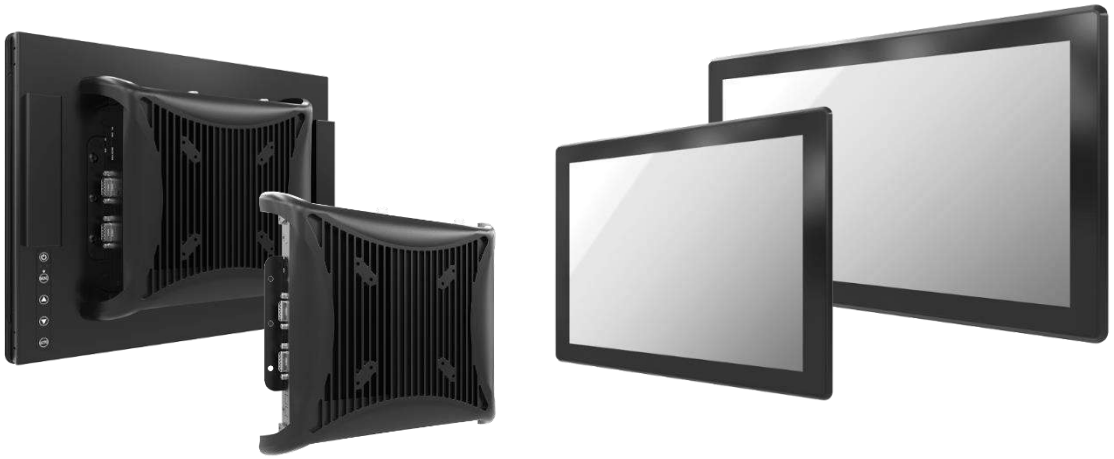
USER'S MANUAL

VIO-200-PC100-EHL Series

Industrial Panel PCs



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Prefaces

Revision

Revision	Description	Date
1.0	Manual Released	2023/08/25

Disclaimer

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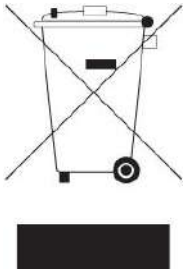
Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. Please recycle to minimize pollution and ensure environment protection.



Safety Precautions

Before installing and using the equipment, please read the following precautions:

- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The power outlet shall be installed near the equipment and shall be easily accessible.
- Turn off the system power and disconnect the power cord from its source before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge
- of power could ruin sensitive components. Make sure the equipment is properly grounded.
- When the power is connected, never open the equipment. The equipment should be opened only by qualified service personnel.
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Disconnect this equipment from the power before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- Avoid the dusty, humidity and temperature extremes.
- Do not place heavy objects on the equipment.
- If the equipment is not used for long time, disconnect it from the power to avoid being damaged by transient over-voltage.
- The storage temperature shall be above -20°C and below 70°C.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
- If one of the following situation arises, get the equipment checked be service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated into the equipment.
    - The equipment has been exposed to moisture.
    - The equipment does not work well or it cannot work according the user's manual.
    - The equipment has been dropped and damaged.
    - The equipment has obvious signs of breakage.

Technical Support and Assistance

1. Visit the Premio Inc website at www.premioinc.com where you can find the latest information about the product.
2. Contact your distributor, our technical support team or sales representative for technical support if you need additional assistance. Please have following information ready before you call:
   - Model name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Conventions Used in this Manual

WARNING This indication alerts operators to an operation that, if not strictly observed, may result in severe injury.

CAUTION This indication alerts operators to an operation that, if not strictly observed, may result in safety hazards to personnel or damage to equipment.

NOTE This indication provides additional information to complete a task easily.

Package Contents

Before installation, please ensure all the items listed in the following table are included in the package.

VIO-212-PC100-EHL | VIO-212-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-212-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	10
3	Screw Pack	1

VIO-215-PC100-EHL | VIO-215-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-215-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	10
3	Screw Pack	1

VIO-W215-PC100-EHL | VIO-W215-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-W215-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	8
3	Screw Pack	1

VIO-217-PC100-EHL | VIO-217-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-217-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	10
3	Screw Pack	1

VIO-219-PC100-EHL | VIO-219-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-219-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	14
3	Screw Pack	1

VIO-W221-PC100-EHL | VIO-W221-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-W221-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	12
3	Screw Pack	1

VIO-W224-PC100-EHL | VIO-W224-PC100-EHL-1E

Item	Description	Q'ty
1	VIO-W224-PC100-EHL Series Panel PC	1
2	Panel Mount Kit	12
3	Screw Pack	1

Ordering Information

12.1" XGA Thin Frame Panel PC	Product Description
VIO-212R-PC100-EHL	12.1" XGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-212C-PC100-EHL	12.1" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-212R-PC100-EHL-1E	12.1" XGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-212C-PC100-EHL-1E	12.1" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

15" XGA Thin Frame Panel PC	Product Description
VIO-215R-PC100-EHL	15" XGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-215C-PC100-EHL	15" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-215R-PC100-EHL-1E	15" XGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-215C-PC100-EHL-1E	15" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

17" SXGA Thin Frame Panel PC	Product Description
VIO-217R-PC100-EHL	17" SXGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-217C-PC100-EHL	17" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-217R-PC100-EHL-1E	17" SXGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-217C-PC100-EHL-1E	17" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

19" SXGA Thin Frame Panel PC	Product Description
VIO-219R-PC100-EHL	19" SXGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-219C-PC100-EHL	19" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-219R-PC100-EHL-1E	19" SXGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-219C-PC100-EHL-1E	19" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

15.6" Full HD Thin Frame Panel PC	Product Description
VIO-W215R-PC100-EHL	15.6" Full HD Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W215C-PC100-EHL	15.6" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W215R-PC100-EHL-1E	15.6" XGA Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-W215C-PC100-EHL-1E	15.6" XGA Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

21.5" Full HD Thin Frame Panel PC	Product Description
VIO-W221R-PC100-EHL	21.5“ Full HD Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W221C-PC100-EHL	21.5“ Full HD Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W221R-PC100-EHL-1E	21.5“ Full HD Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-W221C-PC100-EHL-1E	21.5“ Full HD Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

23.8" Full HD Thin Frame Panel PC	Product Description
VIO-W224R-PC100-EHL	23.8“ Full HD Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W224C-PC100-EHL	23.8“ Full HD Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413
VIO-W224R-PC100-EHL-1E	23.8“ Full HD Resistive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe
VIO-W224C-PC100-EHL-1E	23.8“ Full HD Capacitive Touch Thin Frame Panel PC with Intel® Celeron® Processor J6413, 1x Universal I/O Bracket, 1x PCIe

Optional Accessories

Model No.	Product Description
1-E09A06008	Adapter AC/DC 12V 5A 60W with 3pin Terminal Block Plug 5.0mm Pitch
SFICBL022	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm
3-DINR-0003	DIN-Rail Mount Kit

Chapter 1

Product Introductions

1.1 Overview

The VIO-200-PC100-EHL series Panel PC is based on Intel® Celeron® Processor J6413. Designed with flat surface, IP 65 dust / waterproof front panel, and aluminum die-casting front frame with rugged body structure, it is a versatile I/O connections, and rugged reliability industrial panel PC.

The VIO-200-PC100-EHL series supports Multi-Mode Display Module which makes it more flexible in system maintaining and upgrading. It offers modularize expansion I/O, rich connectivity interfaces, wide range (9~36V) DC power input, and high reliability even operating in temperature extremes.

Featuring with completely high functional, VIO-200-PC100-EHL series are ruggedized display systems that can operate in harsh environments and easy to install and maintain. A build in over voltage protection (OVP), over current protection (OCP), and reverse protection DC power input makes VIO-200-PC100-EHL series are safety system for all industrial applications.

Key Features

- 12.1"~ 23.8" Multi-functional All-in-One Panel PCs
- Intel® Celeron® Processor J6413
- 1x 260-pin DDR4 SODIMM. max up to 32GB
- 1x 2.5" SATA HDD bay, 1x mSATA, 2x SIM socket
- 1x Full-size Mini PCIe (USB 2.0, SATA)
- 2x LAN, 1x DP, 1x HDMI, 1x LVDS
- 6x RS-232/422/485 (w/ 2x internal)
- 2x USB 3.2 Gen 2, 2x USB 2.0
- 8x DI + 8x DO with isolation
- 9 to 36VDC wide range power input
- Designed with aluminum die-casting front frame
- IP65 compliant front panel / Fanless Industrial Display Computer
- Two 10W internal speakers built-in
- Multi-language OSD built-in
- 1x Universal I/O Bracket for Expansion (VIO-XXX-PC100-EHL-1E Only)

1.2 Hardware Specification

Hardware Specification

Display (Model No.)	LCD Size	Max. Resolution	Brightness (cd/m2):	Contrast Ratio	LCD Color	Pixel Pitch (mm):	Viewing Angle (H-V):	Backlight MTBF
VIO-212-PC100-EHL VIO-212-PC100-EHL-1E	12.1" (4:3)	1024 x 768 (XGA)	600	1000 : 1	16.2M	0.24 (H) x 0.24 (V)	178 / 178	50000 hrs (LED Backlight)
VIO-215-PC100-EHL VIO-215-PC100-EHL-1E	15" (4:3)		350		16.7M	0.297 (H) x 0.297 (V)	170 / 160	
VIO-217-PC100-EHL VIO-217-PC100-EHL-1E	17" (4:3)	1280 x 1024 (SXGA)		800 : 1		0.264 (H) x 0.264 (V)	160 / 140	
VIO-219-PC100-EHL VIO-219-PC100-EHL-1E	19" (4:3)			1000 : 1		0.294 (H) x 0.294 (V)	170 / 160	
VIO-W215-PC100-EHL VIO-W215-PC100-EHL-1E	15.6" (16:9)	1920 x 1080 (Full HD)	500			0.17925 (H) x 0.17925 (V)	178 / 178	
VIO-W221-PC100-EHL VIO-W221-PC100-EHL-1E	21.5" (16:9)					0.248 (H) x 0.248 (V)		
VIO-W224-PC100-EHL VIO-W224-PC100-EHL-1E	23.8" (16:9)		450			0.2745 (H) x 0.2745 (V)		30000 hrs (LED Backlight)

Touch	Model No.
Resistive 5-Wire	VIO-212R-PC100-EHL, VIO-212R-PC100-EHL-1E VIO-215R-PC100-EHL, VIO-215R-PC100-EHL-1E VIO-217R-PC100-EHL, VIO-217R-PC100-EHL-1E VIO-219R-PC100-EHL, VIO-219R-PC100-EHL-1E VIO-W215R-PC100-EHL, VIO-W215R-PC100-EHL-1E VIO-W221R-PC100-EHL, VIO-W221R-PC100-EHL-1E VIO-W224R-PC100-EHL, VIO-W224R-PC100-EHL-1E
Projected Capacitive	VIO-212C-PC100-EHL, VIO-212C-PC100-EHL-1E VIO-215C-PC100-EHL, VIO-215C-PC100-EHL-1E VIO-217C-PC100-EHL, VIO-217C-PC100-EHL-1E VIO-219C-PC100-EHL, VIO-219C-PC100-EHL-1E VIO-W215C-PC100-EHL, VIO-W215C-PC100-EHL-1E VIO-W221C-PC100-EHL, VIO-W221C-PC100-EHL-1E VIO-W224C-PC100-EHL, VIO-W224C-PC100-EHL-1E

Hardware Specification

System		
Processor	Intel® Celeron® J6413 Processor Quad core (1.5M Cache,1.8GHz up to 3.00 GHz) FC-BGA16F, Tray 10W	
System Chipset	SoC Integrated	
LAN Chipset	GbE1: Intel® I210 (Support Wake-on-LAN and PXE) 2.5 GbE2: Intel® I225 (Support Wake-on-LAN and PXE)	
Audio Codec	Realtek ALC888S	
System Memory	1x 260-Pin DDR4 2400/2667/3200MT/s SODIMM. Max. up to 32 GB	
BIOS	AMI 128Mbit SPI BIOS	
TPM	TPM 2.0	
Watchdog	Software Programmable Supports 1~255 sec. System Reset	

Storage		
M.2	1x M.2 (E Key, PCIe x1, USB 2.0, 2230) 1x M.2 (B Key, PCIex 2 + USB 3.2 Gen1, 2242/3042/3052)	
mSATA	1x mSATA	
SIM Socket	2x External SIM socket	
SSD/HDD	1x Removable 2.5" SATA HDD Bay	

Expansion		
Mini PCIe	1x Full-size Mini PCIe (USB 2.0, SATA)	
PCIe	**VIO-xxx-PC100-EHL**	**VIO-xxx-PC100-EHL-1E**
	-	1x PCIe x4 (1-lanes)

Hardware Specification

I/O		
Audio	1x Mic-in, 1x Line-out	
CAN	2x CAN 2.0 A/B 2-pin Header (Internal)	
COM	4x RS-232/422/485 2x RS-232/422/485 (internal)	
DIO	8 in / 8 out (Isolated)	
LAN	2x RJ45	
Universal I/O Bracket	**VIO-xxx-PC100-EHL**	**VIO-xxx-PC100-EHL-1E**
	-	1x Universal I/O Bracket (By mini PCIe interface)
USB	2x USB 3.2 Gen 2 (10 Gbps) 2x USB 2.0	
DP	1x DisplayPort 1.2 (4096 x 2160@60Hz)	
HDMI	1x HDMI 2.0b (4096 x 2160@60Hz) (Optional)	
Others	4x WiFi Antenna Holes 1x Power Switch 1x AT/ATX Switch 1x Remote Power On/Off 1x DB9 Cutting Hole	
Optical Bonding	Optional, contact us for more information	
OSD	LCD On/Off, Auto, Menu, Up and Down Multi-language	
Speaker	AMP 10W + 10W	
	AMP 5W + 5W (VIO-212-PC100-EHL, VIO-212-PC100-EHL-1E only)	

Operating System	
Windows	Windows 10, Windows 11
Linux	Linux kernel 5.X

Construction
Extruded Aluminum with Heavy Duty Metal

Hardware Specification

Power	
Power Adapter	Optional AC/DC 12V/5A, 60W
Power Management	Power Ignition Management (by Optional Module)
Power Mode	AT, ATX
Power Supply Voltage	9~36 VDC
Power Connector	3-Pin Terminal Blcok
Power Protection	OVP (Over Voltage Protection) OCP (Over Current Protection) Reserve Protection

Environment	
Operating Temperature	0°C to 50°C (19", 21.5", 23.8") 0°C to 60°C (12.1", 15", 17", 15.6")
Storage Temperature	-20°C to 60°C (19", 21.5", 23.8") -20°C to 70°C (12.1", 15", 17", 15.6")
Relative Humidity	10%~80% (non-condensing)
IP Level	IP 65 Compliant Front Panel
Certification	CE, FCC Class A
Vibration	With SSD: 1.5 Grms, 5 - 500 Hz, 0.5 hr/axis With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis
Shock	With SSD: 20G, half sine, 11ms

Physical (Model No.)	Dimensions	Weights	Mounting Options
VIO-212-PC100-EHL	319 (W) x 257 (D) x 61.7 (H) mm	6.17 kg	VESA Mounting Holes 75 x 75mm, 100 x 100mm
VIO-212-PC100-EHL-1E	319 (W) x 257 (D) x 83.7 (H) mm	6.29 kg	
VIO-215-PC100-EHL	377 (W) x 301 (D) x 64.7 (H) mm	5.12 kg	
VIO-215-PC100-EHL-1E	377 (W) x 301 (D) x 87.7 (H) mm	5.24 kg	
VIO-217-PC100-EHL	407.5 (W) x 339 (D) x 70.5 (H) mm	7.27 kg	
VIO-217-PC100-EHL-1E	407.5 (W) x 339 (D) x 92.5 (H) mm	7.48 kg	
VIO-219-PC100-EHL	450 (W) x 375 (D) x 71 (H) mm	7.68 kg	
VIO-219-PC100-EHL-1E	450 (W) x 375 (D) x 93 (H) mm	7.79 kg	
VIO-W215-PC100-EHL	398 (W) x 247 (D) x 70.7 (H) mm	6.46 kg	
VIO-W215-PC100-EHL-1E	398 (W) x 247 (D) x 92.7 (H) mm	6.57 kg	
VIO-W221-PC100-EHL	527.5 (W) x 323 (D) x 71 (H) mm	8.11 kg	
VIO-W221-PC100-EHL-1E	527.5 (W) x 323 (D) x 93 (H) mm	8.22 kg	
VIO-W224-PC100-EHL	588 (W) x 360 (D) x 71.8 (H) mm	9.82 kg	
VIO-W224-PC100-EHL-1E	588 (W) x 360 (D) x 93.8 (H) mm	10.11 kg	

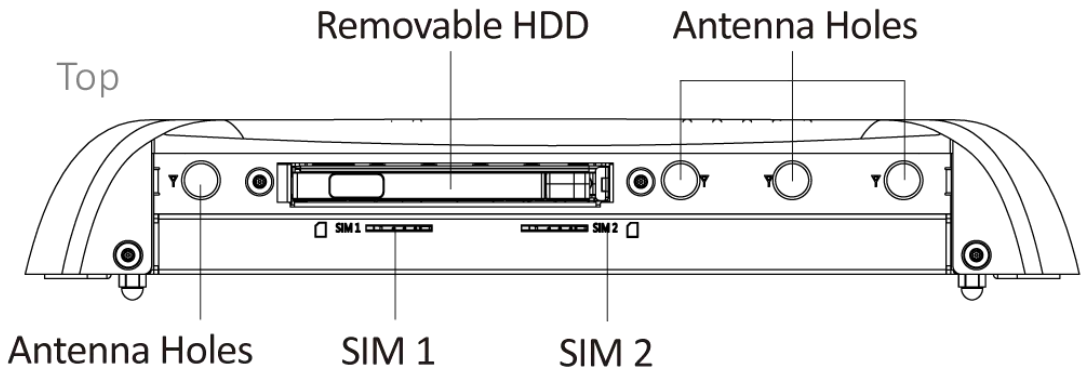
1.3 System I/O

1.3.1 PC100-EHL (Top & Bottom)

Removable HDD Bay
Used to inserts a 2.5" HDD device

Antenna hole
Used to connect an antenna for optional Mini-PCIe WiFi module

SIM Card Socket
Used to insert SIM card

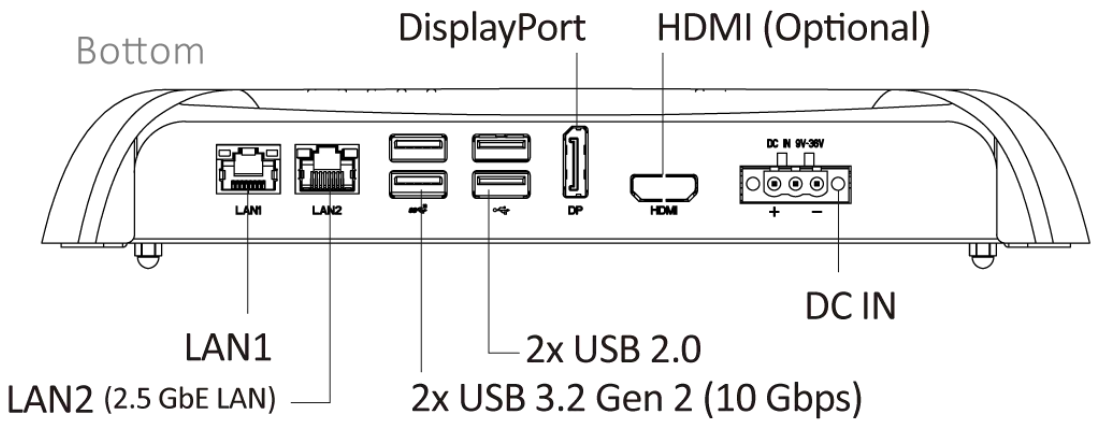


DC IN
Used to plug a DC power input with terminal block

DisplayPort
Used to connect a DisplayPort monitor

4x USB port
Used to connect USB device

LAN port
Used to connect the system to a local area network



PC100-EHL (Left & Right)

ATX power on/off switch
Press to power-on or power-off the system

Power LED
Indicates the power status of the system

HDD LED
Indicates the status of the hard drive

Reset switch
Press to reset the system

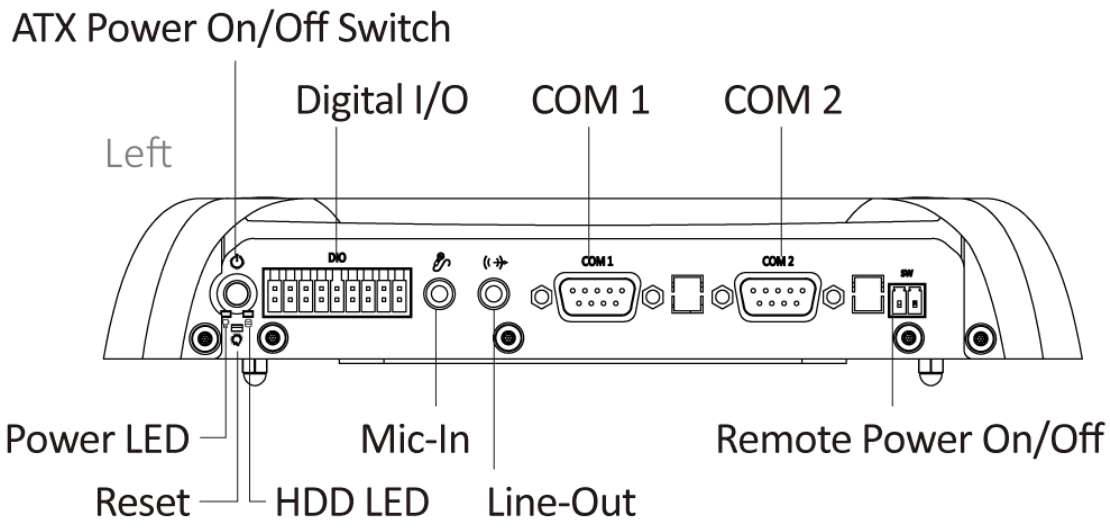
Digital I/O Terminal Block
The Digital I/O terminal block supports 8 digital input and 8 digital output

Line-out
Used to connect a speaker

Mic-in
Used to connect a microphone

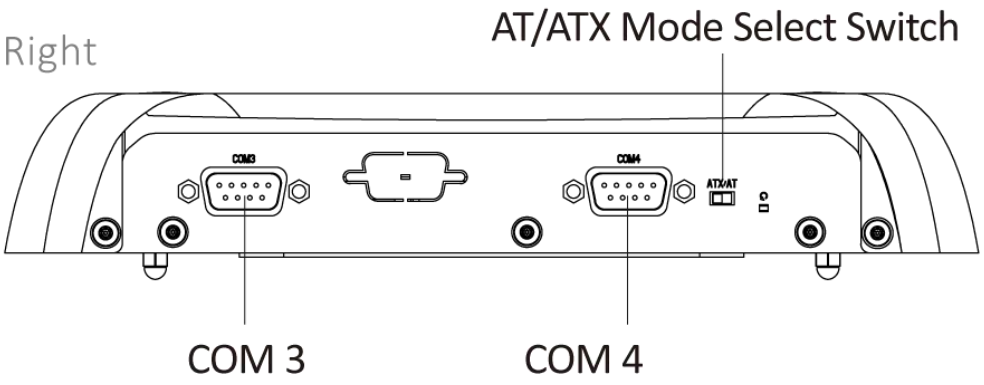
Remote Power on/off Terminal Block
Used to plug a remote power on/off terminal block

COM port
COM1 ~ COM2 support RS232/422/485 serial device



COM port
COM3~4 support RS232/422/485 serial device

AT/ATX mode select switch
Used to select AT or ATX power mode

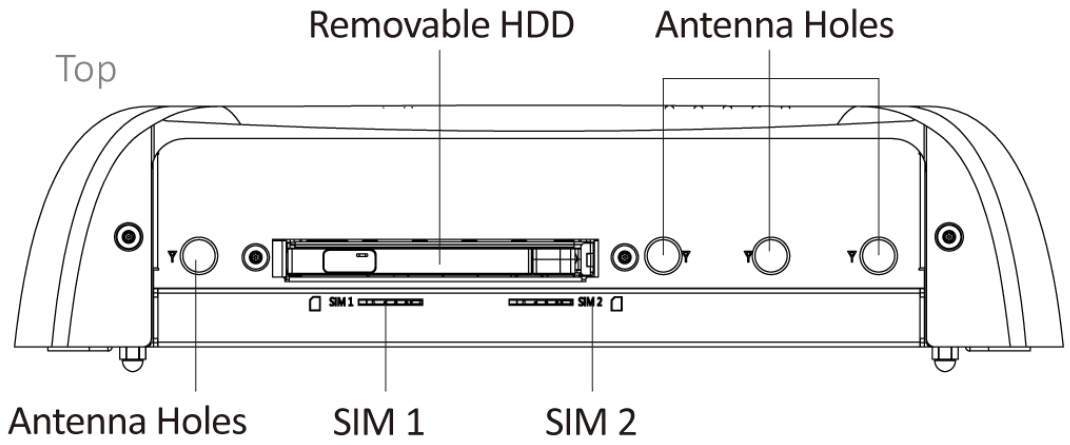


1.3.2 **PC100-EHL-1E** (Top & Bottom)

Removable HDD Bay
Used to inserts a 2.5" HDD device

Antenna hole
Used to connect an antenna for optional Mini-PCIe WiFi module

SIM Card Socket
Used to insert SIM card

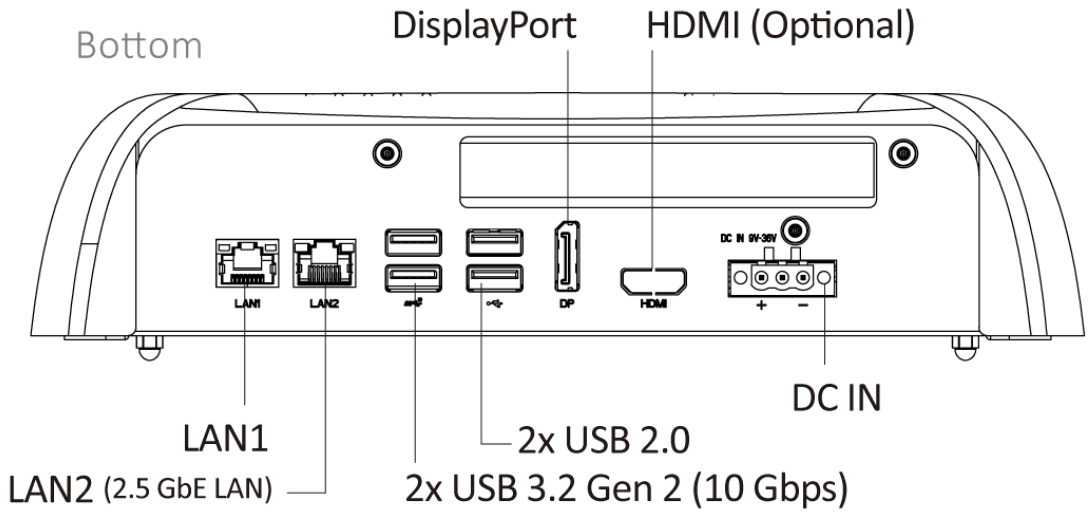


DC IN
Used to plug a DC power input with terminal block

DisplayPort
Used to connect a DisplayPort monitor

4x USB port
Used to connect USB device

LAN port
Used to connect the system to a local area network



PC100-EHL-1E (Left & Right)

ATX power on/off switch
Press to power-on or power-off the system

Power LED
Indicates the power status of the system

HDD LED
Indicates the status of the hard drive

Reset switch
Press to reset the system

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The Digital I/O terminal block supports 8 digital input and 8 digital output

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Used to connect a speaker

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Used to plug a remote power on/off terminal block

COM port
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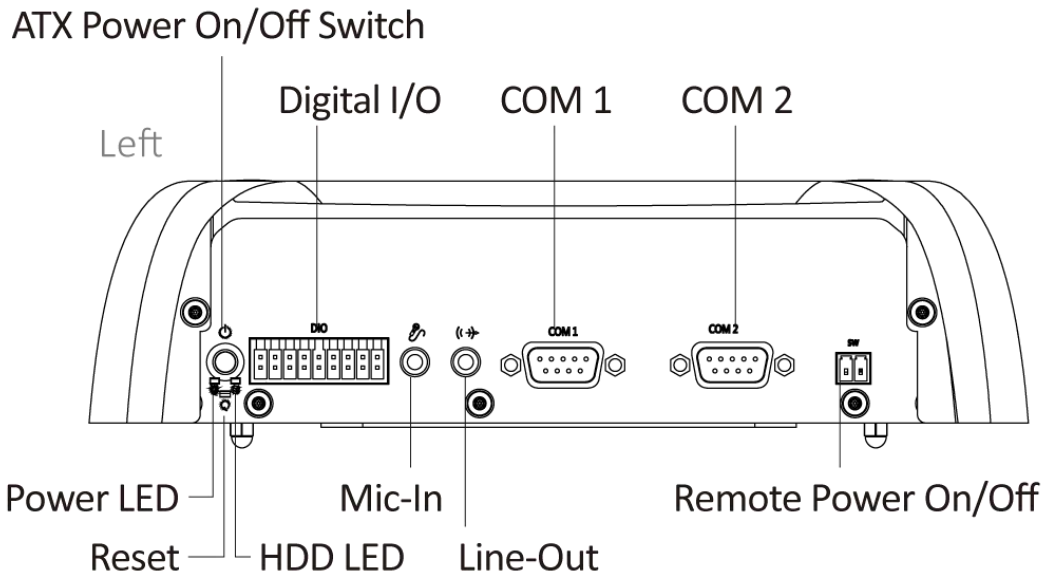
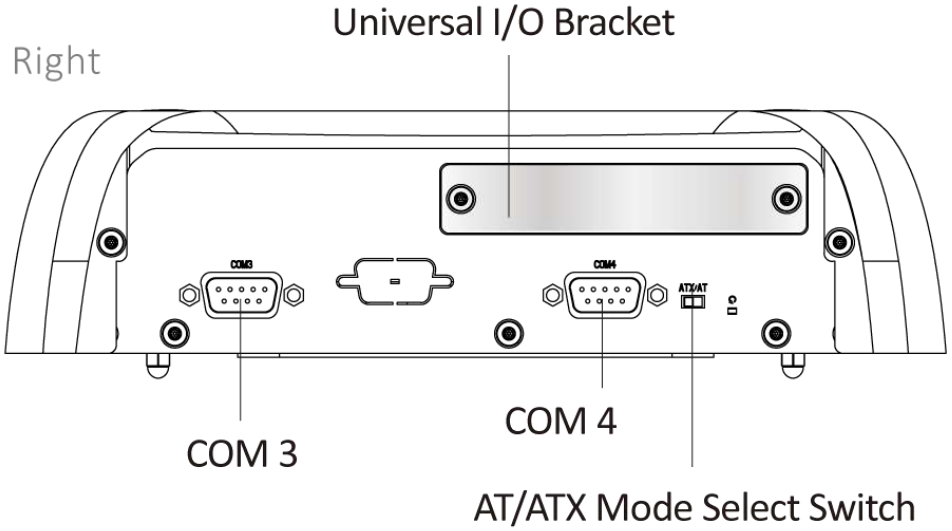


