & USB 2.0 (2230 size).
SATA	1x SATA 6Gb/s ports w/ 5V SATA power
USB	2x USB 3.2 Gen2 (5V/1A) 3x USB 2.0 (5V/0.5A)
COM	2x RS-232/422/485 2x RS-232 (Rear side)
DIO	8x GPI, 8x GPO (DB9)
TPM	fTPM, TPM 2.0 (optional)

2.3 Graphics

Interfaces	1x DP1.4A 1x HDMI 2.1 (4096 x 2160 @ 60Hz) 1x Type-C (USB 3.2, DP, Power Delivery 5V, 3A)

2.4 Audio

Audio Codec	Realtek ALC888S
Interfaces	1x line-in, 1x line-out, MIC-in

2.5 Power Consumption

2.5.1 15W CPU

Power off	3.9W	In shutdown mode with DC input and only USB keyboard/mouse.
System Idle	14.5W	Under Windows Desktop with no application programs executed.
Processor full load	24.3W	Under Windows with 100% CPU utilization and 2D/3D graphics load.
System full load	31.3W	Under Windows with 100% CPU utilization and simultaneous access to all I/O devices.

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Recommended minimum powersupply	60W	With consideration of voltage de-ratingunder high environmental temperature.

2.5.2 28W CPU

Power off	3.9W	In shutdown mode with DC input and only USB keyboard/mouse.
System Idle	15W	Under Windows Desktop with no application programs executed.
Processor full load	39.3W	Under Windows with 100% CPU utilization and 2D/3D graphics load.
System full load	46.6W	Under Windows with 100% CPU utilization and simultaneous access to all I/O devices.
Recommended minimum powersupply	60W	With consideration of voltage de-rating under high environmental temperature.



Information in this section is for power budget planning and design purposes only. Actual power consumption may differ based on final application.

Les informations contenues dans cette annexe sont uniquement destinées à la planification du budget énergétique et à des fins de conception. La consommation réelle d'énergie peut varier en fonction de l'application finale.

2.6 Environmental

Power Supply	12V-24V DC Jack connector	
Temperature	**Operating Temperature**	-20°C to 60°C (-4° F to 140° F)
	Storage (Non-Operating) Temperature	-40°C to 85°C (-4°F to 185°F – AC adapter supports up to 50°C only)
Humidity	**Operating Humidity**	10% - 85% (non-condensing)
	Storage (Non-Operating) Humidity	10% - 95% (non-condensing)

2.7 Certification

EMC	CE and FCC Class B
Safety	CB, UL/cUL

2.8 Form Factor

System	180 (W) x 130 (D) x 70 (H) mm

2.9 Operating Systems

Standard Support	Windows 10 IoT Enterprise LTSC 21H2 (64-bit) Ubuntu 22.04

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2.10 Functional Block Diagram

