OMNI-ADP-KIT Series

OMNI-3105-ADP, OMNI-3125-ADP, OMNI-3155-ADP, OMNI-2155-ADP,
OMNI-2155HDT-ADP, OMNI-3175-ADP, OMNI-3195-ADP, OMNI-2215-ADP

Modular Touch Panel Solutions

User's Manual 1st Ed

Last Updated: January 31, 2024

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Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● OMNI-ADP-KIT	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page on AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device
18. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 50°C (122°F) TO PREVENT DAMAGE.

FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON System QO4-381 Rev.A0

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚(PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

×：表示该有害物质的某一均质材料超出了 GB/T 26572 的限量要求，然而该部件仍符合欧盟指令 2011/65/EU 的规范。

备注：

一、此产品所标示之环保使用期限，系指在一般正常使用状况下。

二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。

三、上述部件物质液晶模块、触控模块仅一体机产品适用。

China RoHS Requirement (EN)

Hazardous and Toxic Materials List

AAEON System QO4-381 Rev.A0

Component Name	Hazardous or Toxic Materials or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CrVI)	Polybrominated biphenyls (PBBs)	Polybrominated diphenyl ethers (PBDEs)
PCB and Components	X	O	O	O	O	O
Wires & Connectors for Ext.Connections	X	O	O	O	O	O
Chassis	O	O	O	O	O	O
CPU & RAM	X	O	O	O	O	O
HDD Drive	X	O	O	O	O	O
LCD Module	X	O	O	O	O	O
Optical Drive	X	O	O	O	O	O
Touch Control Module	X	O	O	O	O	O
PSU	X	O	O	O	O	O
Battery	X	O	O	O	O	O

This form is prepared in compliance with the provisions of SJ/T 11364.

O: The level of toxic or hazardous materials present in this component and its parts is below the limit specified by GB/T 26572.

X: The level of toxic of hazardous materials present in the component exceed the limits specified by GB/T 26572, but is still in compliance with EU Directive 2011/65/EU (RoHS 2).

Notes:

1. The Environment Friendly Use Period indicated by labelling on this product is applicable only to use under normal conditions.
2. Individual components including the CPU, RAM/memory, HDD, optical drive, and PSU are optional.
3. LCD Module and Touch Control Module only applies to certain products which feature these components.

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

These specifications apply to all models of the OMNI-ADP-KIT Series. Specifications for individual models are listed separately.

System	
Product Name	OMNI-3105-ADP
	OMNI-3125-ADP
	OMNI-3155-ADP
	OMNI-2155-ADP
	OMNI-3175-ADP
	OMNI-3195-ADP
	OMNI-2155HDT-ADP
	OMNI-2215-ADP
Construction	Aluminum + SECC
Display	10.4" OMNI-310D (800 x 600)
	12.1" OMNI-312D (1024 x 768)
	15" OMNI-315D (1024 x 768)
	15.6" OMNI-215D (1366 x 768)
	15.6" OMNI-215D-HD (1920 x 1080)
	17" OMNI-317D (1280 x 1024)
	19" OMNI-319D (1280 x 1024)
	21.5" OMNI-215D (1920 x 1080)
Touch Screen	Supports Flat 5-Wire Resistive/PCAP Multitouch
CPU	12th Generation Intel® Core™/Celeron® Processors:
	Intel® Core™ i7-1265UE
	(10C/12T, 3.50 GHz, up to 4.70 GHz)

System

CPU	Intel® Core™ i5-1245UE
	(10C/12T, 3.30 GHz, up to 4.40 GHz)
	Intel® Core™ i3-1215UE
	(6C/8T, 3.30 GHz, up to 4.40 GHz)
	Intel® Celeron® Processor 7305E
	(5C/5T, 3.10 GHz, up to 4.20 GHz)
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LAN	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1 (USB 3.2 Gen 2, DP 1.4, PD 5V/3A)
	DB-9 x 2 (RS-232/422/485, Switch By BIOS)
	HDMI 2.0b (Type-A) x 1
	RJ-45 x 1, 2.5GbE
	RJ-45 x 1, GbE
	DC 9V ~ 30V via 3-pin Terminal Block Connector
	Power On/Off Switch x 1 with LED
Storage	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Expansion	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)

System

OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11
LED Life	Follow LCD Lifetime

Mechanical

Architecture	Module Design/All in One
Front Bezel	IP65 Aluminum
Front Bezel Color	Silver
Mounting	Panel Mount/VESA Mount (VESA 100)
Packing Filler	PE

Mechanical

DC Input	9V ~ 30V

Environmental

Operating Temperature	-4°F~122°F (-20°C~50°C) with 0.5 m/s airflow
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1 Grms/ 5~ 500Hz/ operation – with HDD
Shock	15 G peak acceleration (11 msec. duration) – with HDD
Drop	ISTA Project 1A
Certification	CE/FCC, Class A

1.1.1 OMNI-3105-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2
	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1
	HDMI 2.0b x 1
	Audio x 1
	DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	11" x 9.4" x 2.8" (280mm x 239.3mm x 72.8mm)
Carton Dimension	16.3" x 7" x 15.4" (415mm x 180mm x 392mm)
Gross Weight	6.2 lb. (2.84Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	10.4" TFT-LCD, LED
Max Resolution	800 (H) x 600 (V)
Max. Colors	16.2M Colors
Luminance	230 cd/m^2
Viewing Angle	120° (H) x 100° (V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

1.1.2 OMNI-3125-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2
	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1
	HDMI 2.0b x 1
	Audio x 1
	DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	12.9" x 11.3" x 2.7" (328.5mm x 288mm x 69.7mm)
Carton Dimension	20.9" x 17.5" x 7.9" (530mm x 445mm x 200mm)
Gross Weight	7.6 lb. (3.48Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	12.1" TFT-LCD, LED
Max Resolution	1024 (H) x 768 (V)
Max. Colors	16.2M Colors
Luminance	500 cd/m^2
Viewing Angle	160° (H); 160° (V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

1.1.3 OMNI-3155-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2
	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1
	HDMI 2.0b x 1
	Audio x 1
	DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	14.52" x 12.35" x 2.83" (368.9mm x 313.7mm x 72mm)
Carton Dimension	20.1" x 9.8" x 18.1" (510mm x 250mm x 460mm)
Gross Weight	8.5 lb. (3.9Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	15" TFT-LCD, LED
Max Resolution	1024 (H) x 768 (V)
Max. Colors	16.2M (8 bit/color)
Luminance	300 cd/m^2
Viewing Angle	176° (H); 176° (V)
Back Light	LED
Back Light MTBF (Hours)	70,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 2%), 5-wire Resistive (80% ± 2%)

1.1.4 OMNI-3175-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2
	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1
	HDMI 2.0b x 1
	Audio x 1
	DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	16.14" x 14.56" x 2.87" (409.9mm x 369.9mm x 73mm)
Carton Dimension	20.1" x 9.8" x 18.1" (510mm x 250mm x 460mm)
Gross Weight	12.4 lb. (5.63Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	17" TFT-LCD, LED
Max Resolution	1280 (H) x 1024 (V)
Max. Colors	16.7M Colors (RGB 6-bits + Hi-FRC data)
Luminance	350 cd/m^2
Viewing Angle	170° (H); 160° (V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

1.1.5 OMNI-3195-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base
	Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2
	USB 3.2 Gen 2 (Type-A) x 3
	USB (Type-C) x 1
	HDMI 2.0b x 1
	Audio x 1
	DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module)
	RS-232/422/485 x 2 (For iDoor COM Module)
	8-bit DIO (For Display Resolution AutoDetect)
	SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1
	M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (BOM Optional: PCIe [x2],
	default: USB 3.2 Gen 2 + SATA)
	M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021
	Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	18.15" x 16.14" x 2.87" (460.8mm x 410mm x 72.8mm)
Carton Dimension	26.02" x 8.11" x 19.53" (661mm x 206mm x 496mm)
Gross Weight	13.9 lb. (6.34Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	19" TFT-LCD, LED
Max Resolution	1280 (H) x 1024 (V)
Max. Colors	16.7M Colors
Luminance	350 cd/m^2
Viewing Angle	170° (H); 160° (V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

1.1.6 OMNI-2155-ADP/OMNI-2155HDT-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2, up to 64GB
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base Intel® I226, 10/100/1000/2500Base
I/O Ports	USB 3.2 Gen 2 (Type-A) x 3 USB 2.0 (Type-C) x 1 (USB 3.2 Gen 2, DP 1.4, PD 5V/3A) HDMI 2.0b (Type-A) x 1 DC 9V ~ 30V via 3-pin Terminal Block Connector DB-9 x 2 (RS-232/422/485, Switch By BIOS) Power on/off Switch x 1 with LED
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module) RS-232/422/485 x 2 (For iDoor COM Module) 8-bit DIO (For Display Resolution AutoDetect) SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1 M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (Default: USB 3.2 Gen 2 + SATA, PCIe [x2] optional by BOM) M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021 Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	16.5" x 10.4" x 2.9" (420.2mm x 264.4mm x 73.8mm)
Carton Dimension	16.54" x 10.41" x 2.90" (420.2mm x 264.5mm x 73.8mm)
Gross Weight	11.46 lb. (5.2Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	15.6" TFT-LCD, LED
Max Resolution	Regular: 1366 (H) x 768 (V)
	Full HD: 1920 (H) x 1080 (V)
Max. Colors	Regular :16.7M (8 bit/color)
	Full HD: 16.2M
Luminance	Regular: 400 cd/m^2
	Full HD: 450 cd/m^2
Viewing Angle	Regular: 170° (H); 130° (V)
	Full HD: 178° (H); 178° (V)

LCD

Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (90% ± 3%), 5-wire Resistive (80% ± 3%)

1.1.7 OMNI-2215-ADP

System	
Processor	12th Generation Intel® Core™/Celeron® Processors
System Memory	DDR5 4800MHz, Dual Channel SODIMM x 2, up to 64GB
LCD/CRT Controller	—
Ethernet	Intel® I219, 10/100/1000Base Intel® I226, 10/100/1000/2500Base
I/O Port	RJ-45 LAN x 2 USB 3.2 Gen 2 (Type-A) x 3 USB 2.0 (Type-C) x 1 HDMI 2.0b x 1 Audio x 1 DB-9 x 2 (RS-232/422/485)
Onboard Reserved Wafer	USB 2.0 x 4 (For iDoor USB Module) RS-232/422/485 x 2 (For iDoor COM Module) 8-bit DIO (For Display Resolution AutoDetect) SATA + SATA Power
Storage Disk Drive	2.5" HDD Bay for SATA 6Gb/s x 1 M.2 2280 M-Key x 1 (PCIe [x4] NVMe Storage)
Expansion Slot	M.2 3052 B-Key x 1 (Default: USB 3.2 Gen 2 + SATA, PCIe [x2] optional by BOM) M.2 2230 E-Key x 1 (PCIe, USB 2.0)
OS Support	Windows® 10 IoT Enterprise LTSC 2021 Windows® 10/11

Mechanical

Construction	Aluminum Front Bezel + Metal Chassis
Mounting	VESA/Panel Mount
Dimension	21.63" x 14.66" x 2.64" (549.4mm x 372.4mm x 67mm)
Carton Dimension	26.38" x 7.87" x 20.67" (670mm x 200mm x 525mm)
Gross Weight	14.9 lb. (6.8Kg)

Environmental

Operating Temperature	-4°F ~ 122°F (-20°C ~ 50°C) with airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	90% @40°C; non-condensing
Vibration	1Grms / 5~ 500Hz / operation
Shock	15 G peak acceleration (11 msec. duration)
EMC	CE/FCC Class A

Power Supply

DC Input	9V ~ 30V

LCD

Display Type	21.5" TFT-LCD, LED
Max Resolution	1920 x 1080
Max. Colors	16.7M colors
Luminance	250 cd/m2
Viewing Angle	178° (H), 178° (V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Touchscreen

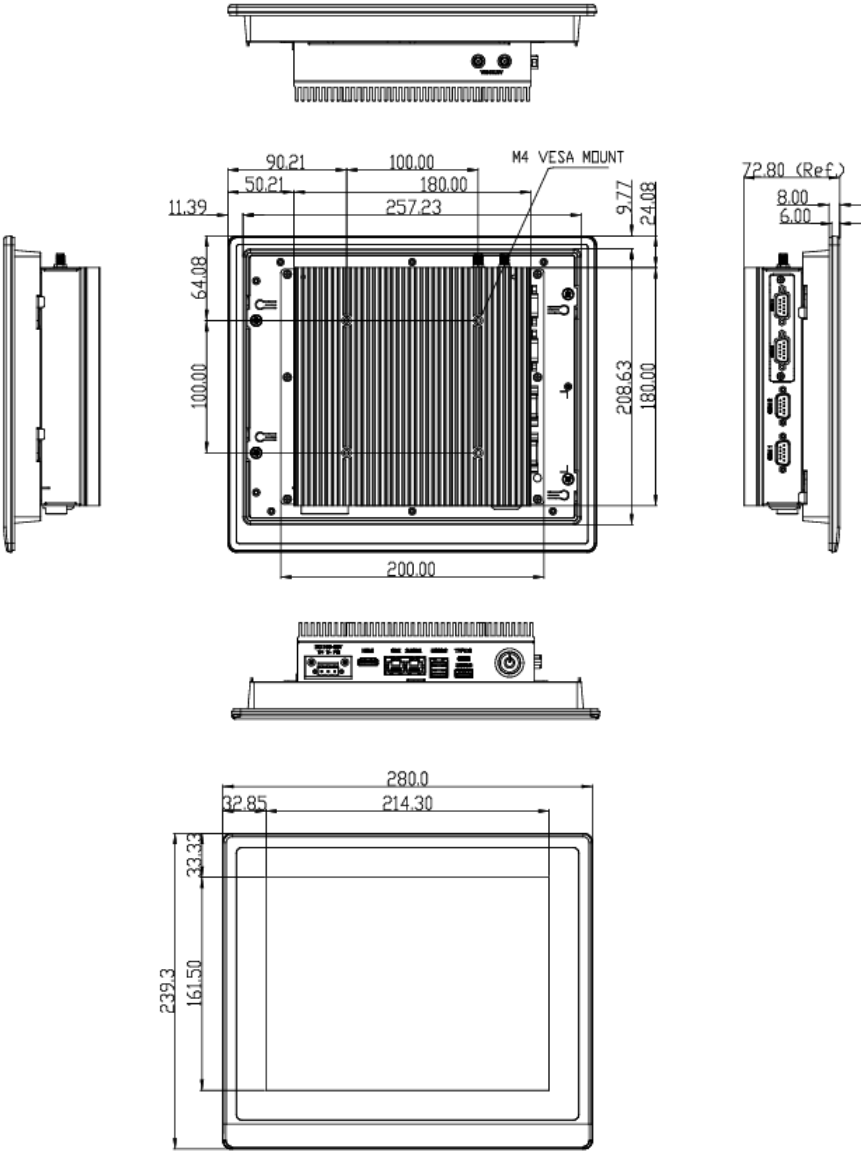
Type	P-CAP/ 5-wire resistive
Light Transmission	P-CAP (≥85%), 5-wire Resistive (80% ± 3%)