COM port
COM3~4 support RS232/422/485 serial device

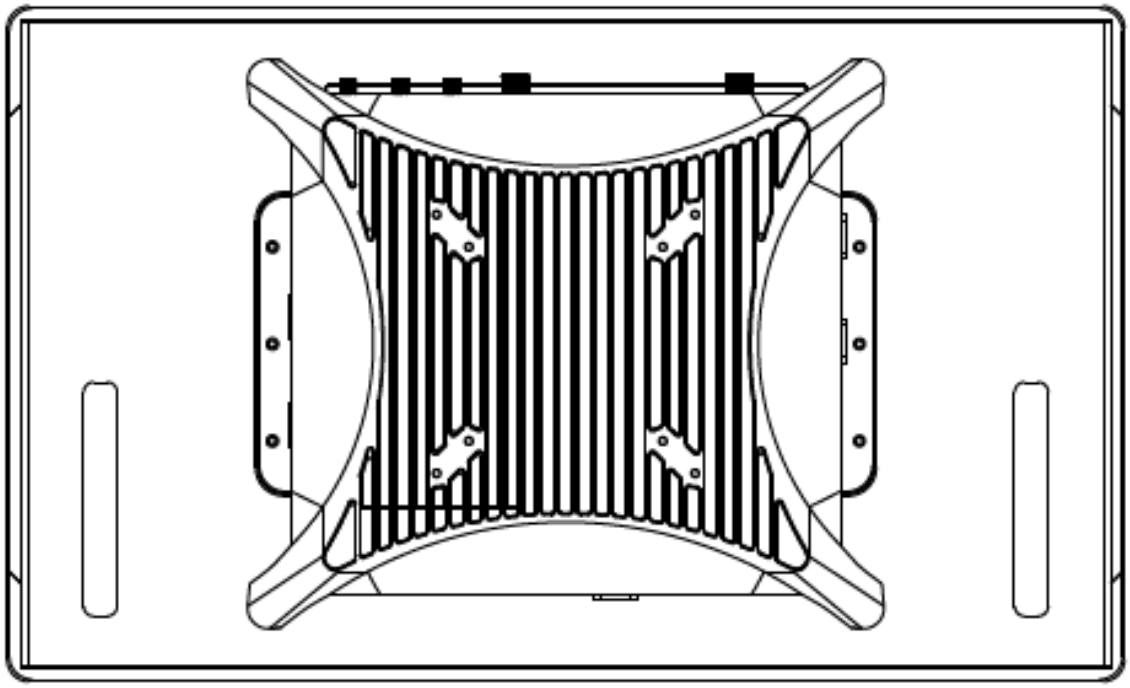
AT/ATX mode select switch
Used to select AT or ATX power mode

Universal I/O Bracket
Used to customized I/O output
(VIO-xxx/PC100-EHL-1E only)



1.3.3 VESA Mounting Hole

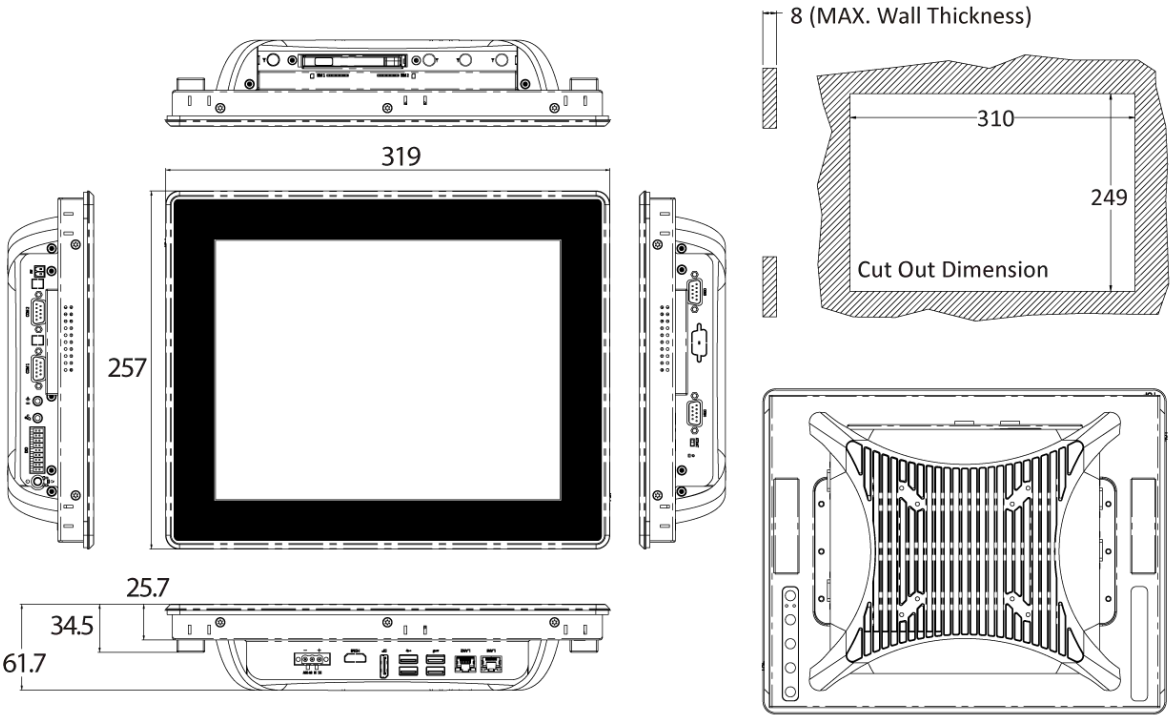
These are mounting holes for VESA mount (75x75mm and 100x100mm)