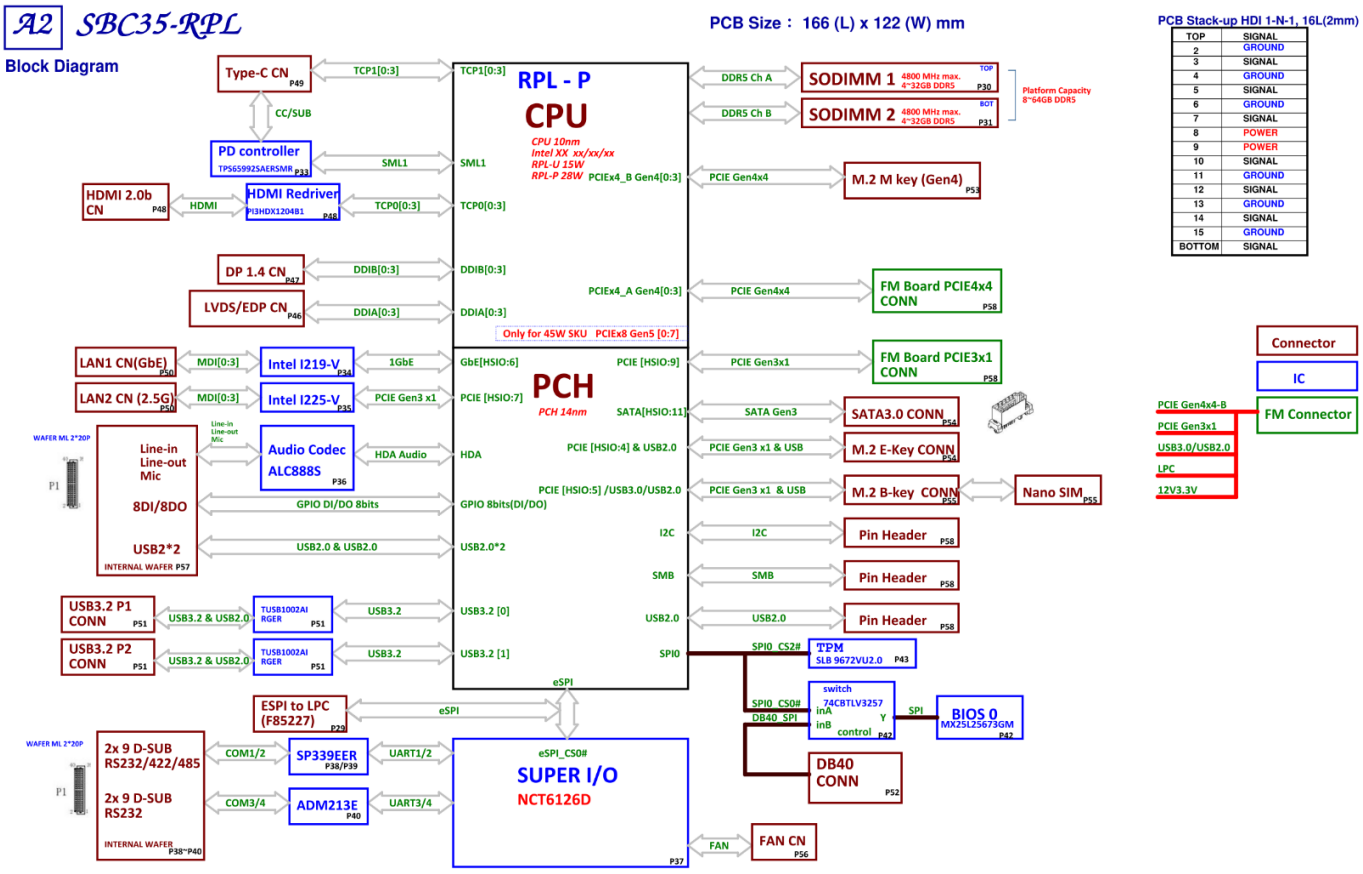


Figure 1: Functional block diagram

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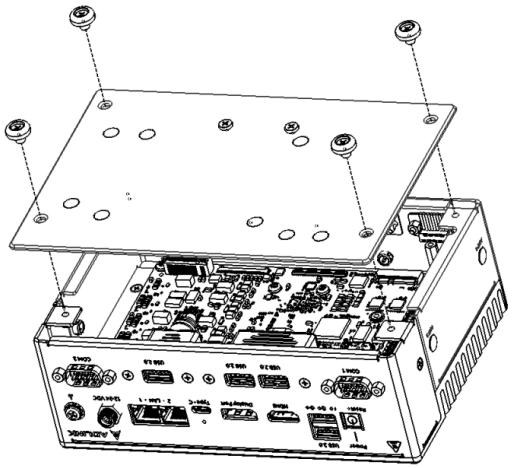
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3. Quick Installation

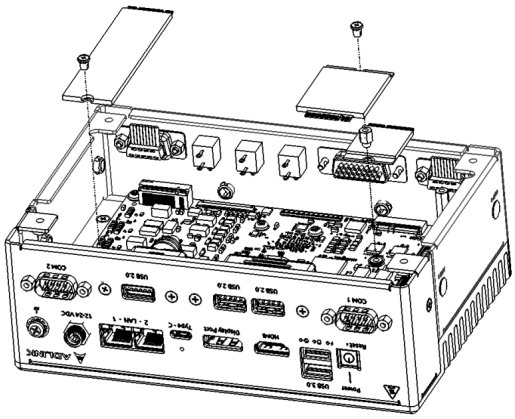
This chapter covers the installation of M.2 expansion modules, wall mounting, and Din Rail, and also the integration of SATA SSDs for the ADLINK MXE-310.

3.1 Installing M.2 Expansion Modules

1. Remove the top-side 4x screws.

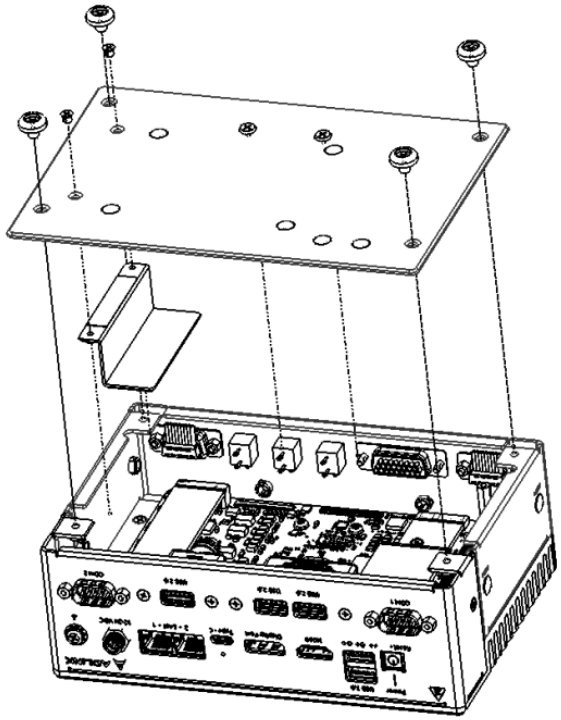


2. Install the M.2 module.



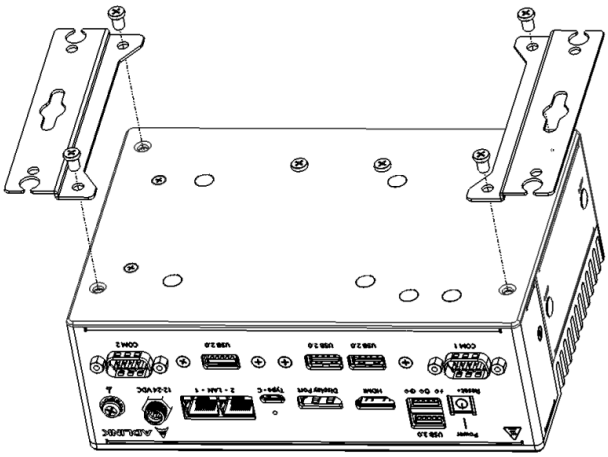
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3. Reattach the heatsink and seal it with the top cover using the 4x screws.



3.2 Wall Mounting

Use the two M4 screws shipped with the controller to attach the two wall-mount brackets (also included) to the chassis, following the spacing dimensions of the screw holes and brackets.



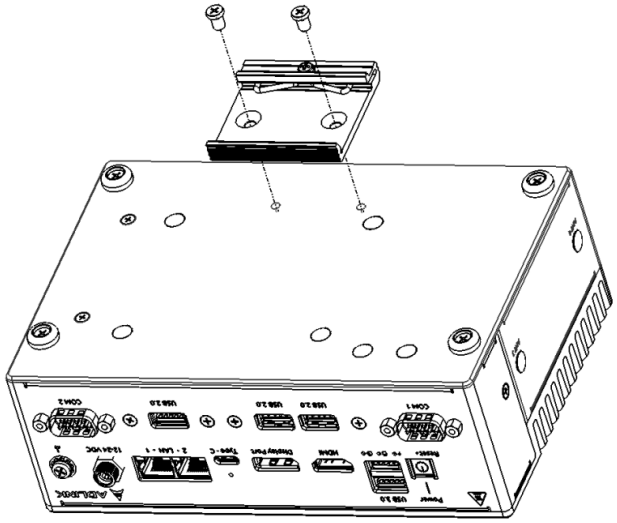
NOTE:

The heat-generating components of the MXE-310, including the CPU and PCH, are located on the left side and make contact with the heatsink via thermal pads to dissipate heat. For optimal heat dissipation, ensure at least 2 inches (5 cm) of clearance beneath the MXE-310.

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3.3 Installing DIN Rail

The DIN rail is optional. Use the two M4 screws shipped with the controller to secure the DIN rail.