Chapter 2

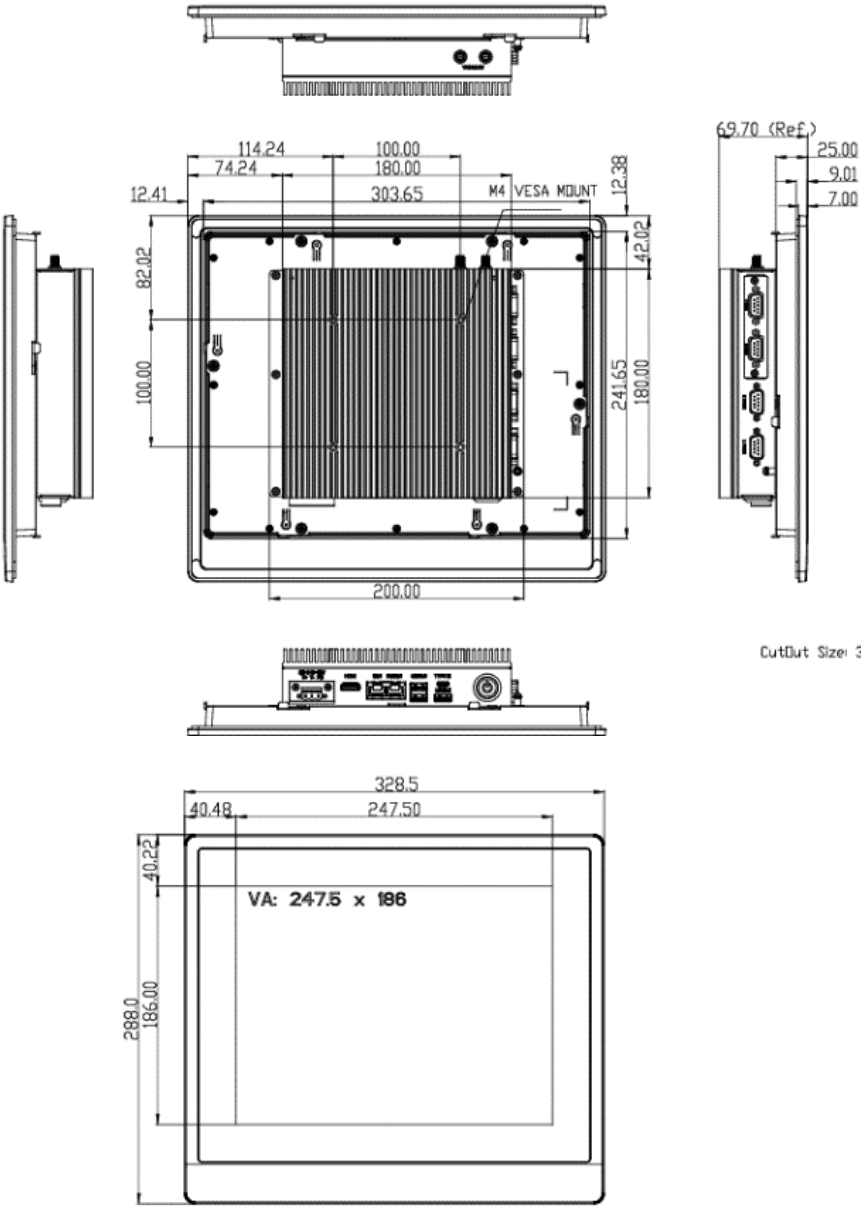
Hardware Information

2.1 Dimensions

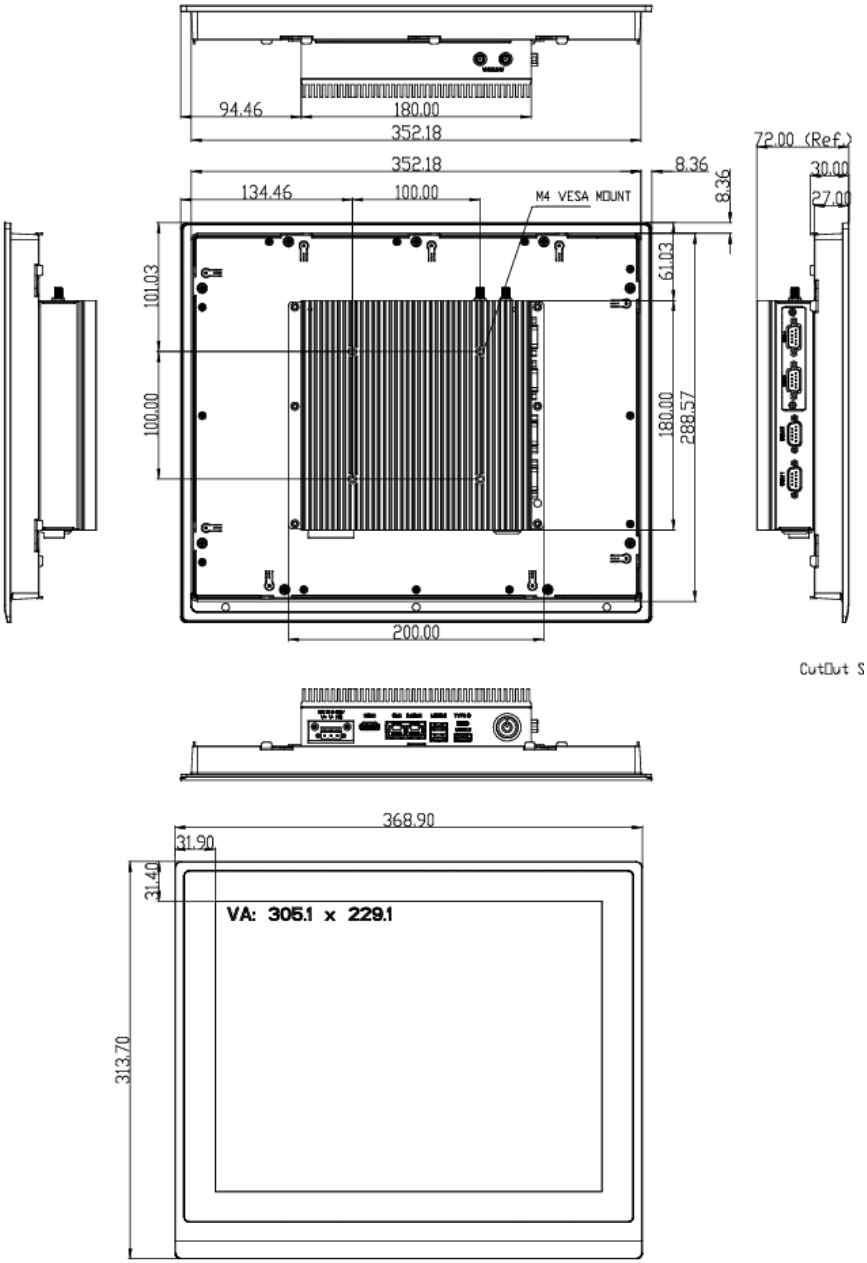
2.1.1 OMNI-3105-ADP



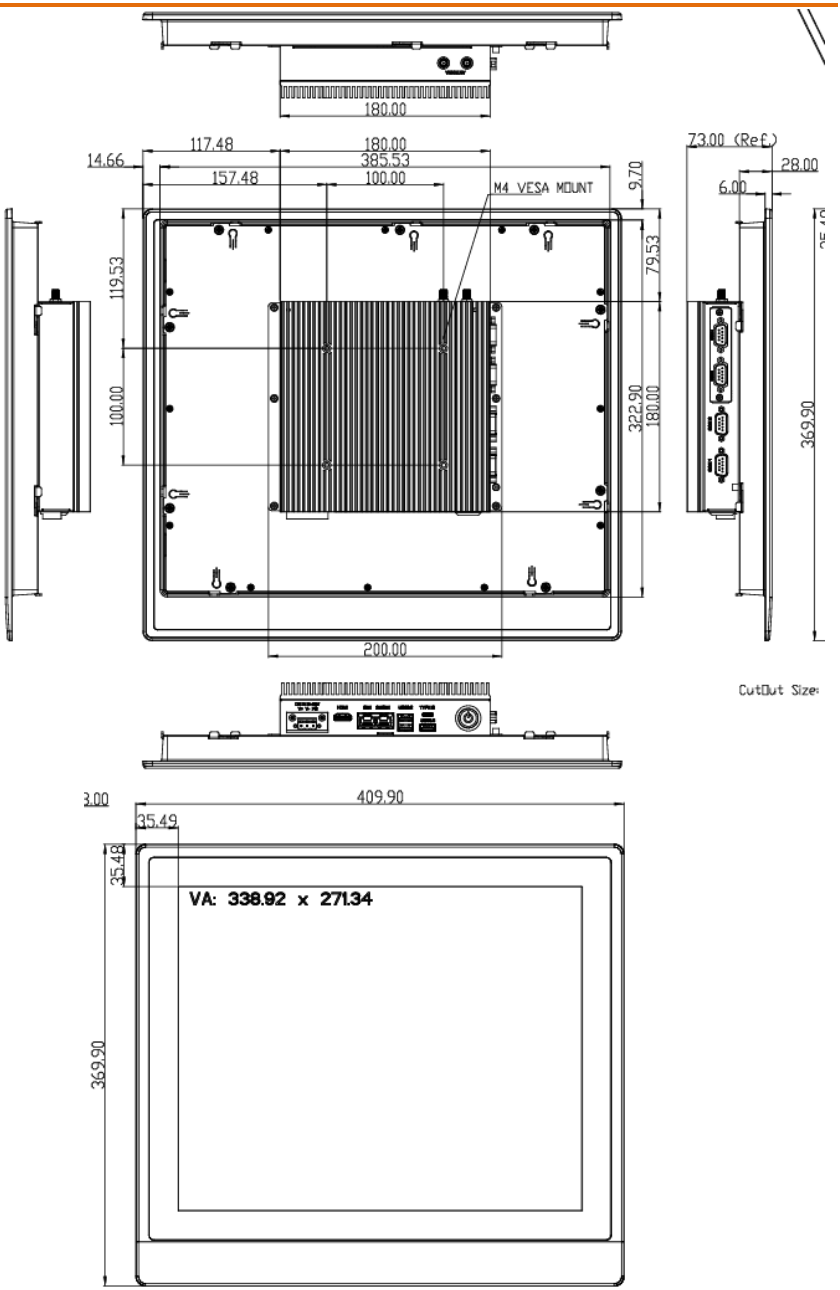
2.1.2 OMNI-3105-ADP



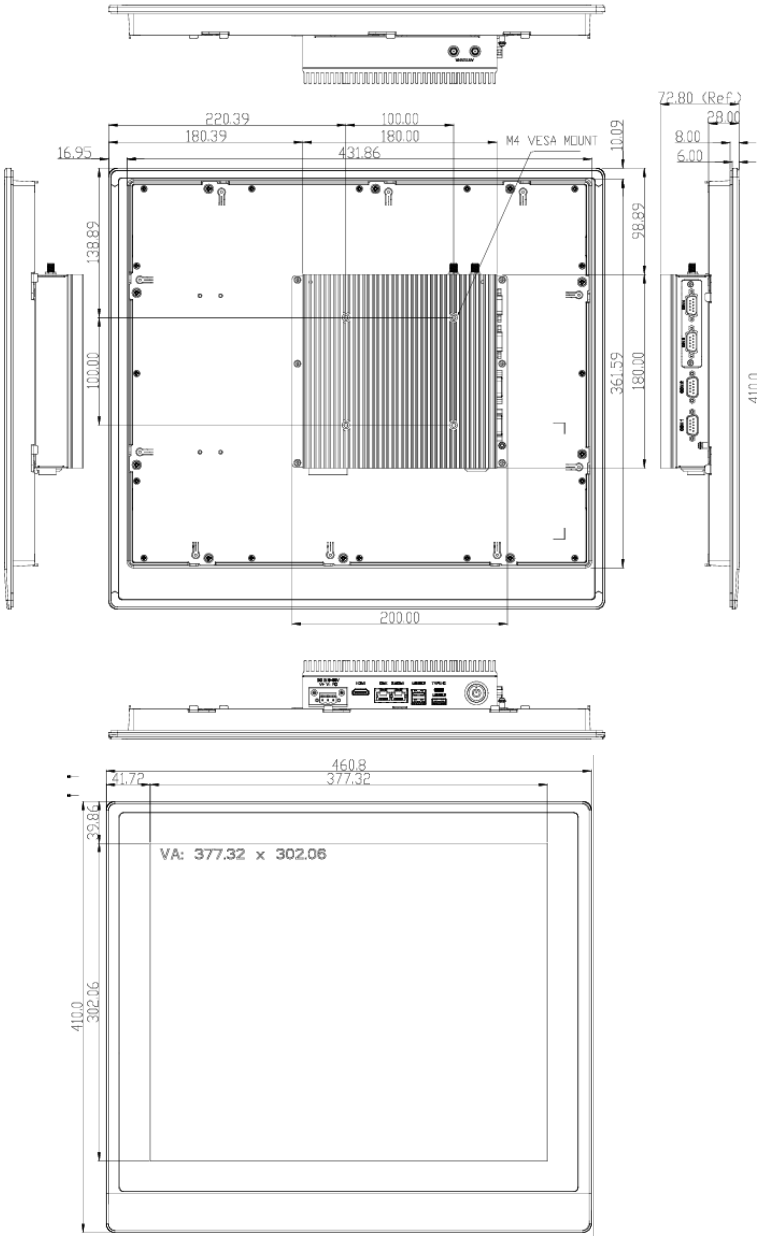
2.1.3 OMNI-3155-ADP



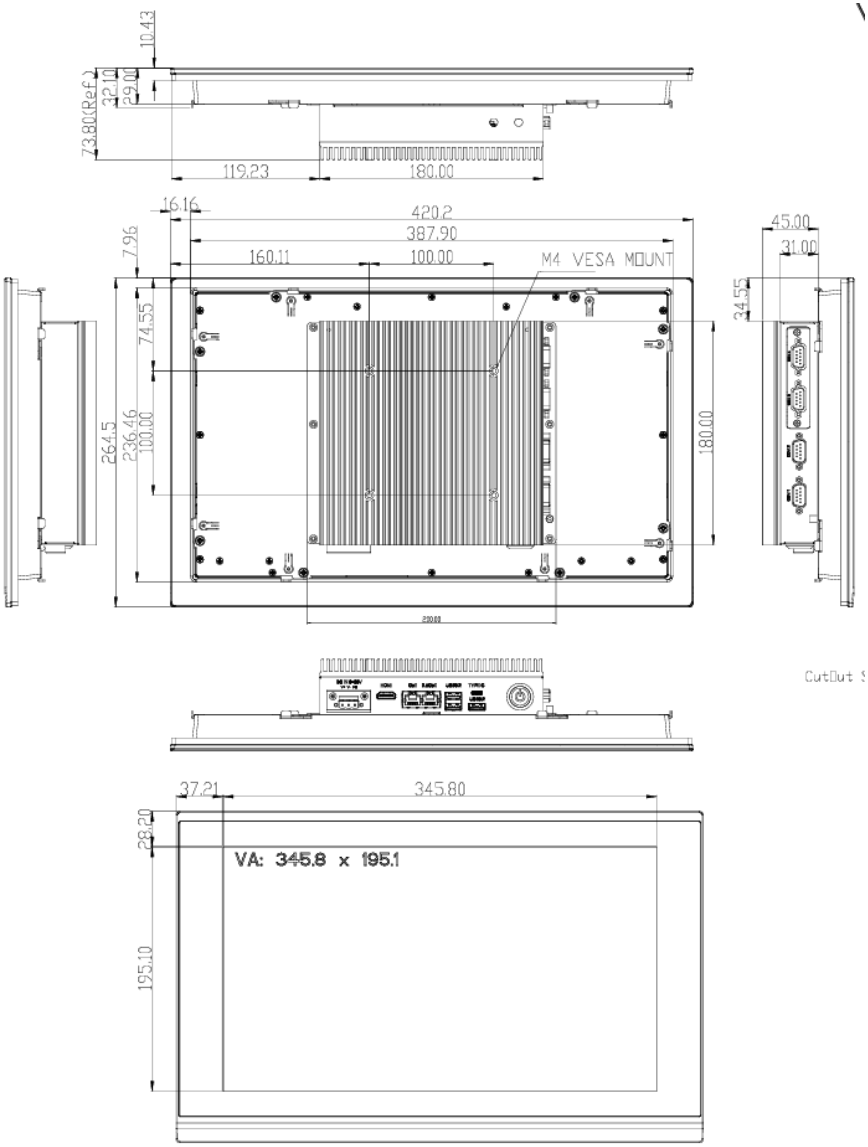
2.1.4 OMNI-3175-ADP



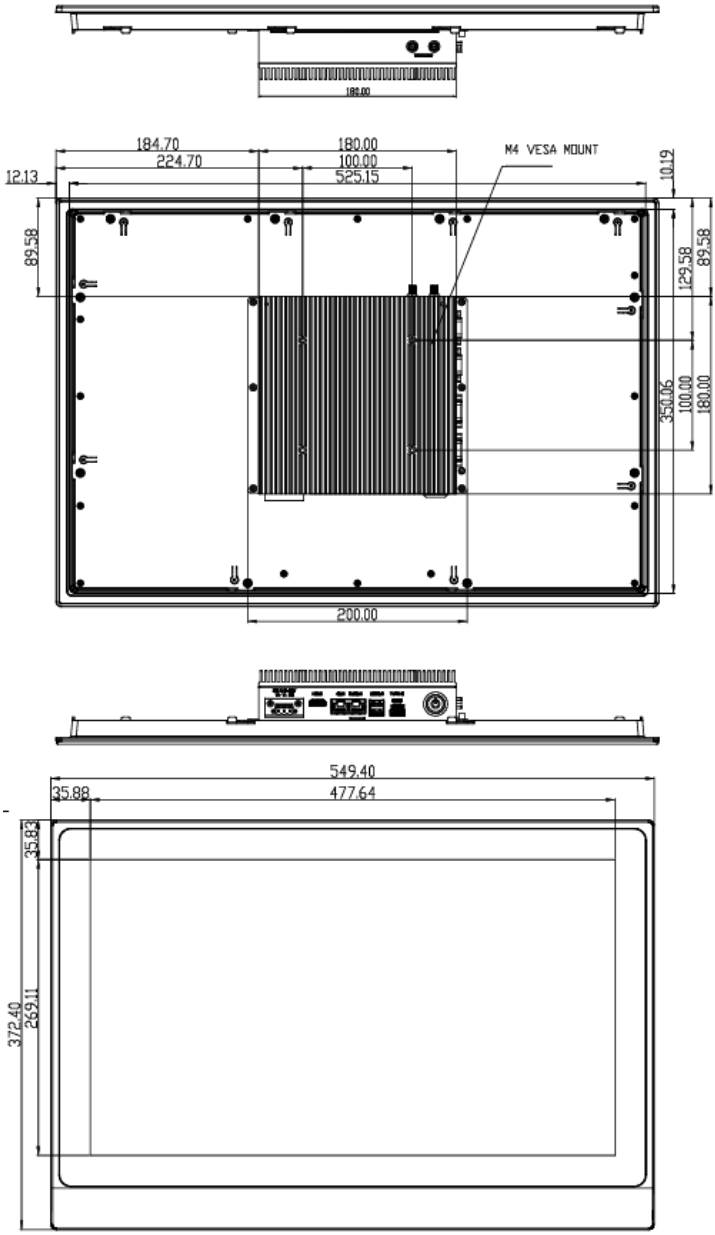
2.1.5 OMNI-3195-ADP



2.1.6 OMNI-2155-ADP & OMNI-2155HDT-ADP

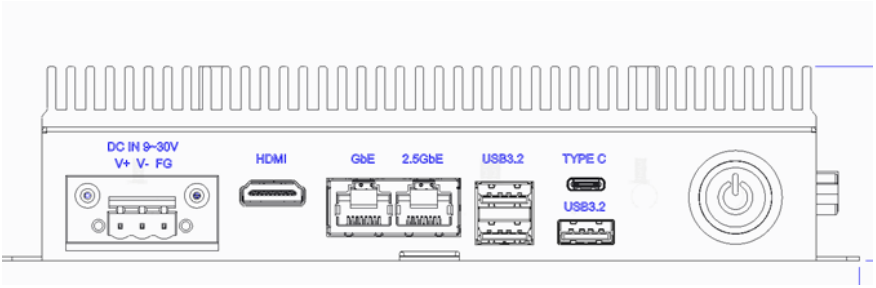


2.1.7 OMNI-2215-ADP



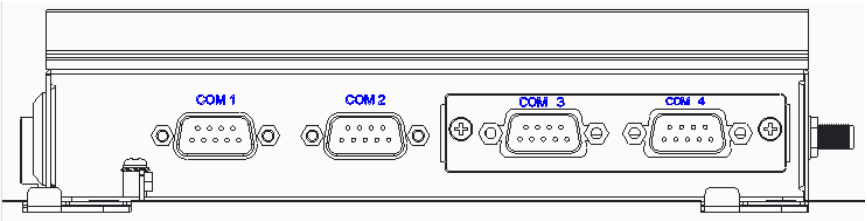
2.2 I/O Ports

2.2.1 Bottom Side I/O



Port	I/O Description
DC IN	Phoenix Connector for 9V ~ 30V DC power input
HDMI	HDMI Type-A Port for HDMI Cable
GbE	RJ-45 port for 10/100/1000Base Ethernet
2.5GbE	RJ-45 port for 10/100/1000/2500Base Ethernet
USB3.2	USB Type-A Port for USB 3.2 Gen 2 interface
TYPE C	USB Type-C Port (DP 1.4a, PD 5V/3A)

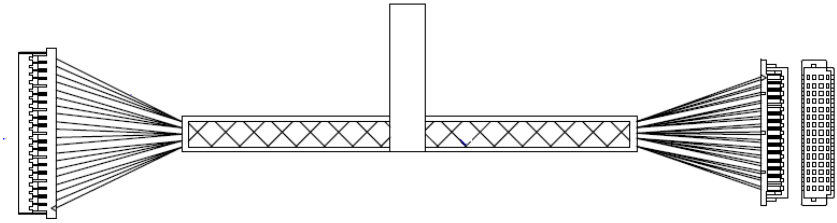
2.2.2 Left Side Panel I/O



Port	I/O Description
COM 1~4	DB-9 Port for RS-232/422/485

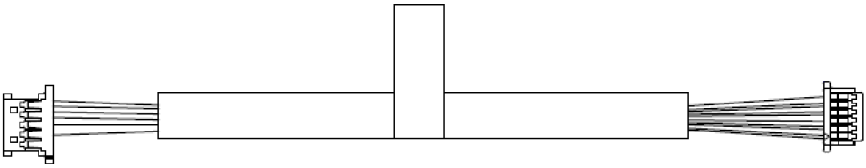
2.3 Cable List

2.3.1 LVDS Cable



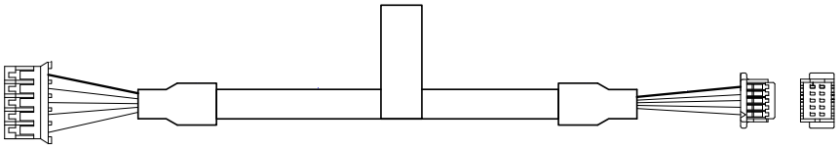
Model	LVDS Cable P/N
OMNI-3105-ADP	170X000817
OMNI-3125-ADP	170X000826
OMNI-3155-ADP	170430030Z
OMNI-2155-ADP	170X000811
OMNI-2155HDT-ADP	170X000721
OMNI-3175-ADP	170X000837
OMNI-3195-ADP	170X000824
OMNI-2215-ADP	170X000811