1.4 Mechanical Dimensions

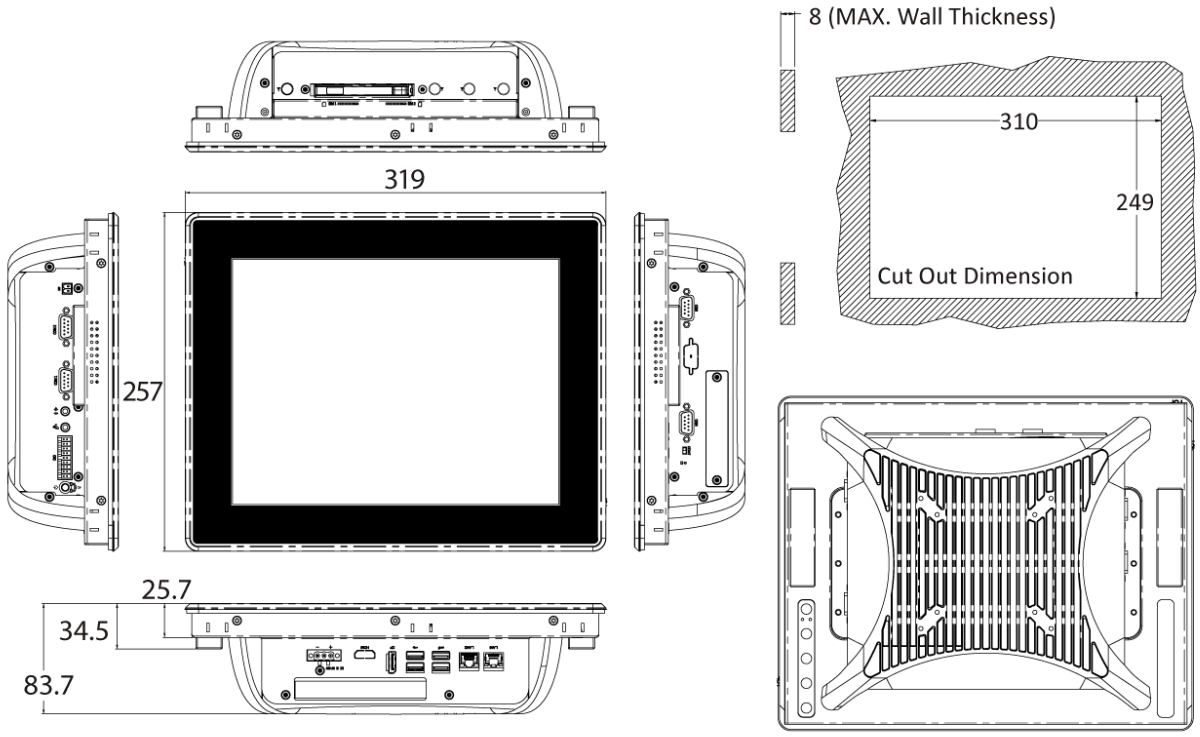
1.4.1 VIO-212-PC100-EHL

Unit: mm



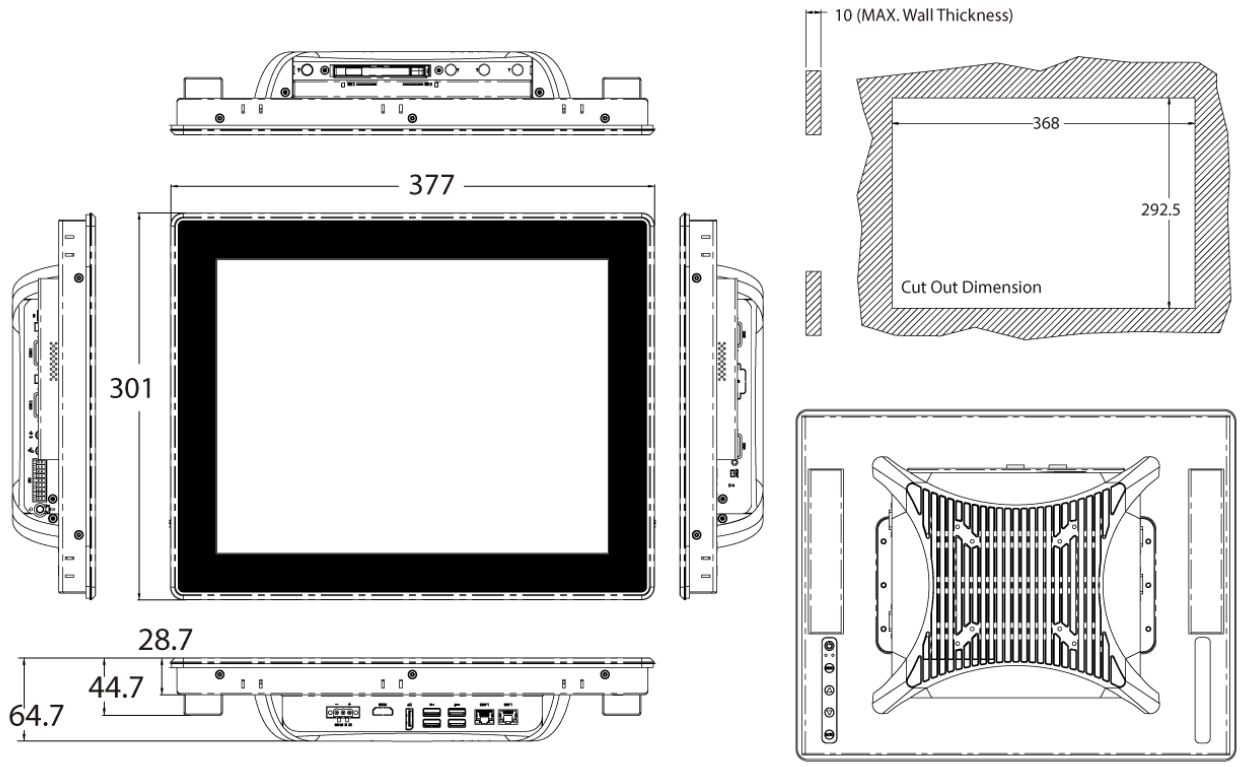
VIO-212-PC100-EHL -1E

Unit: mm



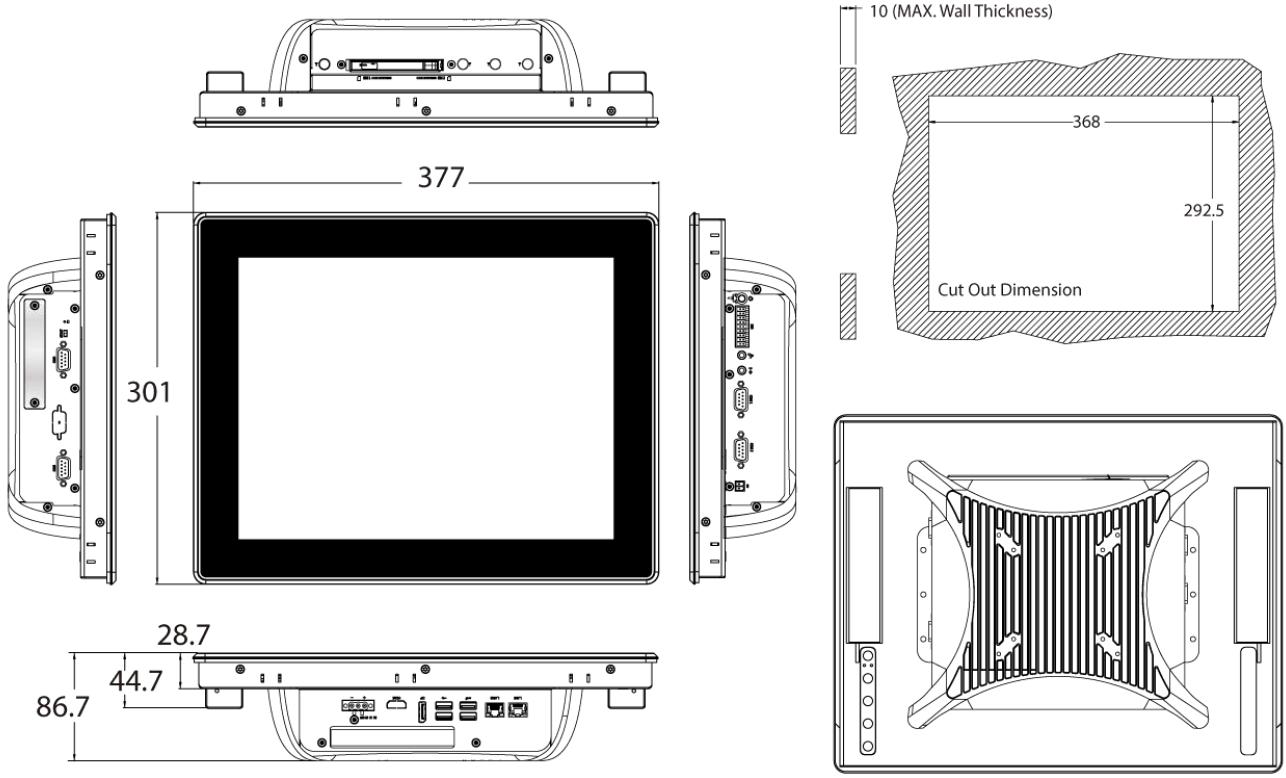
1.4.2 VIO-215-PC100-EHL

Unit: mm



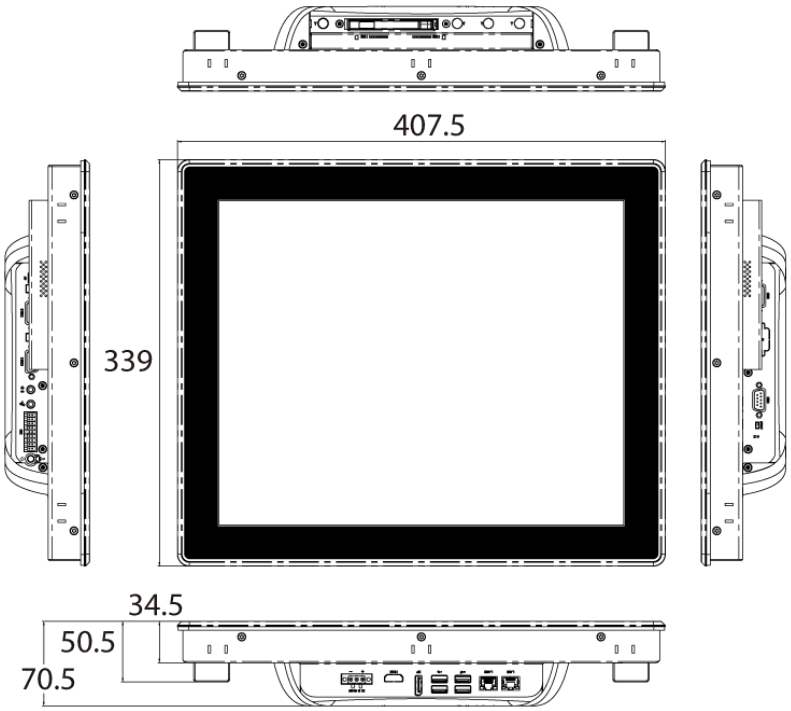
VIO-215-PC100-EHL-1E

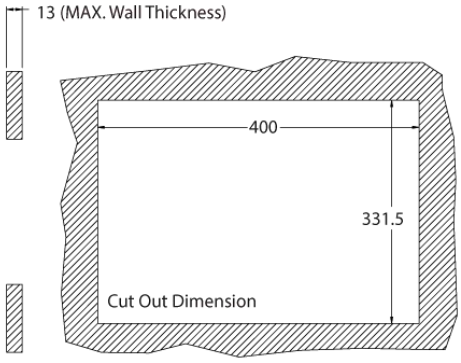
Unit: mm

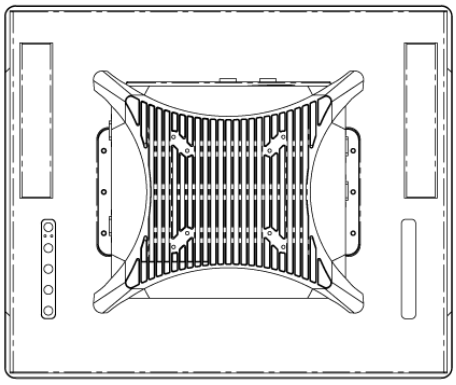


1.4.3 VIO-217-PC100-EHL

Unit: mm

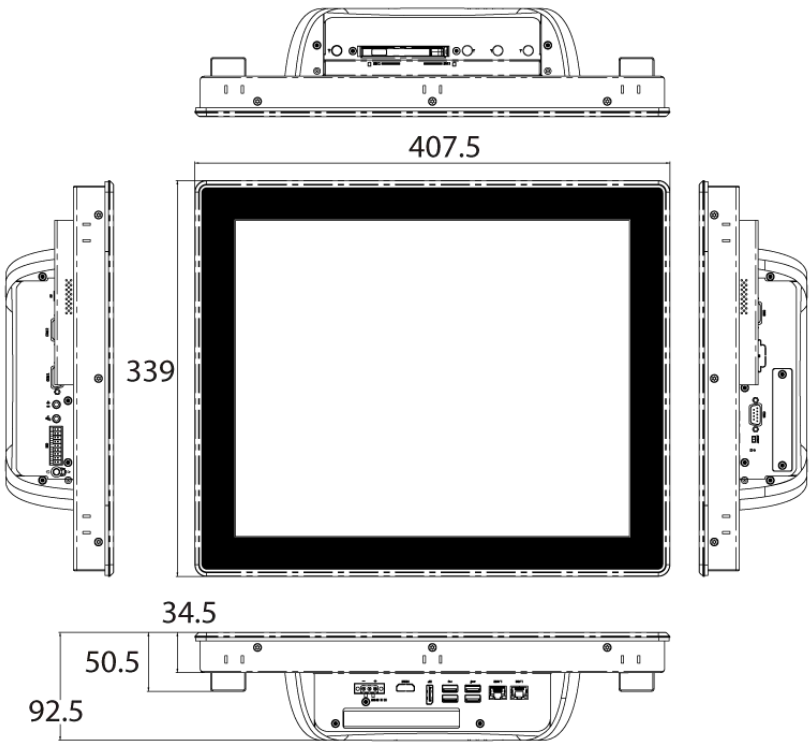


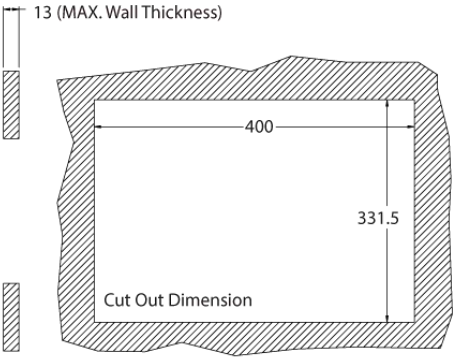


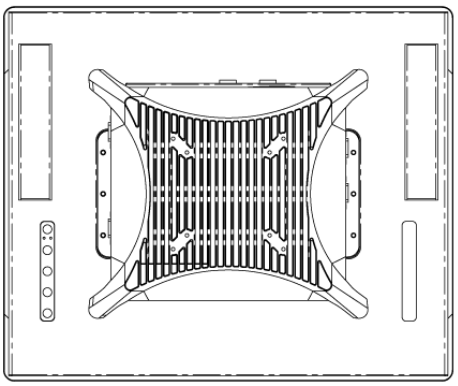


VIO-217-PC100-EHL-1E

Unit: mm

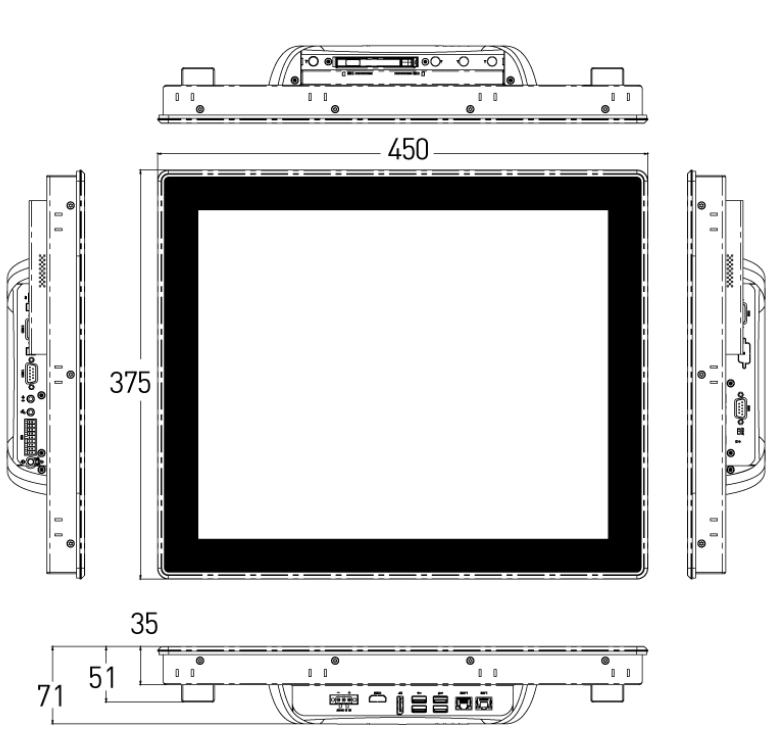


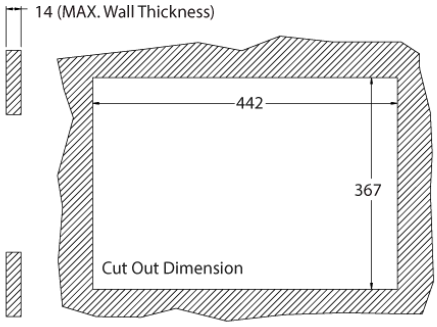


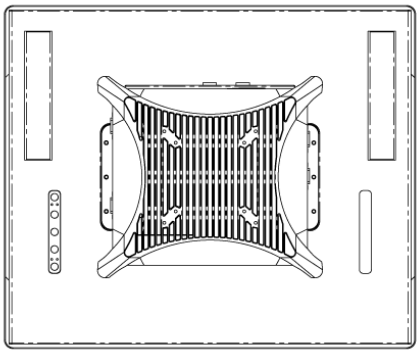


1.4.4 VIO-219-PC100-EHL

Unit: mm

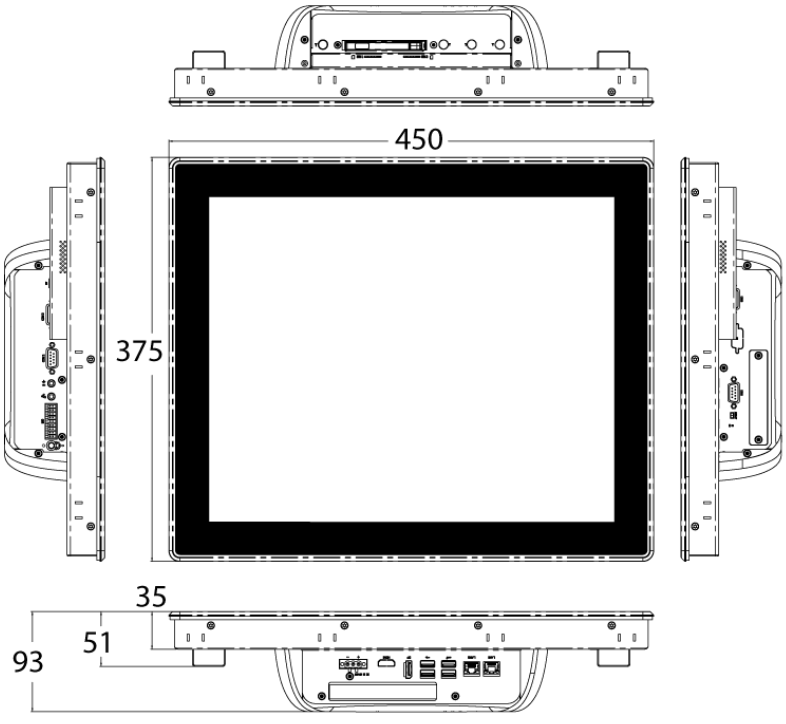


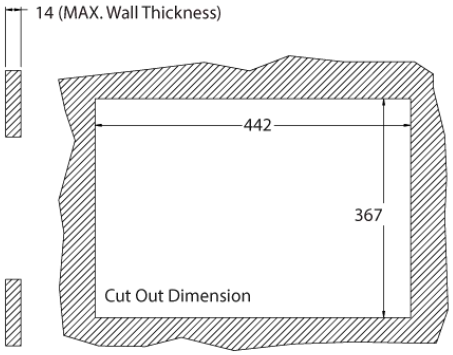


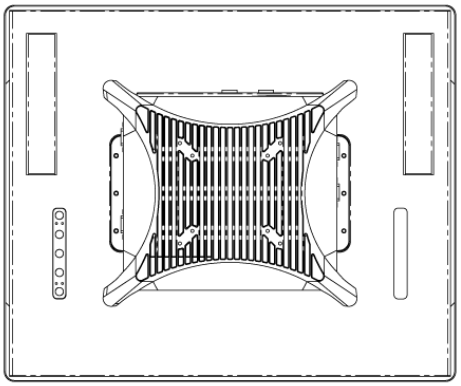


VIO-219-PC100-EHL-1E

Unit: mm

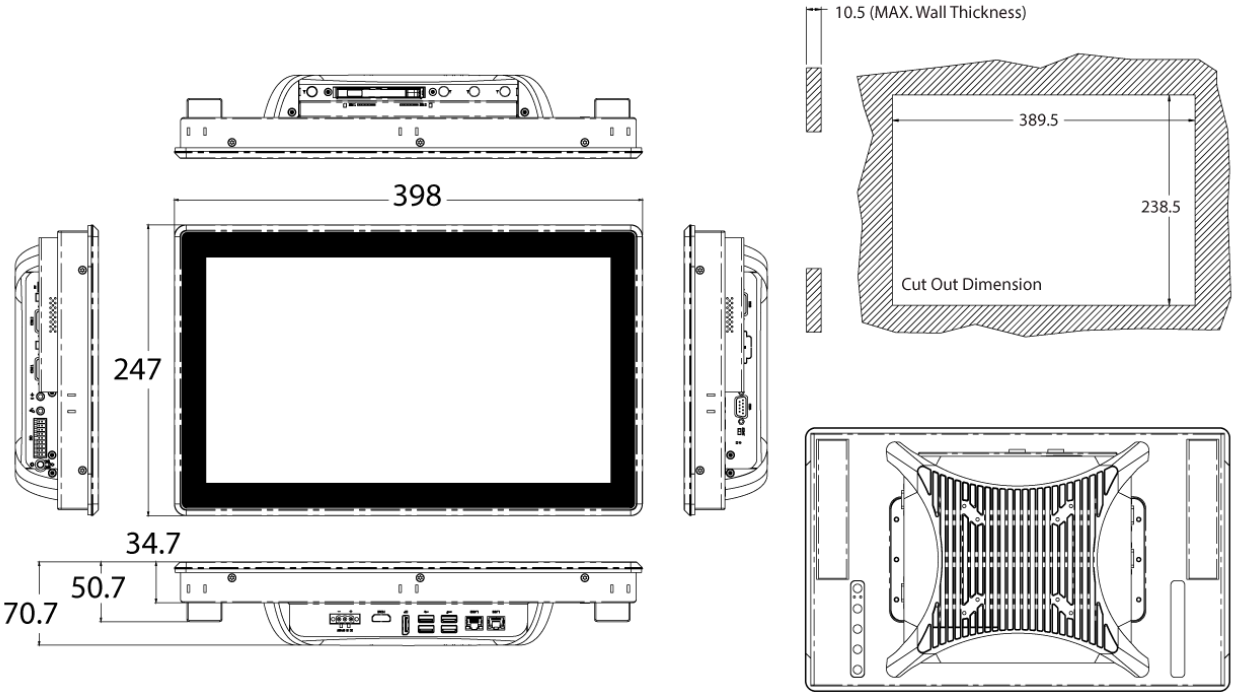






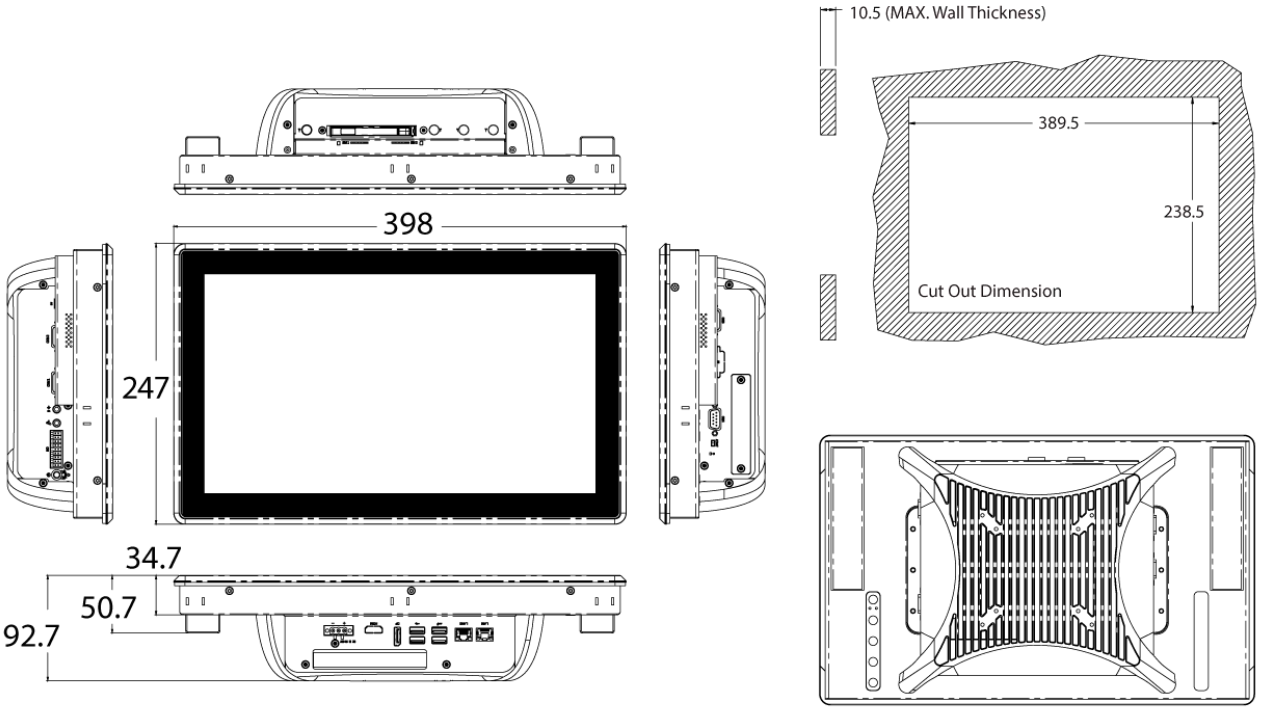
1.4.5 VIO-W215-PC100-EHL

Unit: mm



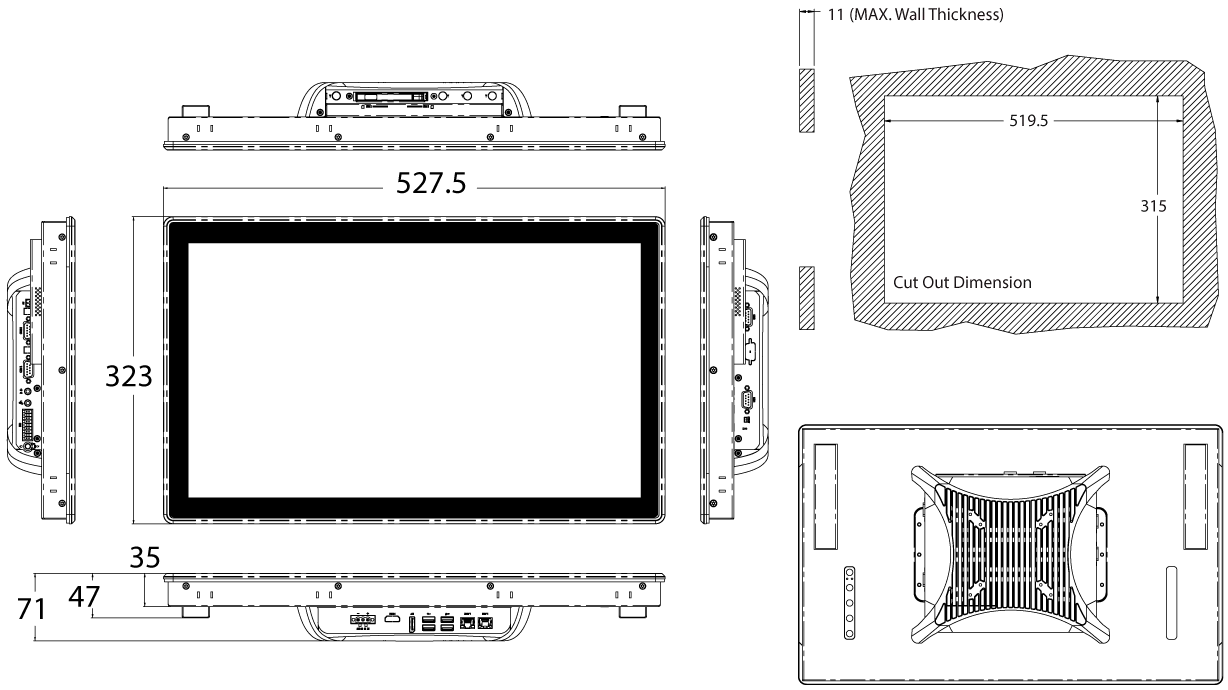
VIO-W215-PC100-EHL-1E

Unit: mm



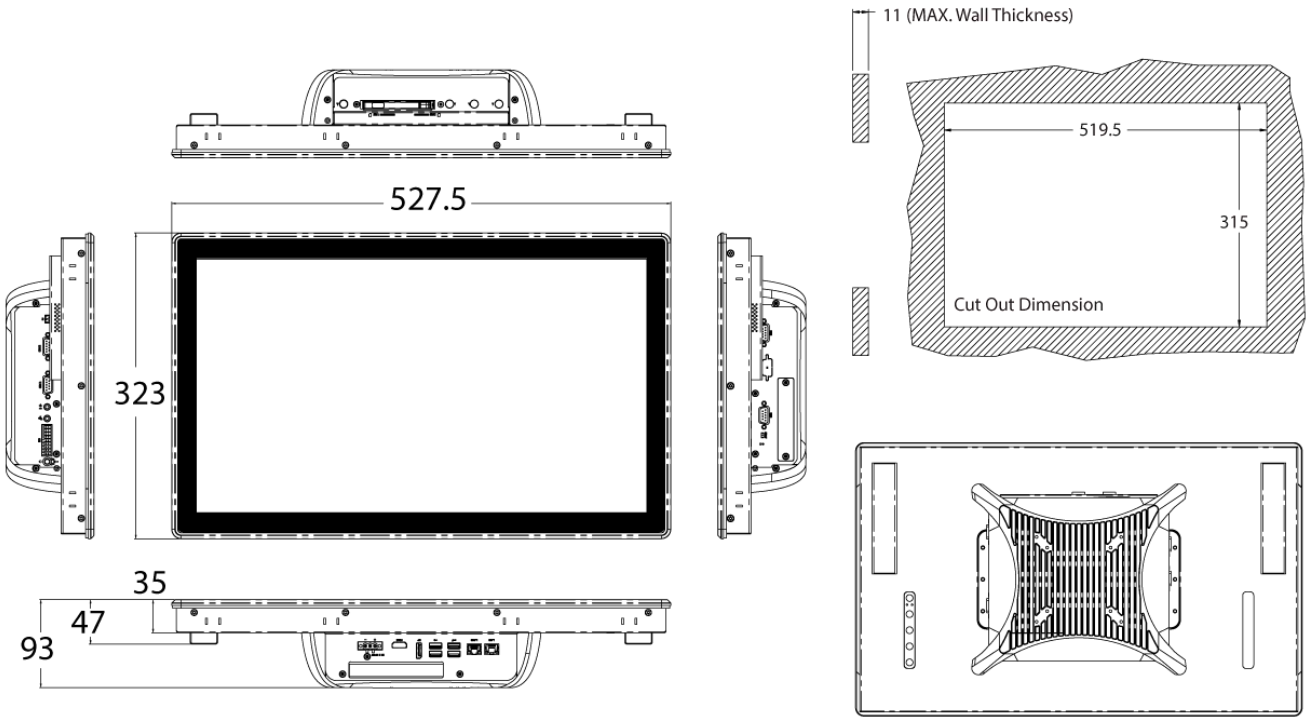
1.4.6 VIO-W221-PC100-EHL

Unit: mm



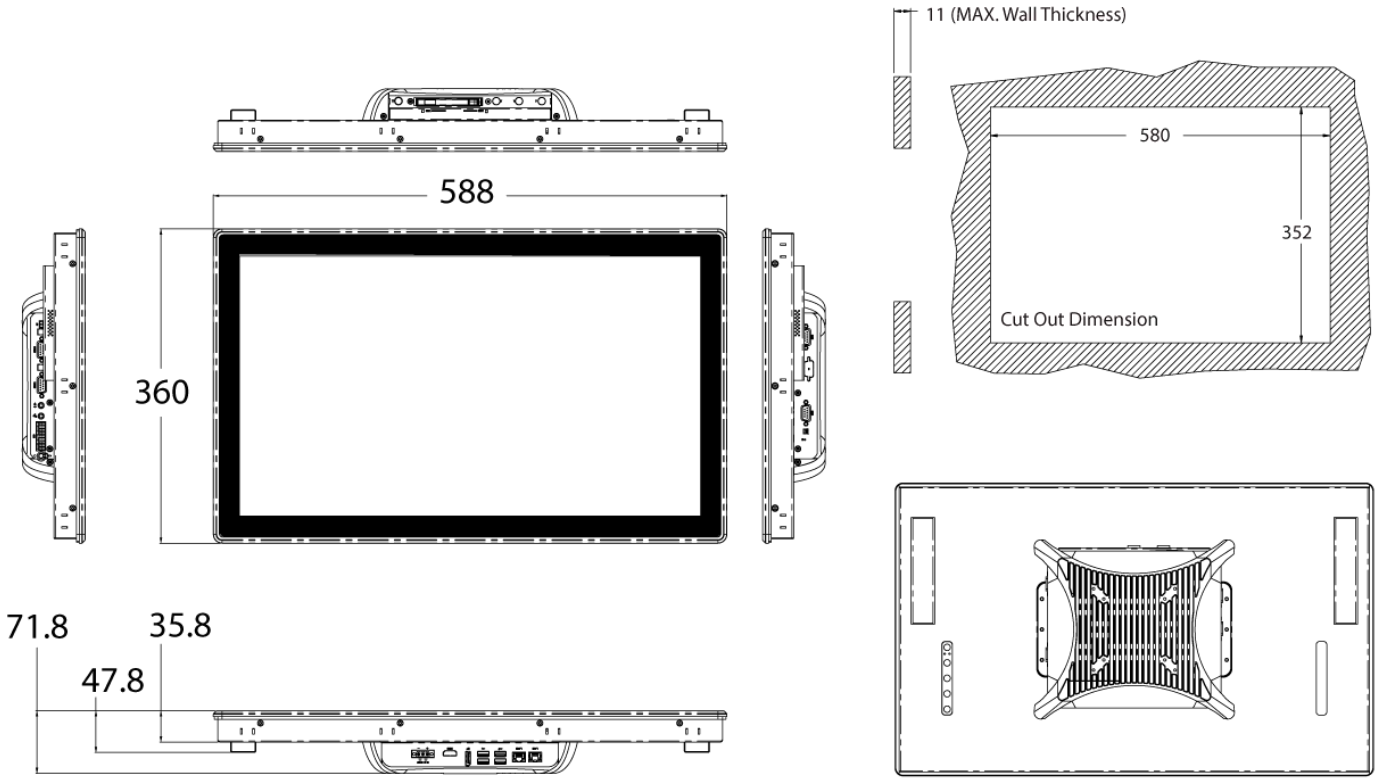
VIO-W221-PC100-EHL-1E

Unit: mm



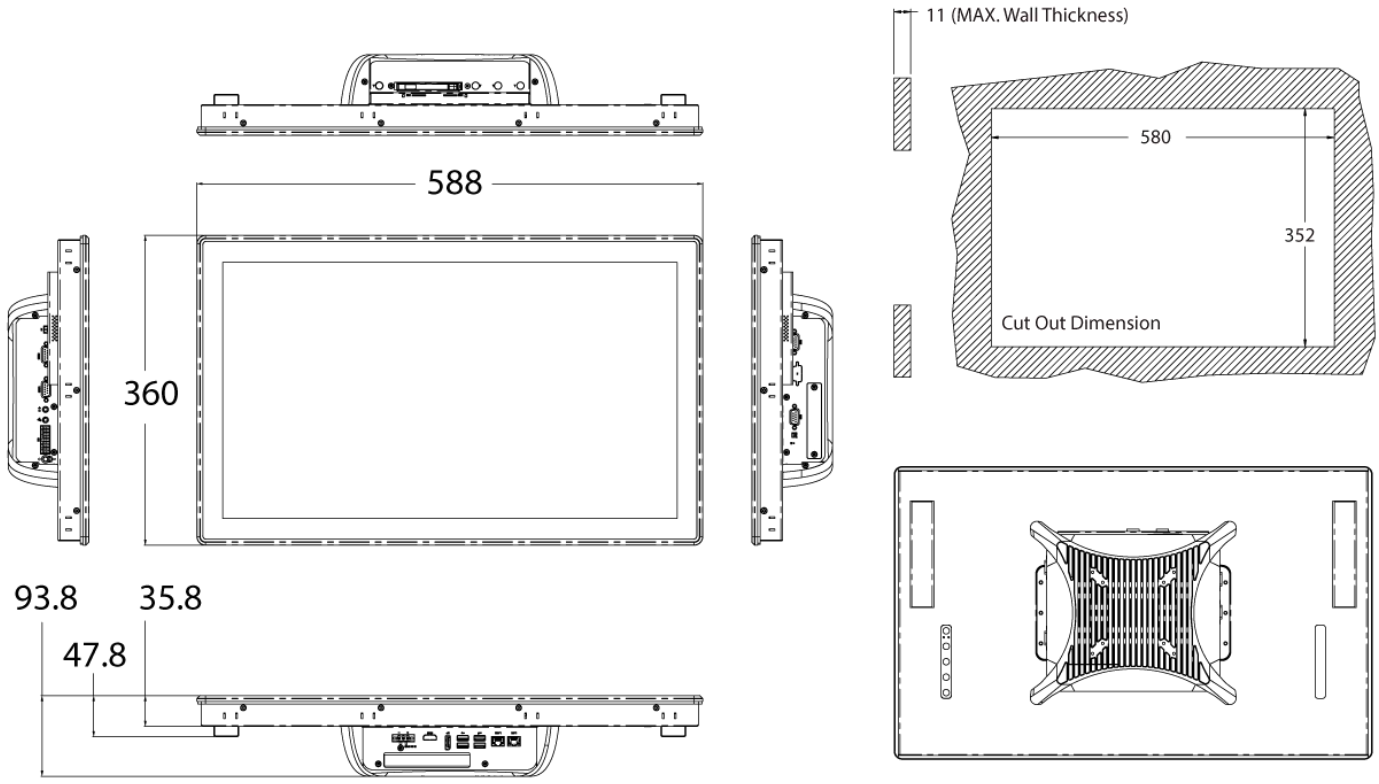
1.4.7 VIO-W224-PC100-EHL

Unit: mm



VIO-W224-PC100-EHL-1E

Unit: mm

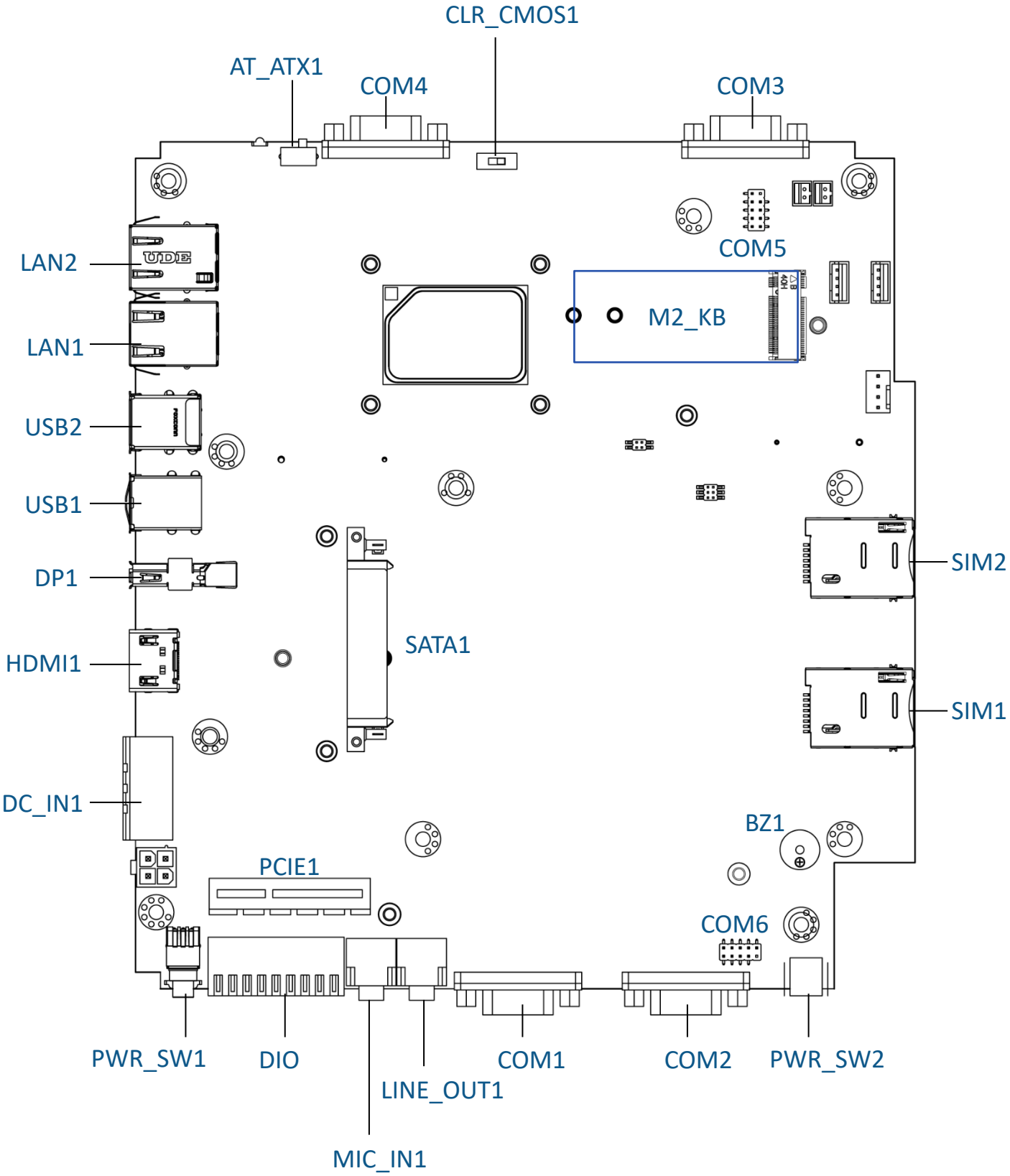


Chapter 2

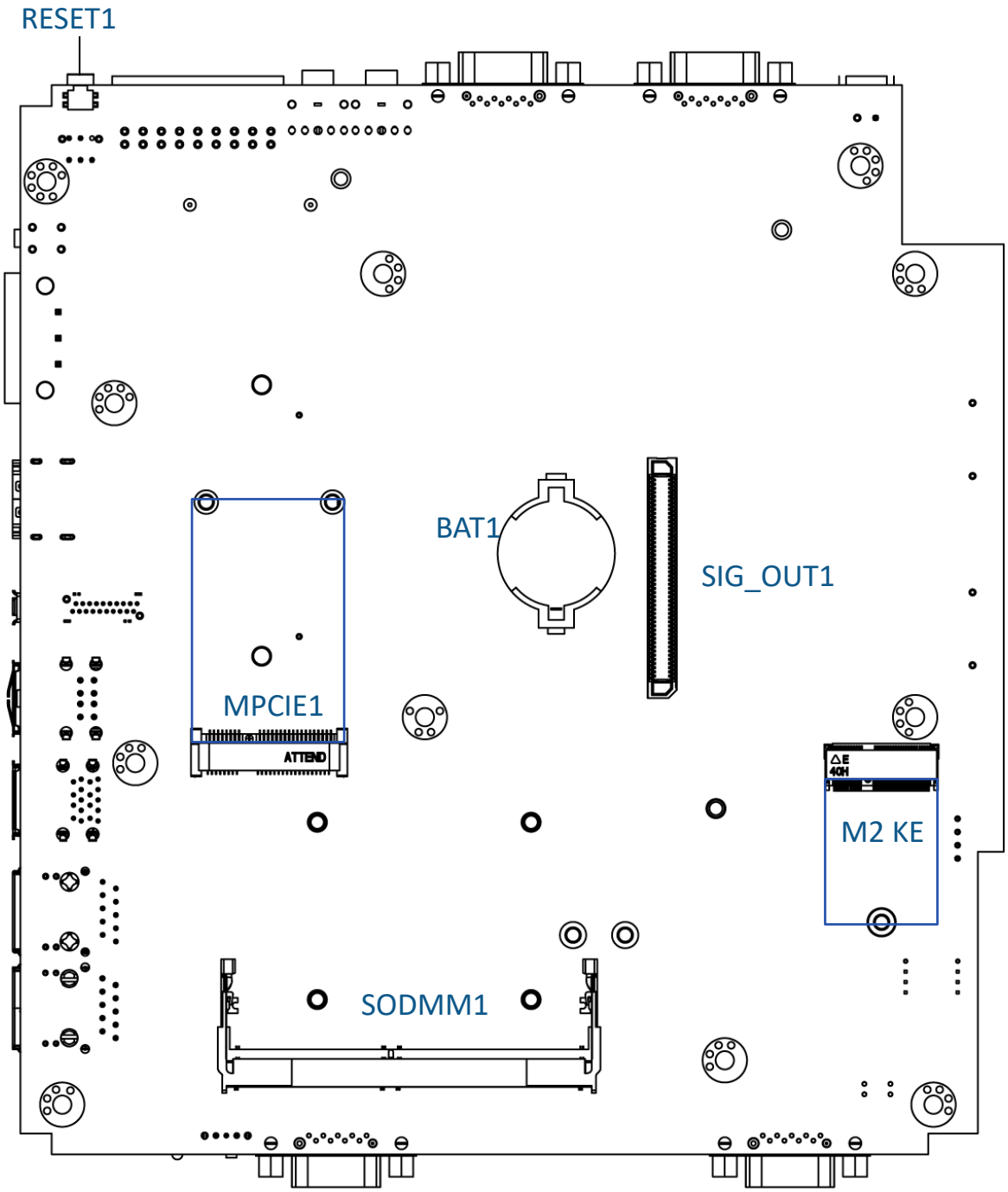
Switches and Connectors

2.1 Switch and Connector Locations

2.1.1 Top View



2.1.2 Bottom View

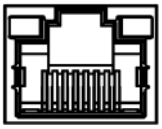


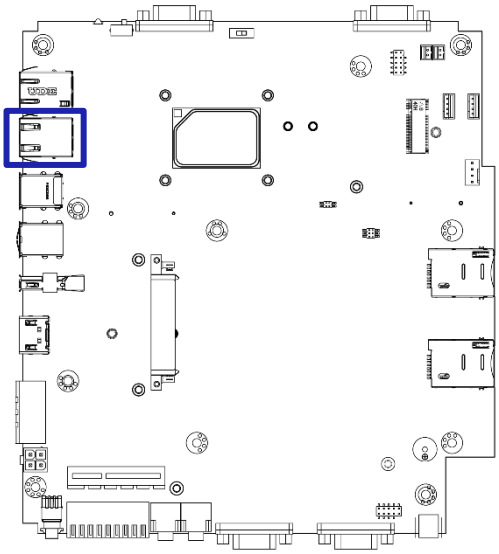
2.2 Connector / Switch Definition

List of Connector / Switch

Connector Location	Definition
AT_ATX1	AT / ATX Power Mode Switch
CLR_CMOS1	Clear BIOS Switch
PWR_SW1	Power Switch
RESET1	Reset Switch
USB2, USB1	USB Port (3.2 Gen 2 and 2.0)
SIM1, SIM2	SIM Card Socket
COM1 ~ COM6	RS232 / RS422 / RS485 Connector
LAN1, LAN2	LAN Port
DC_IN1	3-pin DC 9~36V Power Input Connector
DP1	DisplayPort Connector
LINE_OUT1	Line-out Jack
MIC_IN1	Mic-in Jack
DIO	8DI / 8DO Connector
PWR_SW2	Remote Power Switch
MINI-PCIE1	Mini PCI-Express / mSATA Socket
SATA1	SATA with Power Connector
BZ1	Buzzer
HDMI1	HDMI signal connector
SODIMM1	Memory
BAT1	Battery
M2_KB	M.2 B-Key Socket
SIG_OUT1	VIO Display Module Connector
M2 KE	M.2 E Key Socket

LAN1

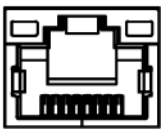


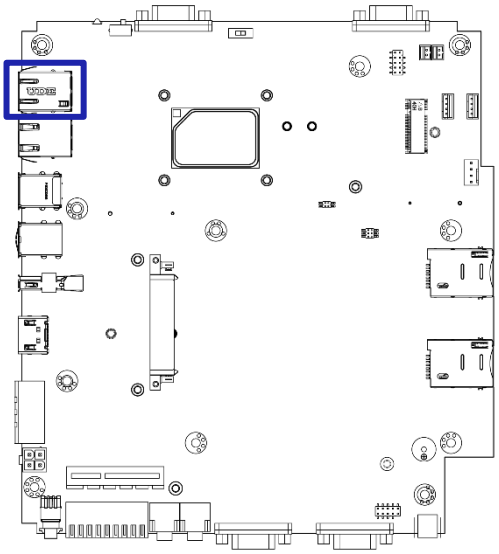


LAN Port i225

Pin	Signal
1	LAN2_MDI0_P
2	LAN2_MDI0_N
3	LAN2_MDI1_P
4	LAN2_MDI1_N
5	R5_CT
6	R6_CT
7	LAN2_MDI2_P
8	LAN2_MDI2_N
9	LAN2_MDI3_P
10	LAN2_MDI3_N
L1_1	LAN2_SPD_2500#
L2_!	L2 LINK1000J
L3_1	+V3.3A_LAN2
L4_1	LAN2_LINK_ACT#

LAN2

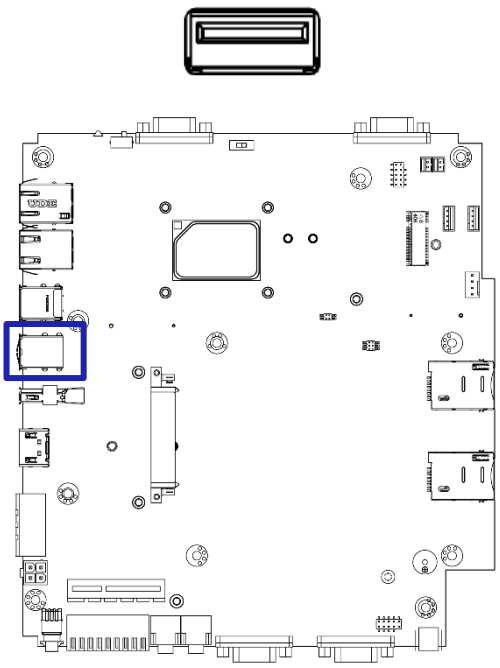




LAN Port i210

Pin	Signal
1	LAN1_MDI0_P
2	LAN1_MDI0_N
3	LAN1_MDI1_P
4	LAN1_MDI1_N
5	R5_CT
6	R6_CT
7	LAN1_MDI2_P
8	LAN1_MDI2_N
9	LAN1_MDI3_P
10	LAN2_MDI3_N
L1_1	LAN1_MDI3_N
L2_!	L2 LINK1000J
L3_1	+V3.3A_LAN2
L4_1	LAN2_LINK_ACT#

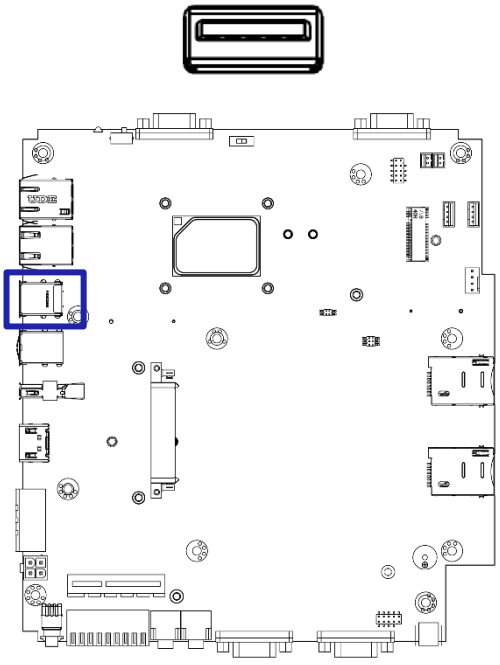
USB1



USB Port 2.0

Pin	Signal	Pin	Signal
1	USB2_VCC1	2	USB2_VCC1
3	USB2_P5_N	4	USB2_P6_N
5	USB2_P5_P	6	USB2_P6_P
7	GND	8	GND

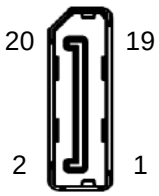
USB2

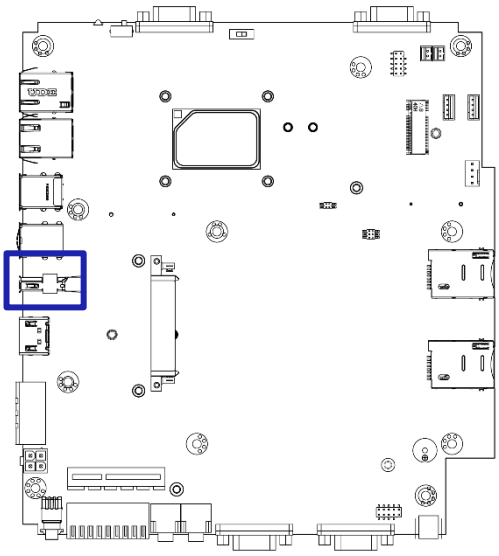


USB Port 3.2 Gen 2

Pin	Signal	Pin	Signal
1	+V5A_USBP12	10	+V5A_USBP12
2	USB2_P1_N	11	USB2_P2_N
3	USB2_P1_P	12	USB2_P2_P
4	GND	13	GND
5	P1_SSRX_N	14	P2_SSRX_N
6	P1_SSRX_P	15	P2_SSRX_P
7	GND	16	GND
8	P1_SSTX_N	17	P2_SSTX_N
9	P1_SSTX_P	18	P2_SSTX_P

DP1

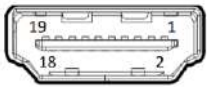


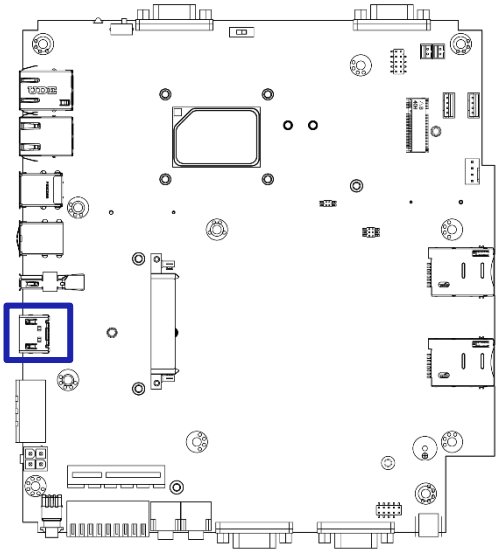


Display Port

Pin	Signal	Pin	Signal
1	DP1_TXP0	11	GND
2	GND	12	DP1_TXN3
3	DP1_TXN0	13	DP1_CFG1
4	DP1_TXP1	14	GND
5	GND	15	DP1_AUX+_HDMI_DDCCLK
6	DP1_TXN1	16	GND
7	DP1_TXP2	17	DP1_AUX-_HDMI_DDCDAT
8	GND	18	DP1_HPD
9	DP1_TXN2	19	DP_PWR Return
10	DP1_TXP3	20	DP_PWR

HDMI1 (Optional)

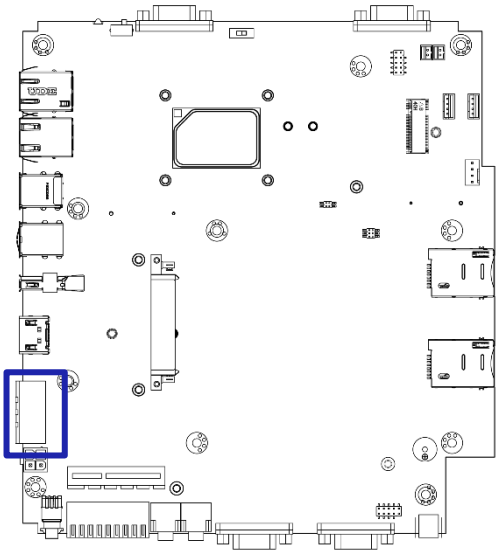


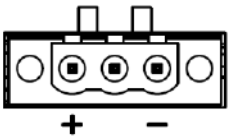


High Definition Multimedia Interface

Pin	Signal	Pin	Signal
1	HDMI_TX2+_C	11	GND
2	GND	12	HDMI_TXC-_C
3	HDMI_TX2-_C	13	NC
4	HDMI_TX1+_C	14	NC
5	GND	15	HDMI_SCL
6	HDMI_TX1-_C	16	HDMI_SDA
7	HDMI_TX0+_C	17	GND
8	GND	18	VCC5_HDMI
9	HDMI_TX0-_C	19	HDMI_HPD_CON
10	HDMI_TXC+_C	20	