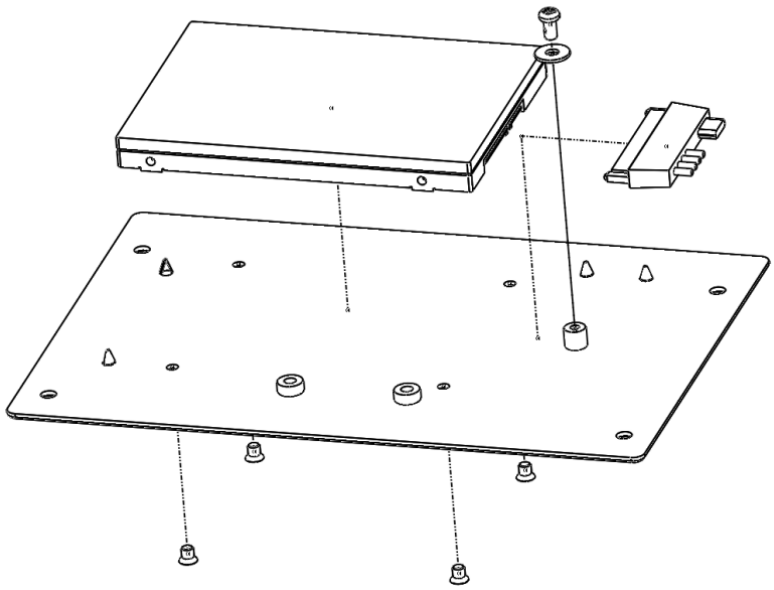


NOTE:

When using a DIN rail, the system's vibration resistance is 1G.

3.4 Integrating SATA SSD

1. Remove the top cover, then install the SATA SSD and secure it with screws.
2. Connect the SATA cable.



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4. Mechanical Layouts

4.1 Connector Locations

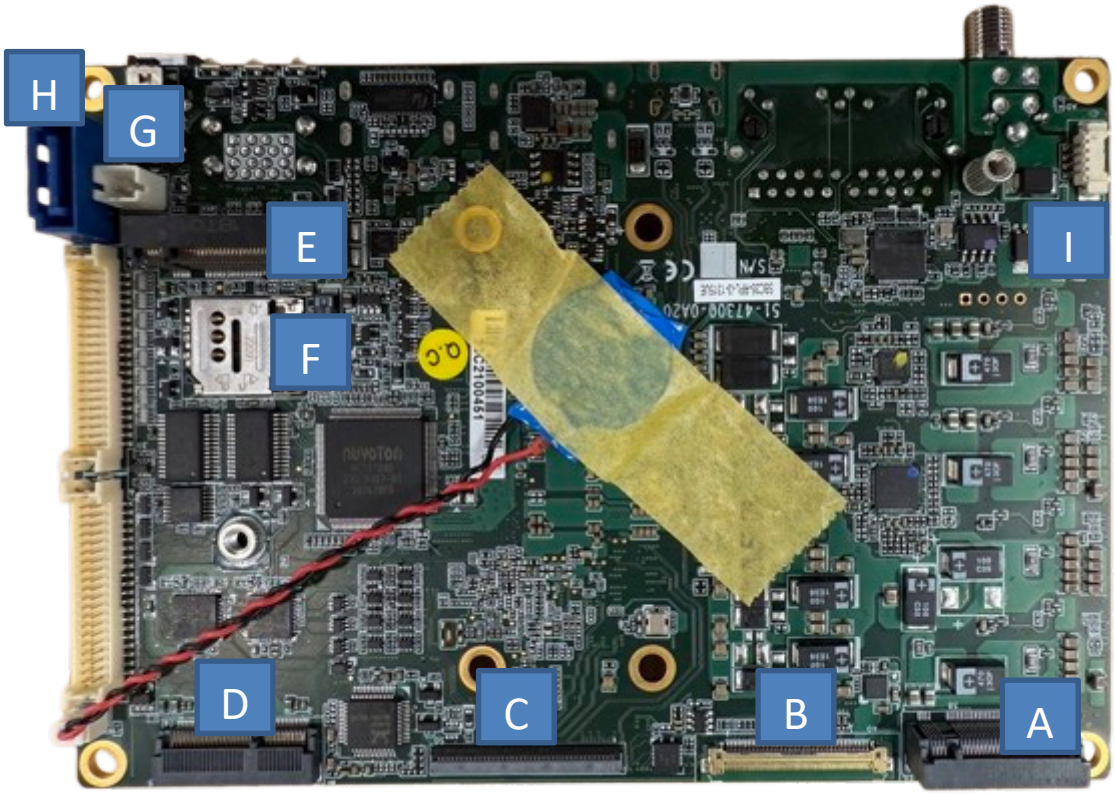


Figure 2: Onboard connector locations (Top)

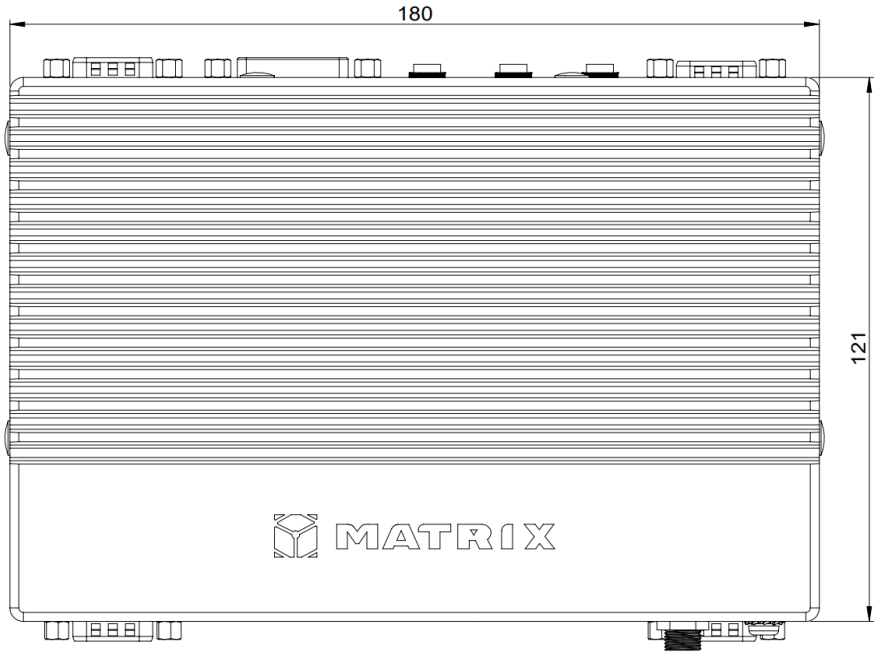
Table 1: Onboard connector locations descriptions

Onboard Connectors	
Item	Description
A	M.2 M key
B	eDP/LVDS Connector
C	FPC Connector(Support FM Board)
D	M.2 E.Key
E	M.2 B.Key
F	Nano SIM1 Connector
G	SATA PWR Connector
H	SATA Connector
I	External Power Connector for FM board