2.3.2 Backlight Cable

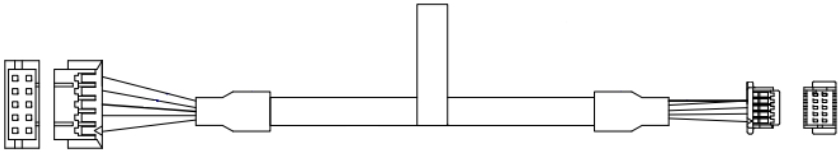


Model	Backlight Cable P/N
OMNI-3105-ADP	170X000816
OMNI-3125-ADP	170X000827
OMNI-3155-ADP	170X000716
OMNI-2155-ADP	170X000812
OMNI-2155HDT-ADP	Combined in LVDS Cable
OMNI-3175-ADP	170X000836
OMNI-3195-ADP	170X000825
OMNI-2215-ADP	170X000812

2.3.3 Resistive Touch Cable

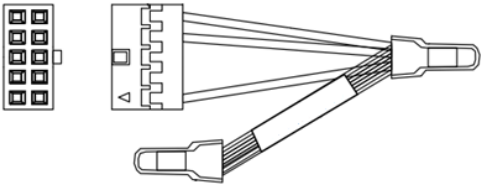


2.3.4 PCAP Touch Cable



Model	Resistive Touch Cable P/N	PCAP Touch Cable P/N
OMNI-3105-ADP	170X000717	170X000813
OMNI-3125-ADP	170X000717	170X000813
OMNI-3155-ADP	170X000717	170X000839
OMNI-2155-ADP	170X000717	170X000813
OMNI-2155HDT-ADP	170X000717	170X000717
OMNI-3175-ADP	170X000717	170X000839
OMNI-3195-ADP	170X000717	170X000813
OMNI-2215-ADP	170X000717	170X000717

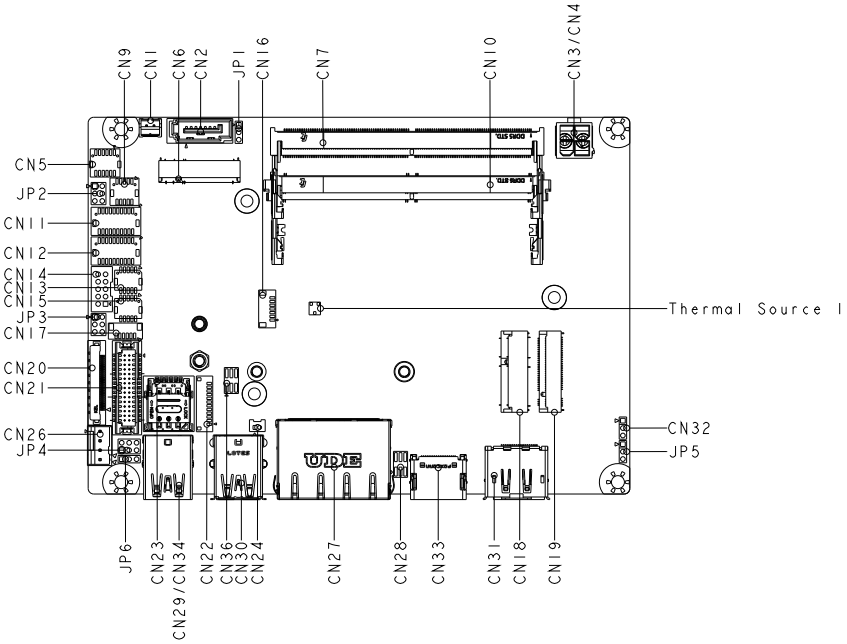
2.3.5 Config Cable

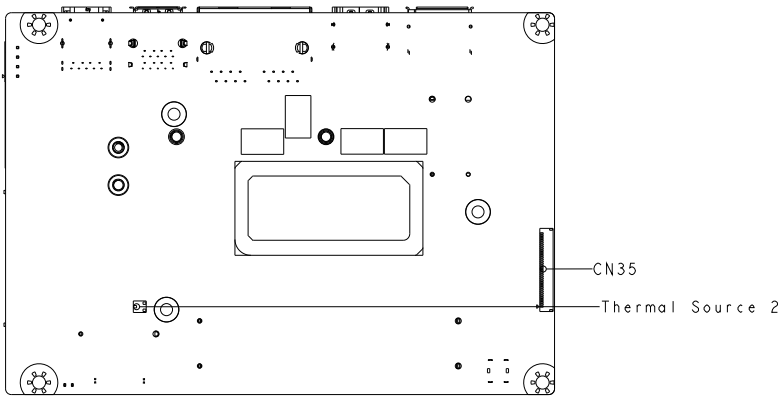


Model	Config Cable P/N
OMNI-3105-ADP	170X000783
OMNI-3125-ADP	170X000784
OMNI-3155-ADP	170X000785

Model	Config Cable P/N
OMNI-2155-ADP	170X000786
OMNI-2155HDT-ADP	170X000787
OMNI-3175-ADP	170X000788
OMNI-3195-ADP	170X000789
OMNI-2215-ADP	170X000790

2.4 Jumpers and Connectors



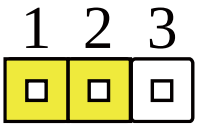


2.5 List of Jumpers

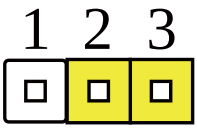
Please refer to the table below for all the system's jumpers that you can configure for your application.

Label	Function
JP1	Auto Power Button Enable/Disable Selection
JP2	COM 1 Pin 9 Function Selection
JP3	COM 2 Pin 9 Function Selection
JP4	LVDS Operating Voltage Selection LVDS Backlight Inverter Voltage Selection
JP5	Clear CMOS Jumper
JP6	LVDS Backlight Lightness Control Mode Selection

2.5.1 Auto Power Button Enable/Disable Selection (JP1)

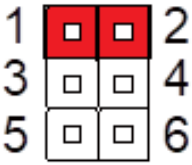


Disable Auto Power Button
(Default)

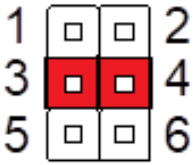


Enable Auto Power Button

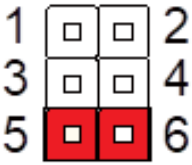
2.5.2 COM 1 Pin 9 Function Selection (JP2)



+12V

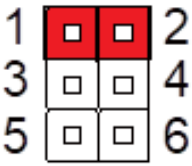


Ring (Default)

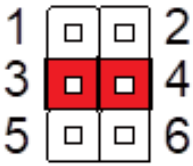


+5V

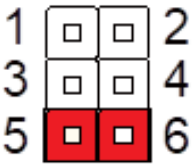
2.5.3 COM 2 Pin 9 Function Selection (JP3)



+12V

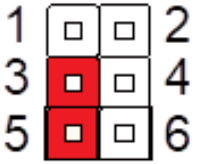


Ring (Default)

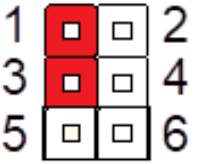


+5V

2.5.4 LVDS Backlight Inverter Voltage Selection (JP4)



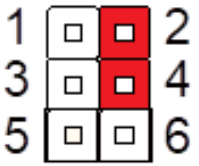
+5V



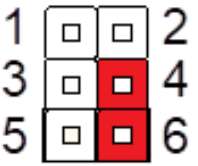
+12V

Model	Backlight Inverter Voltage Selection
OMNI-3105-ADP	1-3 (+12V)
OMNI-3125-ADP	1-3 (+12V)
OMNI-3155-ADP	1-3 (+12V)
OMNI-2155-ADP	1-3 (+12V)
OMNI-2155HDT-ADP	1-3 (+12V)
OMNI-3175-ADP	1-3 (+12V)
OMNI-3195-ADP	1-3 (+12V)
OMNI-2215-ADP	1-3 (+12V)

2.5.5 LVDS Operating Voltage Selection (JP4)



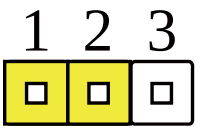
+3.3V



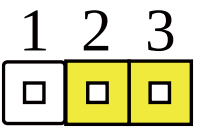
+5V

Model	Operating Voltage Selection
OMNI-3105-ADP	2-4 (+3.3V)
OMNI-3125-ADP	2-4 (+3.3V)
OMNI-3155-ADP	2-4 (+3.3V)
OMNI-2155-ADP	2-4 (+3.3V)
OMNI-2155HDT-ADP	2-4 (+3.3V)
OMNI-3175-ADP	4-6 (+5V)
OMNI-3195-ADP	4-6 (+5V)
OMNI-2215-ADP	4-6 (+5V)

2.5.6 Clear CMOS Jumper (JP5)

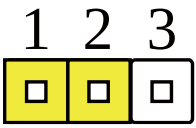


Normal (Default)

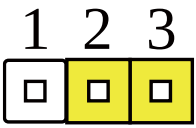


Clear CMOS

2.5.7 LVDS Backlight Lightness Control Mode Selection (JP6)



VR mode



PWM mode (Default)

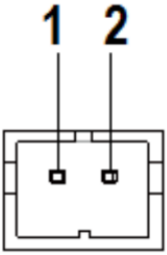
2.6 List of Connectors

Please refer to the table below for all the system's connectors that you can configure for your application.

Label	Function
CN1	+5V Output for SATA HDD
CN2	SATA Port
CN3	External +12V Input (Optional)
CN4	External Power Input
CN5	Audio I/O Port
CN6	M.2 3052/3042/2242 B-Key Slot
CN7	DDR5 SODIMM Channel 1
CN9	Front Panel
CN10	DDR5 SODIMM Channel 2
CN11	COM Port 3/Port 4
CN12	COM Port 1/Port 2
CN13	USB 2.0 Port 5/Port 6
CN14	Digital IO Port
CN15	USB 2.0 Port 7/Port 8
CN16	SPI Flash Programming Port
CN17	LVDS Inverter/Backlight Connector
CN18	M.2 2230 E-Key Slot
CN19	M.2 2280 M-Key Slot
CN20	eDP Connector
CN21	LVDS Connector
CN22	eSPI Connector
CN23	Nano SIM Card Socket
CN24	RTC Battery Connector

Label	Function
CN25	3-pin Fan Connector (Optional)
CN26	4-pin Fan Connector
CN27	RJ-45 LAN Port 1/Port 2
CN28	LAN Port 1 LED Connector
CN29	USB 3.2/USB 2.0 Port 3
CN30	USB 3.2/USB 2.0 Port 1/Port 2
CN31	DP Connector
CN33	HDMI Connector
CN34	USB Type-C
CN35	FPC Connector
CN36	LAN Port 2 LED Connector

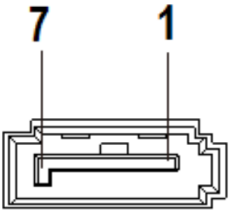
2.6.1 +5V Output for SATA HDD (CN1)



Pin	Pin Name	Signal Type	Signal Level
1	+V5S	PWR	+5V
2	GND	GND	-

Note: The driving current of +V5S supports up to 2A.

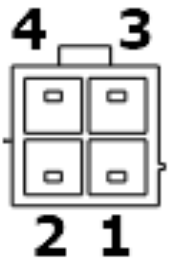
2.6.2 SATA Port (CN2)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	SATA_TX+	DIFF	-
3	SATA_TX-	DIFF	
4	GND	GND	GND

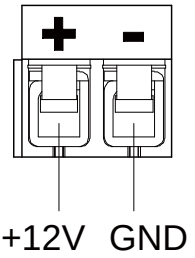
Pin	Pin Name	Signal Type	Signal Level
5	SATA_RX-	DIFF	
6	SATA_RX+	DIFF	
7	GND	GND	GND

2.6.3 External +12V Input (Optional) (CN3)



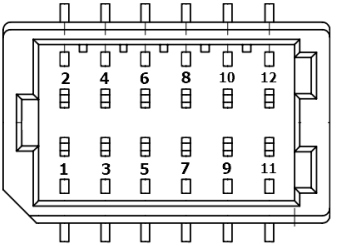
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	GND	GND	GND
3	+12V	PWR	+12V
4	+12V	PWR	+12V

2.6.4 External Power Input (CN4)



Pin	Pin Name	Signal Type	Signal Level
1	+12V	PWR	+12V
2	GND	GND	GND

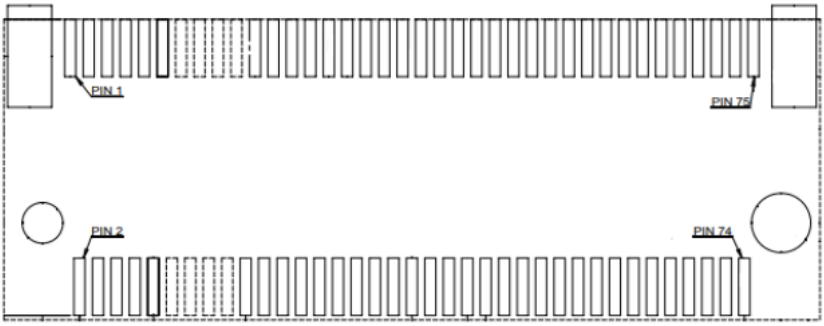
2.6.5 Audio I/O Port (CN5)



Pin	Pin Name	Signal Type	Signal Level
1	RIGHT_OUT	OUT	-
2	MIC_R	IN	-
3	LEFT_OUT	OUT	-
4	MIC_L	IN	-
5	JD_LOUT	IN	-

Pin	Pin Name	Signal Type	Signal Level
6	JD_MIC	IN	-
7	GND_AUDIO	GND	-
8	GND_AUDIO	GND	-
9	JD_LIN	IN	-
10	LINE_R_IN	IN	-
11	+5V_AUDIO	PWR	+5V
12	LINE_L_IN	IN	-

2.6.6 M.2 3052/3042/2242 B-Key Slot (CN6)

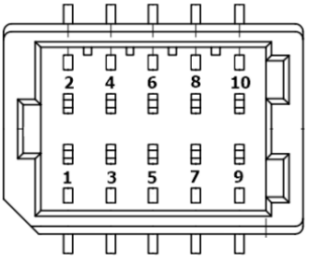


Standard specifications.

2.6.7 DDR5 SODIMM Channel 1 (CN7)

Standard specifications.

2.6.8 Front Panel (CN9)

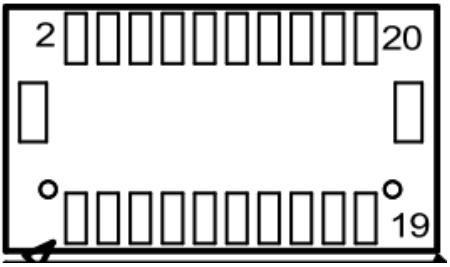


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	EXT_PWRBTN#	IN	-
3	SATA_LED-	OUT	-
4	SATA_LED+	OUT	-
5	BUZZER-	OUT	-
6	BUZZER+	OUT	-
7	GND	GND	GND
8	PWR_LED+	OUT	-
9	GND	GND	GND
10	HWRST#	IN	-

2.6.9 DDR5 SODIMM Channel 2 (CN10)

Standard specifications.

2.6.10 COM Port 3/Port 4 (CN11)



COM Port 3/Port 4 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
1	DCD3	IN	-
2	DCD4	IN	-
3	RX3	IN	-
4	RX4	IN	-
5	TX3	OUT	±9V
6	TX4	OUT	±9V
7	DTR3	OUT	±9V
8	DTR4	OUT	±9V
9	GND	GND	GND
10	GND	GND	GND
11	DSR3	IN	-
12	DSR4	IN	-
13	RTS3	OUT	±9V
14	RTS4	OUT	±9V
15	CTS3	IN	-
16	CTS4	IN	-
17	RI3/ +5V/ +12V	IN/ PWR	+5V / +12V
18	RI4/ +5V/ +12V	IN/ PWR	+5V / +12V

COM Port 3/Port 4 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
19	NC	NC	NC
20	NC	NC	NC

COM Port 3 RS-422			
Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS422_TX-	OUT	±9V
3	RS422_TX+	OUT	±9V
5	RS422_RX+	IN	-
7	RS422_RX-	IN	-

COM Port 3 RS-485			
Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS485_D-	I/O	±9V
3	RS485_D+	I/O	±9V

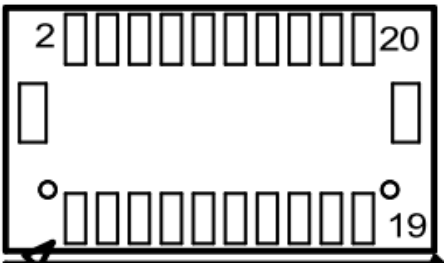
Note: COM 3 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

COM Port 4 RS-422			
Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS422_TX-	OUT	±9V
4	RS422_TX+	OUT	±9V
6	RS422_RX+	IN	-
8	RS422_RX-	IN	-

COM Port 4 RS-485			
Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS485_D-	I/O	±9V
4	RS485_D+	I/O	±9V

Note: COM 4 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

2.6.11 COM Port 1/Port 2 (CN12)



COM Port 1/Port 2 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
1	DCD1	IN	-
2	DCD2	IN	-
3	RX1	IN	-
4	RX2	IN	-
5	TX1	OUT	±9V
6	TX2	OUT	±9V
7	DTR1	OUT	±9V
8	DTR2	OUT	±9V
9	GND	GND	GND
10	GND	GND	GND

COM Port 1/Port 2 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
11	DSR1	IN	-
12	DSR2	IN	-
13	RTS1	OUT	±9V
14	RTS2	OUT	±9V
15	CTS1	IN	-
16	CTS2	IN	-
17	RI1/ +5V/ +12V	IN/ PWR	+5V / +12V
18	RI2/ +5V/ +12V	IN/ PWR	+5V / +12V
19	NC	NC	NC
20	NC	NC	NC

COM Port 1 RS-422			
Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS422_TX-	OUT	±9V
3	RS422_TX+	OUT	±9V
5	RS422_RX+	IN	-
7	RS422_RX-	IN	-

COM Port 1 RS-485			
Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS485_D-	I/O	±9V
3	RS485_D+	I/O	±9V

Note: COM 1 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

Note: Pin 17 function can be set by JP2.

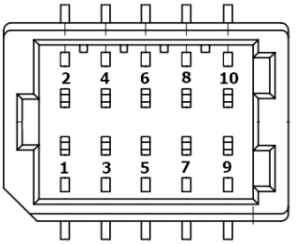
COM Port 2 RS-422			
Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS422_TX-	OUT	±9V
4	RS422_TX+	OUT	±9V
6	RS422_RX+	IN	-
8	RS422_RX-	IN	-

COM Port 2 RS-485			
Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS485_D-	I/O	±9V
4	RS485_D+	I/O	±9V

Note: COM 2 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

Note: Pin 18 function can be set by JP3.