DC_IN1

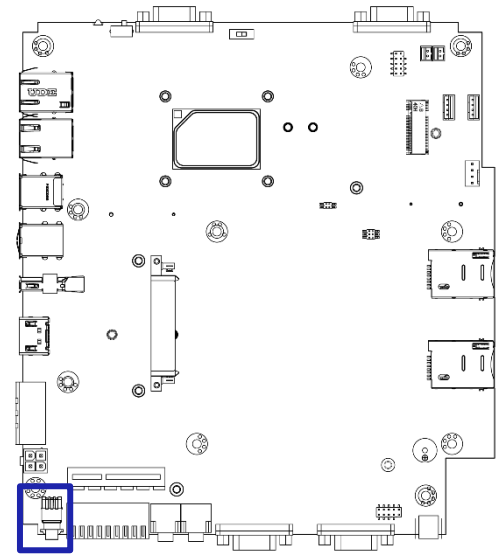




Power Input DC 9~36V

Pin	Signal
1	Power 9-36V_IN
2	ACC Ignition
3	GND_IN

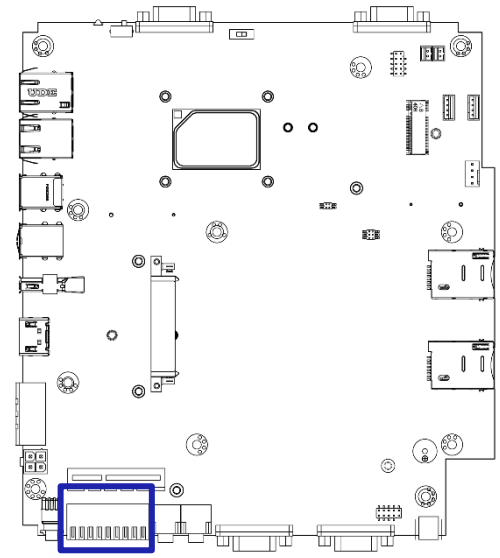
PWR_SW1

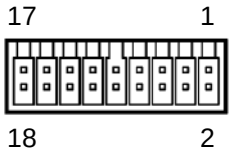


Power Button

Pin	Signal
1	NC
2	PWRBT_IN#
3	NC
4	GND
5	NC
6	GND

DIO

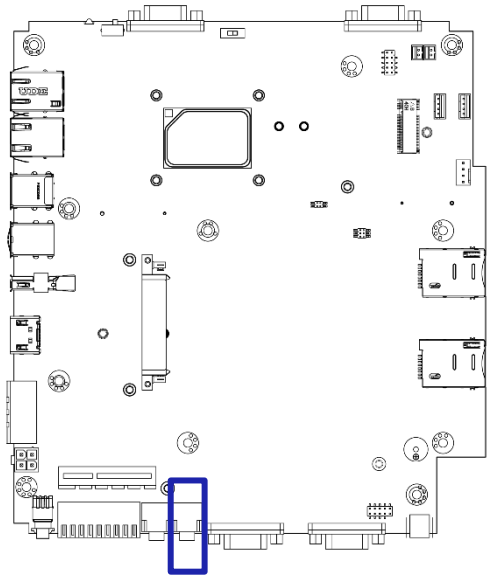


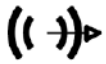


Digital I/O

Pin	Signal	Pin	Signal
1	IN1_1	2	OUT1_1
3	IN2_1	4	OUT2_1
5	IN3_1	6	OUT3_1
7	IN4_1	8	OUT4_1
9	IN5_1	10	OUT5_1
11	IN6_1	12	OUT6_1
13	IN7_1	14	OUT7_1
15	IN8_1	16	OUT8_1
17	XCOM+	18	XCOM-

LINE-OUT1

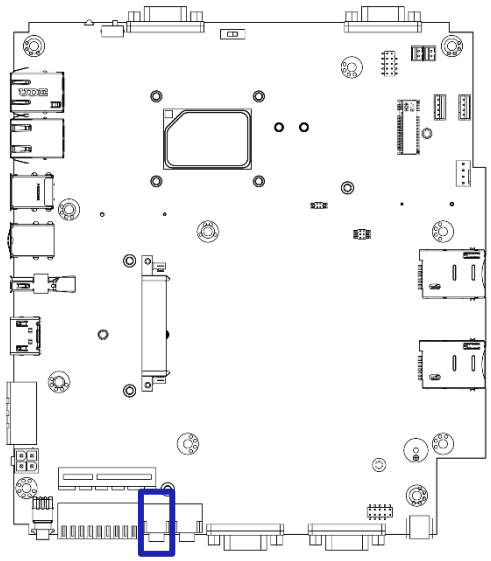




Line-out Jack

Pin	Signal
1	AGND
2	LINEOUT_RIGHT
3	AGND
4	AGND
5	LINEOUT_LEFT

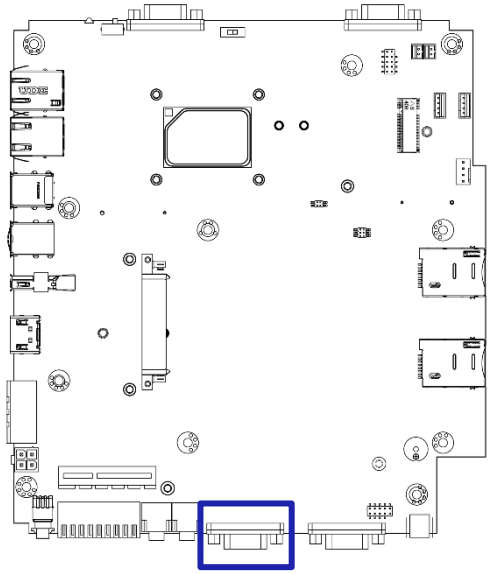
MIC-IN1

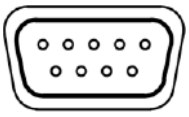


Mic-in Jack

Pin	Signal
1	AGND
2	MIC_IN_R
3	AGND
4	AGND
5	MIC_IN_L

COM1

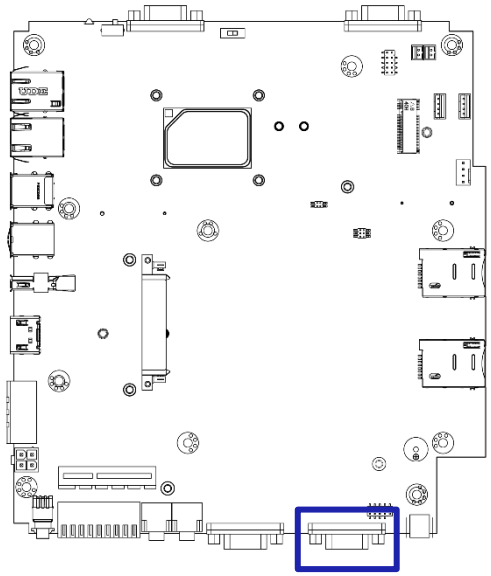




RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	NDCD1	6	NDSR1
2	NRXD1	7	NRTS1
3	NTXD1	8	NCTS1
4	NDTR1	9	NRI1
5	GND		

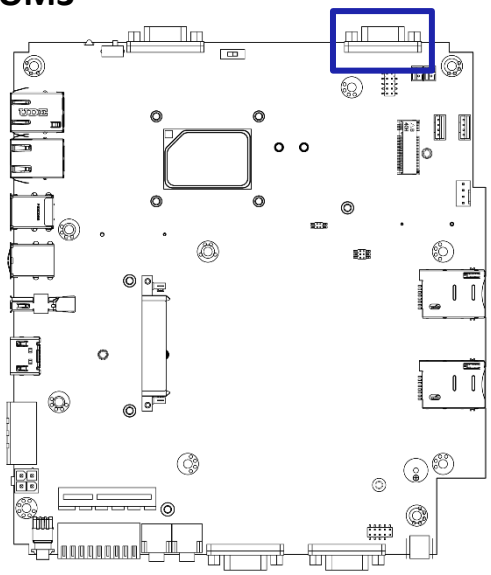
COM2



RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	NDCD2	6	NDSR2
2	NRXD2	7	NRTS2
3	NTXD2	8	NCTS2
4	NDTR2	9	NRI2
5	GND		

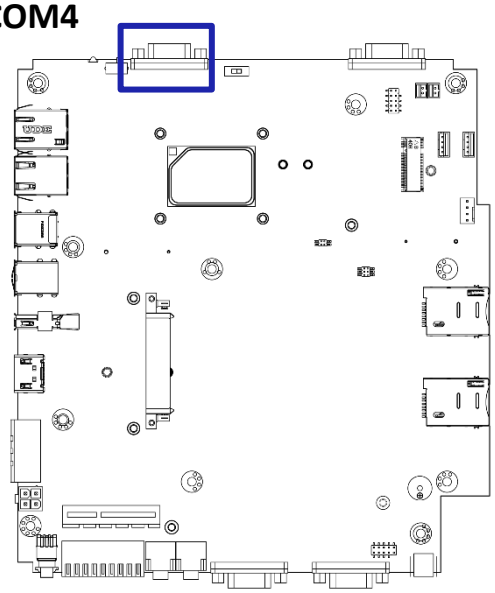
COM3



RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	NDCD3	6	NDSR3
2	NRXD3	7	NRTS3
3	NTXD3	8	NCTS3
4	NDTR3	9	NRI3
5	GND		

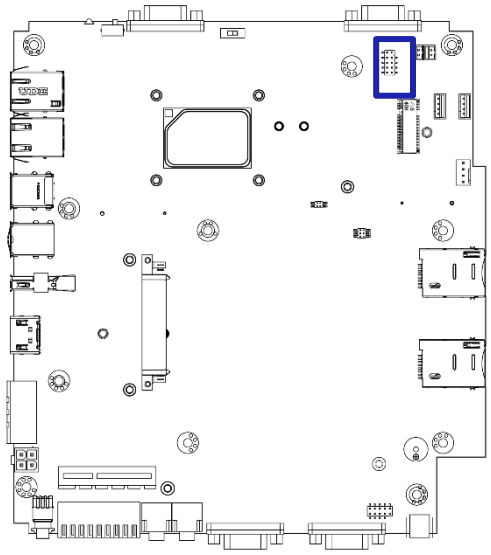
COM4



RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	NDCD4	6	NDSR4
2	NRXD4	7	NRTS4
3	NTXD4	8	NCTS4
4	NDTR4	9	NRI4
5	GND		

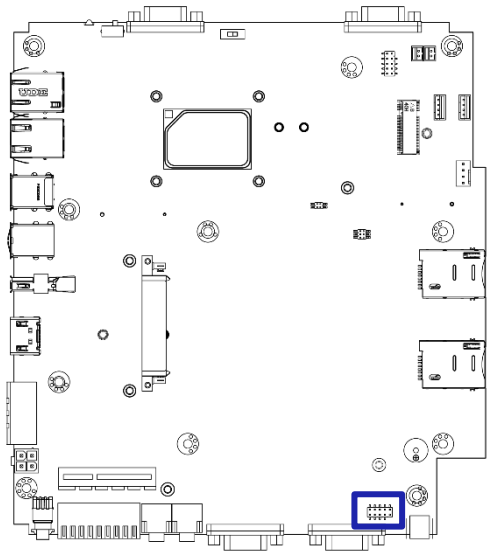
COM5



RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	CM5_DCD	6	CM5_CTS
2	CM5_DSR	7	CM5_DTR
3	CM5_RXD	8	CM5_RI
4	CM5_RTS	9	GND
5	CM5_TXD		

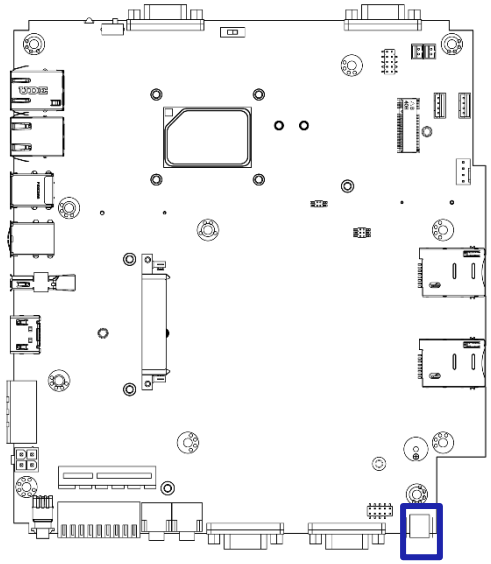
COM6



RS232 / RS422 / RS485 Connector

Pin	Signal	Pin	Signal
1	CM6_DCD	6	CM6_CTS
2	CM6_DSR	7	CM6_DTR
3	CM6_RXD	8	CM6_RI
4	CM6_RTS	9	GND
5	CM6_TXD		

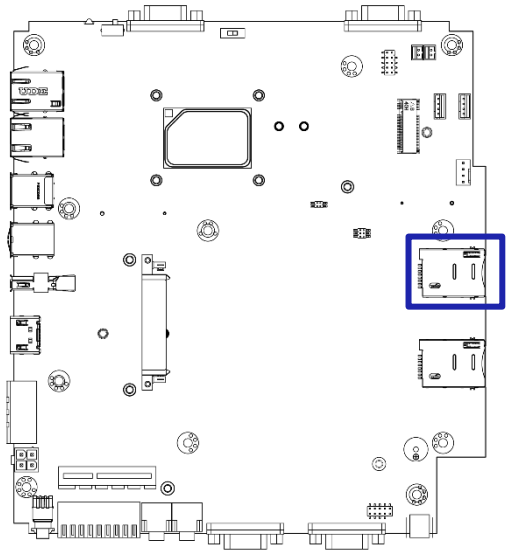
PWR_SW2



Remote Power Switch

Pin	Signal
1	PWRBT_IN#
2	GND

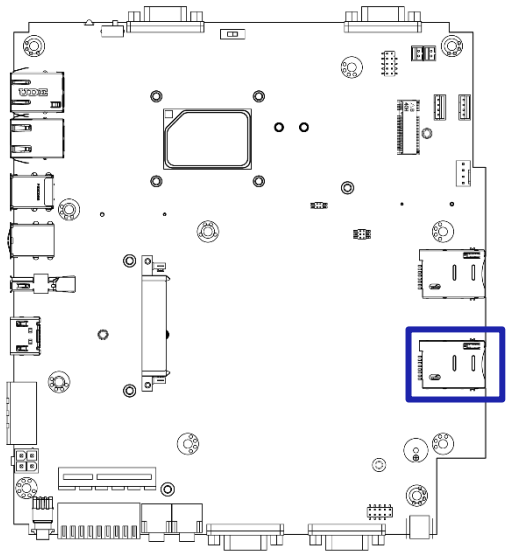
SIM1



SIM Card Socket

Pin	Signal	Pin	Signal
1	P_UIM_PWR	5	GND
2	P_UIM_RST	6	P_UIM_VPP
3	P_UIM_CLK	7	P_UIM_DATA
4	CD	8	COM

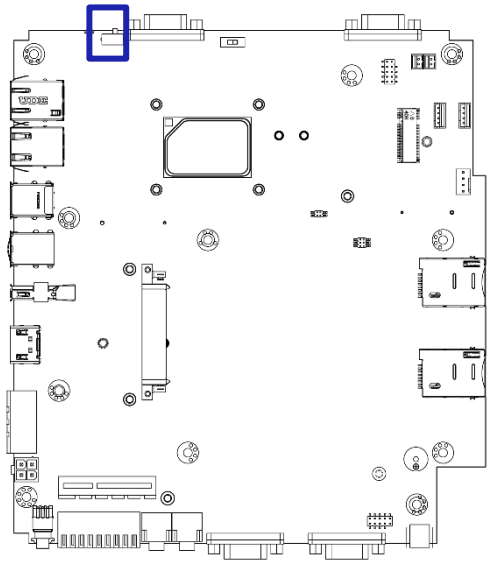
SIM2

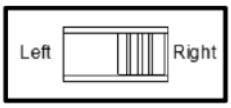


SIM Card Socket

Pin	Signal	Pin	Signal
1	P1_UIM_VDD	5	GND
2	P1_UIM_RST	6	P1_UIM_VPP
3	P1_UIM_CLK	7	P1_UIM_DATA
4	P_UIM_CD	8	COM

ATX1

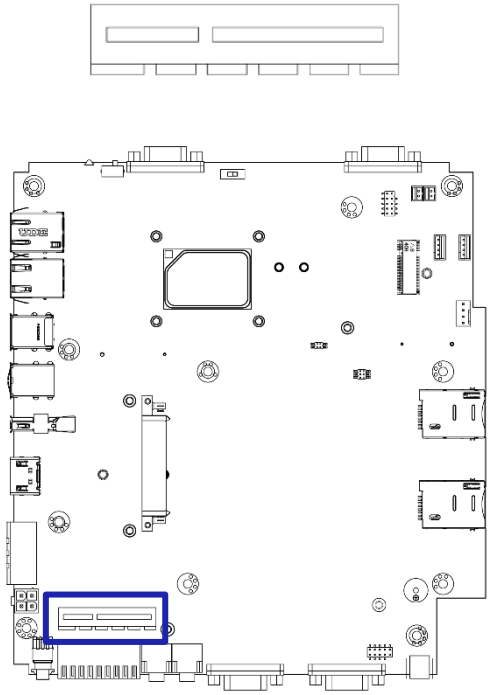




AT / ATX Power Mode Switch

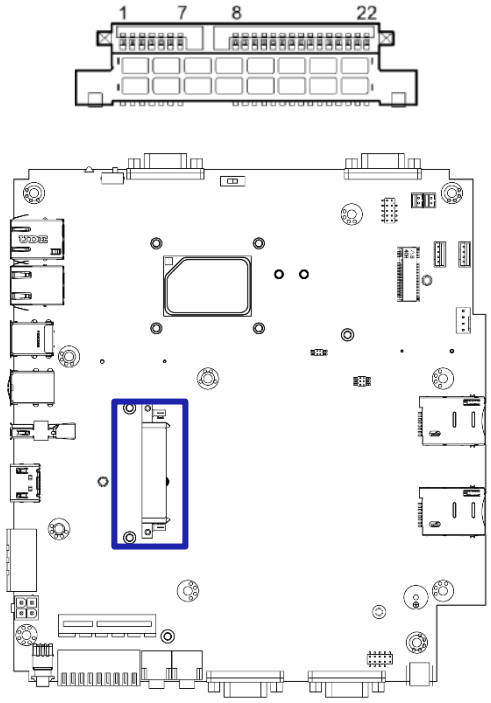
Switch	Signal
1-2 (Left)	ATX Power Mode
2-3 (Right)	AT Power Mode

PCIE1



Pin	Signal	Pin	Signal
A1	Pull down	B1	12V
A2	12V	B2	12V
A3	12V	B3	12V
A4	GND	B4	GND
A5	NC	B5	SMB_CLK
A6	NC	B6	SMB_DATA
A7	NC	B7	GND
A8	NC	B8	3.3V
A9	3.3V	B9	NC
A10	3.3V	B10	3.3V
A11	PCIE_X4_RST#	B11	PCIE_X4_WAKE_N
A12	GND	B12	NC
A13	CLKOUT_PCIE_P0	B13	GND
A14	CLKOUT_PCIE_N0	B14	X4SLOT_PCIE_6_TX_P
A15	GND	B15	X4SLOT_PCIE_6_TX_N
A16	X4SLOT_PCIE_6_RX_P	B16	GND
A17	X4SLOT_PCIE_6_RX_N	B17	PCIEX4_PRSNT#
A18	GND	B18	GND
A19-A32	NC	B19-B32	NC

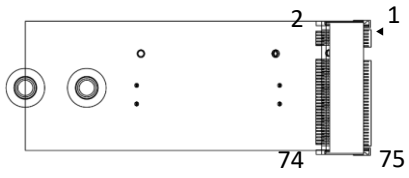
SATA1

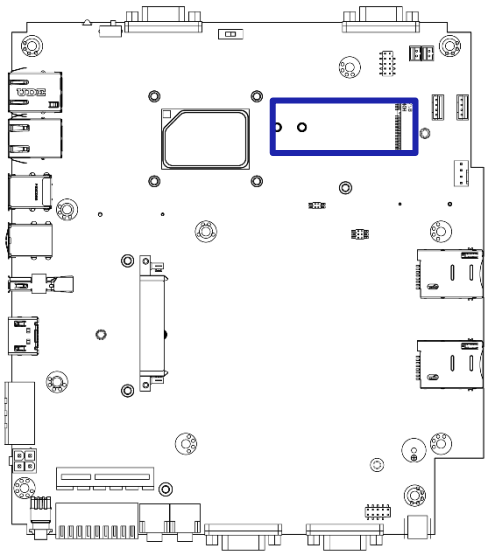


SATA with Power Connector

Pin	Signal	Pin	Signal
1	GND	2	SATA_TXP1
3	SATA_TXN1	4	GND
5	SATA_RXN1	6	SATA_RXP1
7	SATA0_PD	8	NC
9	NC	10	DEVSLP
11	GND	12	GND
13	GND	14	5V
15	5V	16	5V
17	GND	18	GND
19	GND	20	12V
21	12V	22	12V

M2_KB

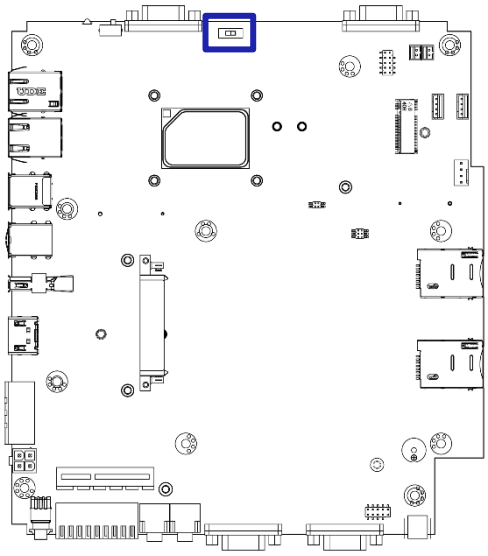




M.2 B-Key Socket

Pin	Signal	Pin	Signal
1	CONFIG_3	2	VCC1
3	GND	4	VCC2
5	GND	6	FULL_CARD_POWER_OFF#
7	USB_D+	8	W_DISABLE1#
9	USB_D-	10	WWAN_LED#
11	GND	12	NOTCH
13	NOTCH	14	NOTCH
15	NOTCH	16	NOTCH
17	NOTCH	18	NOTCH
19	NOTCH	20	GPIO_5(O/1.8V)
21	CONFIG_0	22	GPIO_6(O/1.8V)
23	GPIO_11(0/1.8V)	24	GPIO_7(O/1.8V)
25	DPR	26	GPIO_10(O/1.8V)
27	GND	28	GPIO_8(O/1.8V)
29	PERn1/USB3.0-Rx-	30	USIM1_RST
31	PERp1/USB3.0-Rx+	32	USIM1_CLK
33	GND	34	USIM1_DATA
35	PETn1/USB3.0-Tx-	36	USIM1_VDD
37	PETp1/USB3.0-Tx+	38	DEVSLP (O)
39	GND	40	USIM2_DET
41	PERn0/SATA-B+	42	USIM2_DATA
43	PERp0/SATA-B-	44	USIM2_CLK
45	GND	46	USIM2_RST
47	PETn0/SATA-A-	48	USIM2_VDD
49	PETp0/SATA-A+	50	PCIE_RST_N
51	GND	52	PCIE_CLKREQ_N
53	PCIE_REFCLK_M	54	PCIE_WAKE_N
55	PCIE_REFCLK_P	56	N/C
57	GND	58	N/C
59	ANTCTL0	60	COEX3(O/1.8V)
61	ANTCTL1	62	COEX2(O/1.8V)
63	ANTCTL2	64	COEX1(O/1.8V)
65	ANTCTL3	66	USIM1_DET
67	RESET_N	68	SUSCLK(32kHz)
69	CONFIG_1	70	VCC3
71	GND	72	VCC4
73	GND	74	VCC5
75	CONFIG_2	76	

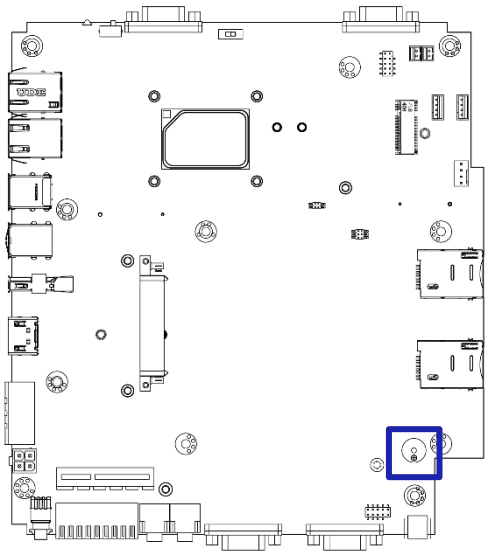
CLR_CMOS1



Clear BIOS Switch

Switch	Signal
On	Clear CMOS
Off	Default

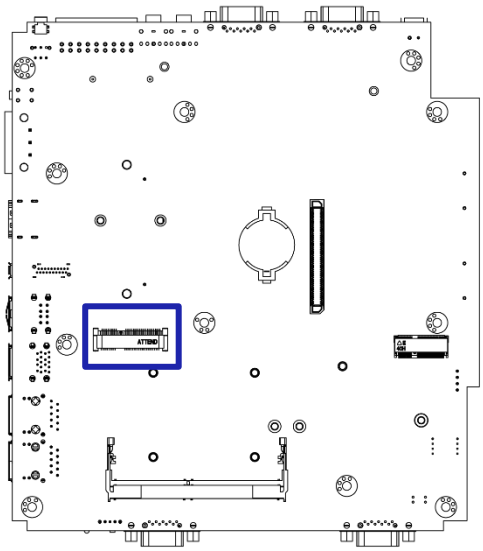
BZ1



Buzzer

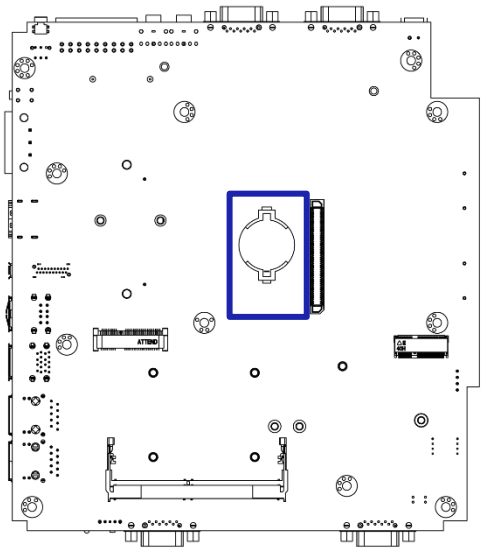
Pin	Signal
1	Positive
2	Negative

MPCIE1



Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3V
3	Reserved	4	GND
5	Reserved	6	+1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND	16	UIM_VPP
17	Reserved	18	GND
19	Reserved	20	Reserved
21	GND	22	PERST#
23	PERn0	24	+3.3Vaux
25	PERp0	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PETn0	32	SMB_DATA
33	PETp0	34	GND
35	GND	36	USB_D-
37	Reserved	38	USB_D+
39	Reserved	40	GND
41	Reserved	42	LED_WWAN#
43	Reserved	44	LED_WLAN#
45	Reserved	46	LED_WPAN#
47	Reserved	48	+1.5V
49	Reserved	50	GND
51	Reserved	52	+3.3V
53	GND	54	GND

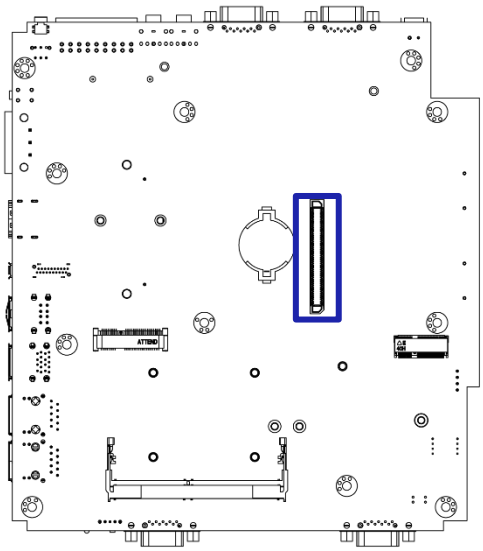
BAT1



Battery

Pin	Signal
1	+VBAT
2	GND

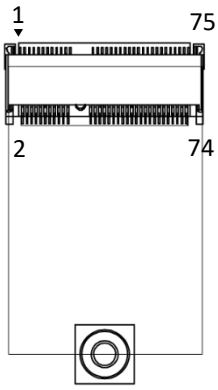
SIG_OUT1

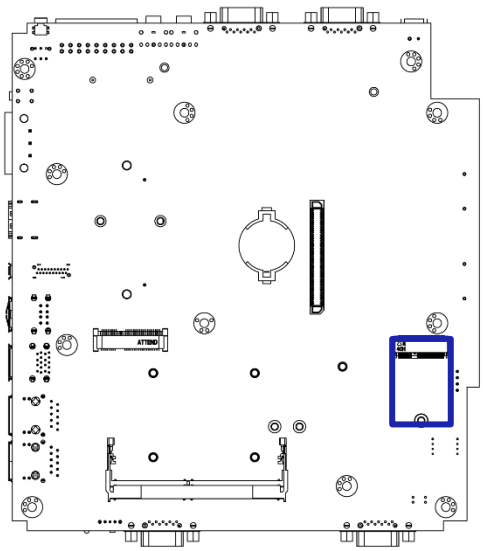


VIO Display Module Connector

Pin	Signal	Pin	Signal
1	PE1_TX+	26	PE3_RX-
2	PE1_TX-	27	GND
3	GND	28	GND
4	GND	29	PE4_TX+
5	PE1_RX+	30	PE4_TX-
6	PE1_RX-	31	GND
7	GND	32	GND
8	GND	33	PE4_RX+
9	PE2_TX+	34	PE4_RX-
10	PE2_TX-	35	GND
11	GND	36	USB_0P
12	GND	37	USB_0N
13	PE2_RX+	38	Power_BTN

M2_KE





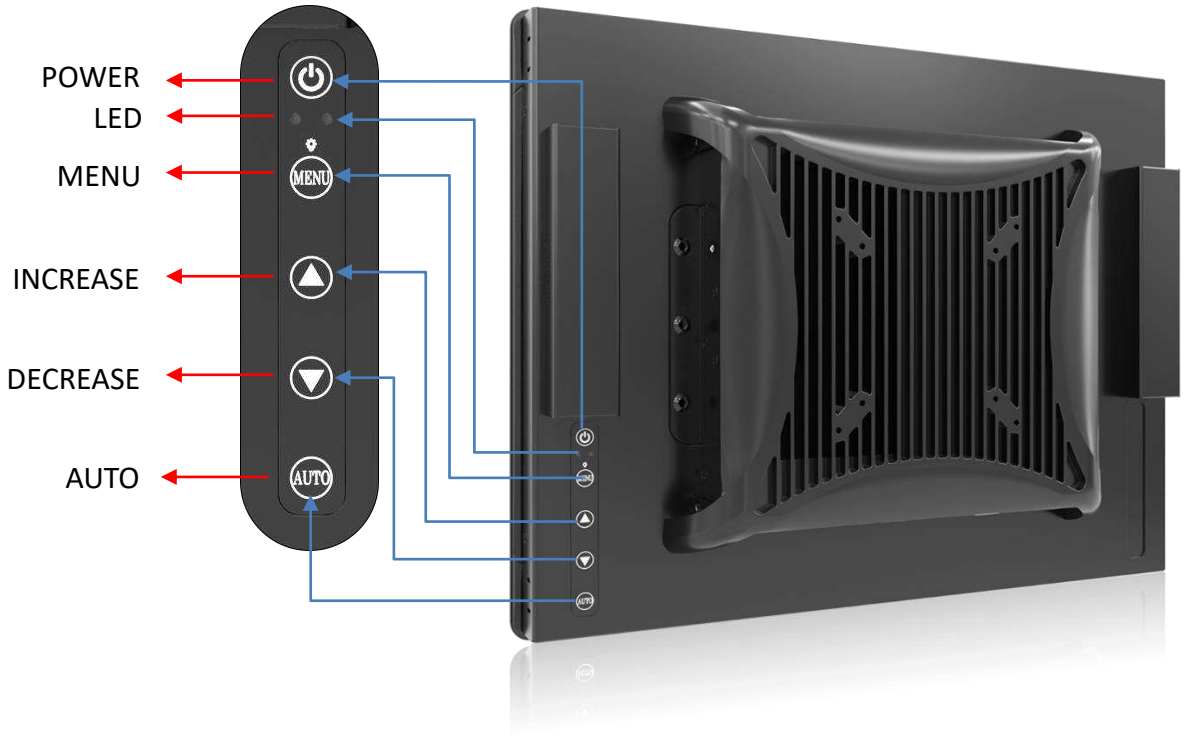
M.2 E Key Socket

Pin	Signal	Pin	Signal
1	GND	2	+V3.3A
3	USB_D+	4	+V3.3A
5	USB_D-	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	NC	24	NOTCH
25	NOTCH	26	NOTCH
27	NOTCH	28	NOTCH
29	NOTCH	30	NOTCH
31	NOTCH	32	NC
33	NOTCH	34	NC
35	PCIE_1_TX_DP	36	NC
37	PCIE_1_TX_DN	38	NC
39	GND	40	NC
41	PCIE_1_RX_DP	42	NC
43	PCIE_1_RX_DN	44	NC
45	GND	46	NC
47	CLKOUT_PCIE_P1	48	NC
49	CLKOUT_PCIE_N1	50	NC
51	GND	52	M.2_E_RST#
53	SRCCLKREQ1_N	54	NC
55	M.2_E_WAKE_L	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	GND	64	NC
65	NC	66	M.2_E_RST#
67	NC	68	NC
69	GND	70	M.2_E1_WAKE_L
71	NC	72	+V3.3A
73	NC	74	+V3.3A
75	GND	76	

Chapter 3

Front Panel Controls

3.1 Users Controls



■ **Power Button**
Turns the monitor on or off.