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4.2 Mechanical Dimensions

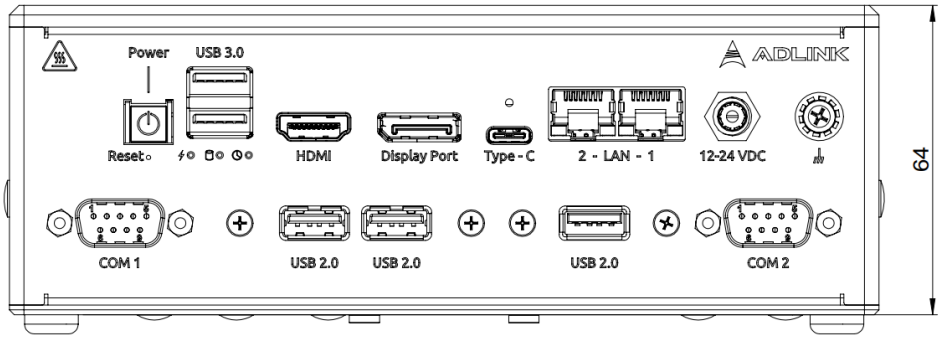
Top View



Dimensions: mm

Figure 3: Mechanical dimensions (Top)

Front View

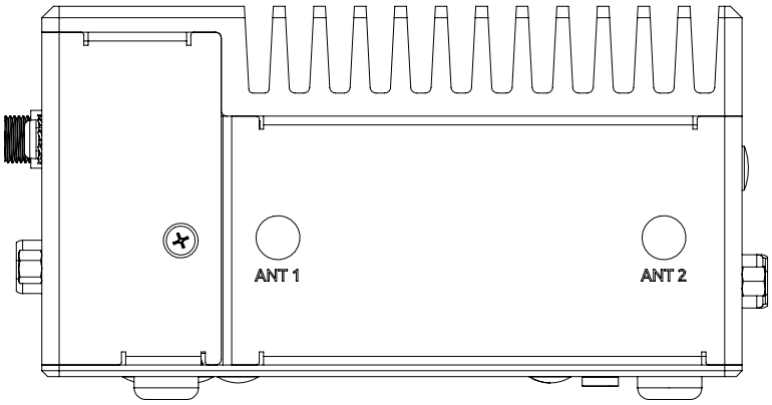


Dimensions: mm

Figure 4: Mechanical dimensions (Front)

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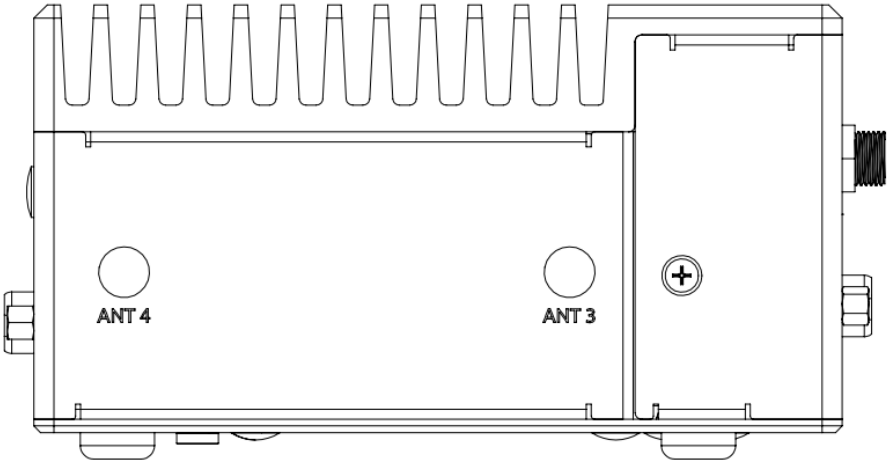
Right Side View



Dimensions: mm

Figure 5: Mechanical dimensions (Right side)

Left Side View

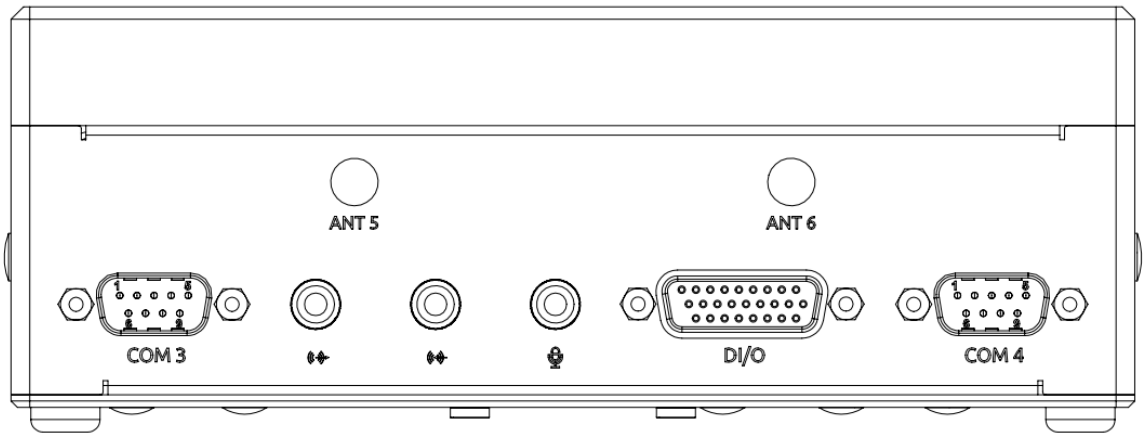


Dimensions: mm

Figure 6: Mechanical dimensions (Left side)