2.6.12 USB 2.0 Port 5/Port 6 (CN13)

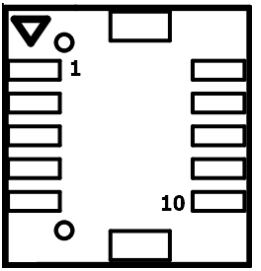


Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	+5VSB	PWR	+5V

Pin	Pin Name	Signal Type	Signal Level
3	USB2_5_DN	DIFF	-
4	USB2_6_DN	DIFF	-
5	USB2_5_DP	DIFF	-
6	USB2_6_DP	DIFF	-
7	GND	GND	GND
8	GND	GND	GND
9	GND	GND	GND
10	GND	GND	GND

Note: The driving current of +5VSB supports up to 0.5A/Port.

2.6.13 Digital IO Port (CN14)

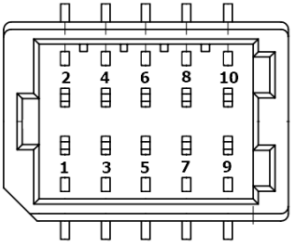


Pin	Pin Name	Signal Type	Signal Level
1	DIO_0	IN/OUT	-
2	DIO_1	IN/OUT	-
3	DIO_2	IN/OUT	-
4	DIO_3	IN/OUT	-
5	DIO_4	IN/OUT	-
6	DIO_5	IN/OUT	-
7	DIO_6	IN/OUT	-

Pin	Pin Name	Signal Type	Signal Level
8	DIO_7	IN/OUT	-
9	+V5S	PWR	+5V
10	GND	GND	GND

Note: The driving current of +V5S supports up to 0.5A.

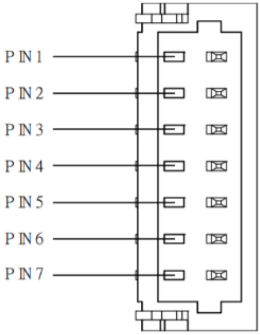
2.6.14 USB 2.0 Port 7/Port 8 (CN15)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	+5VSB	PWR	+5V
3	USB2_7_DN	DIFF	-
4	USB2_8_DN	DIFF	-
5	USB2_7_DP	DIFF	-
6	USB2_8_DP	DIFF	-
7	GND	GND	GND
8	GND	GND	GND
9	GND	GND	GND
10	GND	GND	GND

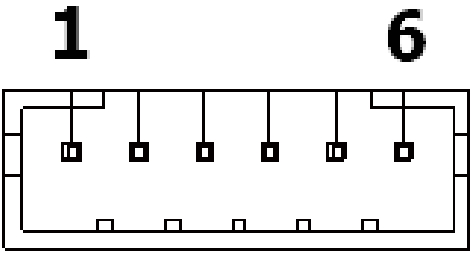
Note: The driving current of +5VSB supports up to 0.5A/Port.

2.6.15 SPI Flash Programming Port (CN16)



Pin	Pin Name	Signal Type	Signal Level
1	SPI_MISO	OUT	-
2	GND	GND	GND
3	SPI_CLK	IN	-
4	+V3P3A_SPI	PWR	+3.3V
5	SPI_MOSI	IN	-
6	SPI_CS	IN	-
7	NC	-	-

2.6.16 LVDS Inverter/Backlight Connector (CN17)



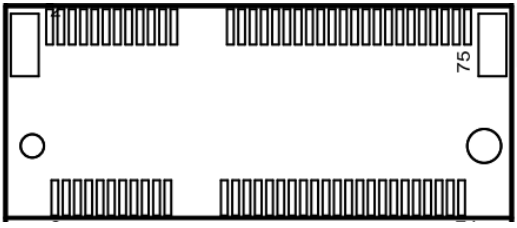
Pin	Pin Name	Signal Type	Signal Level
1	BKL_PWR	PWR	+5V / +12V
2	BKL_PWR	PWR	+5V / +12V
3	BKL_CONTROL	OUT	-
4	GND	GND	-
5	GND	GND	-
6	BKL_ENABLE	OUT	+3.3V

Note: LVDS/BKL_PWR can be set to +12V or +5V by JP4.

Note: LVDS/BKL_CONTROL can be set by JP6.

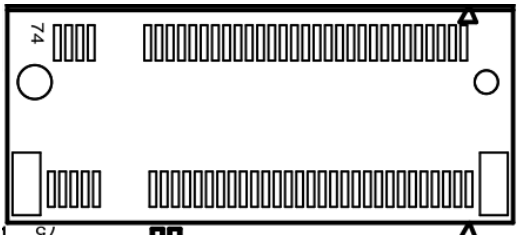
Note: The driving current of BKL_PWR supports up to 2A.

2.6.17 M.2 2230 E-Key Slot (CN18)



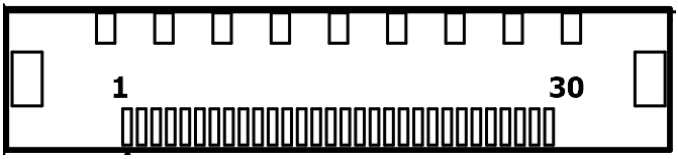
Standard specifications.

2.6.18 M.2 2280 M-Key Slot (CN19)



Standard specifications.

2.6.19 eDP Connector (CN20)



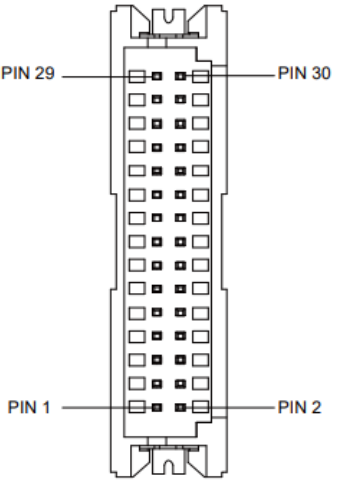
Pin	Pin Name	Signal Type	Signal Level
1	+VDD	PWR	+3.3V
2	+VDD	PWR	+3.3V
3	+VDD	PWR	+3.3V
4	GND	GND	-
5	EDP_LANE2_DN	DIFF	-
6	EDP_LANE2_DP	DIFF	-
7	GND	GND	-
8	EDP_LANE1_DN	DIFF	-
9	EDP_LANE1_DP	DIFF	-
10	GND	GND	-
11	EDP_LANE0_DN	DIFF	-
12	EDP_LANE0_DP	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
13	GND	GND	-
14	EDP_LANE3_DN	DIFF	-
15	EDP_LANE3_DP	DIFF	-
16	GND	GND	-
17	EDP_AUX_DN	DIFF	-
18	EDP_AUX _DP	DIFF	-
19	GND	GND	-
20	EDP_BKLTCTL		-
21	N/A		-
22	EDP_BKLT_EN		-
23	EDP_HPD		-
24	GND	GND	-
25	GND	GND	-
26	GND	GND	-
27	+VCC_EDP_BKLT	PWR	+12V
28	+VCC_EDP_BKLT	PWR	+12V
29	+VCC_EDP_BKLT	PWR	+12V
30	+VCC_EDP_BKLT	PWR	+12V

Note: The driving current of +VCC_EDP_BKLT supports up to 1.2A.

Note: The driving current of +VDD supports up to 1A.

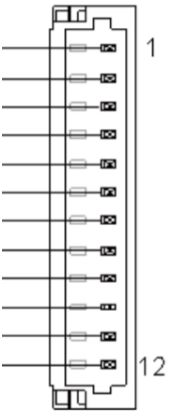
2.6.20 LVDS Connector (CN21)



Pin	Pin Name	Signal Type	Signal Level
1	BKL_ENABLE	OUT	-
2	BKL_CONTROL	OUT	-
3	LCD_PWR	PWR	+3.3V / +5V
4	GND	GND	-
5	LVDS_A_CLK-	DIFF	-
6	LVDS_A_CLK+	DIFF	-
7	LCD_PWR	PWR	+3.3V / +5V
8	GND	GND	-
9	LVDS_DA0-	DIFF	-
10	LVDS_DA0+	DIFF	-
11	LVDS_DA1-	DIFF	-
12	LVDS_DA1+	DIFF	-
13	LVDS_DA2-	DIFF	-
14	LVDS_DA2+	DIFF	-

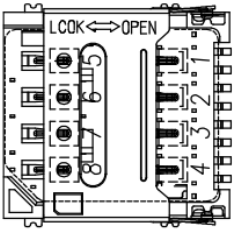
Pin	Pin Name	Signal Type	Signal Level
15	LVDS_DA3-	DIFF	-
16	LVDS_DA3+	DIFF	-
17	DDC_DATA	I/O	+3.3V
18	DDC_CLK	I/O	+3.3V
19	LVDS_DB0-	DIFF	-
20	LVDS_DB0+	DIFF	-
21	LVDS_DB1-	DIFF	-
22	LVDS_DB1+	DIFF	-
23	LVDS_DB2-	DIFF	-
24	LVDS_DB2+	DIFF	-
25	LVDS_DB3-	DIFF	-
26	LVDS_DB3+	DIFF	-
27	LCD_PWR	PWR	+3.3V / +5V
28	GND	GND	-
29	LVDS_B_CLK-	DIFF	-
30	LVDS_B_CLK+	DIFF	-

2.6.21 eSPI Connector (CN22)



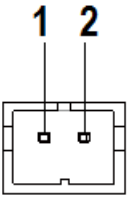
Pin	Pin Name	Signal Type	Signal Level
1	ESP_IO0	I/O	+1.8V
2	ESP_IO1	I/O	+1.8V
3	ESP_IO2	I/O	+1.8V
4	ESP_IO3	I/O	+1.8V
5	+V3P3S	PWR	+3.3V
6	ESPI_CS	IN	-
7	ESPI_RST	OUT	+3.3V
8	GND	GND	GND
9	ESPI_CLK	OUT	+1.8V
10	SMB_DATA/ I2C_SDA	I/O	+3.3V
11	SMB_CLK/ I2C_CLK	OUT	+3.3V
12	SMB_ALERT / INT_SERIRQ	IN	+3.3V

2.6.22 Nano SIM Card Socket (CN23)



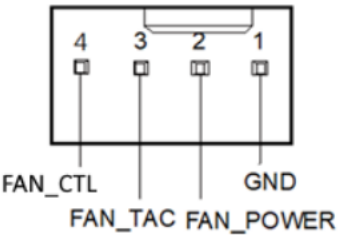
Pin	Pin Name	Signal Type	Signal Level
1	UIM_PWR	PWR	-
2	UIM_RST	IN	-
3	UIM_CLK	IN	-
4	N/A	N/A	-
5	GND	GND	GND
6	UIM_VPP	PWR	-
7	UIM_DATA	I/O	-
8	N/A	N/A	-

2.6.23 RTC Battery Connector (CN24)



Pin	Pin Name	Signal Type	Signal Level
1	+3.3V	PWR	+3.3V
2	GND	GND	GND

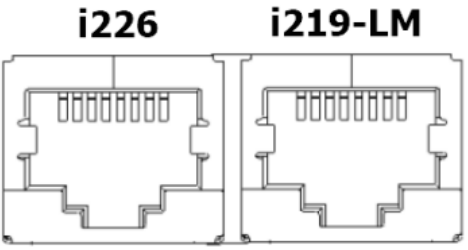
2.6.24 4-pin Fan Connector (CN26)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	FAN_POWER	PWR	+12V
3	FAN_TAC	IN	-
4	FAN_CTL	-	-

Note: The driving current of FAN_POWER supports up to 1A.

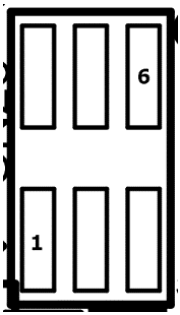
2.6.25 RJ-45 LAN Port 1/Port 2 (CN27)



Pin	Pin Name	Signal Type	Signal Level
1P1	LAN2_MDI0_P	DIFF	-
1P2	LAN2_MDI0_N	DIFF	-
1P3	LAN2_MDI1_P	DIFF	-
1P4	LAN2_MDI1_N	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
1P7	LAN2_MDI2_P	DIFF	-
1P8	LAN2_MDI2_N	DIFF	-
1P9	LAN2_MDI3_P	DIFF	-
1P10	LAN2_MDI3_N	DIFF	-
2P1	LAN1_MDI0_P	DIFF	-
2P2	LAN1_MDI0_N	DIFF	-
2P3	LAN1_MDI1_P	DIFF	-
2P4	LAN1_MDI1_N	DIFF	-
2P7	LAN1_MDI2_P	DIFF	-
2P8	LAN1_MDI2_N	DIFF	-
2P9	LAN1_MDI3_P	DIFF	-
2P10	LAN1_MDI3_N	DIFF	-

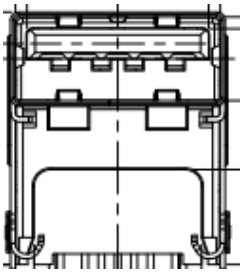
2.6.26 LAN Port 1 LED Connector (CN28)



Pin	Pin Name	Signal Type	Signal Level
1	LINK1_ACT#	I/O	-
2	+V3P3A	PWR	+3.3V
3	LAN1_1000#	I/O	-
4	LAN1_100#	I/O	-

Pin	Pin Name	Signal Type	Signal Level
5	LAN1_100#	I/O	-
6	LAN1_1000#	I/O	-

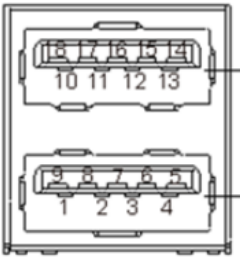
2.6.27 USB 3.2/USB 2.0 Port 3 (CN29)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_3_DN	DIFF	-
3	USB2_3_DP	DIFF	-
4	GND	GND	GND
5	USB3_3_RXN	DIFF	-
6	USB3_3_RXP	DIFF	-
7	GND	GND	GND
8	USB3_3_TXN	DIFF	-
9	USB3_3_TXP	DIFF	-

Note: The driving current of +5VSB supports up to 0.9A.

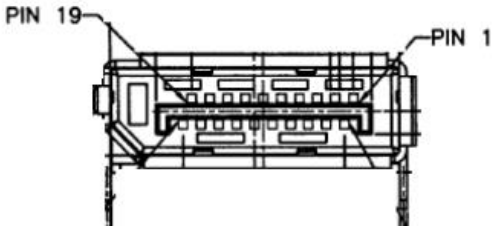
2.6.28 USB 3.2/USB 2.0 Port 1/Port 2 (CN30)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_1_DN	DIFF	-
3	USB2_1_DP	DIFF	-
4	GND	GND	GND
5	USB3_1_RXN	DIFF	-
6	USB3_1_RXP	DIFF	-
7	GND	GND	GND
8	USB3_1_TXN	DIFF	-
9	USB3_1_TXP	DIFF	-
10	+5VSB	PWR	+5V
11	USB2_2_DN	DIFF	-
12	USB2_2_DP	DIFF	-
13	GND	GND	GND
14	USB3_2_RXN	DIFF	-
15	USB3_2_RXP	DIFF	-
16	GND	GND	GND
17	USB3_2_TXN	DIFF	-
18	USB3_2_TXP	DIFF	-

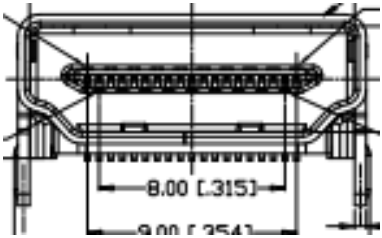
Note: The driving current of +5VSB supports up to 0.9A/Port.

2.6.29 DP Connector (CN31)



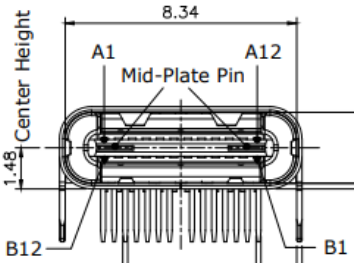
Pin	Pin Name	Signal Type	Signal Level
1	DP_TX0_DP	DIFF	-
2	GND	GND	GND
3	DP_TX0_DN	DIFF	-
4	DP_TX1_DP	DIFF	-
5	GND	GND	GND
6	DP_TX1_DN	DIFF	-
7	DP_TX2_DP	DIFF	-
8	GND	GND	GND
9	DP_TX2_DN	DIFF	-
10	DP_TX3_DP	DIFF	-
11	GND	GND	GND
12	DP_TX3_DN	DIFF	-
13	DP_OB_AUX_EN	IN	-
14	GND	GND	GND
15	DP_AUX_DP	I/O	-
16	GND	GND	GND
17	DP_AUX_DN	I/O	-
18	DP_HPD	I/O	-
19	GND	GND	GND
20	+3.3V	PWR	+3.3V

2.6.30 HDMI Connector (CN33)



Pin	Pin Name	Signal Type	Signal Level
1	HDMI_TX2+	DIFF	-
2	GND	GND	GND
3	HDMI_TX2-	DIFF	-
4	HDMI_TX1+	DIFF	-
5	GND	GND	GND
6	HDMI_TX1-	DIFF	-
7	HDMI_TX0+	DIFF	-
8	GND	GND	GND
9	HDMI_TX0-	DIFF	-
10	HDMI_CLK+	DIFF	-
11	GND	GND	GND
12	HDMI_CLK-	DIFF	-
13	N/A	N/A	N/A
14	N/A	N/A	N/A
15	DDC_CLK	I/O	-
16	DDC_DATA	I/O	-
17	GND	GND	GND
18	+V5S	PWR	+5V
19	HDMI_HPD	IN	-

2.6.31 USB Type-C (CN34)

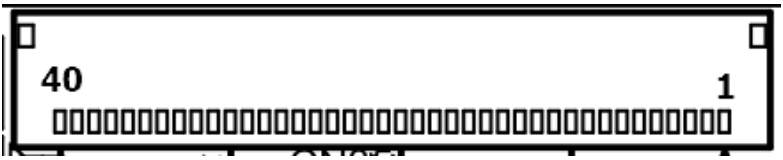


Pin	Pin Name	Signal Type	Signal Level
A1	GND	GND	GND
A2	TCP2_TX0_DP	DIFF	-
A3	TCP2_TX0_DN	DIFF	-
A4	+5VSB	PWR	+5V
A5	CON_CC1	IN	-
A6	USB2_10_DP	DIFF	-
A7	USB2_10_DN	DIFF	-
A8	CONN_TYPEC1_SBU1	DIFF	-
A9	+5VSB	PWR	+5V
A10	TCP2_TXRX1_DN	DIFF	-
A11	TCP2_TXRX1_DP	DIFF	-
A12	GND	GND	GND
B1	GND	GND	GND
B2	TCP2_TX1_DP	DIFF	-
B3	TCP2_TX1_DN	DIFF	-
B4	+5VSB	PWR	+5V
B5	CONN_TYPEC1_CC2	IN	-
B6	USB2_10_DP	DIFF	-
B7	USB2_10_DN	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
B8	CONN_TYPEC1_SBU2	DIFF	-
B9	+5VSB	PWR	+5V
B10	TCP2_TXRX0_DN	DIFF	-
B11	TCP2_TXRX0_DP	DIFF	-
B12	GND	GND	GND

Note: The driving current of +5VSB supports up to 3A.