■ **LED**
1. Blue indicates power on.
2. Yellow indicates HDD access status.

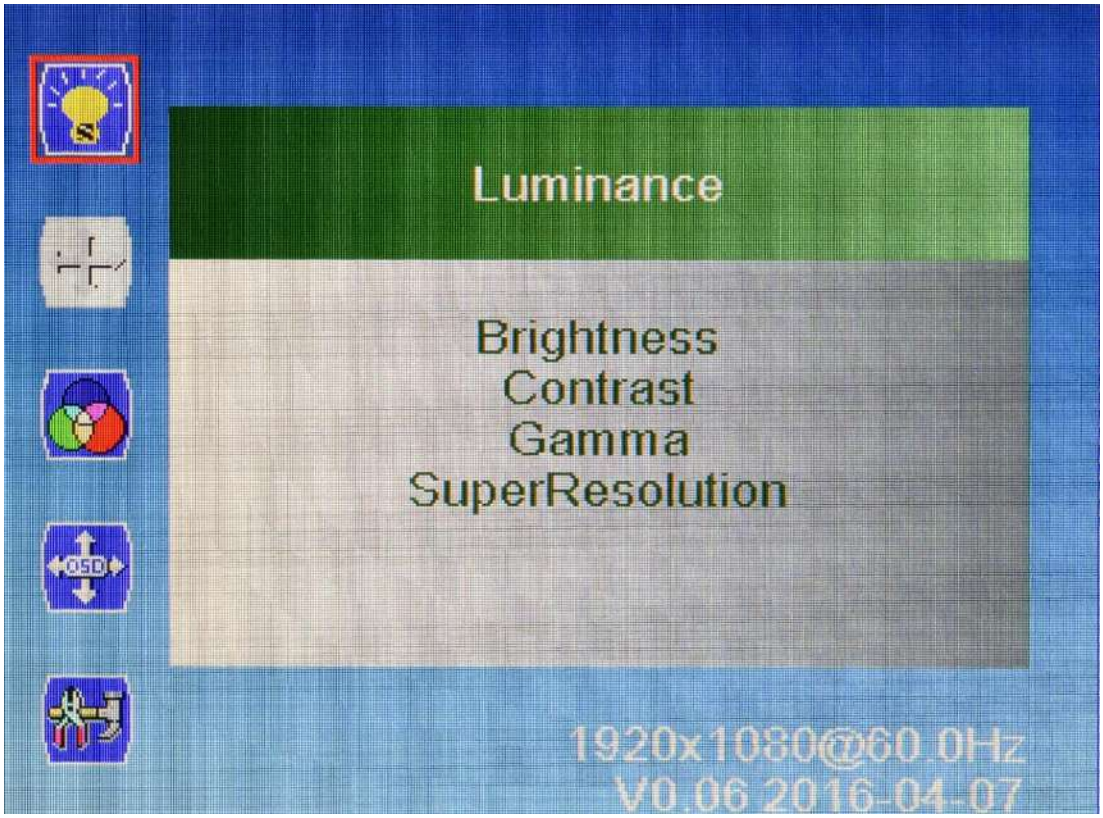
■ **MENU / Enter Button**
Press to view the OSD menu. Press it again to enter a selection in the OSD menu.

■ **Increase Button**
1. Activates the Volume control menu, and increases volume (with audio option).
2. Scrolls the OSD menu upward.
3. Increases the value of a selected function.

■ **Decrease Button**
1. Activates the Volume control menu, and decreases volume (with audio option).
2. Scrolls the OSD menu downward.
3. Decreases the value of a selected function.

■ **AUTO / Exit Button**
1. When the OSD menu is active, press this button to exit the OSD menu.
2. When the OSD menu is inactive, press this button for two seconds to activate the Auto Adjustment function and the monitor will automatically optimize the display position, focus, and clock of your display.

3.2 OSD Operation



3.2.1 Luminance

■ **Brightness**
Adjust the luminance level of the screen.

■ **Contrast**
Adjusts the contrast level of the screen.

■ **Gamma**
This item allows you to on or off the Gamma function.

■ **SuperResolution**
This setting allows you to select options for the SuperResolution.
Select <Off> , <Weak>, <Median> or <Strong>.

3.2.2 Picture

■ **Phase**
Adjust the monitor internal signal phase.

■ **Clock**
Adjust the monitor internal sampling clock rate.

■ **H. Position**
Adjusts the position of the screen image left and right.

■ **V. Position**
Adjusts the position of the screen image up and down.

3.2.3 Color

Color Temperature

6500K: Select the setting of screen color to be reddish white.

7500K: Select the setting of screen color to be bluish white.

9300K: Select the setting of screen color to be bluish white.

sRGB: Set the screen color to fit the sRGB standard color specification.

User Define: Individual adjustments for red (R), green (G), blue (B).

3.2.4 OSD Settings

Horizontal

Changes the viewing position of the OSD menu to the left or right area of the screen.

Vertical

Changes the viewing position of the OSD menu to the top or bottom area of the screen.

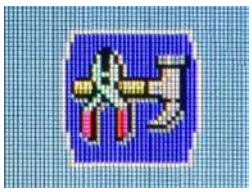
Transparency

Adjust to view the background information through the OSD.

OSD Time Out

Sets the time duration in seconds that the OSD is visible after the last button is pressed.

3.2.5 Setup



Language

Selects the language in which the OSD menu is displayed. The factory default is English.

Mute

Allows the user to turn the Mute On or Off.

Input

When press Input Select change Input signal to D-SUB, DVI or DP.

Reset

Reset monitor parameters back to factory preset values.

Chapter 4

System Setup

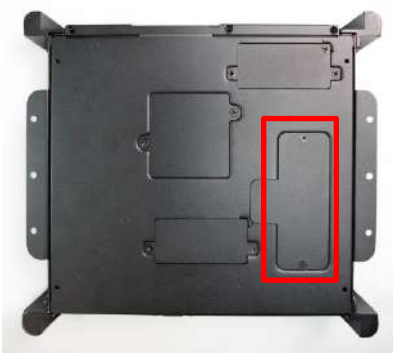
4.1 Set torque force to 3.5 kgf-cm to execute all the screwing and unscrewing

WARNING

In order to prevent electric shock or system damage, before removing the chassis cover, must turn off power and disconnect the unit from power source.

4.2 Installing SODIMM

1. Remove the SODIMM cover in the below circled area.

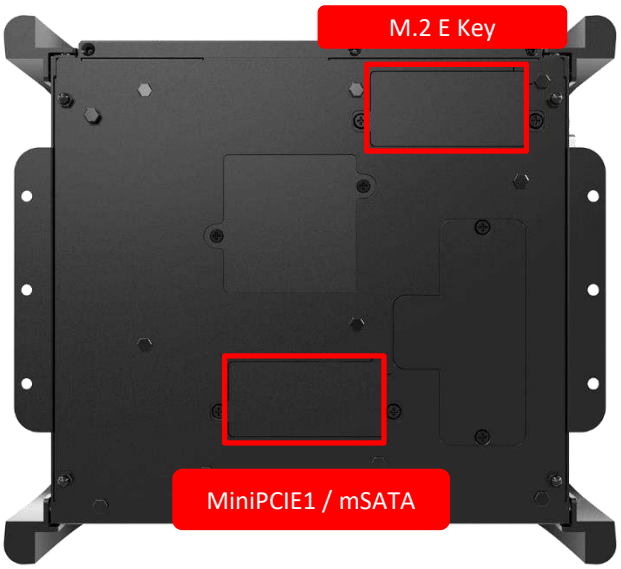


2. Insert the memory card at a 45 degree angle.

3. Press the memory card down until you hear a click. Ensure the memory card is secure before replacing the cover.

4.3 Installing mini PCIe card / mSATA / M.2 E Key.

1. Two mini PCIe slots with M.2 E Key Support is available on PC100 Series.

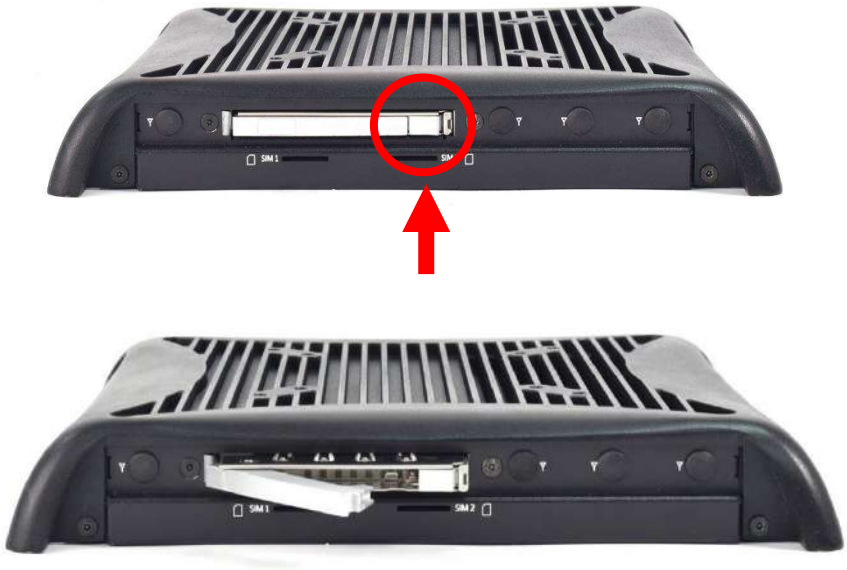


2. Insert mini PCIe card/mSATA module at a 45 degree angle.

3. Press the mini PCIe card or mSATA module down and ensure it is secure before screwing the cover back on.

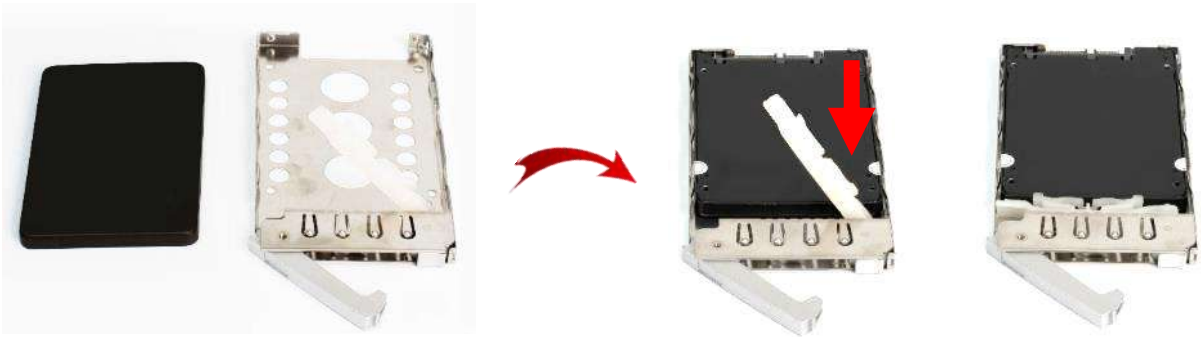
4.4 Installing HDD on removable STAT HDD bay

1. To unlock the tray lock press the location highlighted at the red circle below and pull the tray towards you to remove the SATA HDD/SSD bay.



2. Unlock the drive lock by lifting the plastic insert up, then insert the HDD/SSD card.

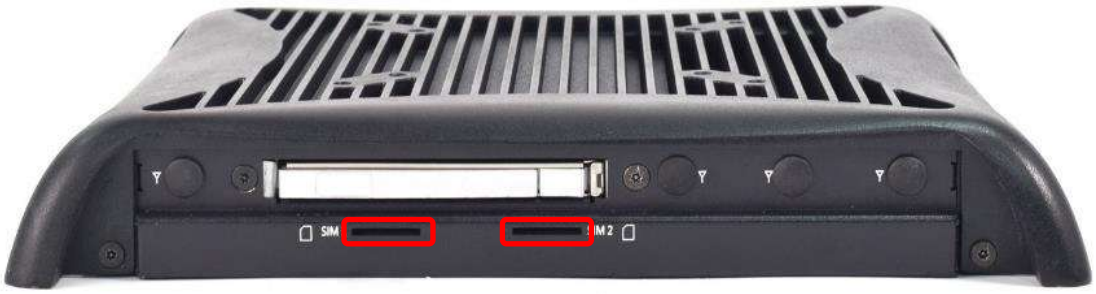
3. Once the HDD/SSD card is inserted, push the plastic insert back down and to secure it.



4. Place the tray back into the bay and ensure the tray lock is secured.

4.5 Installing SIM card

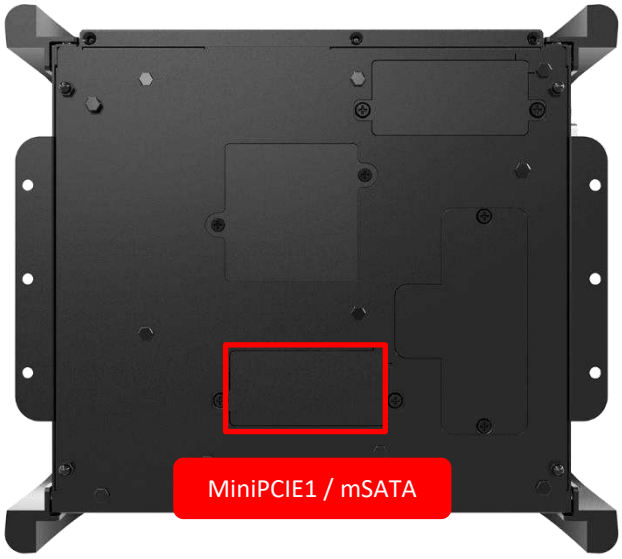
1. There are two SIM card slots are available on system chassis located next to the removable HDD bay, as shown below.



2. Place the SIM card inside the SIM slot until you hear a click.

3. Please refer to the table below to note which SIM slot to insert your SIM card into according to the matching Mini PCIe type.

SIM Card Socket Number	Matching Mini PCIe Slot
SIM 1	M.2 B Key
SIM 2	Mini PCIe / mSATA



4. To remove the SIM card, push the SIM card into the slot and it will be released from the slot.

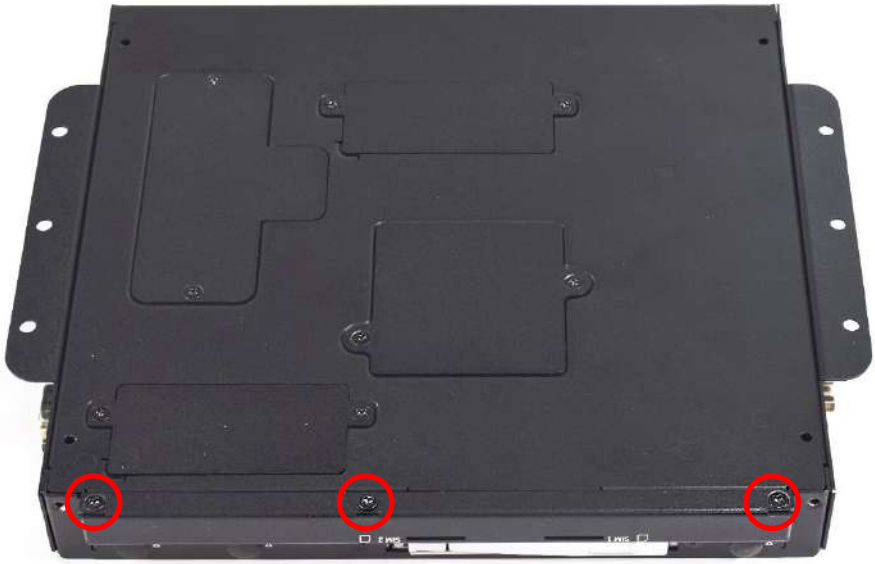
4.6 Removing chassis top cover

1. To remove the chassis top cover, there are 6 screws to be unscrewed at the locations highlighted by the red circles below.

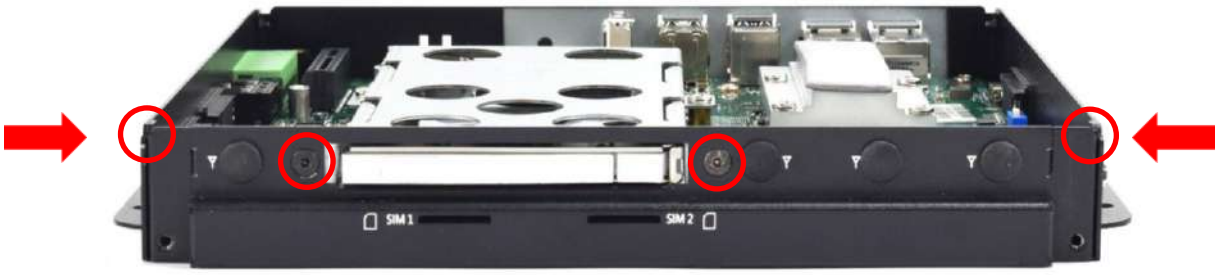
2. Once all six screws are removed, the chassis top cover can be lifted up as shown below.

4.7 Installing antenna

1. Remove 3 screws located at the back of the system as pictured below. The screw locations are highlighted in red.



2. Remove 4 screws located at the front and side face of the system as pictured below. The screw locations are highlighted in red.

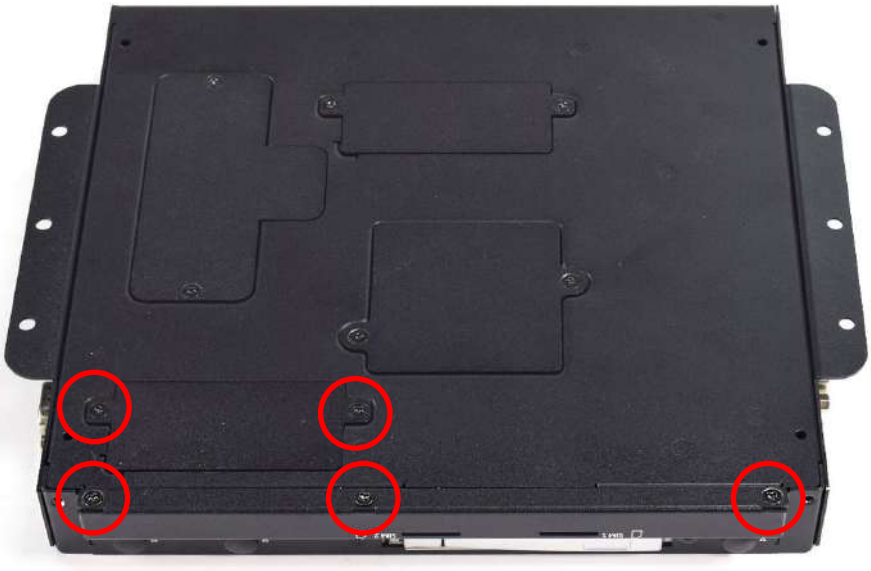


3. Remove antenna hole cover on the system panel as indicated below.

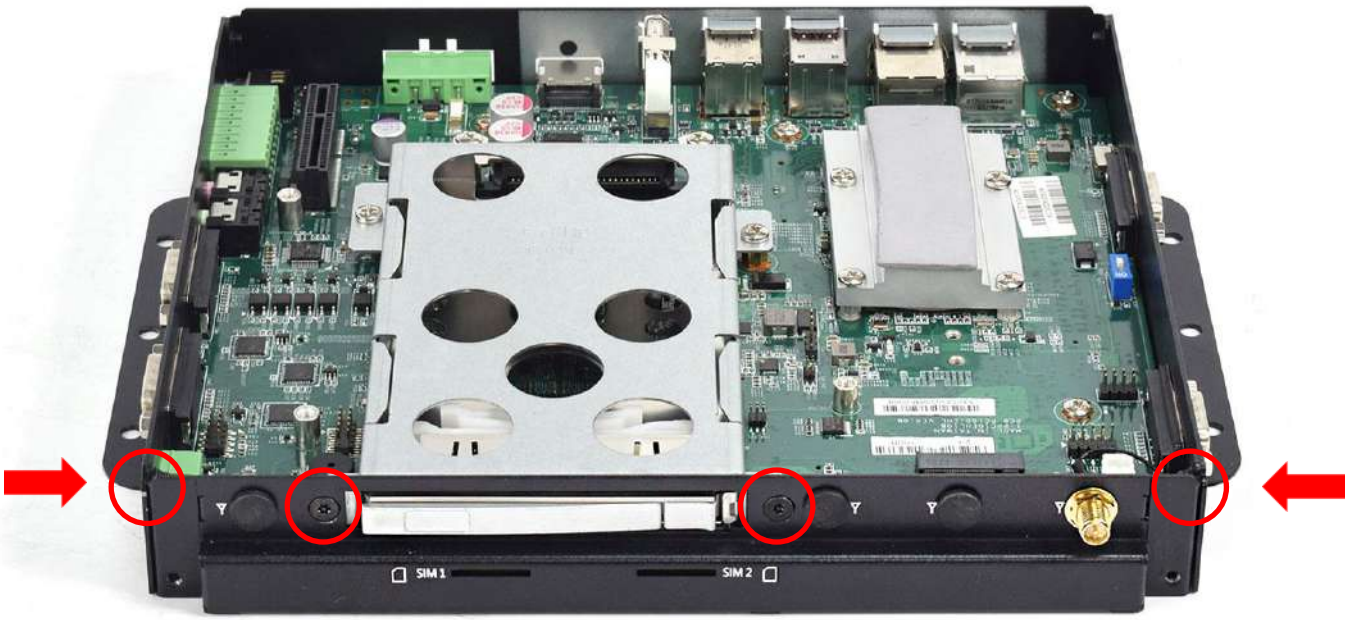
4. Pass the RF connector at the end of the cable around the gap between the iron piece and the motherboard and connect it to the communication module。

5. Put on washer and fasten the nut with antenna jack as indicated below.

6. Fasten the 5 screws at the locations indicated by the red circles.



7. Fasten the 4 screws located at the front and side face of the system as pictured below. The screw locations are highlighted in red.



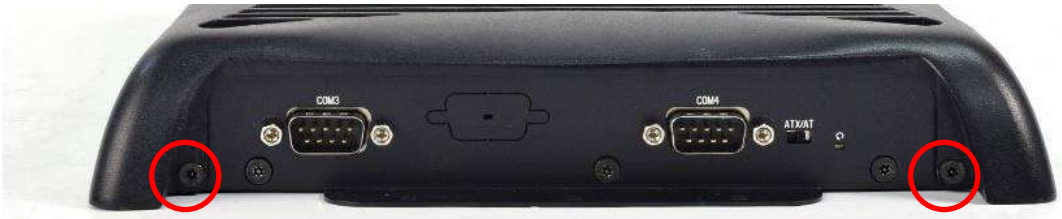
8. Assemble the antenna and antenna jack together.

4.8 Assembling chassis top cover

1. Ensure thermal pad is in place on the CPU thermal block.

2. Close the chassis top cover following the below direction and make sure the aluminum part on the top cover is touching the thermal pad on CPU thermal block.

3. Fasten the 6 screws to lock the system body with top cover. The locations are highlighted by the red circles below.

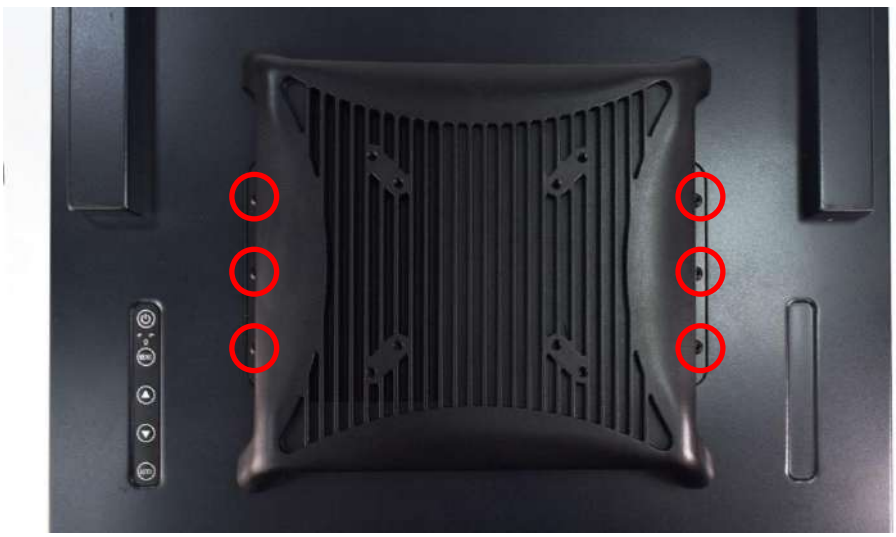


4.9 Connecting PC module with VIO display module

1. Place the PC module with its connector facing the back of VIO display module as shown in the picture below.

2. Ensure the PC Module is aligned with the VIO Display Module and push it down gently.

3. Screw the PC Module onto the Displau Module at the locations highlighted below.



4.10 PC100-EHL-1E Installing PCIe expansion card

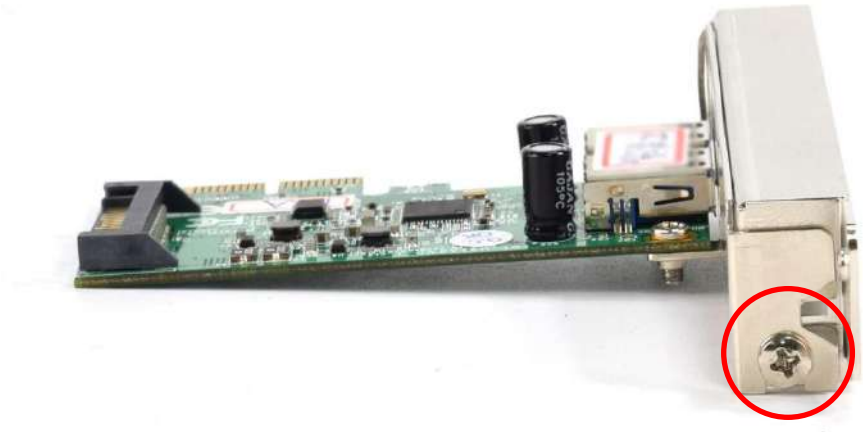
1. Unscrew the 6 screws indicated at the circles in the photos below.

2. Once unscrewed, remove the top cover of PC module as shown below.

3. Unscrew the 3 screws below indicated at the locations highlighted below.

4. Then, unscrew the screw indicated in the red circle below.

5. Attach the PCIe expansion card and then fasten the screw in the circle indicated below.



6. Install the PCIe/PCI card according to direction indicated in the picture below.

7. Ensure the gold fingers are inserted properly into the slot.

8. Fasten the 3 screws indicated at the locations in the red circles below.

9. Replace the chassis top cover and make sure the aluminum part on the top cover is touching the thermal pad on CPU thermal block.

10. Fasten the 6 screws indicated by the red circles in the pictures below.

Chapter 5

BIOS Setup

5.1 BIOS Introduction

The BIOS provides an interface to modify the configuration. When the battery is removed, all the parameters will be reset.

BIOS Setup

Power on the embedded system and by pressing <Del> immediately allows you to enter the setup screens. If the message disappears before you respond and you still wish to enter the Setup, restart the system by turning it OFF and ON or pressing the RESET button.
You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Control Keys	
<→> <←>	Select Screen
<↑> <↓>	Select Item
<Enter>	Select
<Page Up/+>	Increases the numeric value or makes changes
<Page Down/->	Decreases the numeric value or makes changes
<F1>	General Help
<F2>	Previous Value
<F3>	Load Optimized Defaults
<F4>	Save Configuration and Exit
<Tab>	Select Setup Fields
<Esc>	Exit BIOS Setup

Main Setup

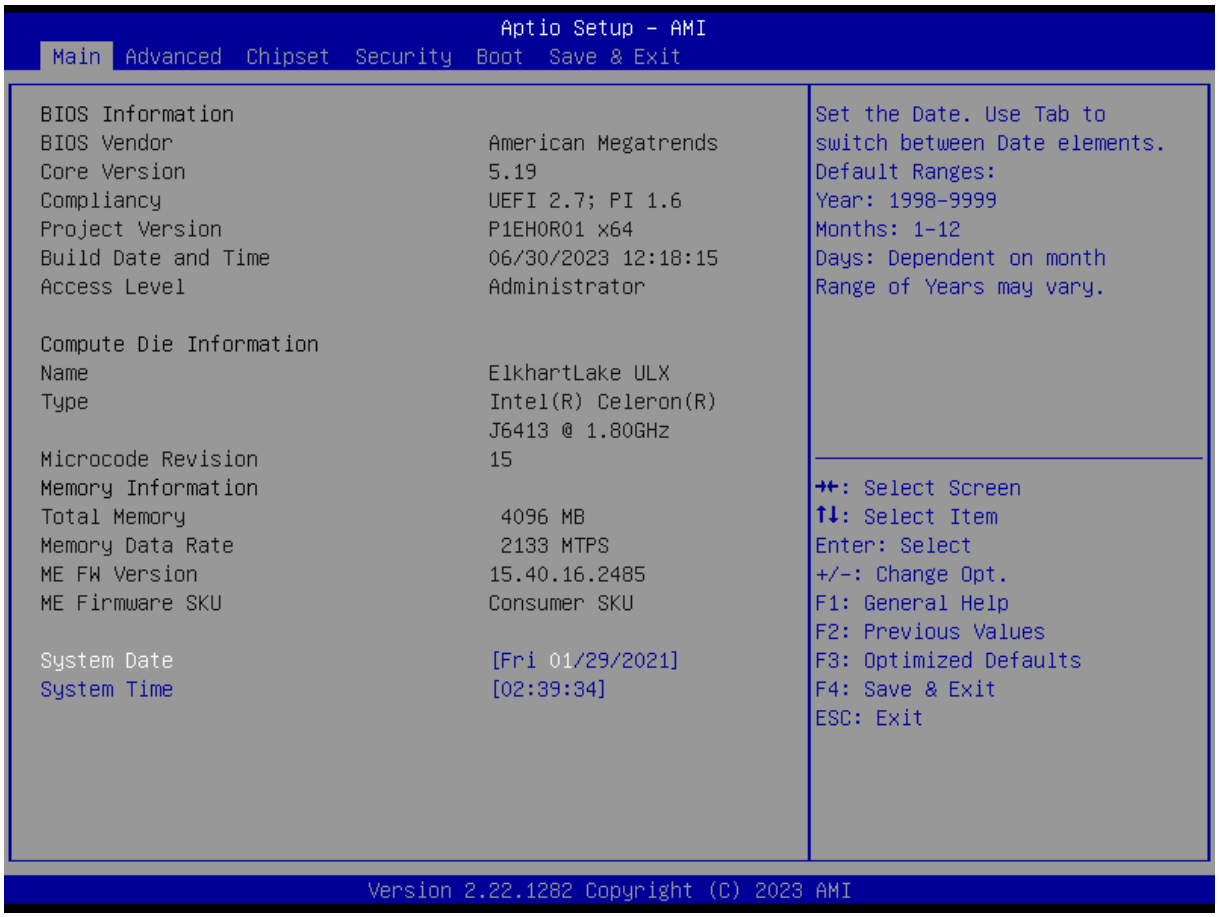
The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

5.2 Main Setup

Press <Del> to enter BIOS CMOS Setup Utility. The Main setup screen is showed as following when the setup utility is entered. System Date/Time is set up in the Main Menu.