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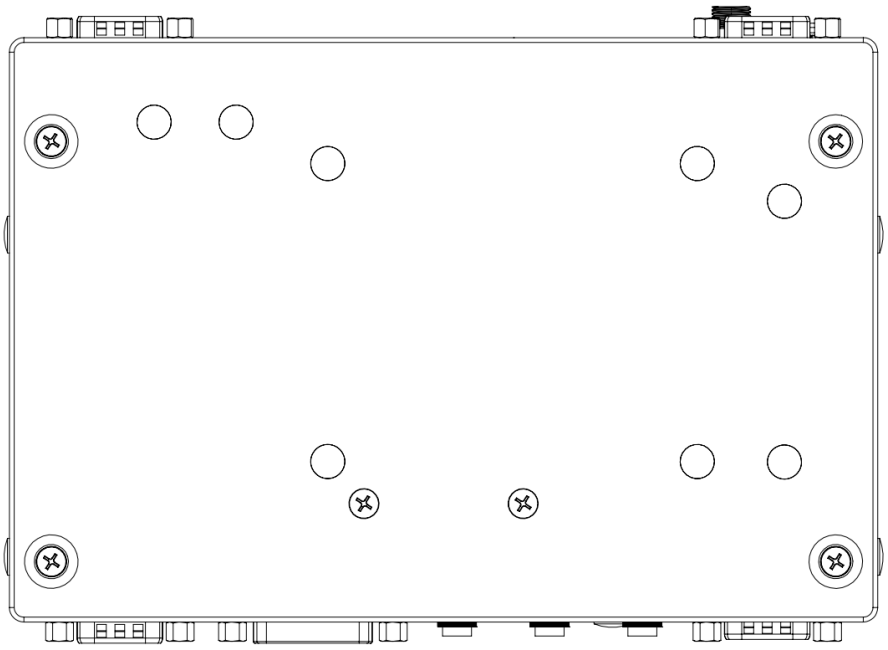
Rear View



Dimensions: mm

Figure 7: Mechanical dimensions (Rear)

Bottom View



Dimensions: mm

Figure 8: Mechanical dimensions (Bottom)

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5. Connectors and Jumpers

5.1 Panel I/O Connectors

5.1.1 Power LEDs

The power button is a non-latched push button with a blue LED indicator. System is turned on when button is pressed, and the power LED lit. If the system hangs, pressing the button for 5 seconds powers down the system.

System status	Power LED
Turned on	Light On
Suspension (S3)	Blinking
Hibernation (S4)	Blinking
Power Off (S5)	Light Off

5.1.2 LAN LEDs

LAN1

LED	LED Color	Status	Description
Active/Link	Yellow	OFF	Ethernet port is disconnected
		ON	Ethernet port is connected with no activity
		Flashing	Ethernet port is connected and active
Speed	Green/ Orange	OFF	10 Mbps
		Green	100 Mbps
		Yellow	**1000 Mbps**

LAN2

LED	LED Color	Status	Description
Active/Link	Yellow	OFF	Ethernet port is disconnected
		ON	Ethernet port is connected with no activity
		Flashing	Ethernet port is connected andactive
Speed	Green/ Orange	OFF	10/100 Mbps
		Green	1000 Mbps
		Yellow	**2500 Mbps**

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5.1.3 LED Status Indicators

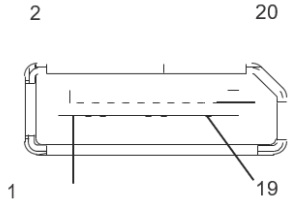
There are three LEDs on the front panel, apart from the power LED, indicating the following operations.

LED Indication	Location	Color	Description
Hard disk drive (HD)	LED1	Red	Blinking indicates that the SATA HDD and/or SSD are active.
Diagnostic (DG)	LED2	Red	Lighting continuously indicates that no physical storage is connected. Blinking indicates that no memory is installed on either SO-DIMM socket.
User-defined	LED3	Red	User-defined LED

5.1.4 DisplayPort

A single DisplayPort connector supporting DP 1.4 facilitates connectivity to VGA, DVI, HDMI, and DisplayPort monitors using adapter cables, supporting resolutions up to 4096 x 2160 at 60Hz.

Pin	Signal	Pin	Signal
1	ML_Lane0_P	11	GND
2	GND	12	ML_Lane3_N
3	ML_Lane0_N	13	Config1
4	ML_Lane1_P	14	Config2
5	GND	15	Aux_P
6	ML_Lane1_N	16	GND
7	ML_Lane2_P	17	Aux_N
8	GND	18	Hot Plug
9	ML_Lane2_N	19	Return
10	ML_Lane3_P	20	DP_PWR_+3.3V



5.1.5 USB

The USB 3.2 & USB2.0 port supports Type A connection, compatible with SuperSpeed, Hi-Speed, full-speed and low-speed USB devices, with support for multiple boot devices, including USB flash, USB external HDD, and USB CD-ROM drivers, with boot priority and boot device configured in BIOS.

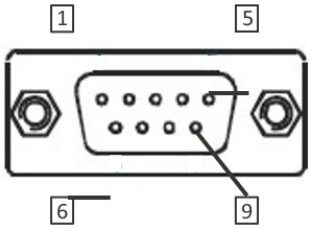
Note: When using USB CD-ROM via USB 3.0 port to re-install or repair the OS, cold boot should be utilized

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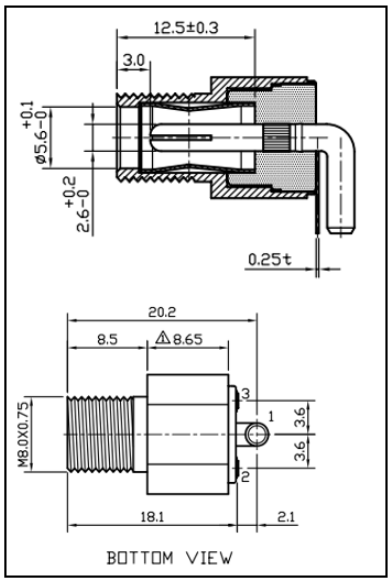
5.1.6 DB9 COM Port Connector

Through a D-sub 9-pin connector, COM3 and COM4 only supports RS- 232, while the other selectively supporting RS-232/RS-422/RS-485 mode by BIOS setting.

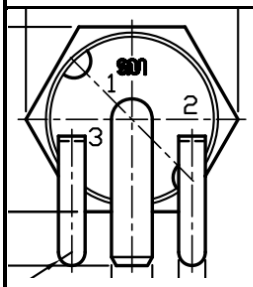
Pin	RS232	RS422	RS485
1	DCD#	TXD422-	485-
2	RXD	TXD422+	485+
3	TXD	RXD422+	N/C
4	DTR#	RXD422-	N/C
5	GND	N/C	N/C
6	DSR#	N/C	N/C
7	RTS#	N/C	N/C
8	CTS#	N/C	N/C
9	RI#	N/C	N/C



5.1.7 DC Power Supply Connector



DC POWER JACK RT Φ2.6 24V/12A



Pin	Signal
1	Power
2	GND1
3	GND2

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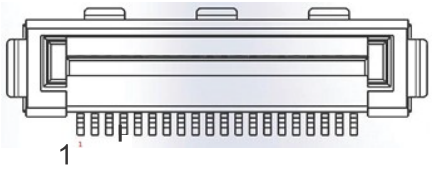
5.1.8 DB26 DIO Connector