2.6.32 FPC Connector (CN35)



Pin	Pin Name	Signal Type	Signal Level
1	+V3P3S	PWR	+3.3V
2	+V3P3S	PWR	+3.3V
3	+V3P3S	PWR	+3.3V
4	SMB_DATA	I/O	-
5	SMB_CLK	OUT	+3.3V
6	BUF_PLT_RST#	OUT	+3.3V
7	+V3P3A	PWR	+3.3V
8	GND	GND	GND
9	PCIE4_B_1_RXP	DIFF	-
10	PCIE4_B_1_RXN	DIFF	-
11	GND	GND	GND
12	PCIE4_B_3_RXP	DIFF	-
13	PCIE4_B_3_RXN	DIFF	-

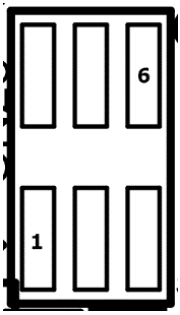
Pin	Pin Name	Signal Type	Signal Level
14	GND	GND	GND
15	PCIE4_B_2_RXP	DIFF	-
16	PCIE4_B_2_RXN	DIFF	-
17	GND	GND	GND
18	PCIE4_B_0_RXP	DIFF	-
19	PCIE4_B_0_RXN	DIFF	-
20	GND	GND	GND
21	PCIE4_B_3_TXN	DIFF	-
22	PCIE4_B_3_TXP	DIFF	-
23	GND	GND	GND
24	PCIE4_B_2_TXN	DIFF	-
25	PCIE4_B_2_TXP	DIFF	-
26	GND	GND	GND
27	PCIE4_B_1_TXN	DIFF	-
28	PCIE4_B_1_TXP	DIFF	-
29	GND	GND	GND
30	PCIE_3_GEN4_CLK_DN	DIFF	-
31	PCIE_3_GEN4_CLK_DP	DIFF	-
32	GND	GND	GND
33	PCIE4_B_0_TXN	DIFF	-
34	PCIE4_B_0_TXP	DIFF	-
35	GND	GND	GND
36	+V12S	PWR	+12V
37	+V12S	PWR	+12V
38	+V12S	PWR	+12V
39	+V12S	PWR	+12V
40	+V12S	PWR	+12V

Note: The driving current of +V12S supports up to 2.1A.

Note: The driving current of +V3P3A supports up to 0.375A.

Note: The driving current of +V3P3S supports up to 3A.

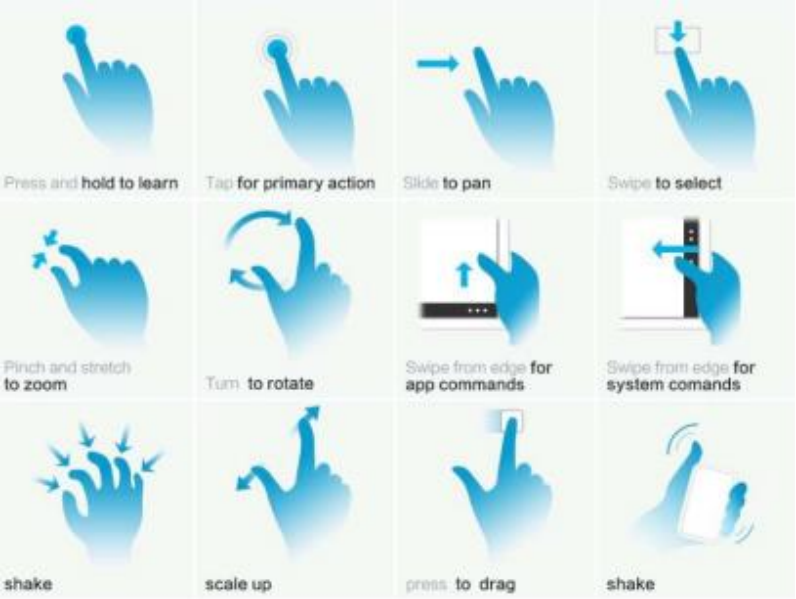
2.6.33 LAN Port 2 LED Connector (CN36)



Pin	Pin Name	Signal Type	Signal Level
1	LINK2_ACT#	I/O	-
2	+V3P3A	PWR	+3.3V
3	LAN2_1000#	I/O	-
4	LAN2_2500#	I/O	-
5	LAN2_2500#	I/O	-
6	LAN2_1000#	I/O	-

2.7 P-CAP Touch Screen Operation

1. Always wear finger pads when touching the screen.
2. The force applied should not exceed 10g.



Chapter 3

AMI BIOS Setup

3.1 System Test and Initialization

The system uses certain routines to perform testing and initialization during the boot up sequence. If an error, fatal or non-fatal, is encountered, the system will output a few short beeps or an error message. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be output, and the BIOS setup program will need to be run to set the configuration information in memory.

There are three situations in which the CMOS settings will need to be set or changed:

- Starting the system for the first time
- The system hardware has been changed
- The system configuration was reset by the Clear CMOS jumper
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention. The battery must be replaced when it runs down.

3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <ESC> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced – Enable/ Disable boot option for legacy network devices

Chipset – For hosting bridge parameters

Security – The setup administrator password can be set here

Boot – Enable/ Disable quiet Boot Option

Save & Exit –Save your changes and exit the program

MEBx – Configure user content preferences

3.3 Setup Submenu: Main

```
                              Aptio Setup - AMI
  Main  Advanced  Chipset  Security  Boot  Save & Exit  MEBx

  BIOS Information                                   Set the Date. Use Tab to
      OMNI-ADP R1.5 (OMADAM15)(11/29/2023)           switch between Date elements.
                                                     Default Ranges:
  BIOS Vendor                    American Megatrends Year: 1998-9999
  Compliancy                     UEFI 2.8; PI 1.7    Months: 1-12
                                                     Days: Dependent on month
  System Date                    [Thu 12/28/2023]    Range of Years may vary.
  System Time                    [13:48:37]

  Access Level                   Administrator

                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```

3.4 Setup Submenu: Advanced

```
                          Aptio Setup - AMI
   Main  Advanced  Chipset  Security  Boot  Save & Exit  MEBx

 ▶ CPU Configuration                    CPU Configuration Parameters
 ▶ PCH-FW Configuration
 ▶ PTT Configuration
 ▶ Trusted Computing
 ▶ SATA Configuration
 ▶ Hardware Monitor
 ▶ SIO Configuration
 ▶ Serial Port Console Redirection
 ▶ AAEON BIOS Robot

   AAEON Features
 ▶ Power Management                     →←: Select Screen
 ▶ GPIO Port Configuration              ↑↓: Select Item
                                        Enter: Select
                                        +/-: Change Opt.
                                        F1: General Help
                                        F2: Previous Values
                                        F3: Optimized Defaults
                                        F4: Save & Exit
                                        ESC: Exit

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```

3.4.1 CPU Configuration

```
Aptio Setup - AMI
Advanced

CPU Configuration                                  When enabled, a VMM can
                                                   utilize the additional
Type                          12th Gen Intel(R)    hardware capabilities provided
                              Core(TM) i3-1215UE   by Vanderpool Technology.
ID                            0x906A4
Microcode Revision            428
Speed                         1200 MHz
VMX                           Supported
SMX/TXT                       Not Supported
L1 Data Cache                 48 KB x 2
L1 Instruction Cache          32 KB x 2
L2 Cache                      1280 KB x 2
L3 Cache                      10 MB

Intel (VMX) Virtualization    [Enabled]            →←: Select Screen
Technology                                         ↑↓: Select Item
Hyper-Threading               [Enabled]            Enter: Select
Intel(R) SpeedStep(tm)        [Enabled]            +/-: Change Opt.
Turbo Mode                    [Enabled]            F1: General Help
C states                      [Enabled]            F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

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```
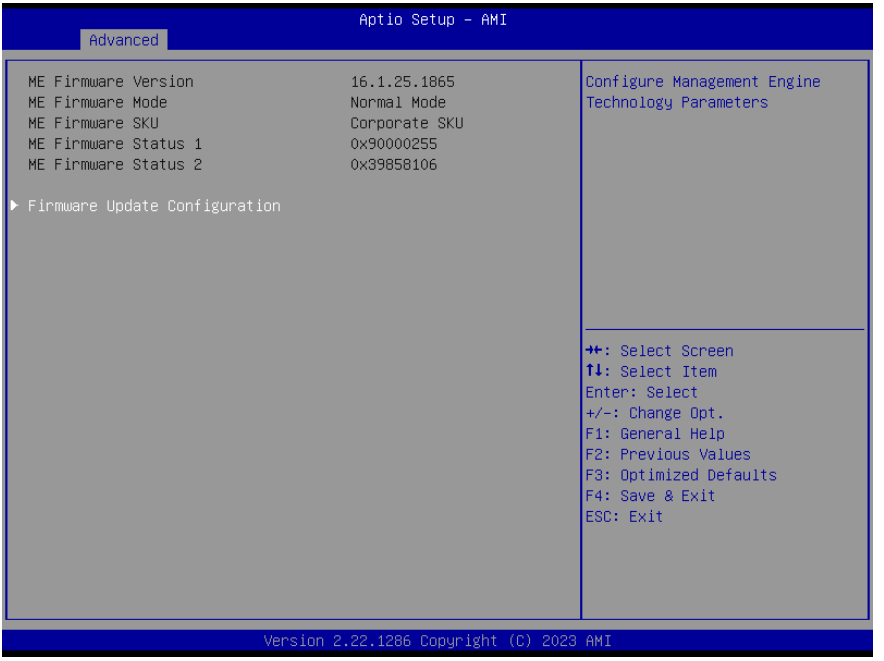
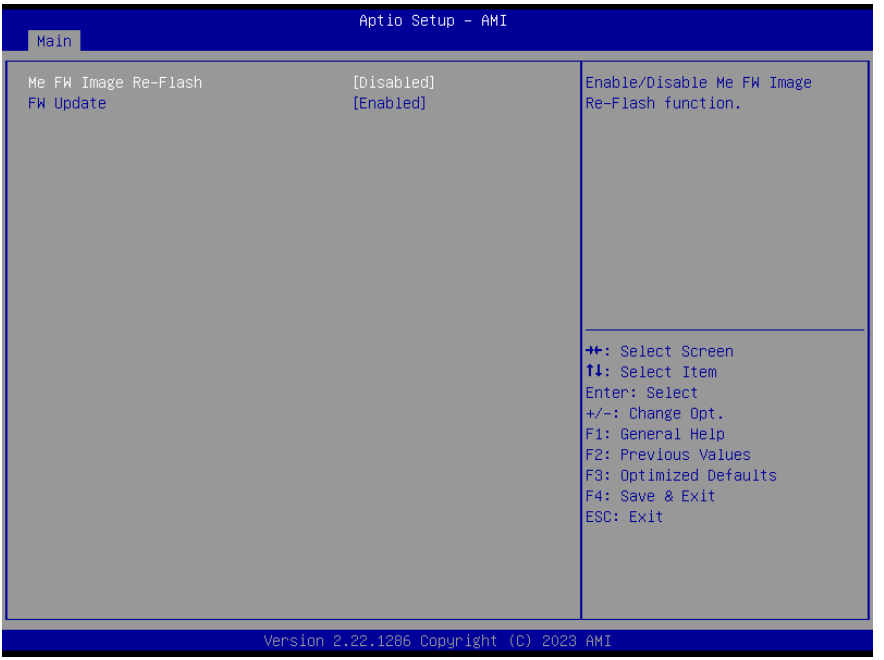

Options Summary		
Intel (VMX) Virtualization Technology	Disabled	
	Enabled	Optimal Default, Failsafe Default
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.		
Hyper-Threading	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Hyper-Threading Technology.		
Intel® SpeedStep™	Disabled	
	Enabled	Optimal Default, Failsafe Default
Allows more than two frequency ranges to be supported.		
Turbo Mode	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable processor Turbo Mode (requires EMTTM enabled too).		
C states	Disabled	
	Enabled	Optimal Default, Failsafe Default

Options Summary
Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

3.4.2 PCH-FW Configuration



3.4.2.1 Firmware Update Configuration



Options Summary		
Me FW Image Re-Flash	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable ME FW Image Re-Flash function.		
FW Update	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable ME FW Update function.		

3.4.3 PTT Configuration

Options Summary		
TPM Device Selection	dTPM	Optimal Default, Failsafe Default
	PTT	
Selects TPM device: PTT or dTPM. PTT – Enables in SkuMgr. dTPM 1.2 – Disables PTT in SkuMgr. Warning! PTT/dTPM will be disabled and all data saved on it will be lost.		

3.4.4 Trusted Computing

```
Aptio Setup - AMI
Advanced

TPM 2.0 Device Found
Firmware Version:                 7.2
Vendor:                           NTC

Security Device Support           [Enable]
Active PCR banks                  SHA256
Available PCR banks               SHA256,SHA384

SHA256 PCR Bank                   [Enabled]
SHA384 PCR Bank                   [Disabled]

Pending operation                 [None]
Platform Hierarchy                [Enabled]
Storage Hierarchy                 [Enabled]
Endorsement Hierarchy             [Enabled]
Physical Presence Spec Version    [1.3]
TPM 2.0 InterfaceType             [TIS]
Device Select                     [TPM 2.0]
Disable Block Sid                 [Disabled]

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.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```
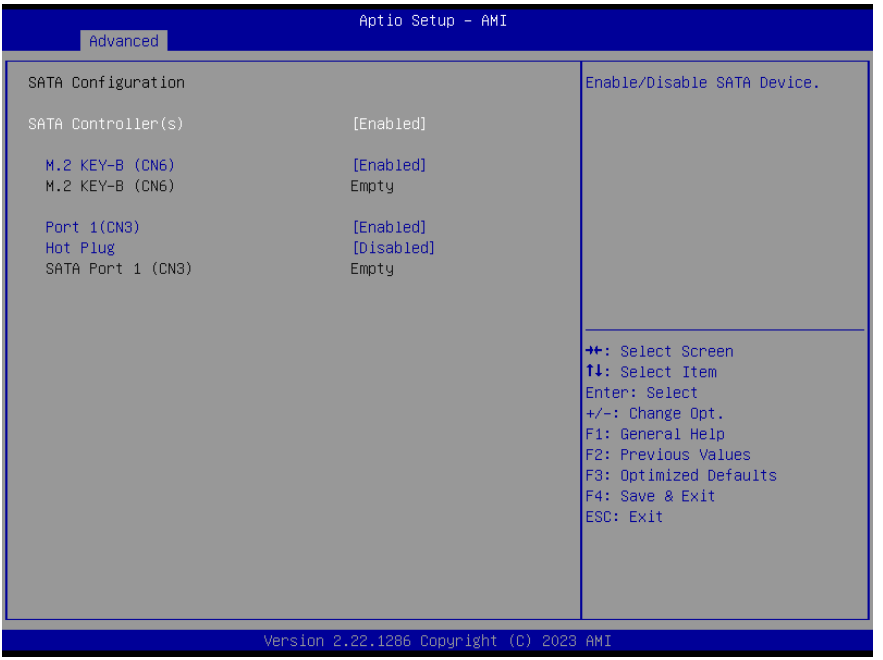

Options Summary		
Security Device Support	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.		
SHA256 PCR Bank	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SHA-256 PCR Bank.		
SHA384 PCR Bank	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or Disable SHA-384 PCR Bank.		
Pending operation	None	Optimal Default, Failsafe Default
	TPM Clear	
Schedule an Operation for the Security Device. **NOTE**: Your Computer will reboot during restart in order to change state of Security Device.		

Options Summary		
Platform Hierarchy	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Platform Hierarchy.		
Storage Hierarchy	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Storage Hierarchy.		
Endorsement Hierarchy	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Endorsement Hierarchy.		
Physical Presence Spec Version	1.2	
	1.3	Optimal Default, Failsafe Default
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.		
Device Select	TPM 1.2	
	TPM 2.0	Optimal Default, Failsafe Default
	Auto	
TPM 1.2 will restrict support to TPM 1.2 device. TPM 2.0 will restrict support to TPM 2.0 devices. Auto will support both with the default set to TPM 2.0 devices if not found. TPM 1.2 device will be enumerated.		
Disable Block Sid	Disabled	Optimal Default, Failsafe Default
	Enabled	
Override to allow SID authentication in TCG Storage device.		

3.4.5 SATA Configuration



Options Summary		
SATA Controller(s)	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SATA Device.		
M.2 KEY-B (CN6)	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SATA Port.		
Port 1 (CN3)	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SATA Port.		
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
Designates this port as Hot Pluggable.		

3.4.6 Hardware Monitor

```
Aptio Setup - AMI
Advanced

Monitor hardware status                          Enable or Disable Smart Fan

CPU Temperature                  : +44 ℃
System Temperature               : +36 ℃
System Temperature 2             : +33 ℃
CPU FAN                          : N/A
VCORE                            : +0.856 V
+12V                             : +12.056 V
+5V                              : +5.045 V
VMEM                             : +5.045 V
+3.3V                            : +3.408 V
3VSB                             : +3.408 V
5VSB                             : +5.064 V
VBAT                             : +3.184 V

Smart Fan                        [Enabled]        →←: Select Screen
▶ Smart Fan Mode Configuration                    ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit

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```
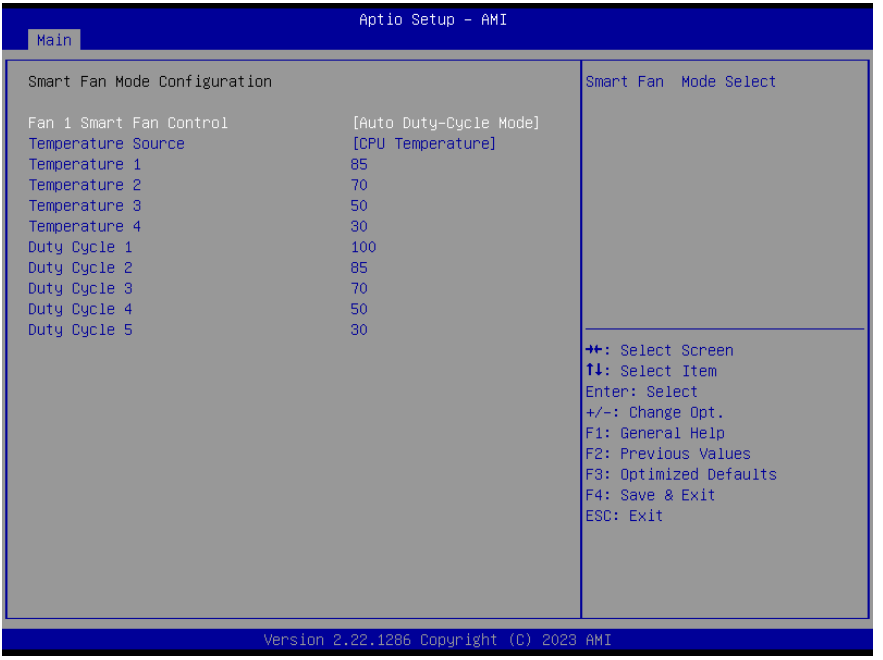

Options Summary		
Smart Fan	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Smart Fan.		

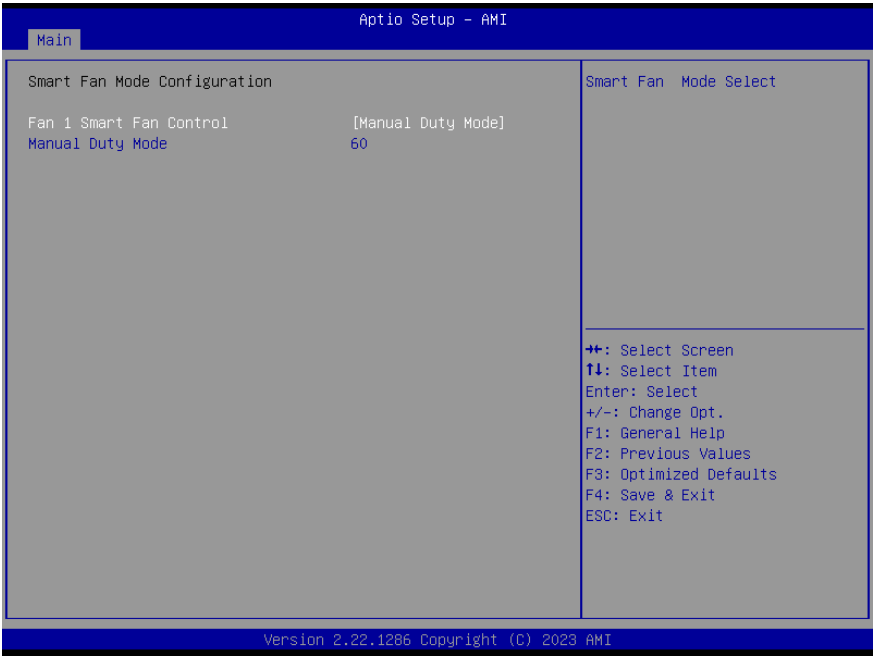
3.4.6.1 Smart Fan Mode Configuration

Fan Mode: Auto Duty-Cycle Mode



Options Summary		
Fan 1 Smart Fan Control	Manual Duty Mode	
	Auto Duty-Cycle Mode	Optimal Default, Failsafe Default
Smart Fan Mode Select.		
Temperature Source	CPU Temperature	Optimal Default, Failsafe Default
	System Temperature 2	
	System Temperature	
Select the monitored temperature source for this fan.		
Temperature 1 - 4	1 - 100	
Auto fan speed control. Fan speed will follow different temperature by different duty cycle 1-100.		
Duty Cycle 1 - 5	1 - 100	
Auto fan speed control. Fan speed will follow different temperature by different duty cycle 1-100.		

Fan Mode: Manual Duty Mode



Options Summary		
Fan 1 Smart Fan Control	Manual Duty Mode	Optimal Default, Failsafe Default
	Auto Duty-Cycle Mode	
Smart Fan Mode Select.		
Manual Duty Mode	1 - 100	
Manual mode fan control, user can write expected duty cycle (PWM fan type) 1 – 100.		

3.4.7 SIO Configuration

```
Aptio Setup - AMI
Advanced

AMI SIO Driver Version :   A5.17.00

Super IO Chip Logical Device(s) Configuration
▶ [*Active*]  Serial Port  1
▶ [*Active*]  Serial Port  2
▶ [*Active*]  Serial Port  3
▶ [*Active*]  Serial Port  4

WARNING: Logical Devices state on the left side of the
control, reflects the current Logical Device state. Changes
made during Setup Session will be shown after you restart
the system.