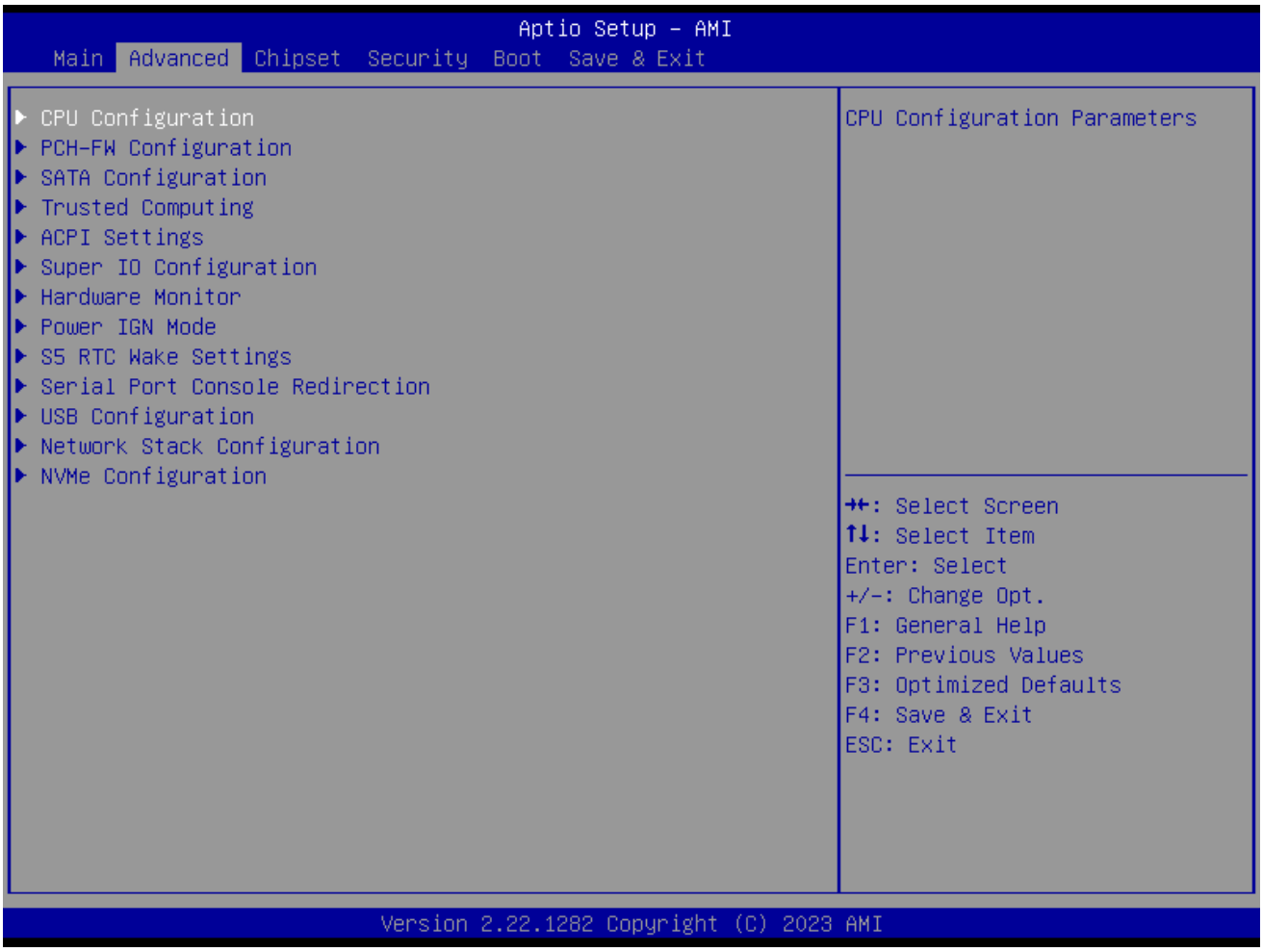
■ System Date

Set the system date. Please use <Tab> to switch between data elements.

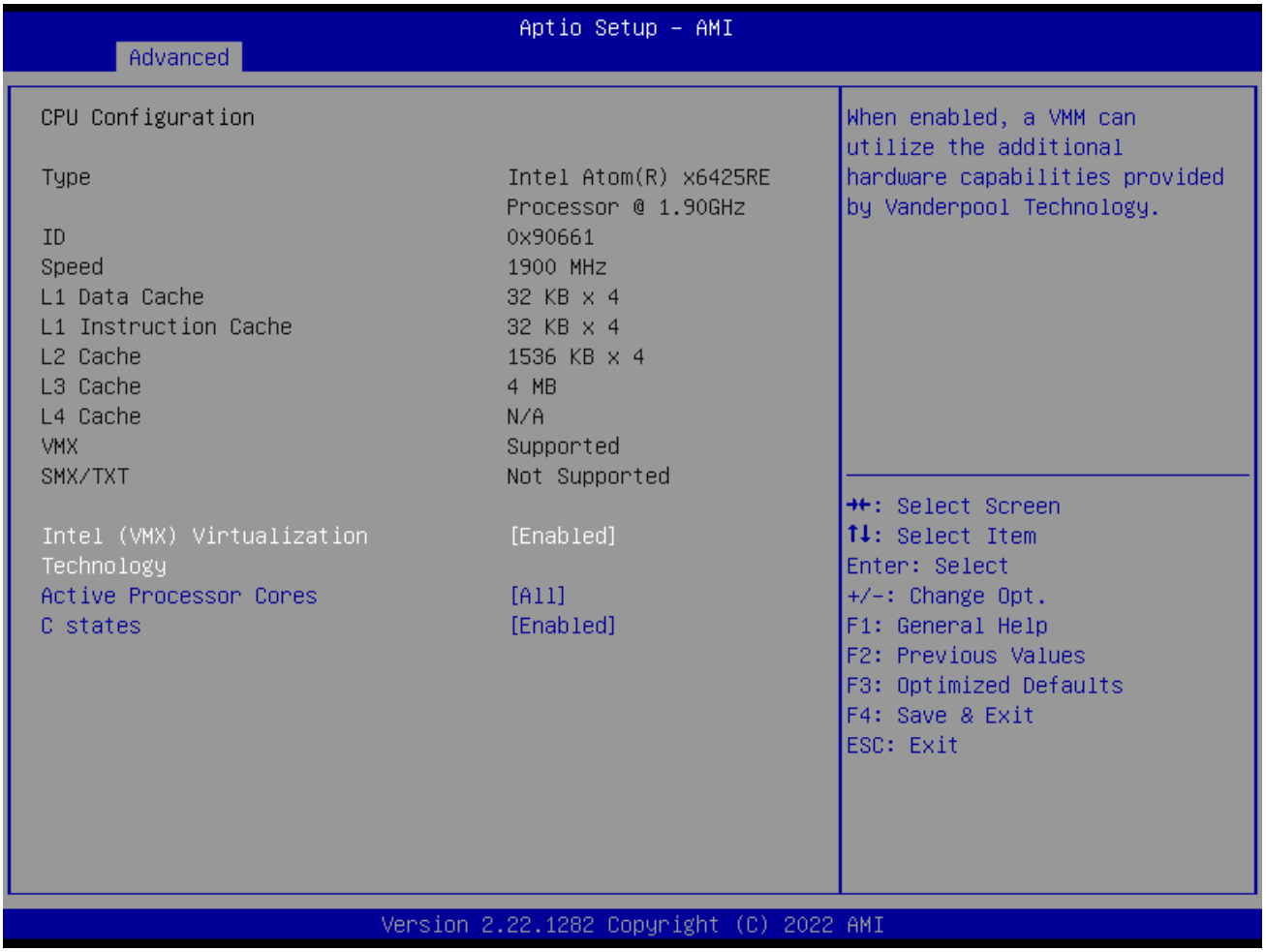
■ System Time

Set the system time. Please use <Tab> to switch between time elements.

5.3 Advanced Setup

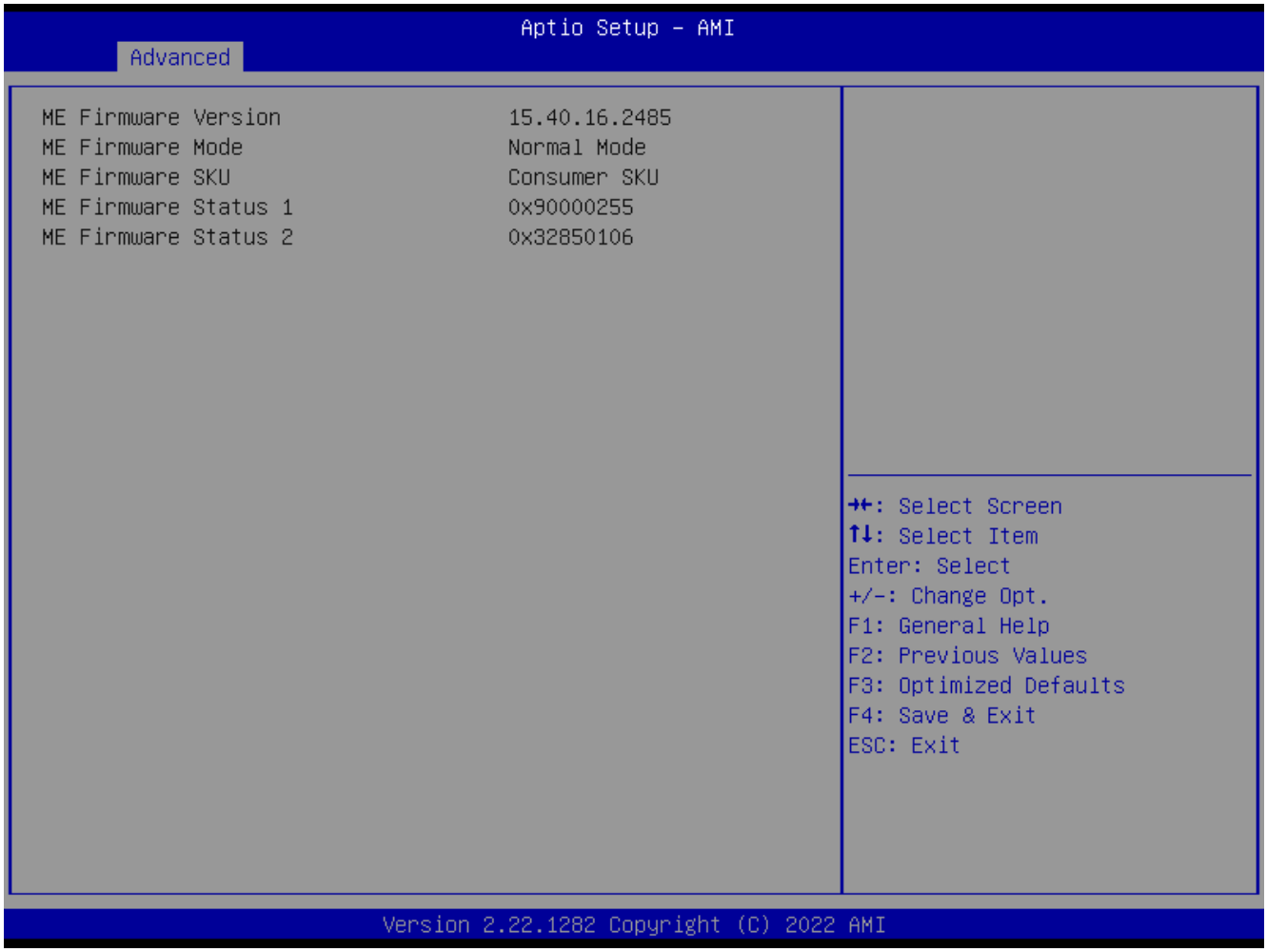


5.3.1 CPU Configuration

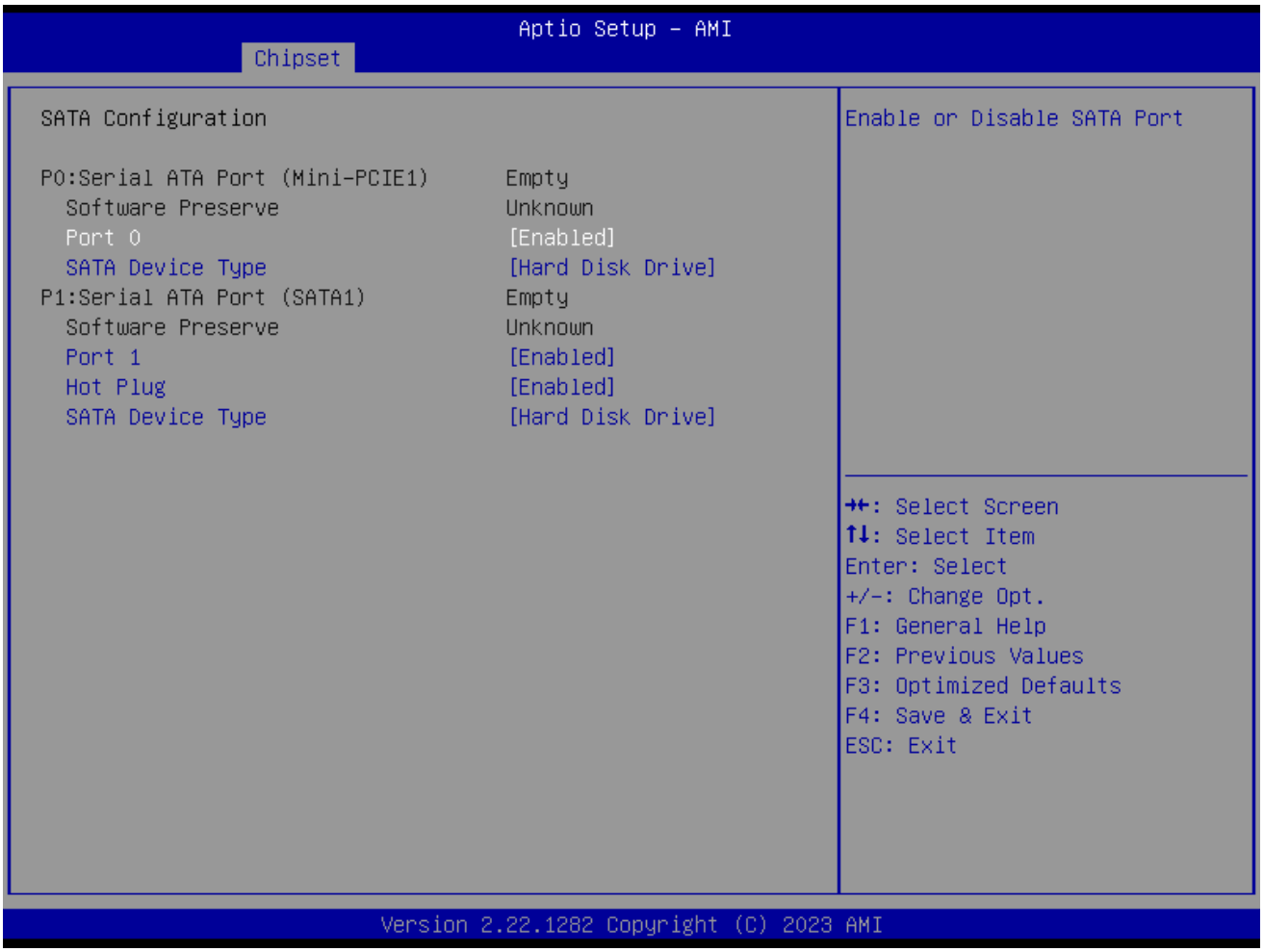


Item	Options	Description
Intel (VMX) Virtualization Technology	Disabled, Enabled**[Default]**	When enabled, a VMM can utilize the additional hardware capabilities provided by Virtualization Technology.
Active Processor Cores	All**[Default]** 1 2 3	Number of cores to enable in each processor package.
C states	Disabled, Enabled**[Default]**	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

5.3.2 PCH-FW Configuration



5.3.3 SATA and RST Configuration

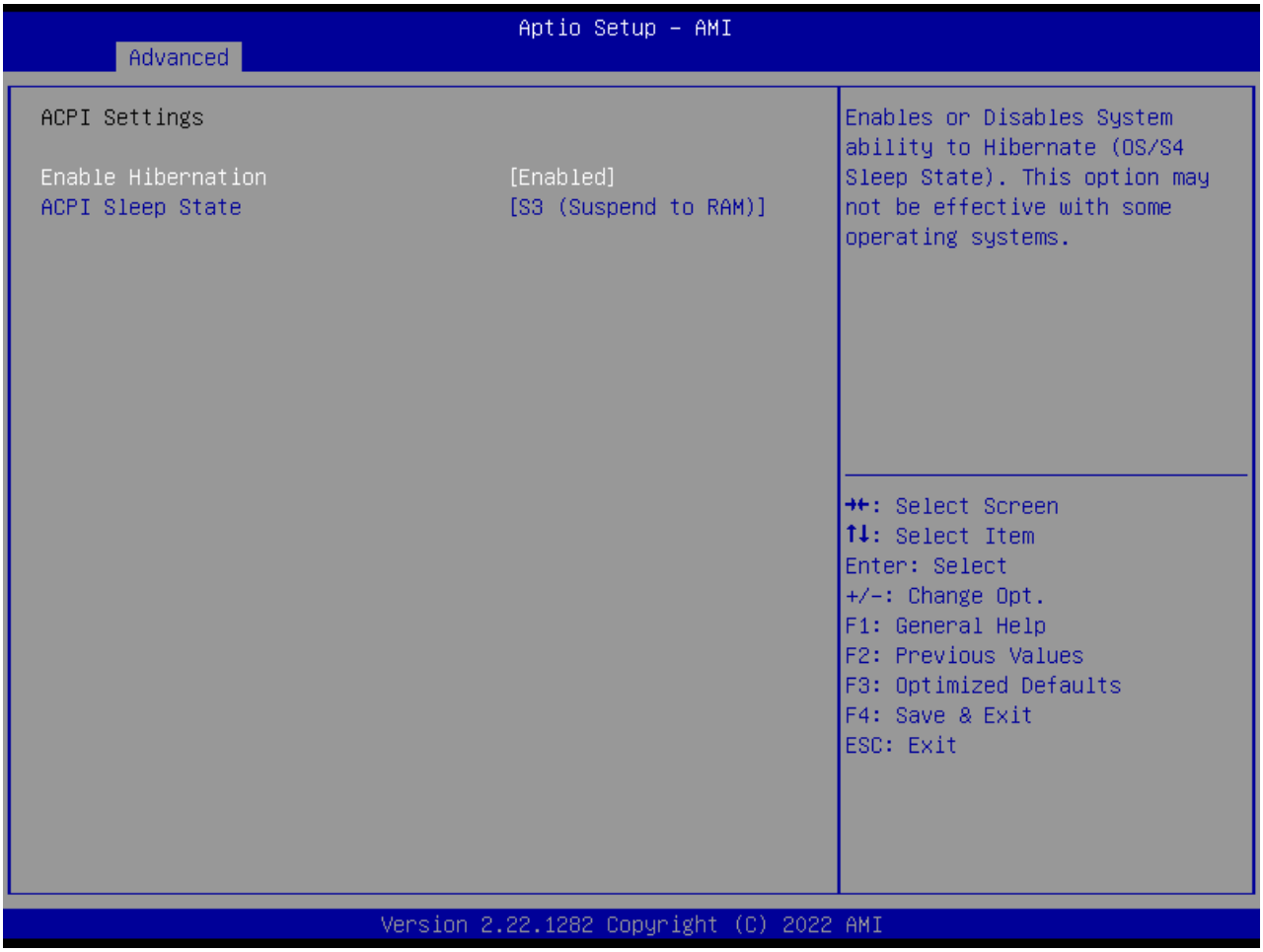


Item	Options	Description
Port0 ~1	Disabled, Enabled**[Default]**	Enable or Disable SATA Port.
Hot Plug	Disabled, Enabled**[Default]**	Designates this port as Hot Pluggable.
SATA Device Type	Hard Disk Drive**[Default] ,** Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

5.3.4 Trusted Computing

Item	Options	Description
Security Device Support	Enabled**[Default]** , Disabled,	Enable/Disable BIOS support for security device. O.S. will not show Security Device.TCG EFI protocol and INT1A interface will not be available.
Pending operation	None**[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.

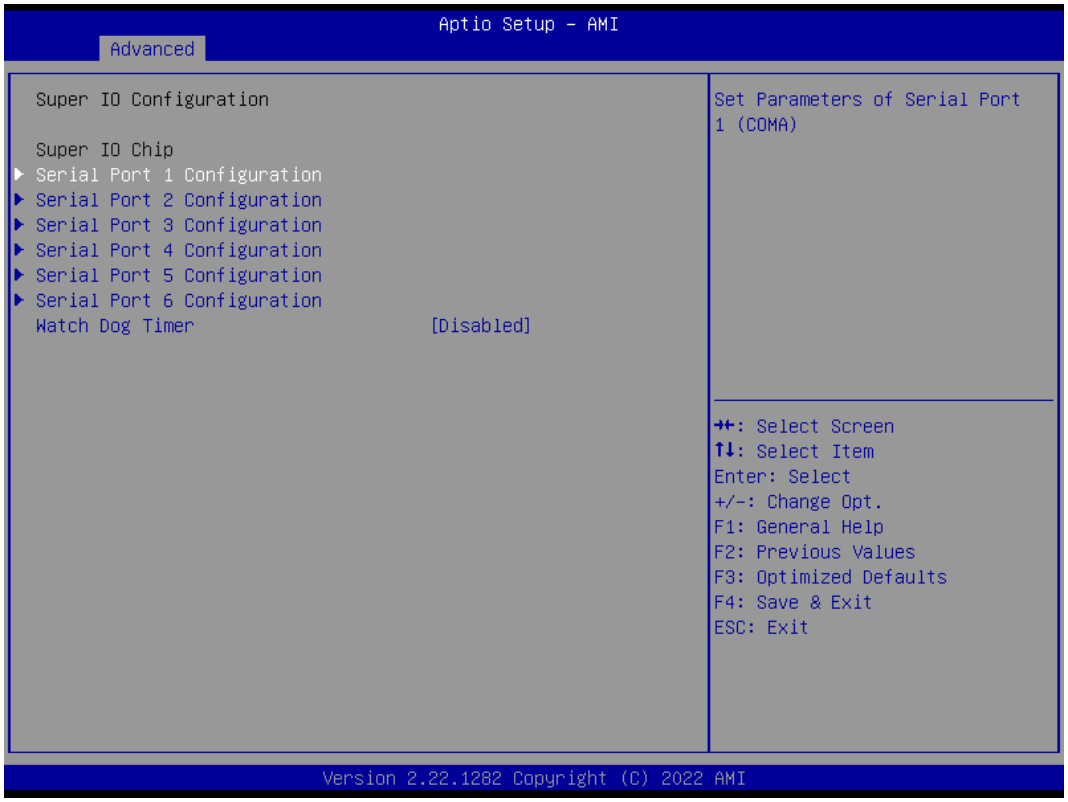
5.3.5 ACPI Settings



Item	Options	Description
Enable Hibernation	Disabled , Enabled**[Default],**	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM)**[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEDN button is pressed.

5.3.6 Super IO Configuration

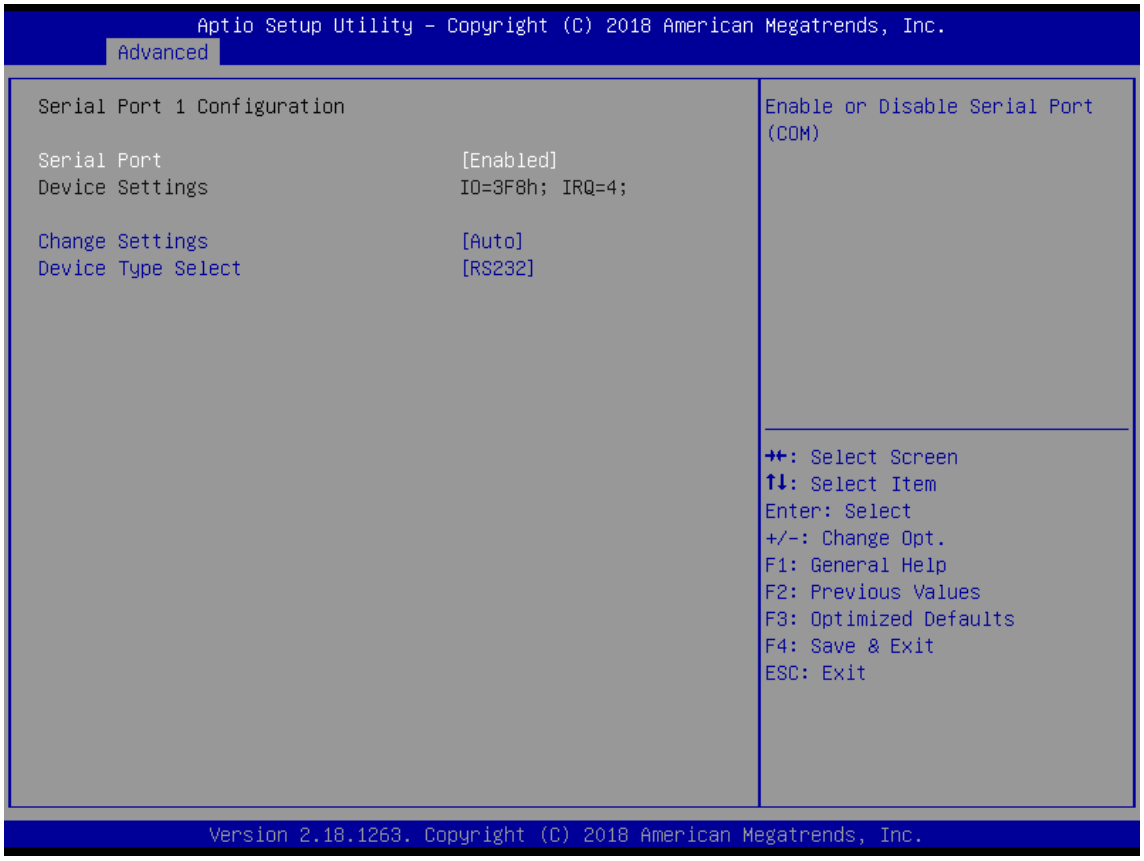
This setting allows you to select options for the Super IO Configuration, and change the value of the selected option.



Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMF).

Item	Options	Description
Watch Dog Timer	Disabled **[Default],** Enabled	Enabled or Disabled Watch Dog Timer function.
Watch Dog Timer Count Mode	Second Mode**[Default]**, Minute Mode	Select Second Mode or Minute Mode.
Watch Dog Timer Time out Value	20~255(Second)**[Default],** 1~255(Minute)	Watch Dog Timer Time out Value.

■ Serial Port 1 Configuration

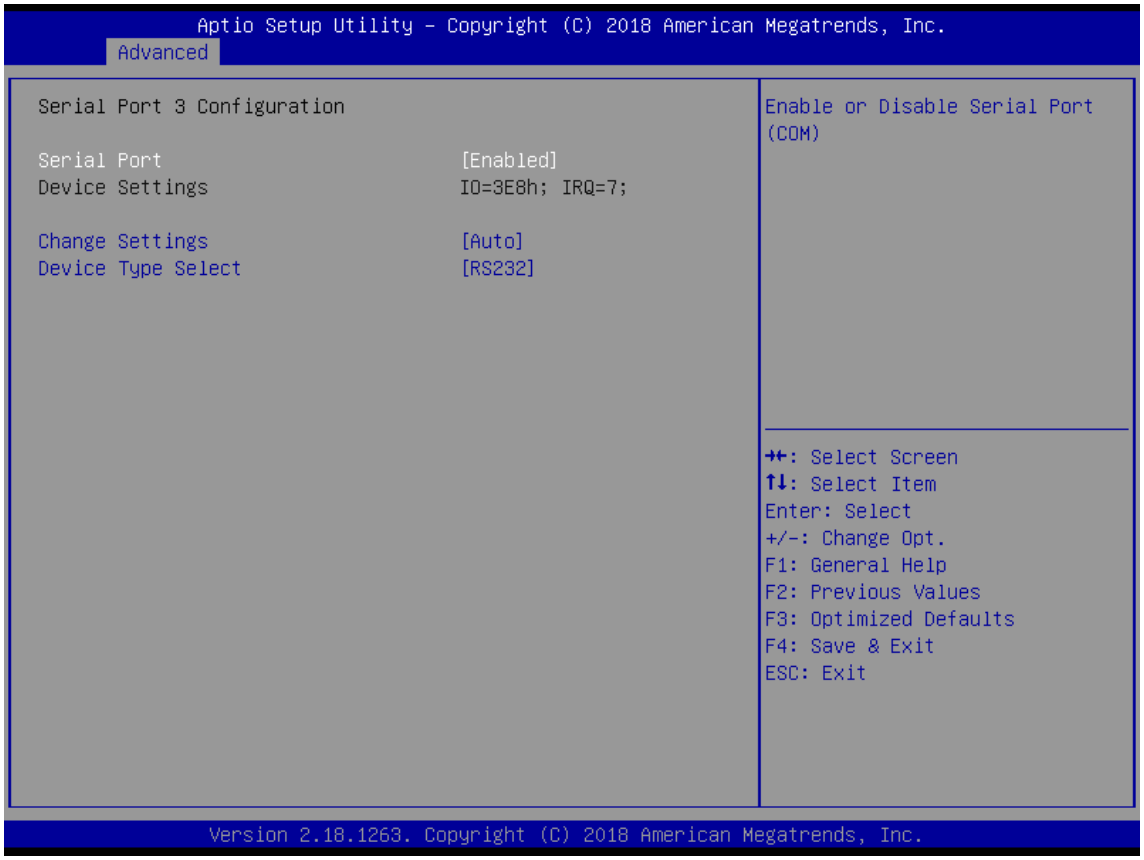


Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=3F8h; IRQ=4; , IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

■ Serial Port 2 Configuration

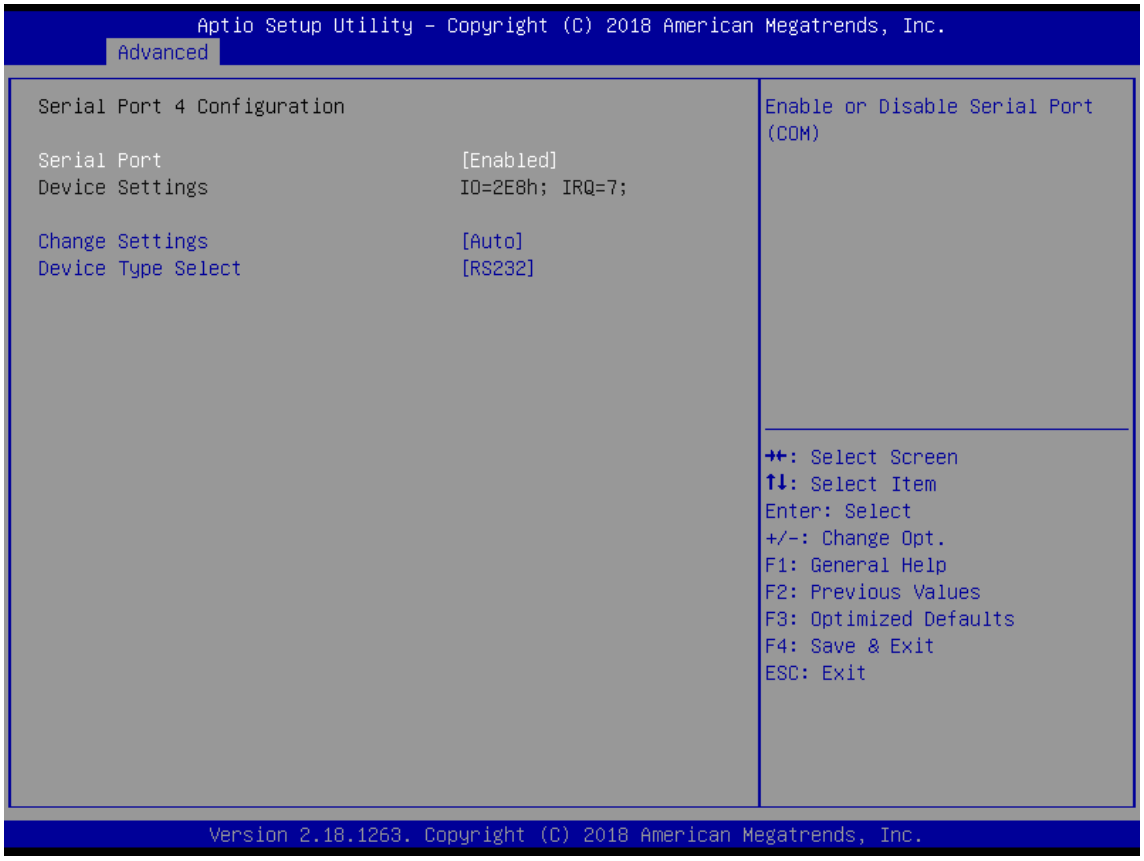
Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=2F8h; IRQ=3; , IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