Pin	Function	Pin	Function
1	DI0	19	DO0
2	DI1	20	DO1
3	DI2	21	DO2
4	DI3	22	DO3
5	DI4	23	DO4
6	DI5	24	DO5
7	DI6	25	DO6
8	DI7	26	DO7

5.2 Internal IO Connectors

5.2.1 SATA

Pin	Signal	Pin	Signal
1	GND	13	+5V
2	SOC_SATA_TX1_P_C	14	+5V
3	SOC_SATA_TX1_N_C	15	+5V
4	GND	16	NC
5	SOC_SATA_RX1_N_C	17	GND
6	SOC_SATA_RX1_P_C	18	GND
7	GND	19	GND
8	NC	20	GND
9	+3.3V	G1	GND
10	+3.3V	G2	GND
11	+3.3V	G3	GND
12	NC	G4	GND



5.2.2 M.2 M/E/B Keys

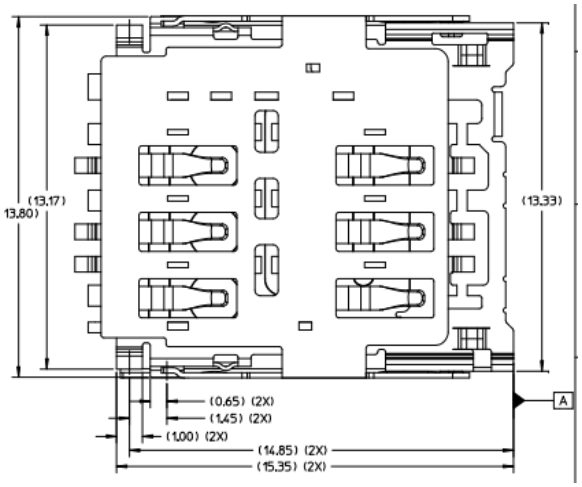
M.2 Key-M support NVMe SSD, only supports PCIE GEN3 x2 speed. 2280 size card.

M.2 Key-B connector support 3042 size card, and support USIM slots for SIM cards. Only support USB3.0+USB2.0 interface, no PCIe M.2 Key-E connector supports 2230 size card.

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5.2.3 Micro SIM Slot

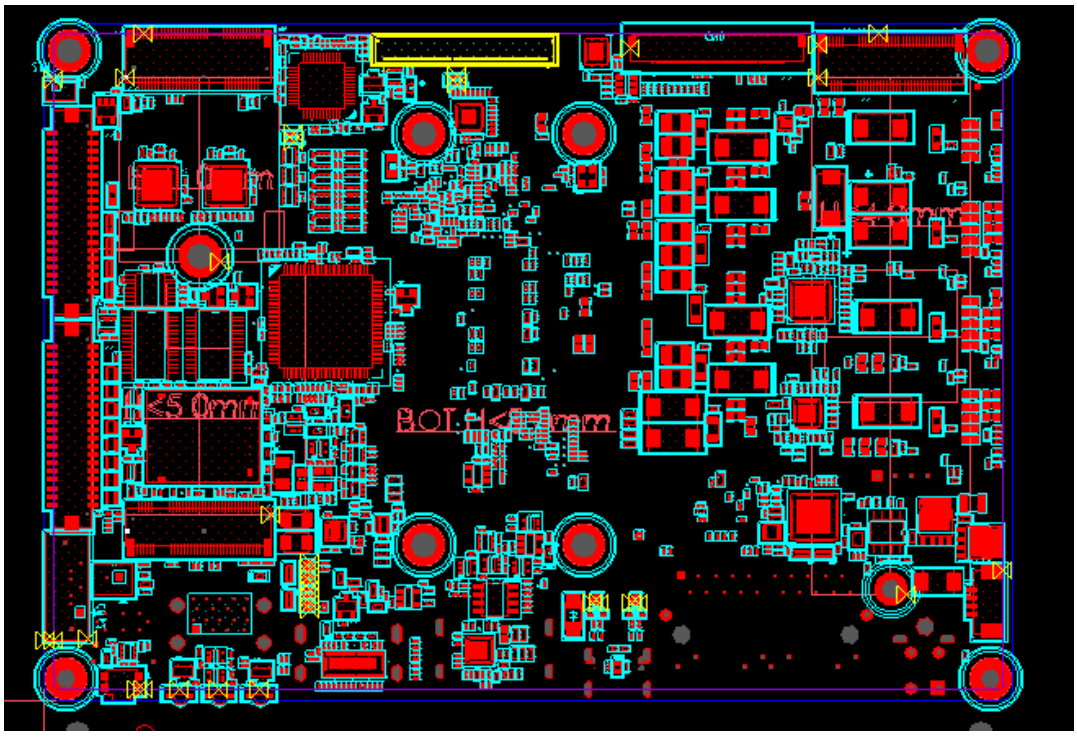
Using a SIM connector with a WWAN card that utilizes the M.2 B Key interface.



5.2.4 AFM Connector

AFM connector is designed for additional ADLINK function board, while the function board connector is tailored for ODM project to design their own function boards to meet specific customer requirements.

The AFM connector includes PCIe Gen 4x4, USB3.0, SMBus, and LPC interface.

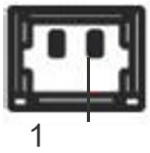


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5.2.5 RTC Battery Header

Links to the BR 2032 3V coin battery pack for the system RTC function.

Pin	Signal
1	P_+3V3_VBAT
2	GND



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6. BIOS Settings

6.1 Main Structure

This section presents the primary menus of the AMIBIOS® EFI BIOS setup utility. Use the following table as a quick reference for the contents of the BIOS Setup Utility. The subsections describe the submenus and options for each menu item.

To enter the BIOS Setup Utility:

1. Power on the motherboard
2. Press < Delete > when the prompt appears.

This section presents the seven 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**	**Chipset**	**Security**
-System Date -System Time	► CPU Configuration ► Power Management ► Serial Console Redirection ► USB Configuration ► TPM 2.0 Configuration ► Onboard Devices Configuration ► Hardware Monitor ► BIOS Watchdog Timer ► Network Stake Configuration ► Intel® Ethernet Controller (3) I225-V	► System Agent (SA) Configuration ► PCH-I/O Configuration - PCH digital I/O device	- Administrator Password - User Password ► Secure Boot menu ► Security Configuration
Boot	**Save & Exit**	**MEBx**	
- Setup Prompt Timeout - Bootup NumLock State - Quiet Boot - Fast Boot - Boot Option #1 - Boot Option #2 - Boot Option #3 - Boot Option #4 - Boot Option #5 - Boot Option #6 - Boot Option #7 - Boot Option #8 - Boot Option #9 - Boot Option #10 - Boot Option #11	Exits the BIOS Setup Utility while saving or discard the changes made Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes Restore Defaults Save as User Defaults Restore User Defaults Launch EFI Shell from filesystem device	- Intel(R) ME Password	

Notes:

► indicates a submenu

Gray text indicates info only

Bold italics font indicates default setting

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6.2 Main Menu

Upon entering the BIOS Setup Utility, the Main Menu is displayed, providing 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	Option	Description
System Date	xxx mm/dd/yyyy	Sets the date. Use Tab to switch between date elements.
System Time	hh:mm:ss	Sets the time. Use Tab to switch between time elements.