View and Set Basic properties
of the SIO Logical device.
Like IO Base, IRQ Range, DMA
Channel and Device Mode.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```

Options Summary
[*Active*] Serial Port N
View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.

3.4.7.1 SIO Configuration: Serial Port 1

```
Aptio Setup - AMI
Advanced

Serial Port  1 Configuration                    Enable or Disable this Logical
                                                Device.
Use This Device                  [Enabled]

Logical Device Settings:
Current :     IO=3F8h; IRQ=4;

Possible:                        [Use Automatic
                                 Settings]
Mode    :                        [RS232]

WARNING: Disabling SIO Logical Devices may have unwanted
side effects.
PROCEED WITH CAUTION.                           →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit

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```

Options Summary		
Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=3F8h; IRQ=4;	
	IO=2F8h; IRQ=3;	
Allows the user to change the device resource settings. New settings will be reflected on this setup page after system restarts.		
Mode	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.7.2 SIO Configuration: Serial Port 2

```
Aptio Setup - AMI
Advanced

Serial Port  2 Configuration                    Enable or Disable this Logical
                                                Device.
Use This Device                  [Enabled]

Logical Device Settings:
Current :     IO=2F8h; IRQ=3;

Possible:                        [Use Automatic
                                 Settings]
Mode    :                        [RS232]

WARNING: Disabling SIO Logical Devices may have unwanted
side effects.
PROCEED WITH CAUTION.                           →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit

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```

Options Summary		
Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2F8h; IRQ=3;	
	IO=3F8h; IRQ=4;	
Allows the user to change the device resource settings. New settings will be reflected on this setup page after system restarts.		
Mode	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.7.3 SIO Configuration: Serial Port 3

```
Aptio Setup - AMI
Advanced

Serial Port  3 Configuration                    Enable or Disable this Logical
                                                Device.
Use This Device                  [Enabled]

Logical Device Settings:
Current :     IO=3E8h; IRQ=5;

Possible:                        [Use Automatic
                                 Settings]
Mode    :                        [RS232]

WARNING: Disabling SIO Logical Devices may have unwanted
side effects.
PROCEED WITH CAUTION.                           →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit

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```

Options Summary		
Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=3E8h; IRQ=5;	
	IO=2E8h; IRQ=7;	
Allows the user to change the device resource settings. New settings will be reflected on this setup page after system restarts.		
Mode	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.7.4 SIO Configuration: Serial Port 4

```
Aptio Setup - AMI
Advanced

Serial Port  4 Configuration                    Enable or Disable this Logical
                                                Device.
Use This Device                  [Enabled]

Logical Device Settings:
Current :     IO=2E8h; IRQ=7;

Possible:                        [Use Automatic
                                 Settings]
Mode    :                        [RS232]

WARNING: Disabling SIO Logical Devices may have unwanted
side effects.
PROCEED WITH CAUTION.                           →←: Select Screen
                                                ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F3: Optimized Defaults
                                                F4: Save & Exit
                                                ESC: Exit

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```
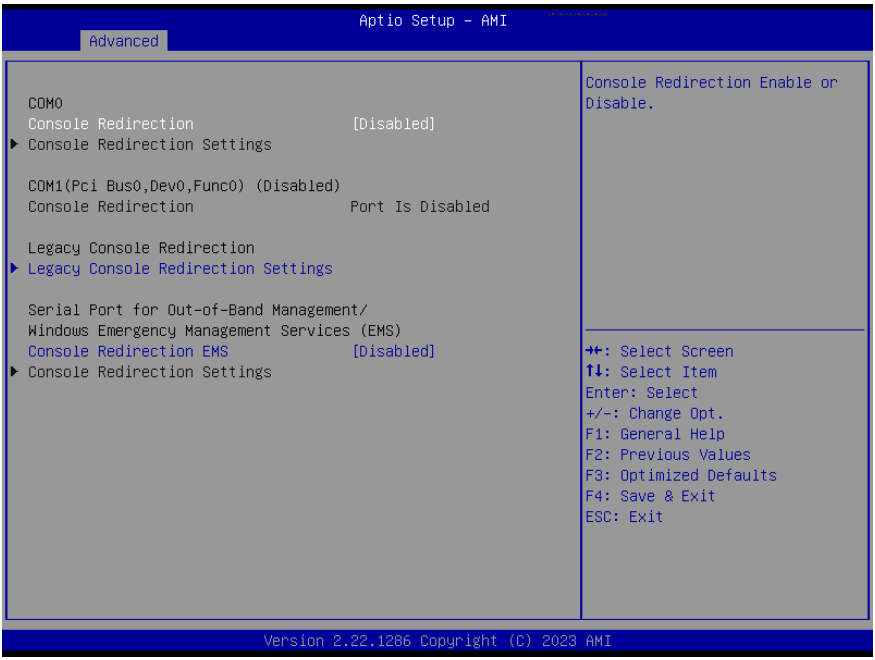

Options Summary		
Use This Device	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2E8h; IRQ=7;	
	IO=3E8h; IRQ=5;	
Allows the user to change the device resource settings. New settings will be reflected on this setup page after system restarts.		
Mode	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.8 Serial Port Console Redirection

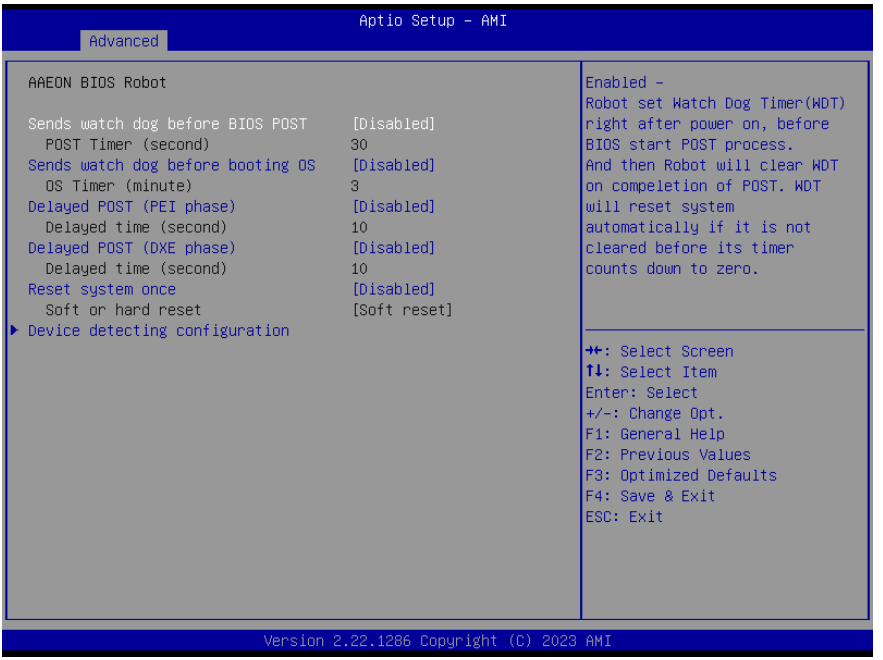


Options Summary		
Console Redirection	Disabled	Optimal Default, Failsafe Default
	Enabled	
Console Redirection Enable or Disable.		
Console Redirection EMS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Console Redirection Enable or Disable.		

3.4.8.1 Legacy Console Redirection Settings

Options Summary		
Redirection COM Port	COM0	Optimal Default, Failsafe Default
	COM1(Pci Bus0, Dev0, Func0) (Disabled)	
Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.		
Resolution	80x24	Optimal Default, Failsafe Default
	80x25	
On Legacy OS, the Number of Rows and Columns supported redirection.		
Redirect After POST	Always Enable	Optimal Default, Failsafe Default
	BootLoader	
When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable.		

3.4.9 AAEON BIOS Robot



Options Summary		
Sends watch dog before BIOS POST	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot set Watch Dog Timer (WDT) right after power on, before BIOS start POST process. And then Robot will clear WDT on completion of POST. WDT will reset system automatically if it is not cleared before its timer counts down to zero.		
POST Timer (second)	30	Optimal Default, Failsafe Default
Timer count set to Watch Dog Timer for POST. **WARNING**: Do not set to a value equal or shorter than normal POST time, otherwise system may never complete POST unless clearing BIOS settings. More than 2 x normal POST time is suggested.		
Sends watch dog before booting OS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot set Watch Dog Timer (WDT) after POST completion, before BIOS transfer control to OS. **WARNING**: Before enabling this function, a program in OS must be in responsible for clearing WDT. Also, this function should be disabled if OS is going to update itself.		

Options Summary		
OS Timer (minute)	3	Optimal Default, Failsafe Default
Timer count set to Watch Dog Timer for OS loading.		
Delayed POST (PEI phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot holds BIOS from starting POST, right after power on. This allows BIOS POST to start with stable power or start after system is physically warmed-up. Note: Robot does this before 'Sends watch dog'.		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Delayed POST (DXE phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot holds BIOS before POST completion. This allows BIOS POST to start with stable power or start after system is physically warmed- Note: Robot does this after 'Sends watch dog before BIOS POST'.		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Reset system once	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot resets system for one time on each boot. This will send a soft or hard reset to onboard devices, thus puts devices to more stable state.		
Soft or hard reset	Soft reset	Optimal Default, Failsafe Default
	Hard reset"	
Select reset type robot should send on each boot.		

3.4.9.1 Device Detecting Configuration

```
                          Aptio Setup - AMI
 Advanced

 Device detecting configuration                    Device #1 detecting
                                                   configuration
 ▶ Device #1 detecting configuration
 ▶ Device #2 detecting configuration
 ▶ Device #3 detecting configuration
 ▶ Device #4 detecting configuration
 ▶ Device #5 detecting configuration

 If any device is detected in unexpected
 condition, the robot will do following
   Action                          [Reset System]
   Soft or hard reset              [Soft]
   Retry-Count                     3
   At time                         [After show logo]      →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```
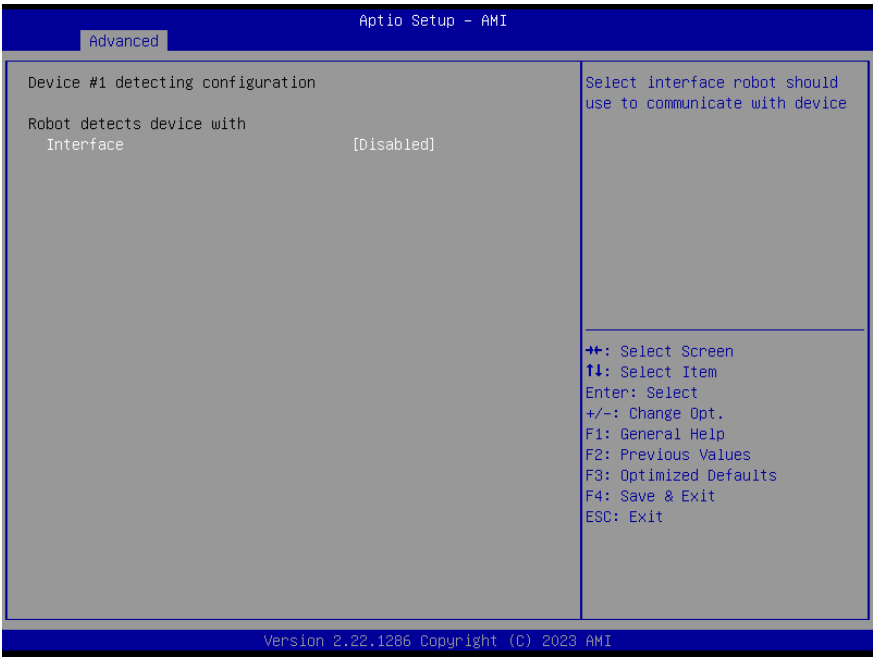

Options Summary		
Action	Reset System	Optimal Default, Failsafe Default
	Hold System	
Select action that robot should do.		
Soft or hard reset	Soft	Optimal Default, Failsafe Default
	Hard	
Select reset type robot should send on each boot.		
Retry-Count	3	Optimal Default, Failsafe Default
Fill retry counter here. Robot will reset system at most counter times, and then let system continue its POST.		
At time	After show logo	Optimal Default, Failsafe Default
	Before show logo	
Select robot action time: After show logo - Robot will do action after logo is displayed. System devices are almost ready. Before show logo - Robot will do action earlier before logo, but some devices may not be ready.		

3.4.9.2 Device #* detecting configuration



Options Summary		
Interface	Disabled	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.10 Power Management

Options Summary		
Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select system power mode.		
Restore AC Power Loss	Last State	Optimal Default, Failsafe Default
	Always On	
	Always Off	
Select power state when power is re-applied after a power failure.		
RTC wake system from S5	Disabled	Optimal Default, Failsafe Default
	Fixed Time	
	Bypass	
Fixed Time: System will wake on the hr :: min :: sec specified. Dynamic Time: System will wake on the current time + Increase minutes(s). Bypass: BIOS will not control RTC wake function during system shutdown.		

3.4.11 GPIO Port Configuration

```
Aptio Setup - AMI
Advanced

GPIO Port Configuration

GPIO1(For PANEL_ID)          [Input ]
GPIO2(For PANEL_ID)          [Input ]
GPIO3(For PANEL_ID)          [Input ]
GPIO4(For PANEL_ID)          [Input ]
GPIO5(For PANEL_ID)          [Input ]
GPIO6(For PANEL_ID)          [Input ]
GPIO7(For PANEL_ID)          [Input ]
GPIO8(For PANEL_ID)          [Input ]

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```
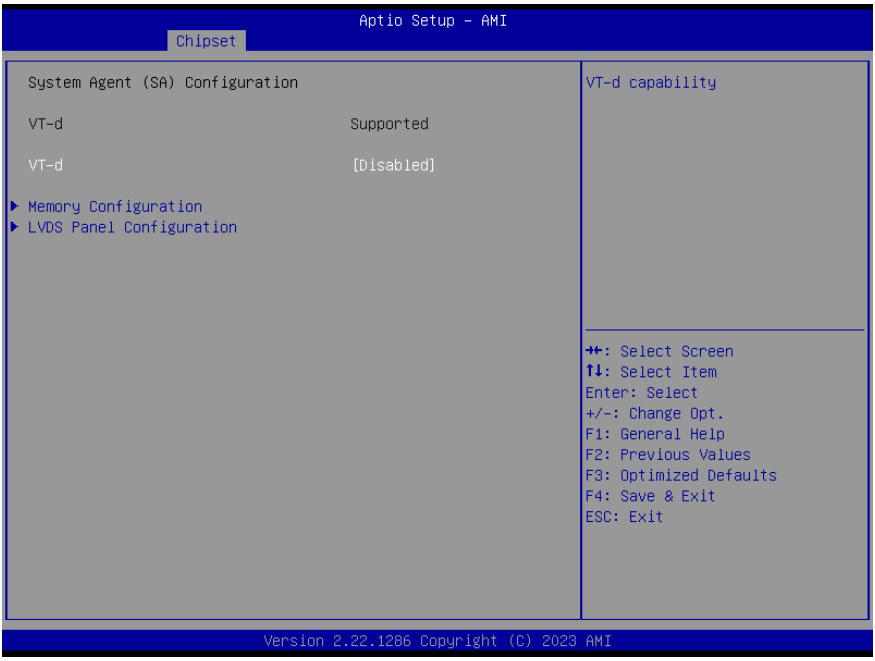
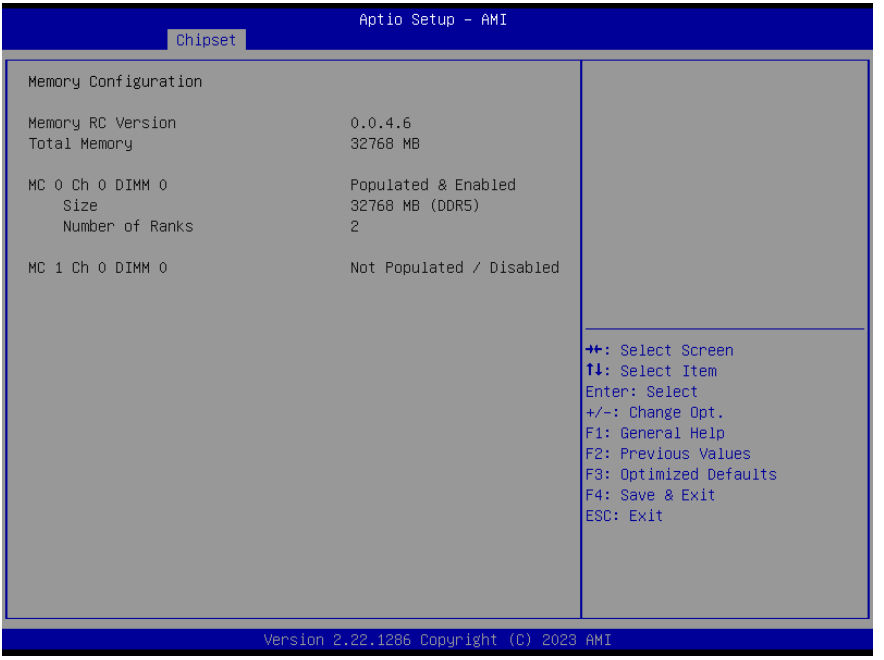

3.5 Setup Submenu: Chipset

3.5.1 System Agent (SA) Configuration



Options Summary		
VT-d	Disabled	Optimal Default, Failsafe Default
	Enabled	
VT-d capability.		