■ Serial Port 3 Configuration



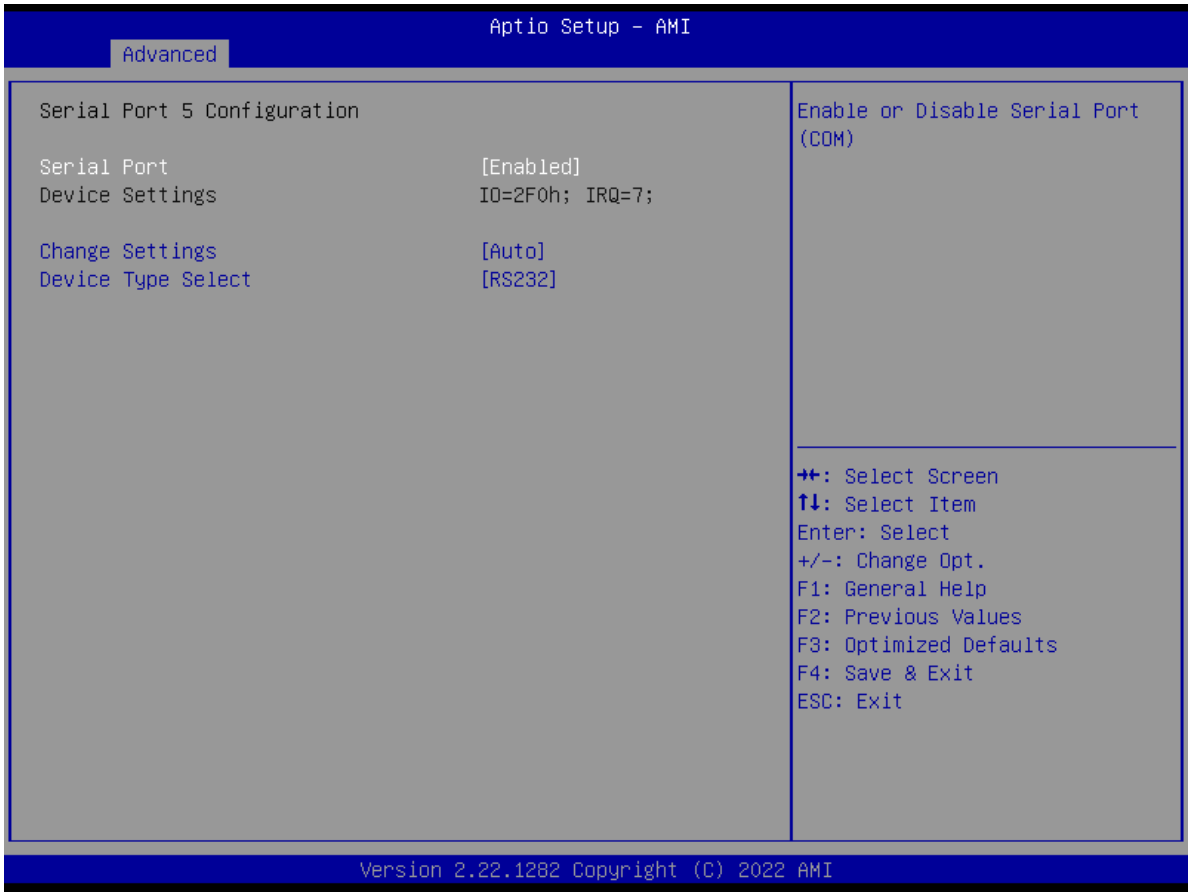
Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=3E8h; IRQ=7; , IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

■ Serial Port 4 Configuration



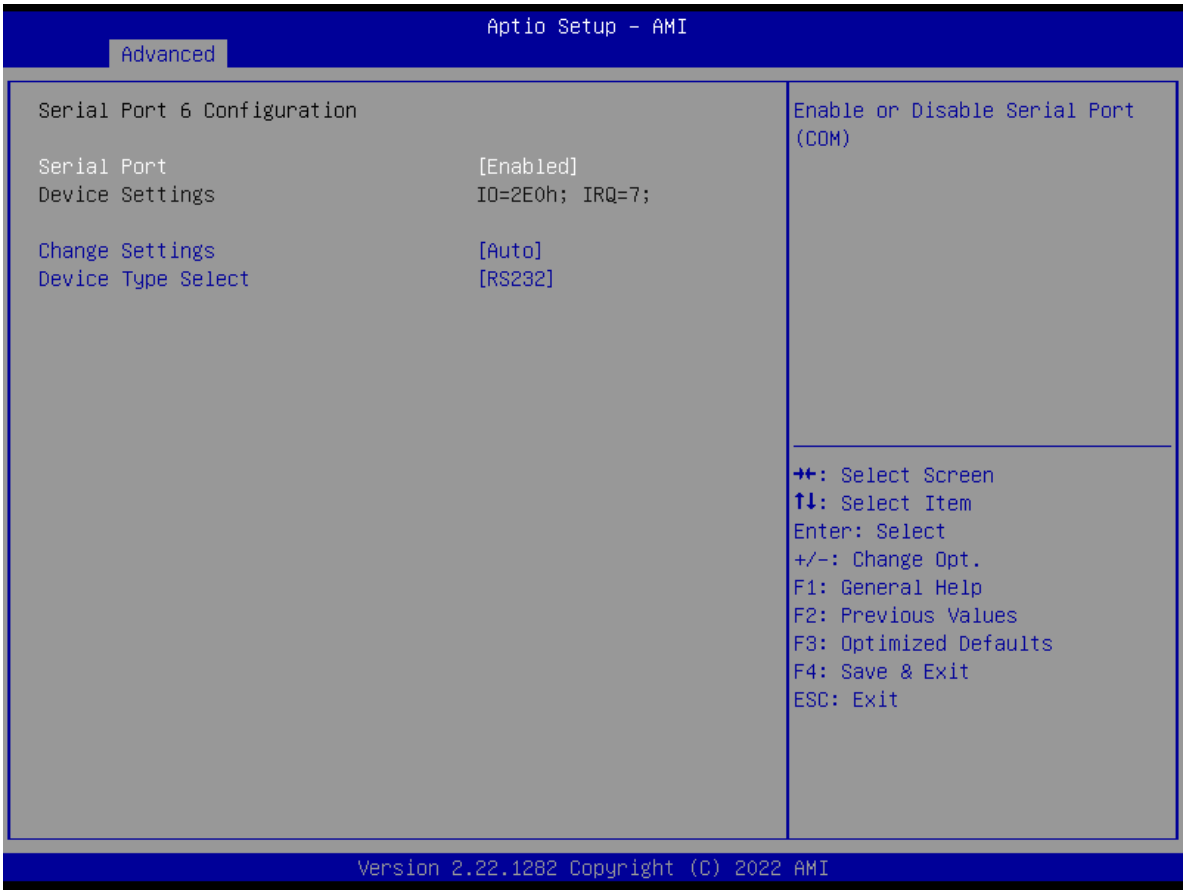
Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=2E8h; IRQ=7; , IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

■ Serial Port 5 Configuration



Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=2F0h; IRQ=7; , IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

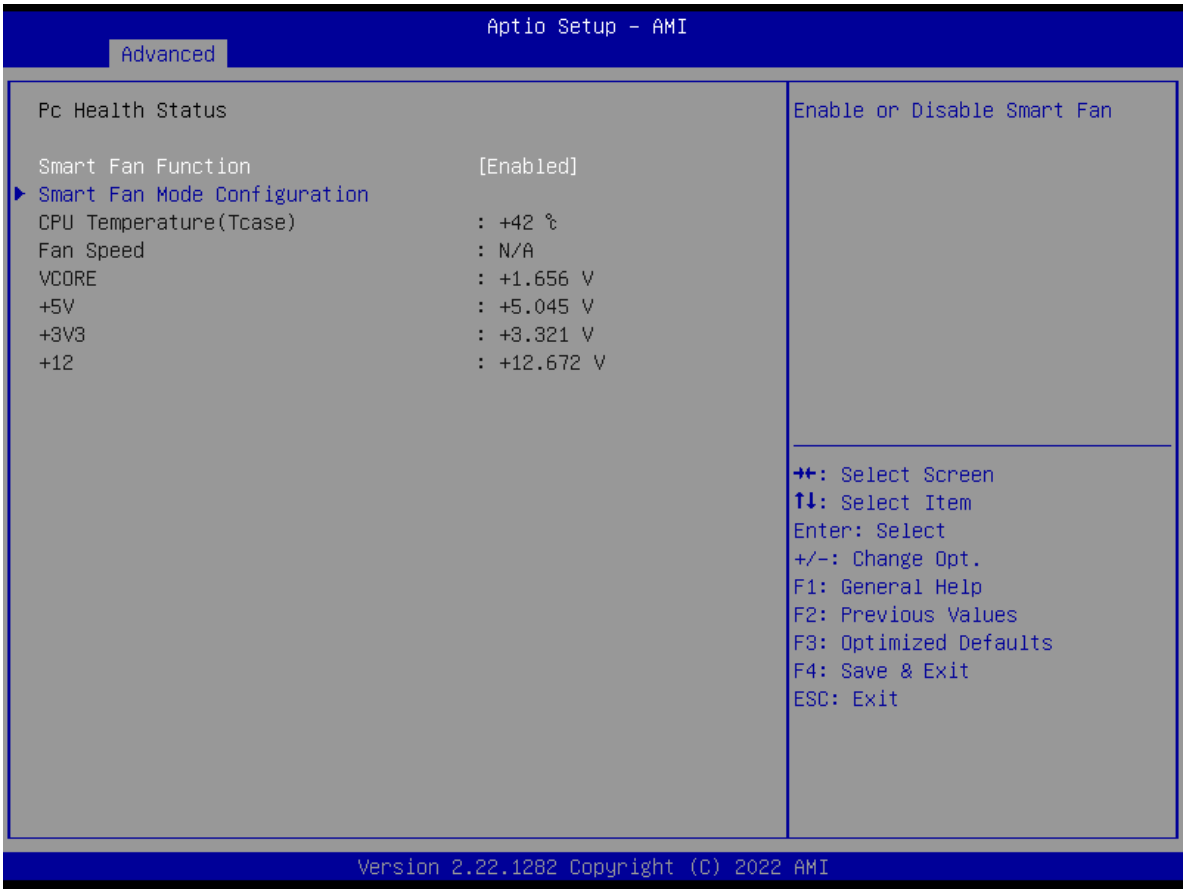
■ Serial Port 6 Configuration



Item	Options	Description
Serial Port	Disabled, Enabled**[Default]**	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]**, IO=2E0h; IRQ=7; , IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; , IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;, IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;	This item allows you to change the address & IRQ settings of the specified serial port.
Device Type Select	UART 232**[Default],** UART 422, UART 485	Set the Serial Port to RS232 & RS422 & RS485
RS-485 Auto Flow Function	Disabled, Enabled**[Default]**	Enabled/Disabled RS485 Autoflow Function

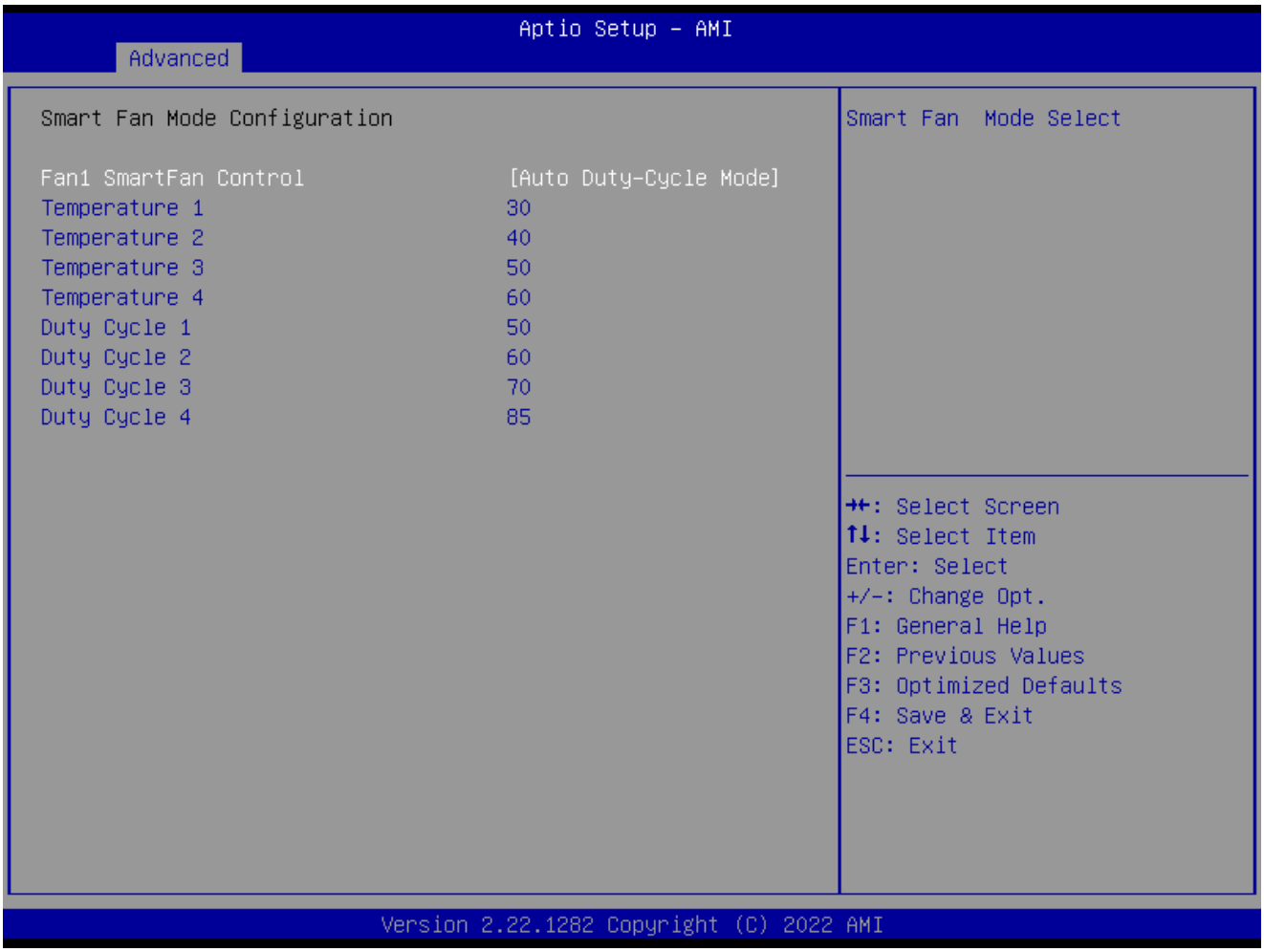
5.3.7 Hardware Monitor

These items display the current status of all monitored hardware devices/ components such as voltages and temperatures.



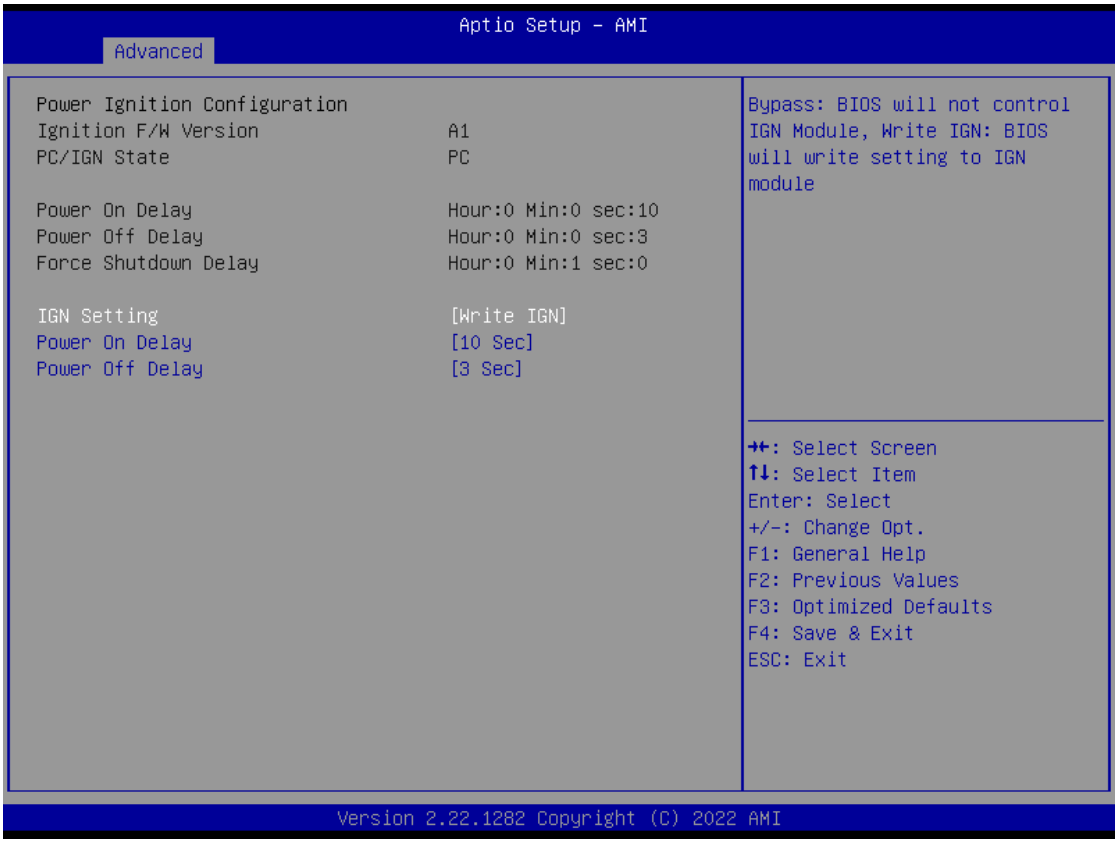
Item	Options	Description
Smart Fan Function	Disabled**[Default],** Enabled	Enabled or Disable Smart Fan

■ Smart Fan Mode Configuration



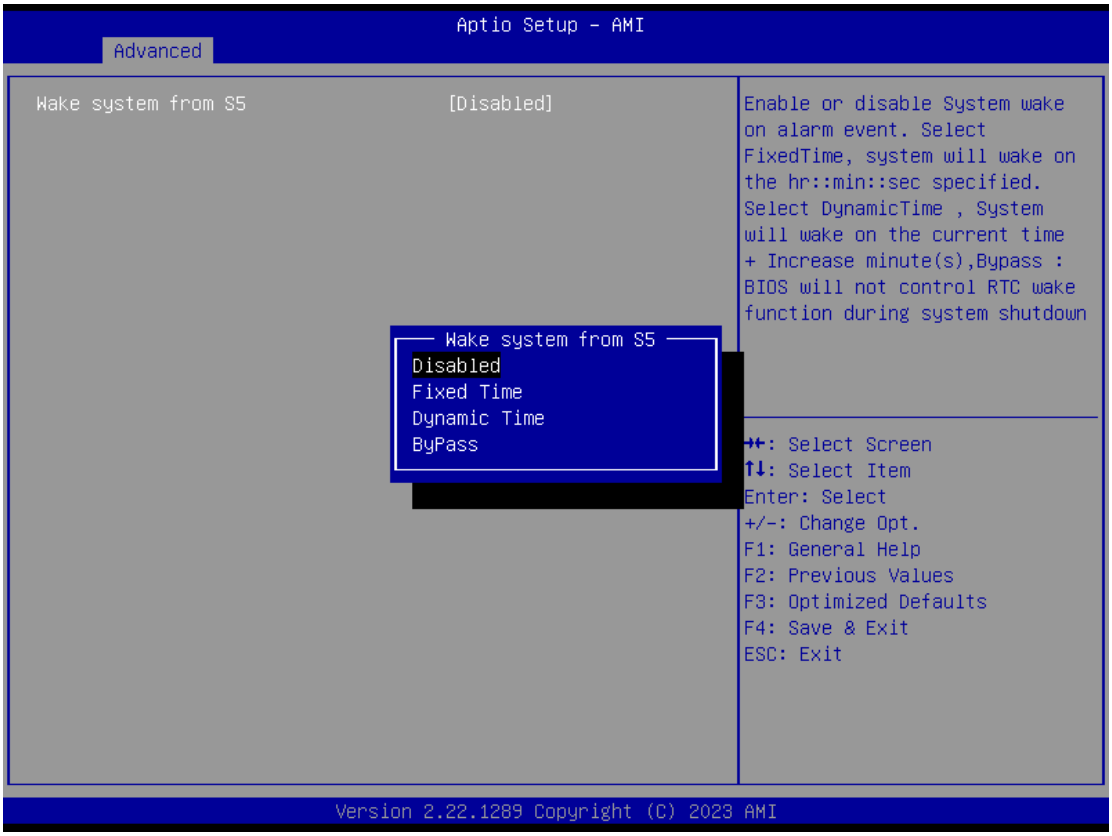
Item	Options	Description
Fan1 SmartFan Control	Manual Duty Mode, Auto Duty-Cycle Mode**[Default],**	Smart Fan Mode Select
Temperature 1~4	1~100	Auto fan speed control. SMART FAN IV
Duty Cycle 1~4	20~100	Auto fan speed control. SMART FAN IV

5.3.8 Power IGN Mode



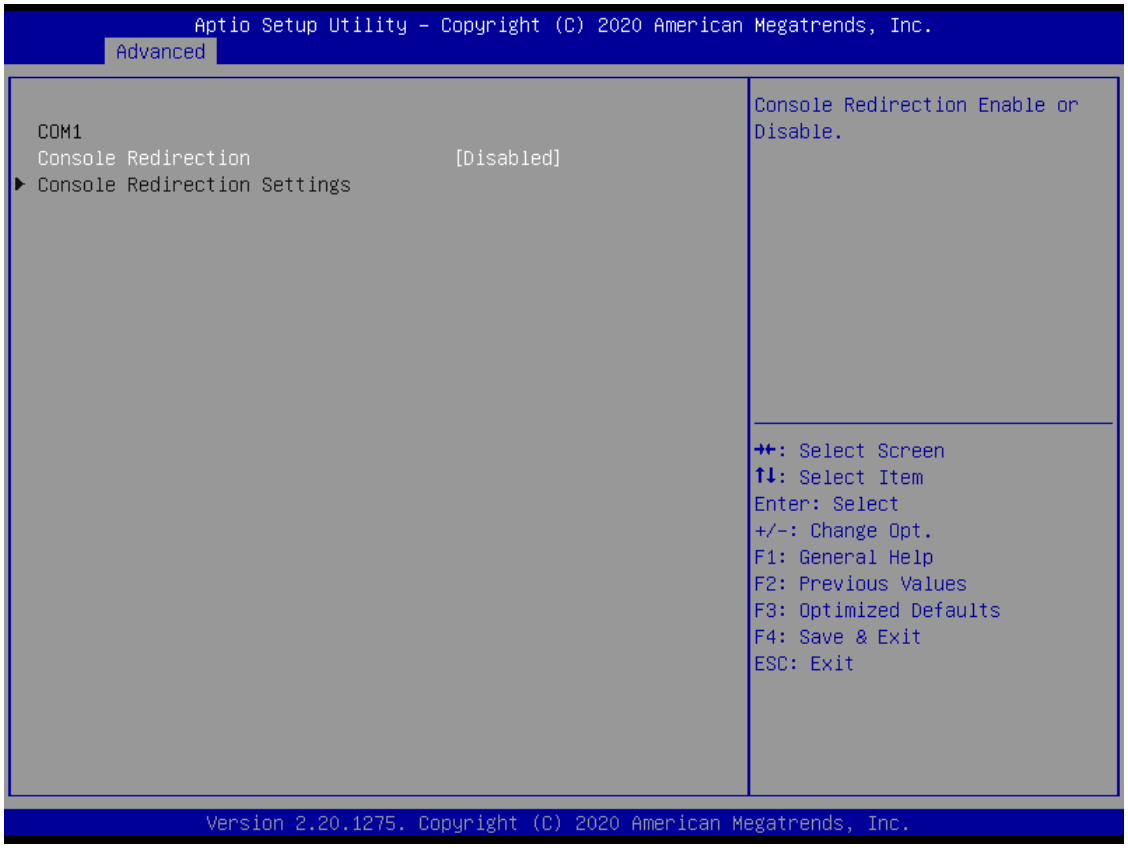
Item	Options	Description
IGN Setting	Bypass mode**[Default]** Write IGN	Bypass: BIOS will not control IGN Module, Write IGN: BIOS will write setting to IGN module
Power On Delay	10 Sec**[Default]** 20 Sec 30 Sec 40 Sec 50 Sec 1 Min Manual Mode	Power On Delay Select
Manual Mode	10 Sec**[Default]**	10~60 Sec
Power Off Delay	3 Sec**[Default]** , 1 Min, 5 Min, 10 Min, 30 Min, 1 Hour, 2 Hour, Manual Mode	Power Off Delay Select
Manual Mode	3 Sec**[Default]**	3~7200 Sec

5.3.9 Wake system from S5



Item	Options	Description
Wake system from S5	Disabled**[Default] ,** Fixed Time, Dynamic Time, ByPass	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s),Bypass : BIOS will not control RTC wake function during system shutdown
Wake up day	**0[Default]**	Date (of month) Alarm (0 is mean daily or you can setup a specific month)
Wake up hour	**0[Default]**	select 0-23 For example enter 3 for 3am and 15 for 3pm
Wake up minute	**0[Default]**	select 0-59 for Minute
Wake up second	**0[Default]**	select 0-59 for Second
Wake up minute increase	**0[Default]**	1 - 5

5.3.10 Serial Port Console Redirection

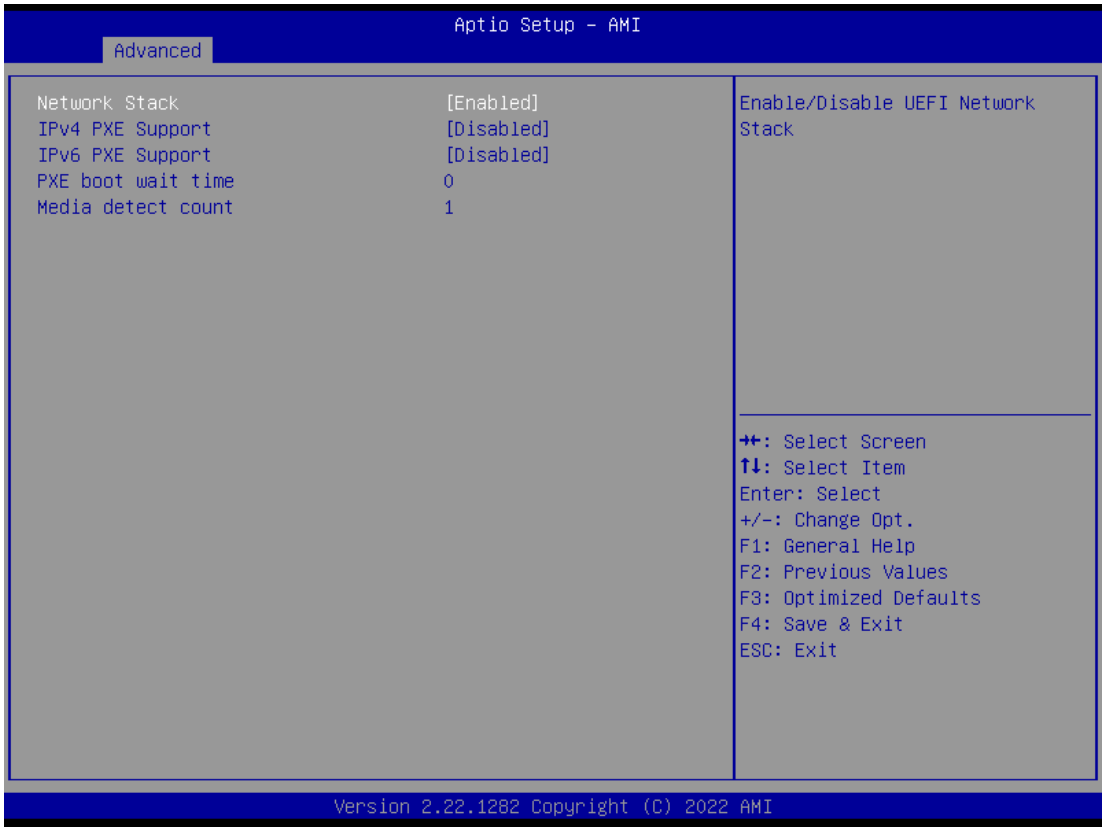


Item	Options	Description
Console Redirection	Disabled**[Default],** Enabled	These items allows you to enable or disable COM1 console redirection

5.3.11 USB Configuration

Item	Options	Description
Legacy USB Support	Enabled**[Default]** Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
XHCI Hand-off	Enabled**[Default]** Disabled	This is a workaround for OSew without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Disabled Enabled**[Default]**	Enable/Disable USB Mass Storage Driver Support.
USB transfer time-out	1 sec , 5 sec , 10 sec , 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec , 20 sec**[Default] ,** 30 sec, 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken form Hub descriptor.