6.3 Advanced Menu

Feature	Option	Description
► CPU Configuration		CPU Configuration
► Power Management		System ACPI Parameters
► Serial Console Redirection		Serial Console Redirection
► USB Configuration		USB Configuration Parameters
► TPM 2.0 Configuration		TPM 2.0 Configuration
► Onboard Devices Configuration		Onboard Device Parameters
► Hardware Monitor		Monitor hardware status
► BIOS Watchdog Timer		BIOS Watch Dog Configuration
► Network Stake		Network Stack Settings
► Intel® Ethernet Controller I225-V		Configure Gigabit Ethernet device parameters

6.3.1 Advanced > CPU Configuration

Feature	Option	Description
Hyper-threading	***Enabled*** Disabled	Enable or Disable Hyper-Threading Technology
Active Performance-cores	***All*** *7* *6* *5* *4* 3 2 1 0	Number of P-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable all cores.
Active Efficient-cores	***All*** *7* *6* *5*	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.

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	4 3 2 1 0	
Intel (VMX) Virtualization Technology	***Enabled*** Disabled	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.
Intel(R) SpeedStep(TM)	***Enabled*** Disabled	Allow more than two frequency ranges to be supported.
Intel(R) Speed Shift Technology	***Enabled*** Disabled	Enable/Disable Intel(R) Speed Shift Technology Support. Enabling will expose the CPPC v2 interface to allow for hardware-controlled P-states.
C states	***Disabled*** Enabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

6.3.2 Advanced > Power Management

Feature	Option	Description
Power Supply Unit	***ATX Mode*** Emulate AT Mode	Select Emulation AT or ATX function. If this option set to [Emulation AT], BIOS will report no suspend functions (S3 & S4) to ACPI OS. In windows XP, it will make OS show shutdown message during system shutdown. ATX: OS will turn off system power when shutdown.
State After G3	***S0 State*** S5 State	Specify what state to go to when power is re-applied after a power failure (G3 states).
RTC Wake system from S5	***Disabled*** Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime, system will wake on the current time + Increase minutes(S).
Wake up hour	***0***	Range: 0-23 hr For example enter 3 for 3am and 15 for 3pm
Wake up minute	***0***	Range: 0-59 min
Wake up second	***0***	Range: 0-59 sec
Wake up minute increase	***0***	Range: 1-5 min
PCIe Wake	***Enabled*** Disabled	Enable or disable PCI Express wake capability.

6.3.3 Advanced > Serial Console Redirection

Feature	Option	Description
Console Redirection	***Disabled*** Enabled	Console Redirection Enable or Disable
Terminal Type	***ANSI*** VT100 VT100Plus VT-UTF8	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

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Bites per second	***115200*** 9600 19200 38400 57600	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
Data Bits	***8*** 7	Data Bites
Parity	***None*** Even Odd Mark Space	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection.
Stop Bits	***1*** 2	Stop bits indicates the end of a serial data packet. (A stat bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may requires more than 1 stop bit.
Flow Control	***None*** Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses tow wires to send start/stop signals.
VT-UTF8 Combo Key Support	***Enabled*** Disabled	Enabled 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.

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6.3.4 Advanced > USB Configuration

Feature	Option	Description
USB Mass Storage Driver Support	***Enabled*** Disabled	Enable/Disable USB Mass Storage Driver Support
USB transfer time-out	***20 sec*** 1 sec 5 sec 10 sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	***20 sec*** 10 sec 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	***Auto*** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

6.3.5 Advanced > TPM 2.0 Configuration

Feature	Option	Description
Security Device Support	***Enable*** Disable	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
SHA256 PCR Bank	***Enabled*** Disabled	Enable or Disable SHA256 PCR Bank
SHA384 PCR Bank	***Disabled*** Enabled	Enable or Disable SHA384 PCR Bank
Pending operation	***None*** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your computer will reboot during restart in order to change State of Security Device.
Platform Hierarchy	***Enabled*** Disabled	Enable or Disable Platform Hierarchy
Storage Hierarchy	***Enabled*** Disabled	Enable or Disable Storage Hierarchy
Endorsement Hierarchy	***Enabled*** Disabled	Enable or Disable Endorsement Hierarchy
Physical Presence Spec Version	***1.3*** 1.2	Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.
PH Randomization	***Enabled*** Disabled	Enables or Disables Platform Hierarchy randomization. DO NOT ENABLE THIS QUESTION IN

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6.3.6 Advanced > Onboard Devices Configuration

Feature	Option	Description
COM1 Mode Control	***RS232*** RS422 RS485	Select COM1 mode. RS232, RS422, RS485
COM2 Mode Control	***RS232*** RS422 RS485	Select COM1 mode. RS232, RS422, RS485
LAN #1	***Enabled*** Disabled	Enable/Disable
LAN #2	***Enabled*** Disabled	Enable/Disable

6.3.7 Advanced > BIOS Watchdog Timer

Feature	Option	Description
BIOS POST Watchdog	***Disabled*** Second Mode Minute Mode	1. Disable: Disable Watchdog Timer; 2. Second Mode: Enable Watchdog Timer in second mode; 3. Minute Mode: Enable Watchdog Timer in minute mode.
BIOS Watchdog Timer	***1***	Set watchdog timer for BIOS POST process. Minute Mode
BIOS Watchdog Timer	***15***	Set watchdog timer for BIOS POST process. Second Mode

6.3.8 Advanced > Network Stack Configuration

Feature	Option	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.
IPv4 HTTP Support	***Disabled*** Enabled	Enable/Disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available.
IPv6 PXE Support	***Disabled*** Enabled	Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available.
IPv6 HTTP Support	***Disabled*** Enabled	Enable/Disable IPv6 HTTP boot support. If disabled, IPv6 HTTP 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 value.
Media detect count	***1***	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.