3.5.1.1 Memory Configuration



3.5.1.2 LVDS Panel Configuration

```
Aptio Setup - AMI
Chipset

LVDS Panel Configuration

LVDS                          [Enabled]
Panel Type Selection          [Auto]
OMNI Panel Type               [OMNI-2215-ADP]
  Panel Mode                  [Single channel]
  Color Depth                 [18-Bit]
  Backlight Mode              [Windows Slider]

Select LCD panel type by OMNI
panel ID.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```

Options Summary		
Panel Type Selection	Auto	Optimal Default, Failsafe Default
	Manual	
Select LCD panel type by OMNI panel ID.		
Panel Type	640x480@60Hz	
	800x480@60Hz	
	800x600@60Hz	
	1024x600@60Hz	
	1024x768@60Hz	Optimal Default, Failsafe Default
	1280x768@60Hz	
	1280x800@60Hz	
	1280x1024@60Hz	
	1366x768@60Hz	
	1440x900@60Hz	
	1600x1200@60Hz	

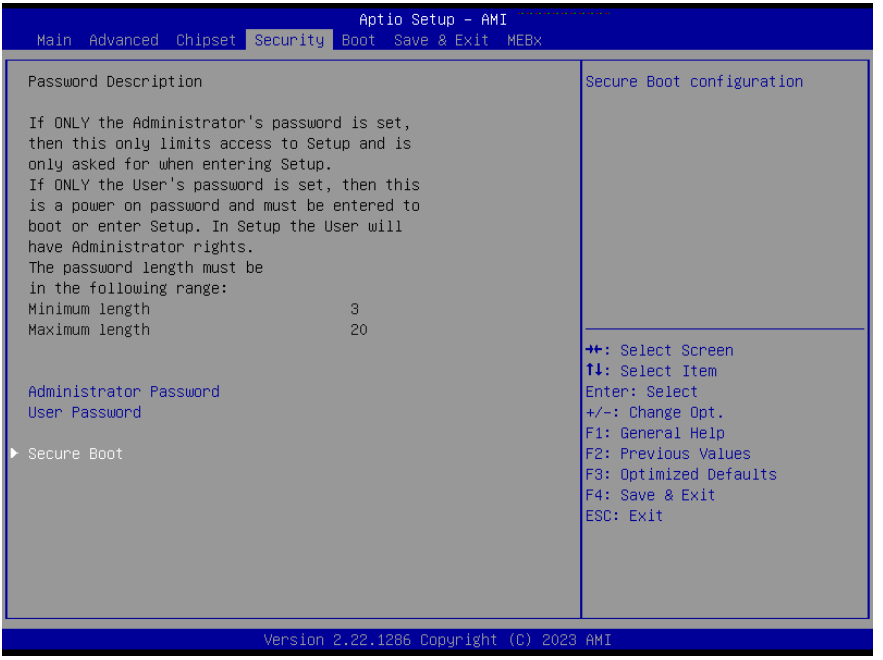
Options Summary		
Panel Type	1920x1080@60Hz	
	1920x1200@60Hz	
Select Panel type.		
Panel Mode	Single channel	Optimal Default, Failsafe Default
	Dual channel	
Panel mode selection for Single channel and Dual channel.		
Color Depth	18-Bit	Optimal Default, Failsafe Default
	24-Bit	
	36-Bit	
	48-Bit	
Select Color Depth.		
Backlight Mode	BIOS & Application	
	Windows Slider	Optimal Default, Failsafe Default
Select backlight control signal type.		

3.5.2 PCH-IO Configuration

Options Summary		
HD Audio	Disabled	Optimal Default, Failsafe Default
	Enabled	
Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled.		

Note: HDMI Audio out will also be turned off while HD Audio is set to disabled.

3.6 Setup Submenu: Security



Change User/Administrator Password

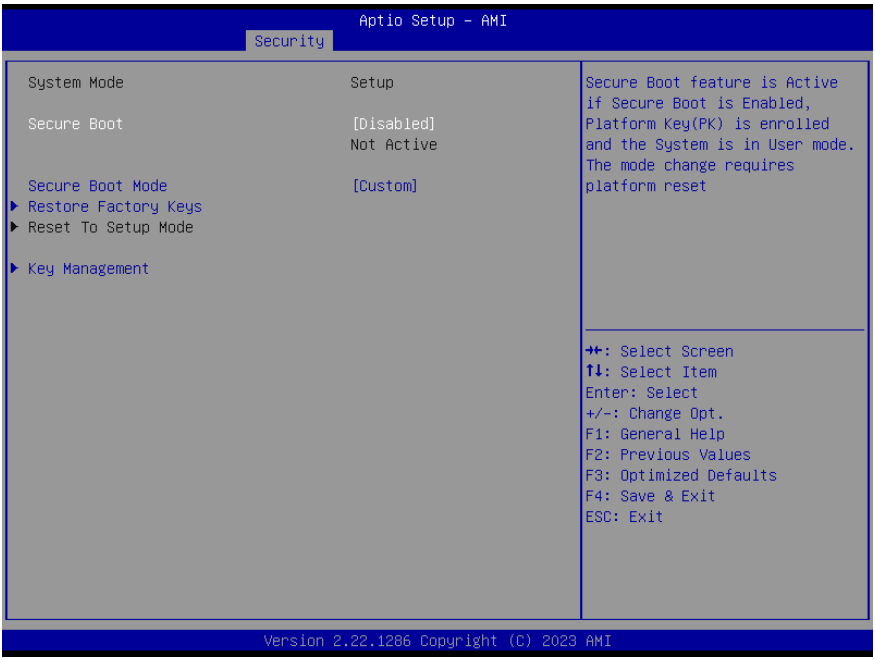
You can set an Administrator Password or User Password. An Administrator Password must be set before you can set a User Password. The password will be required during boot up, or when the user enters the Setup utility. A User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, and press Enter. In the dialog box, enter your password (must be between 3 and 20 letters or numbers). Press Enter and retype your password to confirm. Press Enter again to set the password.

Removing the Password

Select the password you want to remove and enter the current password. At the next dialog box press Enter to disable password protection.

3.6.1 Secure Boot



Options Summary		
Secure Boot	Disabled	Optimal Default, Failsafe Default
	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	Optimal Default, Failsafe Default
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		
Restore Factory Keys	Force system to user mode. Install factory default Secure Boot key databases.	
Reset to Setup Mode	Delete all Secure Boot key databases from NVRAM.	

3.6.1.1 Key Management

```
                              Aptio Setup - AMI
 Main

  Vendor Keys                          Valid                  Install factory default Secure
                                                              Boot keys after the platform
  Factory Key Provision                [Disabled]             reset and while the System is
▶ Restore Factory Keys                                        in Setup mode
▶ Reset To Setup Mode
▶ Enroll Efi Image
▶ Export Secure Boot variables

  Secure Boot variable       | Size| Keys| Key Source
▶ Platform Key          (PK)|    0|    0| No Keys
▶ Key Exchange Keys    (KEK)|    0|    0| No Keys
▶ Authorized Signatures (db)|    0|    0| No Keys
▶ Forbidden  Signatures(dbx)|    0|    0| No Keys
▶ Authorized TimeStamps(dbt)|    0|    0| No Keys          →←: Select Screen
▶ OsRecovery Signatures(dbr)|    0|    0| No Keys          ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit

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```
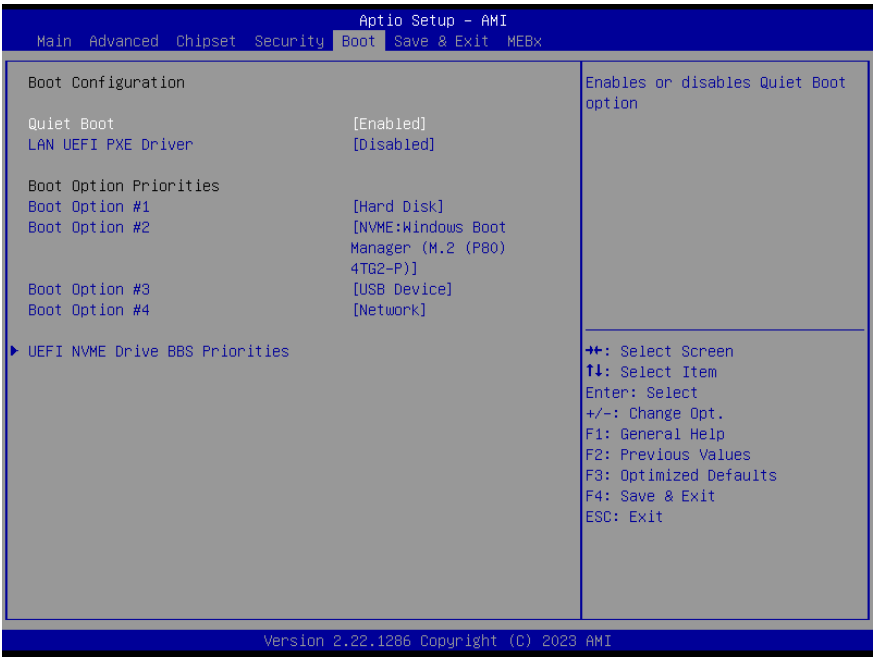

Options Summary		
Factory Key Provision	Disabled	Optimal Default, Failsafe Default
	Enabled	
Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode.		
Restore Factory Keys	Force system to user mode. Install factory default Secure Boot key databases.	
Reset to Setup Mode	Delete all Secure Boot key databases from NVRAM.	
Export Secure Boot Variables	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device	
Enroll EFI Image	Allow the image to run in Secure Boot mode. Enroll SHA256 hash of a PE image into Authorized Signature Database (db).	
Secure Boot Variables		

Options Summary
Enroll Factory Defaults or load certificates from a file: 1. Public Key Certificate in: a) EFI_SIGNATURE_LIST b) EFI_CERT_X509 (DER encoded) c) EFI_CERT_RSA2048 (bin) d) EFI_CERT_SHA256,384,512 2. Authenticated UEFI Variable 3. EFI PE/COFF Image (SHA256) **Key Source:** Default, External, Mixed, Test.

3.7 Setup Submenu: Boot

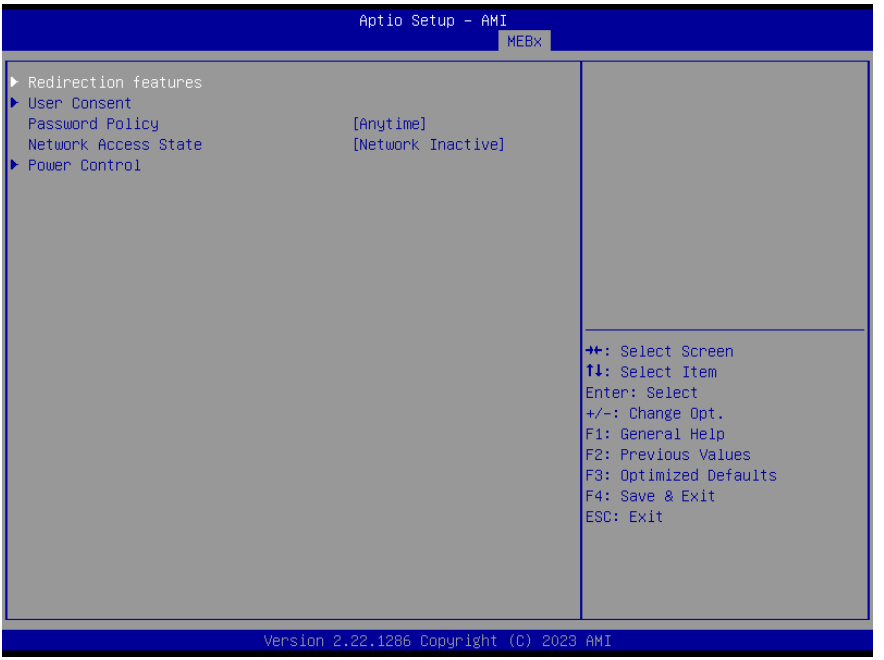


Options Summary		
Quiet Boot	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enables or disables Quiet Boot option.		
LAN UEFI PXE Driver	Enabled	
	Disabled	Optimal Default, Failsafe Default
Enable/Disable LAN UEFI PXE Driver.		
FIXED BOOT ORDER Priorities	Sets the system boot order.	

3.8 Setup Submenu: Save & Exit

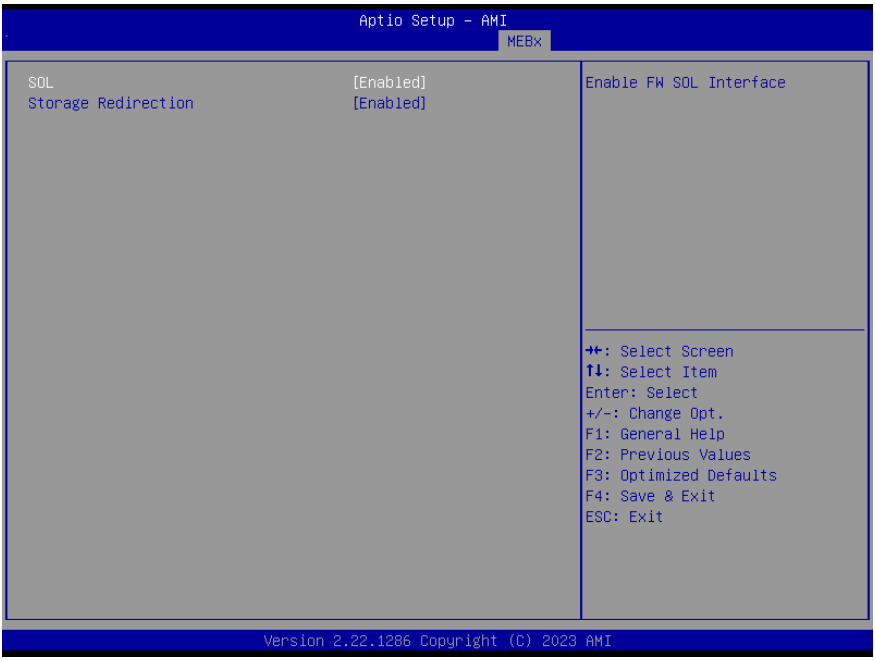
3.9 Setup Submenu: MEBx

3.9.1 Intel® AMT Configuration



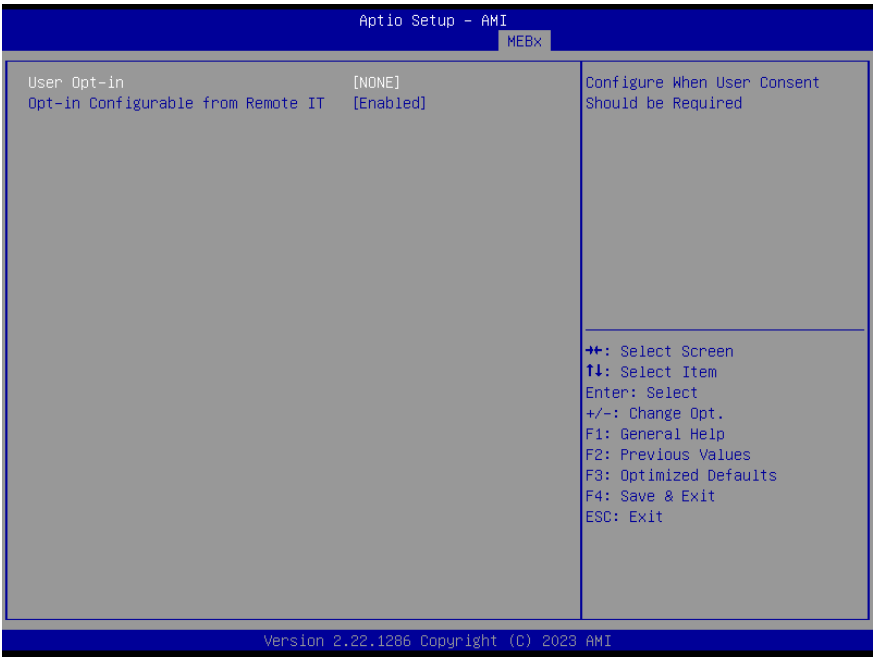
Options Summary		
Password Policy	Default Password Only	
	During Setup and Configuration	
	Anytime	Optimal Default, Failsafe Default
Network Access State	Network Active	
	Network Inactive	Optimal Default, Failsafe Default
	Full Unprovision	
Changes network state of ME. When disabling, it will also clear some other settings.		

3.9.2 Redirection features



Options Summary		
SOL	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enables FW SOL Interface.		
Storage Redirection	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable FW Remote – Storage Redirection.		

3.9.3 User Consent



Options Summary		
User Opt-in	NONE	Optimal Default, Failsafe Default
	ALL	
Configure When User Consent Should be Required.		
Opt-in Configurable from Remote IT	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable Remote Change Capability of User Consent Feature.		

3.9.4 Power Control

Options Summary		
ME ON in Host Sleep States	Mobile: ON in S0	
	Mobile: ON in S0, ME Wake in S3, S4-5 (AC only)	Optimal Default, Failsafe Default
Idle Timeout	15	
Timeout Value (1-65535).		

Chapter 4

Driver Installation

4.1 Driver Download/Installation

Drivers for the OMNI-ADP-KIT can be downloaded from the product page on the AAEON website by following this link:

https://www.aaeon.com/en/

Download the driver(s) you need and follow the steps below to install them.

Audio Driver (Windows 10)

1. Open the folder where you unzipped the **Audio Drivers.**
2. Run the **Setup.exe** in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.

Chipset Driver (Windows 10/11)

1. Open the folder where you unzipped the **Chipset Drivers.**
2. Run the **SetupChipset.exe** file in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.

Graphics Driver (Windows 10/11)

1. Open the folder where you unzipped the **Graphics Drivers.**
2. Run the **Installer.exe** file in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.
5. Refer to the ReadMe.txt for any assistance.

LAN Drivers (Windows 10/11)

1. Open the folder where you unzipped the **LAN Drivers.**
2. Run the **Autorun.exe** file in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.

Peripheral Driver (Windows 10/11)

1. Open the folder where you unzipped the **Peripheral Drivers.**
2. Run the **SetupSerialIO.exe** file in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.

ME & TXE Drivers (Windows 10/11)

1. Open the folder where you unzipped the **ME & TXE Drivers.**
2. Run the **SetupME.exe** file in the folder.
3. Follow the instructions.
4. Drivers will be installed automatically.