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6.4 Chipset

Feature	Option	Description
► System (SA) Configuration		System Agent (SA) Parameters
► PCH-IO Configuration		PCH Parameters
PCH digital I/O device	***Disabled*** Enable	Disable/Enable ACPI GPIO Device support for PCH digital I/O and user LED

6.4.1 Chipset > System Agent (SA) Configuration

Feature	Option	Description
► Memory Configuration		Memory Configuration Parameters
► Graphics Configuration		Graphics Configuration
VT-d	***Enabled*** Disabled	VT-d capability

6.4.2 Chipset > System Agent (SA) Configuration > Graphics Configuration

Feature	Option	Description
GTT Size	***8MB*** 2MB 4MB	Select the GTT Size
Aperture Size	***256MB*** 128MB 512MB 1024MB 2048MB	Select the Aperture Size Note : Above 4GB MMIO BIOS assignment is automatically enabled when selecting > 2048MB aperture. To use this feature, please disable CSM Support.
DVMT Pre-Allocated	***32M*** 4M 8M 16M 64M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device

6.4.3 Chipset > PCH-IO Configuration

Feature	Option	Description
► SATA Configuration		SATA Device Options Settings
► NVMe Configuration		NVMe Device Options Settings

6.4.4 Chipset > SATA Configuration

Feature	Option	Description
SATA Mode Selection	***AHCI***	Determines how SATA controller(s) operate.
SATA Controller Speed	***Gen3*** Default Gen1	Indicates the maximum speed the SATA controller can support.

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	Gen2	
Serial ATA Port 1	***Enabled*** Disabled	Enable or Disable SATA Port

6.5 Security

Feature	Option	Description
Administrator Password		Set Administrator Password
User Password		Set User Password
► Secure Boot menu		Secure Boot configuration
► Security Configuration		Security Configuration settings

6.5.1 Security > Security Boot Menu

Feature	Option	Description
Secure Boot Control	***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 platform reset.
Secure Boot Mode	***Standard*** Custom	Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication

6.5.2 Security > Security Configuration

Feature	Option	Description
BIOS Lock	***Enabled*** Disabled	Enable/Disable the PCH BIOS Lock Enable feature. Required to be enabled to ensure SMM protect of flash.

6.6 Boot

Feature	Option	Description
Setup Prompt Timout	***1***	Number of seconds to wait for setup activation key. The maximum value is 8.
Bootup NumLock State	***Off*** On	Select the keyboard NumLock state
Quiet Boot	***Enabled*** Disabled	Enables or disables Quiet Boot option
Fast Boot	***Disable Link*** Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option #1	***Hard Disk*** NVME UEFI AP CD/DVD SD	Sets the system boot order

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	USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	
Boot Option #2	***NVME*** Hard Disk UEFI AP CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order
Boot Option #3	***UEFI AP*** Hard Disk NVME CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order
Boot Option #4	***CD/DVD*** Hard Disk NVME UEFI AP SD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order

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Boot Option #5	***SD*** Hard Disk NVME UEFI AP CD/DVD USB Hard Disk USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order
Boot Option #6	***USB Hard Disk*** Hard Disk NVME UEFI AP CD/DVD SD USB CD/DVD USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order
Boot Option #7	***USB CD/DVD*** Hard Disk NVME UEFI AP CD/DVD SD USB Hard Disk USB Key USB Floppy USB Lan Network Disabled	Sets the system boot order
Boot Option #8	***USB Key*** Hard Disk NVME UEFI AP CD/DVD SD USB Hard Disk	Sets the system boot order

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	USB CD/DVD USB Floppy USB Lan Network Disabled	
Boot Option #9	***USB Floppy*** Hard Disk NVME UEFI AP CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Lan Network Disabled	Sets the system boot order
Boot Option #10	***USB Lan*** Hard Disk NVME UEFI AP CD/DVD SD USB Hard Disk USB CD/DVD USB Key USB Floppy Network Disabled	Sets the system boot order

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6.7 Save & Exit

Feature	Option	Description
Save Changes and Exit		Exit system setup after saving the changes.
Discard Changes and Exit		Exit system setup without saving any changes.
Save Changes and Reset		Reset the system after saving the changes.
Discard Changes and Reset		Reset the system without saving any changes.
Save Changes		Save Changes done so far to any of the setup options.
Discard Changes		Discard Changes done so far to any of the setup options.
Restore Defaults		Restore/Load Default values for all the setup options.
Save as User Defaults		Save the changes done so far as User Defaults.
Restore User Defaults		Restore the User Defaults to all the setup options
Launch EFI Shell from filesystem device		Attemps to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices

6.8 MEBx

Feature	Option	Description
Intel(R) ME Password		MEBx Login
Intel(R) AMT	Disabled Enable	

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7. Appendix A M.2 Pin Definition

Pin	Signal	Pin	Signal	Pin	Signal
1	M2B_CONFIG_3	2	P_+3V3_NGFF_B	3	GND
4	P_+3V3_NGFF_B	5	GND	6	PU 100K to P_+3V3_NGFF_B
7	U2_USB10_P	8	NC	9	U2_USB10_N
10	NC	11	GND	20	NC
21	M2B_CONFIG_0	22	NC	23	NC
24	NC	25	NC	26	W_DISABLE2#
27	GND	28	NC	29	U3_P2_RX_N
30	UIM_RST	31	U3_P2_RX_P	32	UIM_CLK
33	GND	34	UIM_DATA	35	U3_P2_TX_N
36	P_UIM_PWR	37	U3_P2_TX_P	38	NC
39	GND	40	NC	41	X_PCIEX1_P1_RX_N
42	NC	43	X_PCIEX1_P1_RX_P	44	NC
45	GND	46	NC	47	X_PCIEX1_P1_TX_N
48	NC	49	X_PCIEX1_P1_TX_P	50	PCH_PLTRST-L_BUF
51	GND	52	PCH_CLK_REQ_P5_N	53	C_REFCLK_P5_100M_N
54	NC	55	C_REFCLK_P5_100M_P	56	NC
57	GND	58	NC	59	NC
60	NC	61	NC	62	NC
63	NC	64	NC	65	NC
66	UIM_DET	67	NC	68	NC
69	M2B_CONFIG_1	70	P_+3V3_NGFF_B	71	GND
72	P_+3V3_NGFF_B	73	GND	74	P_+3V3_NGFF_B
75	M2B_CONFIG_2				

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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.



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.

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BURN HAZARD
Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

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

- 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.

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Getting Services

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Please visit the Contact page at www.adlinktech.com for information on how to contact the ADLINK regional office nearest you.

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