SST Drivers (Windows 10/11)

1. Open the folder where you unzipped the **SST Drivers.**
2. Follow the instructions contained within the user guides.

Appendix A

Watchdog Timer Programming

A.1 Watchdog Timer Initial Program

Table 1: Super I/O relative register table		
	Default Value	Note
Index	0x2E(Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E
Data	0x2F(Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F

Table 2: Watchdog relative register table					
	LDN	Register	BitNum	Value	Note
Timer Counter	0x07(Note3)	0xF6(Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	0x07(Note5)	0xF5(Note6)	3(Note7)	0(Note8)	Select time unit. 0: second 1: minute
Watchdog Enable	0x07(Note9)	0xF5(Note10)	5(Note11)	0(Note12)	0: Disable 1: Enable
Timeout Status	0x07(Note13)	0xF5(Note14)	6(Note15)	0	1: Clear timeout status
Output Mode	0x07(Note16)	0xF5(Note17)	4(Note18)	1(Note19)	Select WDTRST# output mode 0: level 1: pulse
WDTRST output	0x07(Note20)	0xFA(Note21)	0(Note22)	1(Note23)	Enable/Disable time out output via WDTRST# 0: Disable 1: Enable

```
*****************************************************************************
*
// SuperIO relative definition (Please reference to Table 1)
#define byte   SIOIndex   //This parameter is represented from Note1
#define byte   SIOData   //This parameter is represented from Note2
#define   void   IOWriteByte(byte IOPort, byte Value);
#define   byte   IOReadByte(byte IOPort);
// Watch Dog relative definition (Please reference to Table 2)
#define byte   TimerLDN   //This parameter is represented from Note3
#define byte   TimerReg   //This parameter is represented from Note4
#define byte   TimerVal   // This parameter is represented from Note24
#define byte   UnitLDN   //This parameter is represented from Note5
#define byte   UnitReg   //This parameter is represented from Note6
#define byte   UnitBit   //This parameter is represented from Note7
#define byte   UnitVal   //This parameter is represented from Note8
#define byte   EnableLDN   //This parameter is represented from Note9
#define byte   EnableReg   //This parameter is represented from Note10
#define byte   EnableBit   //This parameter is represented from Note11
#define byte   EnableVal   //This parameter is represented from Note12
#define byte   StatusLDN   // This parameter is represented from Note13
#define byte   StatusReg   // This parameter is represented from Note14
#define byte   StatusBit   // This parameter is represented from Note15
#define byte   ModeLDN   // This parameter is represented from Note16
#define byte   ModeReg   // This parameter is represented from Note17
#define byte   ModeBit   // This parameter is represented from Note18
#define byte   ModeVal   // This parameter is represented from Note19
#define byte   WDTRstLDN   // This parameter is represented from Note20
#define byte   WDTRstReg   // This parameter is represented from Note21
#define byte   WDTRstBit   // This parameter is represented from Note22
#define byte   WDTRstVal   // This parameter is represented from Note23
*****************************************************************************
*
```

Appendix B

I/O Information

B.1 I/O Address Map

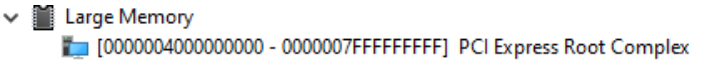
```
DESKTOP-IMQ5BPV
  Input/output (IO)
    [0000000000000000 - 0000000000000CF7] PCI Express Root Complex
    [0000000000000020 - 0000000000000021] Programmable interrupt controller
    [0000000000000024 - 0000000000000025] Programmable interrupt controller
    [0000000000000028 - 0000000000000029] Programmable interrupt controller
    [000000000000002C - 000000000000002D] Programmable interrupt controller
    [000000000000002E - 000000000000002F] Motherboard resources
    [0000000000000030 - 0000000000000031] Programmable interrupt controller
    [0000000000000034 - 0000000000000035] Programmable interrupt controller
    [0000000000000038 - 0000000000000039] Programmable interrupt controller
    [000000000000003C - 000000000000003D] Programmable interrupt controller
    [0000000000000040 - 0000000000000043] System timer
    [000000000000004E - 000000000000004F] Motherboard resources
    [0000000000000050 - 0000000000000053] System timer
    [0000000000000061 - 0000000000000061] Motherboard resources
    [0000000000000063 - 0000000000000063] Motherboard resources
    [0000000000000065 - 0000000000000065] Motherboard resources
    [0000000000000067 - 0000000000000067] Motherboard resources
    [0000000000000070 - 0000000000000070] Motherboard resources
    [0000000000000080 - 0000000000000080] Motherboard resources
    [0000000000000092 - 0000000000000092] Motherboard resources
    [00000000000000A0 - 00000000000000A1] Programmable interrupt controller
    [00000000000000A4 - 00000000000000A5] Programmable interrupt controller
    [00000000000000A8 - 00000000000000A9] Programmable interrupt controller
    [00000000000000AC - 00000000000000AD] Programmable interrupt controller
    [00000000000000B0 - 00000000000000B1] Programmable interrupt controller
    [00000000000000B2 - 00000000000000B3] Motherboard resources
    [00000000000000B4 - 00000000000000B5] Programmable interrupt controller
    [00000000000000B8 - 00000000000000B9] Programmable interrupt controller
    [00000000000000BC - 00000000000000BD] Programmable interrupt controller
    [00000000000002E8 - 00000000000002EF] Communications Port (COM4)
    [00000000000002F8 - 00000000000002FF] Communications Port (COM2)
    [00000000000003E8 - 00000000000003EF] Communications Port (COM3)
    [00000000000003F8 - 00000000000003FF] Communications Port (COM1)
    [00000000000004D0 - 00000000000004D1] Programmable interrupt controller
    [0000000000000680 - 000000000000069F] Motherboard resources
    [0000000000000A00 - 0000000000000A0F] Motherboard resources
    [0000000000000A10 - 0000000000000A1F] Motherboard resources
    [0000000000000A20 - 0000000000000A2F] Motherboard resources
    [0000000000000D00 - 0000000000000FFFF] PCI Express Root Complex
    [000000000000164E - 000000000000164F] Motherboard resources
    [0000000000001854 - 0000000000001857] Motherboard resources
    [0000000000002000 - 00000000000020FE] Motherboard resources
    [0000000000003000 - 000000000000303F] Intel(R) UHD Graphics
    [0000000000003060 - 000000000000307F] Standard SATA AHCI Controller
    [0000000000003080 - 0000000000003083] Standard SATA AHCI Controller
    [0000000000003090 - 0000000000003097] Standard SATA AHCI Controller
    [0000000000000EFA0 - 0000000000000EFBF] Intel(R) SMBus - 51A3
    [0000000000000FFF8 - 0000000000000FFFF] Intel(R) Active Management Technology - SOL (COM3)
```

B.2 Memory Address Map

Memory

```
[00000000000A0000 - 00000000000BFFFF]  PCI Express Root Complex
[0000000050400000 - 00000000504FFFFF]  Intel(R) Ethernet Controller I226-V
[0000000050400000 - 00000000505FFFFF]  Intel(R) PCI Express Root Port #8 - 51BF
[0000000050400000 - 00000000BFFFFFFF]  PCI Express Root Complex
[0000000050500000 - 0000000050503FFF]  Intel(R) Ethernet Controller I226-V
[0000000050600000 - 00000000506FFFFF]  Intel(R) PEG60 - 464D
[0000000050620000 - 0000000005062FFFF]  Standard NVM Express Controller
[0000000050630000 - 0000000050633FFF]  Standard NVM Express Controller
[0000000050700000 - 0000000005071FFFF]  Intel(R) Ethernet Connection (16) I219-LM
[0000000050720000 - 0000000050721FFF]  Standard SATA AHCI Controller
[0000000050722000 - 0000000050722 7FF]  Standard SATA AHCI Controller
[0000000050723000 - 0000000050723 0FF]  Standard SATA AHCI Controller
[00000000BFFFF000 - 00000000BFFFFFFF]  Intel(R) Active Management Technology - SOL (COM3)
[00000000C0000000 - 00000000CFFFFFFF]  Motherboard resources
[00000000FD690000 - 00000000FD69FFFF]  Intel(R) Serial IO GPIO Host Controller - INTC1055
[00000000FD6A0000 - 00000000FD6AFFFF]  Intel(R) Serial IO GPIO Host Controller - INTC1055
[00000000FD6D0000 - 00000000FD6DFFFF]  Intel(R) Serial IO GPIO Host Controller - INTC1055
[00000000FD6E0000 - 00000000FD6EFFFF]  Intel(R) Serial IO GPIO Host Controller - INTC1055
[00000000FE010000 - 00000000FE010FFF]  Intel(R) SPI (flash) Controller - 51A4
[00000000FED00000 - 00000000FED003FF]  High precision event timer
[00000000FED20000 - 00000000FED7FFFF]  Motherboard resources
[00000000FED40000 - 00000000FED44FFF]  Trusted Platform Module 2.0
[00000000FED45000 - 00000000FED8FFFF]  Motherboard resources
[00000000FED90000 - 00000000FED93FFF]  Motherboard resources
[00000000FEDA0000 - 00000000FEDA0FFF]  Motherboard resources
[00000000FEDA1000 - 00000000FEDA1FFF]  Motherboard resources
[00000000FEDC0000 - 00000000FEDC7FFF]  Motherboard resources
[00000000FEE00000 - 00000000FEEFFFFF]  Motherboard resources
[0000004000000000 - 000000400FFFFFFF]  Intel(R) UHD Graphics
[0000006000000000 - 0000006000FFFFFF]  Intel(R) UHD Graphics
[0000006001000000 - 000000600100FFFF]  Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
[0000006001010000 - 000000600101FFFF]  Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
[0000006001020000 - 0000006001027FFF]  Performance Monitor
[000000600102C000 - 000000600102C0FF]  Intel(R) SMBus - 51A3
[0000007FFFFFC000 - 0000007FFFFFCFFF]  Intel(R) Serial IO I2C Host Controller - 51E9
[0000007FFFFFD000 - 0000007FFFFFDFFF]  Intel(R) Serial IO I2C Host Controller - 51E8
[0000007FFFFFE000 - 0000007FFFFFEFFF]  Intel(R) Serial IO I2C Host Controller - 51EB
[0000007FFFFFF000 - 0000007FFFFFFFFF]  Intel(R) Management Engine Interface #1
```

B.3 Large Memory Address Map



B.4 IRQ Mapping Chart

Interrupt request (IRQ)

(ISA) 0x00000000 (00)	System timer
(ISA) 0x00000003 (03)	Communications Port (COM2)
(ISA) 0x00000004 (04)	Communications Port (COM1)
(ISA) 0x00000005 (05)	Communications Port (COM3)
(ISA) 0x00000007 (07)	Communications Port (COM4)
(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1055
(ISA) 0x00000029 (41)	Trusted Platform Module 2.0
(ISA) 0x00000037 (55)	Microsoft ACPI-Compliant System
(ISA) 0x00000038 (56)	Microsoft ACPI-Compliant System
(ISA) 0x00000039 (57)	Microsoft ACPI-Compliant System
(ISA) 0x0000003A (58)	Microsoft ACPI-Compliant System
(ISA) 0x0000003B (59)	Microsoft ACPI-Compliant System
(ISA) 0x0000003C (60)	Microsoft ACPI-Compliant System
(ISA) 0x0000003D (61)	Microsoft ACPI-Compliant System
(ISA) 0x0000003E (62)	Microsoft ACPI-Compliant System
(ISA) 0x0000003F (63)	Microsoft ACPI-Compliant System
(ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
(ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
(ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
(ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
(ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System
(ISA) 0x00000045 (69)	Microsoft ACPI-Compliant System
(ISA) 0x00000046 (70)	Microsoft ACPI-Compliant System
(ISA) 0x00000047 (71)	Microsoft ACPI-Compliant System
(ISA) 0x00000048 (72)	Microsoft ACPI-Compliant System
(ISA) 0x00000049 (73)	Microsoft ACPI-Compliant System
(ISA) 0x0000004A (74)	Microsoft ACPI-Compliant System
(ISA) 0x0000004B (75)	Microsoft ACPI-Compliant System
(ISA) 0x0000004C (76)	Microsoft ACPI-Compliant System
(ISA) 0x0000004D (77)	Microsoft ACPI-Compliant System
(ISA) 0x0000004E (78)	Microsoft ACPI-Compliant System
(ISA) 0x0000004F (79)	Microsoft ACPI-Compliant System
(ISA) 0x00000050 (80)	Microsoft ACPI-Compliant System
(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
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(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
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(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
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(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
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(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System

(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
(ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
(ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
(ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
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(ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
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(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
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(ISA) 0x00000082 (130)	Microsoft ACPI-Compliant System
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(ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
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(ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
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(ISA) 0x000001AA (426)	Microsoft ACPI-Compliant System
(ISA) 0x000001AB (427)	Microsoft ACPI-Compliant System
(ISA) 0x000001AC (428)	Microsoft ACPI-Compliant System
(ISA) 0x000001AD (429)	Microsoft ACPI-Compliant System
(ISA) 0x000001AE (430)	Microsoft ACPI-Compliant System
(ISA) 0x000001AF (431)	Microsoft ACPI-Compliant System
(ISA) 0x000001B0 (432)	Microsoft ACPI-Compliant System
(ISA) 0x000001B1 (433)	Microsoft ACPI-Compliant System
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(ISA) 0x000001B3 (435)	Microsoft ACPI-Compliant System
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(ISA) 0x000001B6 (438)	Microsoft ACPI-Compliant System
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(ISA) 0x000001B9 (441)	Microsoft ACPI-Compliant System
(ISA) 0x000001BA (442)	Microsoft ACPI-Compliant System
(ISA) 0x000001BB (443)	Microsoft ACPI-Compliant System
(ISA) 0x000001BC (444)	Microsoft ACPI-Compliant System
(ISA) 0x000001BD (445)	Microsoft ACPI-Compliant System
(ISA) 0x000001BE (446)	Microsoft ACPI-Compliant System
(ISA) 0x000001BF (447)	Microsoft ACPI-Compliant System
(ISA) 0x000001C0 (448)	Microsoft ACPI-Compliant System
(ISA) 0x000001C1 (449)	Microsoft ACPI-Compliant System
(ISA) 0x000001C2 (450)	Microsoft ACPI-Compliant System
(ISA) 0x000001C3 (451)	Microsoft ACPI-Compliant System
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(ISA) 0x000001C8 (456)	Microsoft ACPI-Compliant System
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(ISA) 0x000001CB (459)	Microsoft ACPI-Compliant System
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(ISA) 0x000001CD (461)	Microsoft ACPI-Compliant System

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(ISA) 0x000001D9 (473)	Microsoft ACPI-Compliant System
(ISA) 0x000001DA (474)	Microsoft ACPI-Compliant System
(ISA) 0x000001DB (475)	Microsoft ACPI-Compliant System
(ISA) 0x000001DC (476)	Microsoft ACPI-Compliant System
(ISA) 0x000001DD (477)	Microsoft ACPI-Compliant System
(ISA) 0x000001DE (478)	Microsoft ACPI-Compliant System
(ISA) 0x000001DF (479)	Microsoft ACPI-Compliant System
(ISA) 0x000001E0 (480)	Microsoft ACPI-Compliant System
(ISA) 0x000001E1 (481)	Microsoft ACPI-Compliant System
(ISA) 0x000001E2 (482)	Microsoft ACPI-Compliant System
(ISA) 0x000001E3 (483)	Microsoft ACPI-Compliant System
(ISA) 0x000001E4 (484)	Microsoft ACPI-Compliant System
(ISA) 0x000001E5 (485)	Microsoft ACPI-Compliant System
(ISA) 0x000001E6 (486)	Microsoft ACPI-Compliant System
(ISA) 0x000001E7 (487)	Microsoft ACPI-Compliant System
(ISA) 0x000001E8 (488)	Microsoft ACPI-Compliant System
(ISA) 0x000001E9 (489)	Microsoft ACPI-Compliant System
(ISA) 0x000001EA (490)	Microsoft ACPI-Compliant System
(ISA) 0x000001EB (491)	Microsoft ACPI-Compliant System
(ISA) 0x000001EC (492)	Microsoft ACPI-Compliant System
(ISA) 0x000001ED (493)	Microsoft ACPI-Compliant System
(ISA) 0x000001EE (494)	Microsoft ACPI-Compliant System
(ISA) 0x000001EF (495)	Microsoft ACPI-Compliant System
(ISA) 0x000001F0 (496)	Microsoft ACPI-Compliant System
(ISA) 0x000001F1 (497)	Microsoft ACPI-Compliant System
(ISA) 0x000001F2 (498)	Microsoft ACPI-Compliant System
(ISA) 0x000001F3 (499)	Microsoft ACPI-Compliant System
(ISA) 0x000001F4 (500)	Microsoft ACPI-Compliant System
(ISA) 0x000001F5 (501)	Microsoft ACPI-Compliant System
(ISA) 0x000001F6 (502)	Microsoft ACPI-Compliant System
(ISA) 0x000001F7 (503)	Microsoft ACPI-Compliant System
(ISA) 0x000001F8 (504)	Microsoft ACPI-Compliant System
(ISA) 0x000001F9 (505)	Microsoft ACPI-Compliant System
(ISA) 0x000001FA (506)	Microsoft ACPI-Compliant System
(ISA) 0x000001FB (507)	Microsoft ACPI-Compliant System
(ISA) 0x000001FC (508)	Microsoft ACPI-Compliant System
(ISA) 0x000001FD (509)	Microsoft ACPI-Compliant System
(ISA) 0x000001FE (510)	Microsoft ACPI-Compliant System
(ISA) 0x000001FF (511)	Microsoft ACPI-Compliant System
(PCI) 0x00000013 (19)	Intel(R) Active Management Technology - SOL (COM3)
(PCI) 0x0000001B (27)	Intel(R) Serial IO I2C Host Controller - 51E8

(PCI) 0x00000028 (40) Intel(R) Serial IO I2C Host Controller - 51E9
(PCI) 0x0000002B (43) Intel(R) Serial IO I2C Host Controller - 51EB
(PCI) 0xFFFFFFE9 (-23) Intel(R) Management Engine Interface #1
(PCI) 0xFFFFFFEA (-22) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFEB (-21) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFEC (-20) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFED (-19) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFEE (-18) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFEF (-17) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFF0 (-16) Intel(R) Ethernet Controller I226-V
(PCI) 0xFFFFFFF1 (-15) Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
(PCI) 0xFFFFFFF2 (-14) Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
(PCI) 0xFFFFFFF3 (-13) Intel(R) UHD Graphics
(PCI) 0xFFFFFFF4 (-12) Intel(R) Ethernet Connection (16) I219-LM
(PCI) 0xFFFFFFF5 (-11) Standard NVM Express Controller
(PCI) 0xFFFFFFF6 (-10) Standard NVM Express Controller
(PCI) 0xFFFFFFF7 (-9) Standard NVM Express Controller
(PCI) 0xFFFFFFF8 (-8) Standard NVM Express Controller
(PCI) 0xFFFFFFF9 (-7) Standard NVM Express Controller
(PCI) 0xFFFFFFFA (-6) Standard NVM Express Controller
(PCI) 0xFFFFFFFB (-5) Standard NVM Express Controller
(PCI) 0xFFFFFFFC (-4) Standard NVM Express Controller
(PCI) 0xFFFFFFFD (-3) Standard NVM Express Controller
(PCI) 0xFFFFFFFE (-2) Standard SATA AHCI Controller