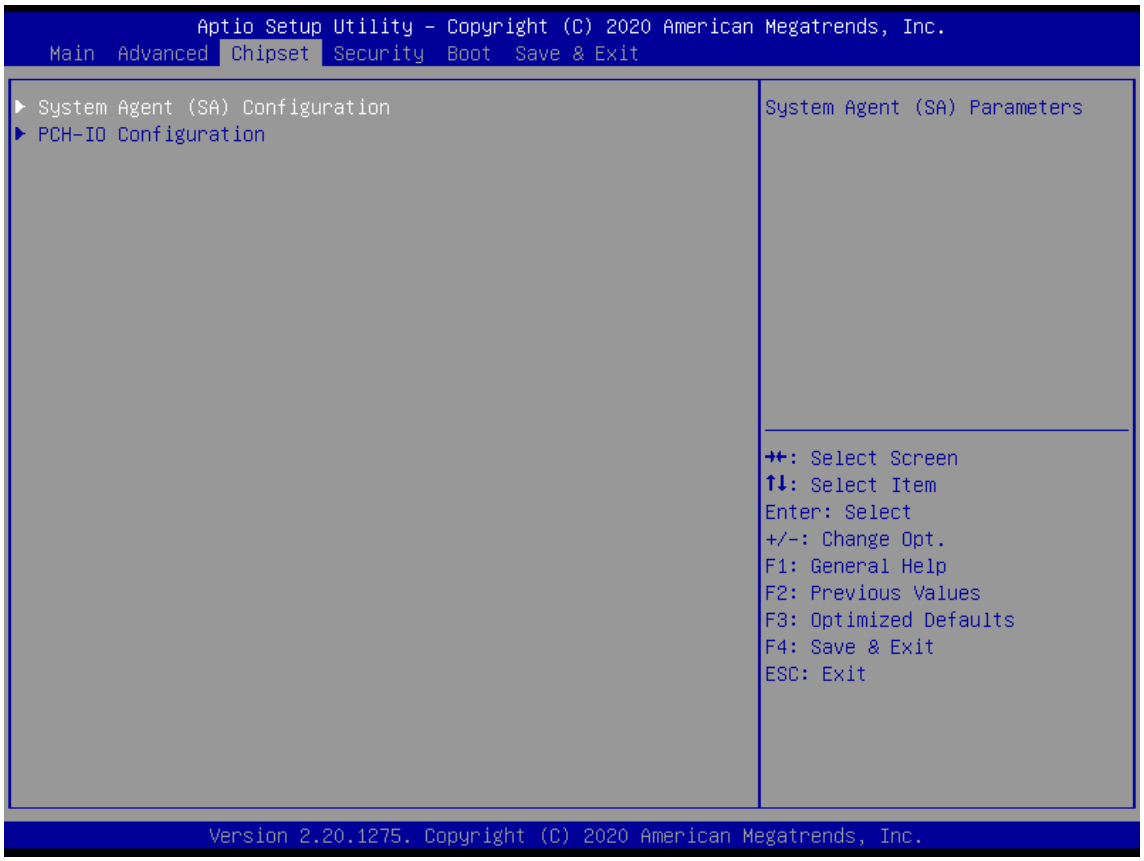
5.3.12 Network Stack Configuration



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

5.4 Chipset

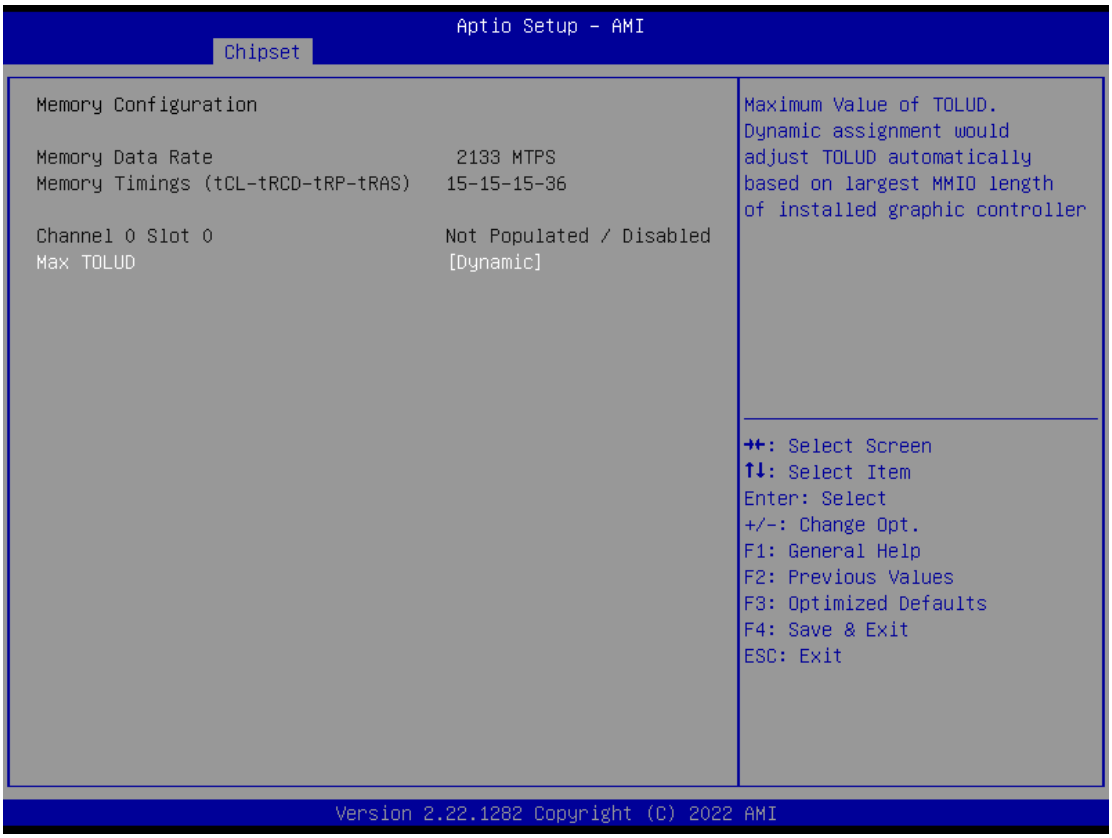
This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



5.4.1 System Agent (SA) Configuration

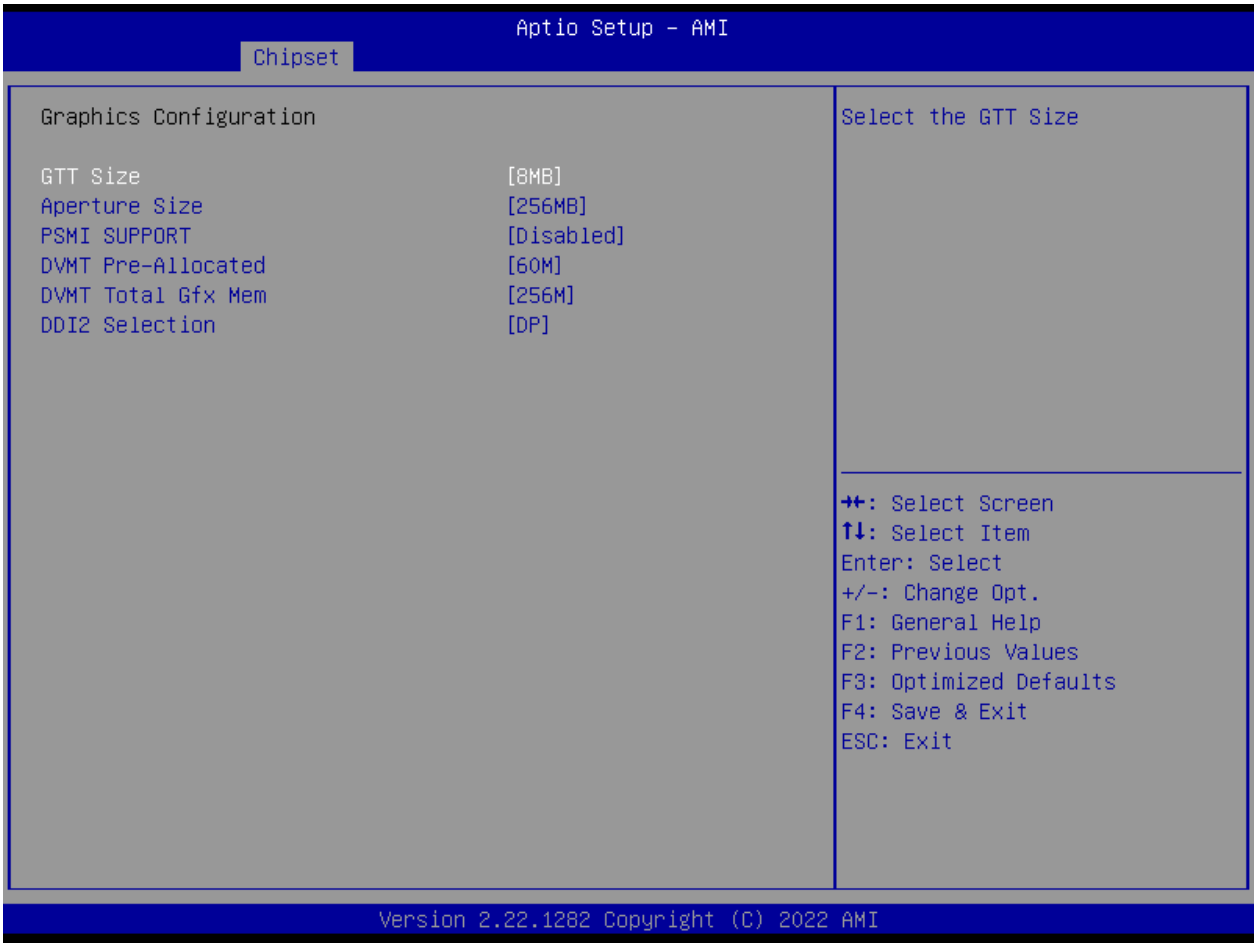
Item	Options	Description
VT-d	Disabled, Enabled **[Default]**	VT-d capability.
Above 4GB MMIO BIOS assignment	Enabled**[Default]** , Disabled	Enable/Disable above 4GB MemoryMappedIO BIOS assignment\n\nThis is enabled automatically when Aperture Size is set to 2048MB.

■ Memory Configuration



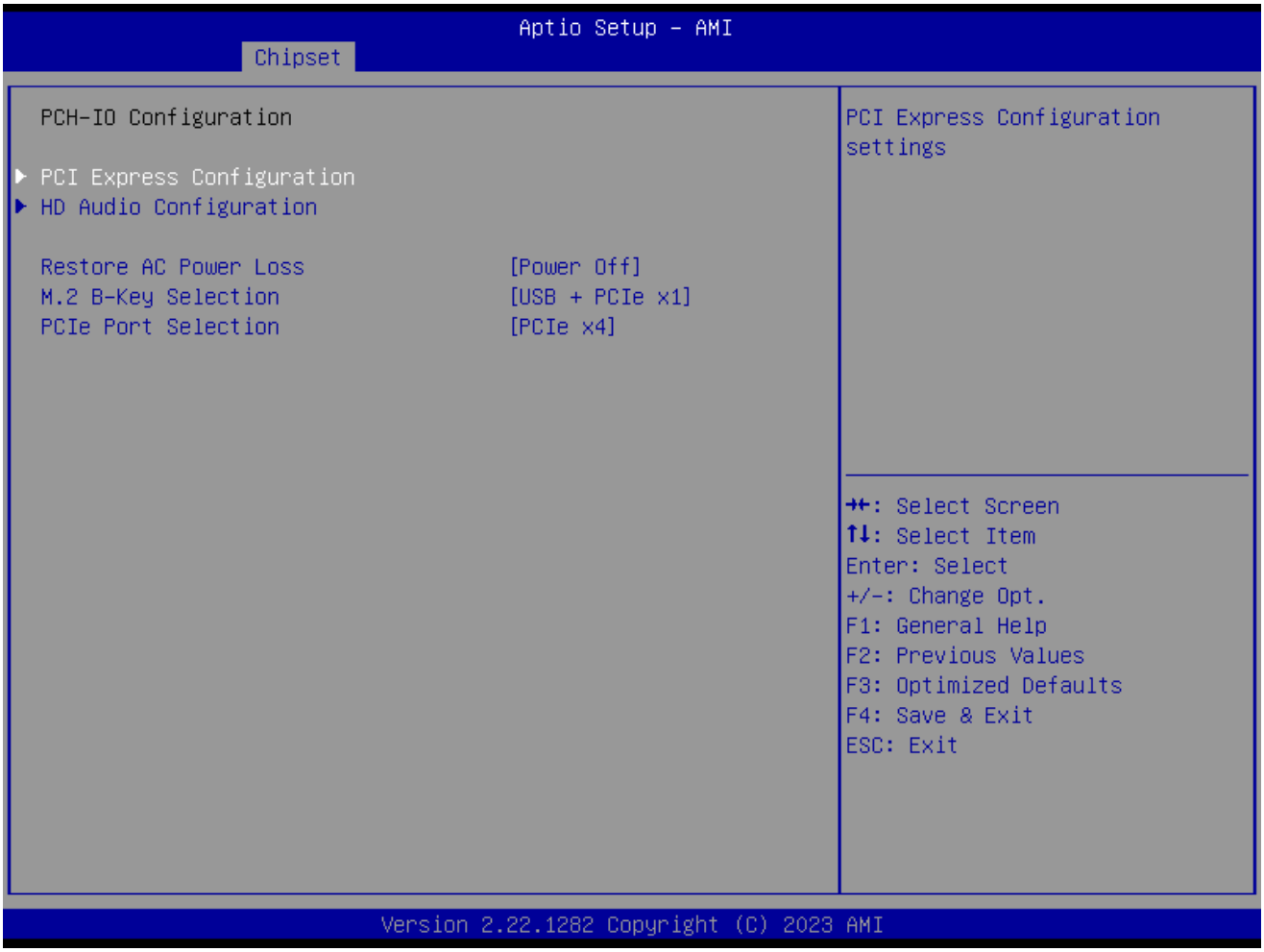
Item	Options	Description
Max TOLUD	Dynamic**[Default],** 1GB, 1.25GB, 1.5 GB, 1.75 GB, 2 GB, 2.25 GB, 2.5 GB,	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller

■ Graphic Configuration



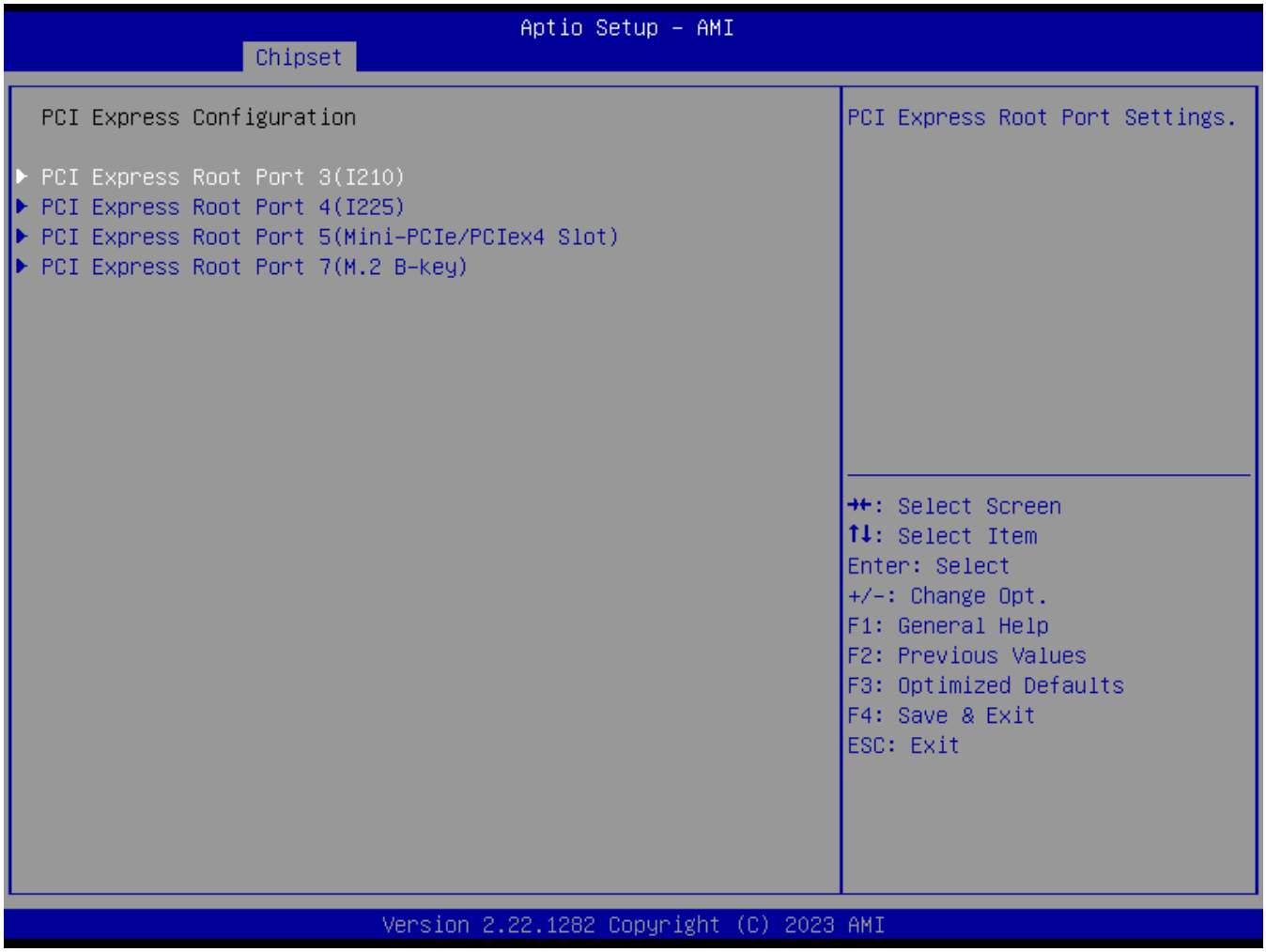
Item	Options	Description
GTT Size	2MB, 4MB, 8MB**[Default]**	Select the GTT Size .
Aperture Size	128MB, 256MB**[Default] ,** 512MB, 1024MB	Select the Aperture Size. Note : Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.
PSMI SUPPORT	Disabled **[Default] ,** Enabled	PSMI Enable/Disable.
DVMT Pre-Allocated	32M,64M,96M,128M, 160M,4M, 8M,12M, 16M,20M,24M, 28M, 32M/F7,36M, 40M,44M, 48M,52M,56M, 60M**[Default]**	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	128M, 256M**[Default] ,** MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.
DDI2 Selection	DP**[Default] ,** HDMI	Selects DDI2 function: DP or HDMI

5.4.2 PCH-IO Configuration

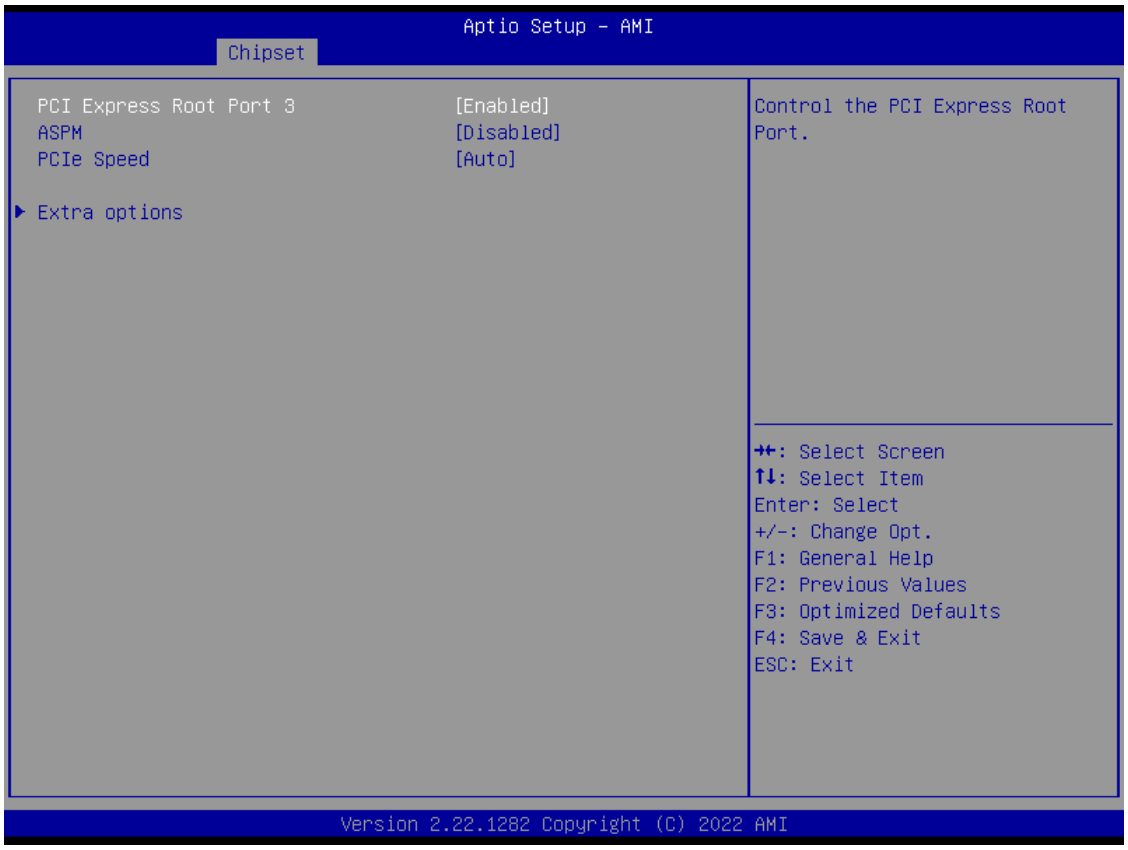


Item	Options	Description
Restore AC Power Loss	Power On, Power Off **[Default]** , Lase State	Specify what state to go to when power is re-applied after a power failure (G3 state).
M.2 B-Key Selection	USB + PCIe x1 **[Default]** , PCIe x2	Selects M.2 B-KEy function: PCIe x2 or USB + PCIe x1.
PCIe Port Selection	PCIe x4**[Default]** , MiniPCIe1	This setting controls PCIe Port configuration for [PCIex4 slot] or [MiniPCIe1]. This PCIex4 slot connector only have support PCIex1 lanes.

■ PCI Express Configuration

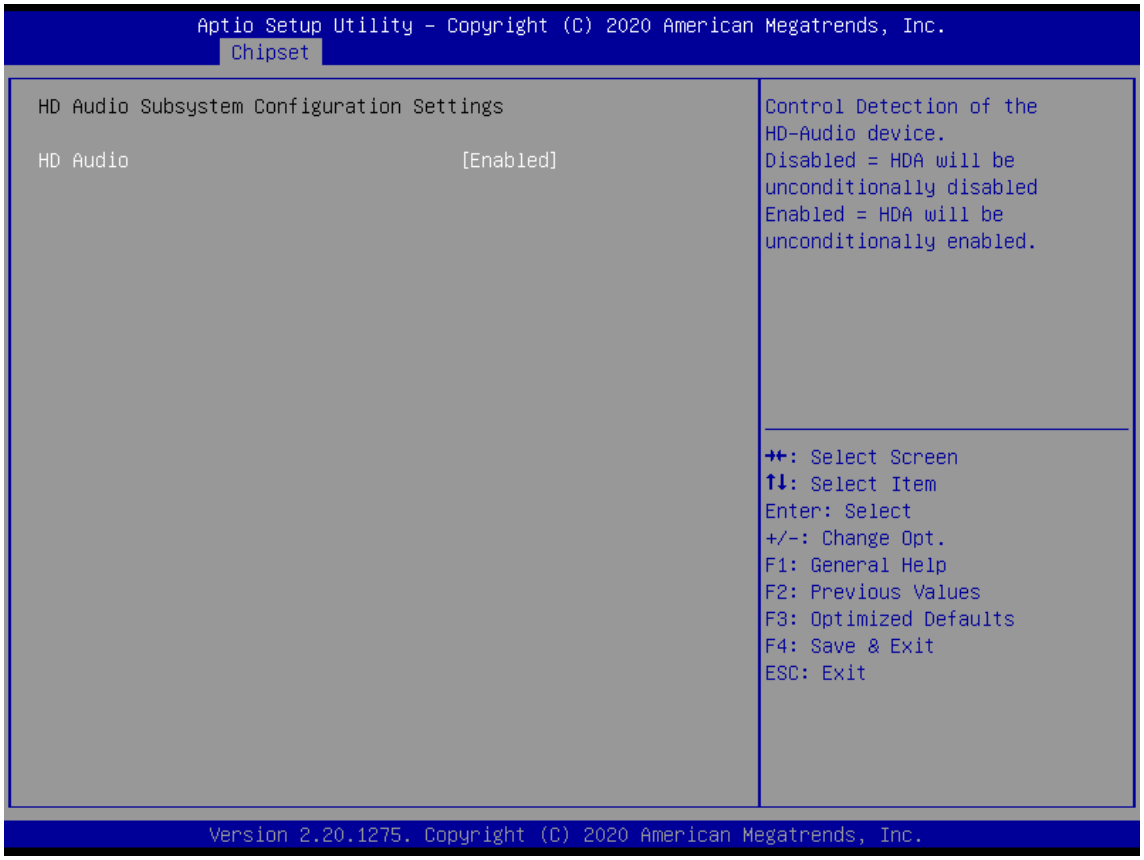


■ PCI Express Root Port 3 /4 /5 /7



Item	Options	Description
PCI Express Root Port 3 /4 /5 /7	Disabled, Enabled **[Default]**	Control the PCI Express Root Port.
ASPM	Disabled **[Default]** , L0s, L1, L0sL1, Auto	Set the ASPM Level: Force L0s - Force all links to L0s State, AUTO - BIOS auto configure, DISABLE - Disables ASPM,
PCIe Speed	Auto**[Default]** , Gen1, Gen2, Gen3	Configure PCIe speed.
Detect Non-Compliance Device	Disabled **[Default]** , Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

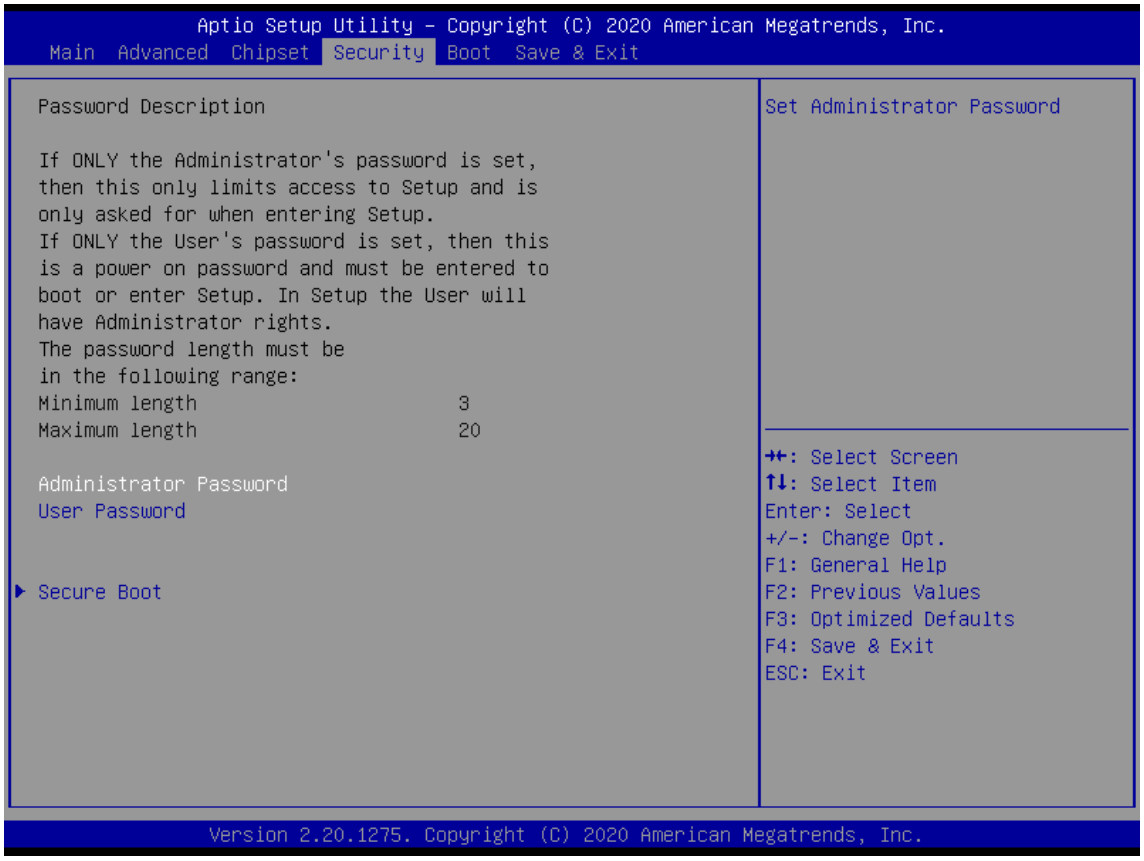
■ HD Audio Configuration



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

5.5 Security

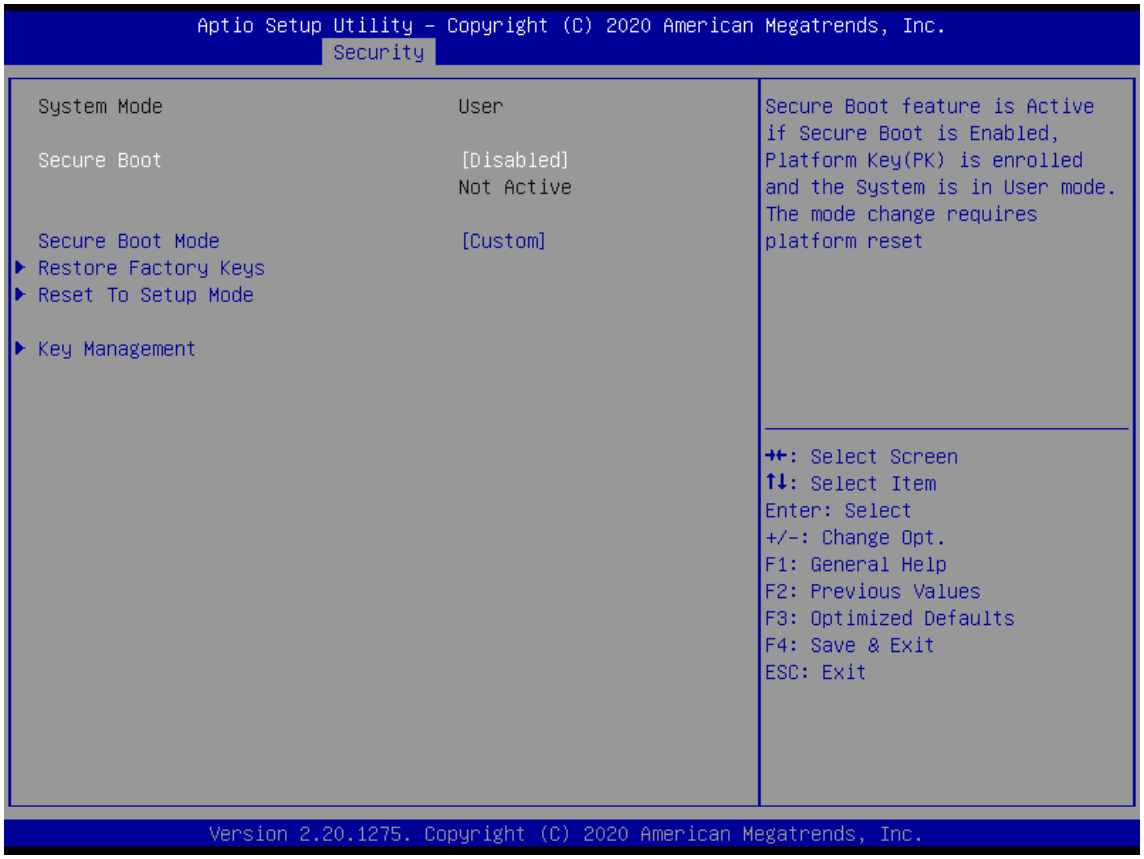
Security menu allow users to change administrator password and user password settings.



- **Administrator Password**
  This item allows you to set Administrator Password.

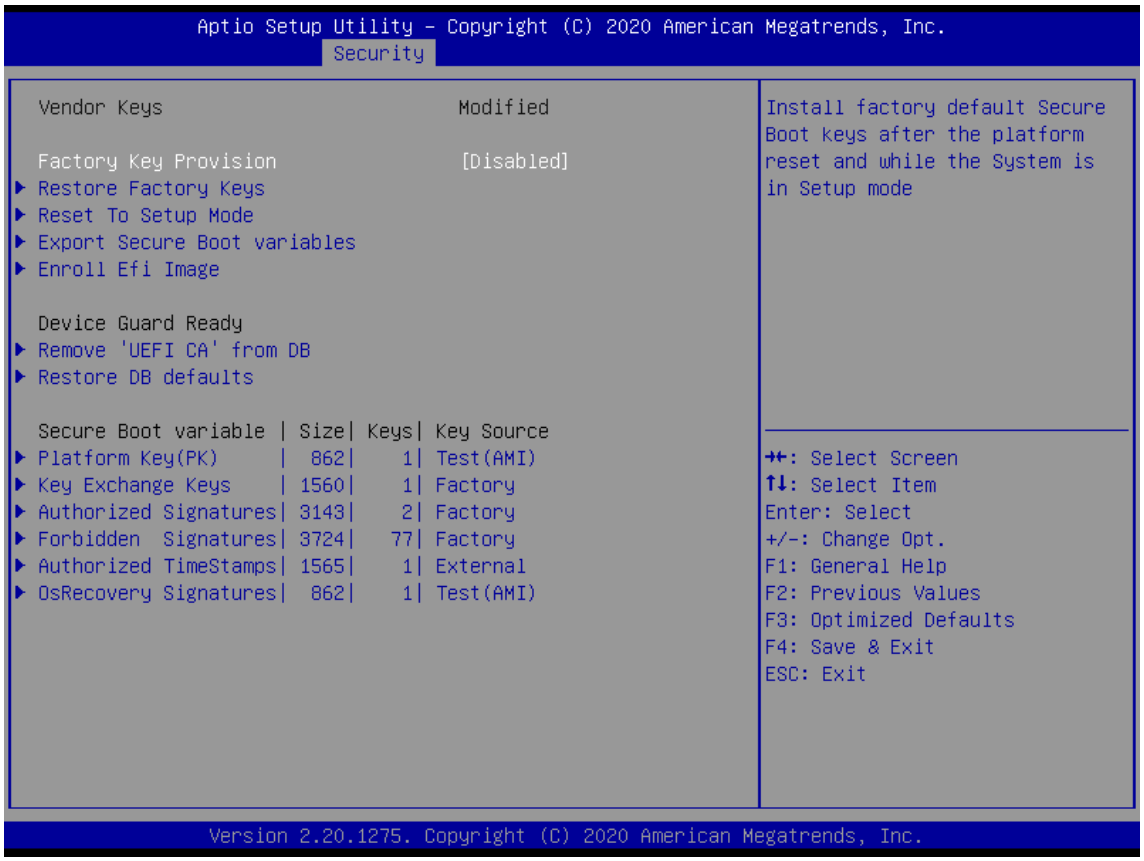
- **User Password**
  This item allows you to set User Password.

■ Security Boot



Item	Options	Description
Secure Boot	Disabled **[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**[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

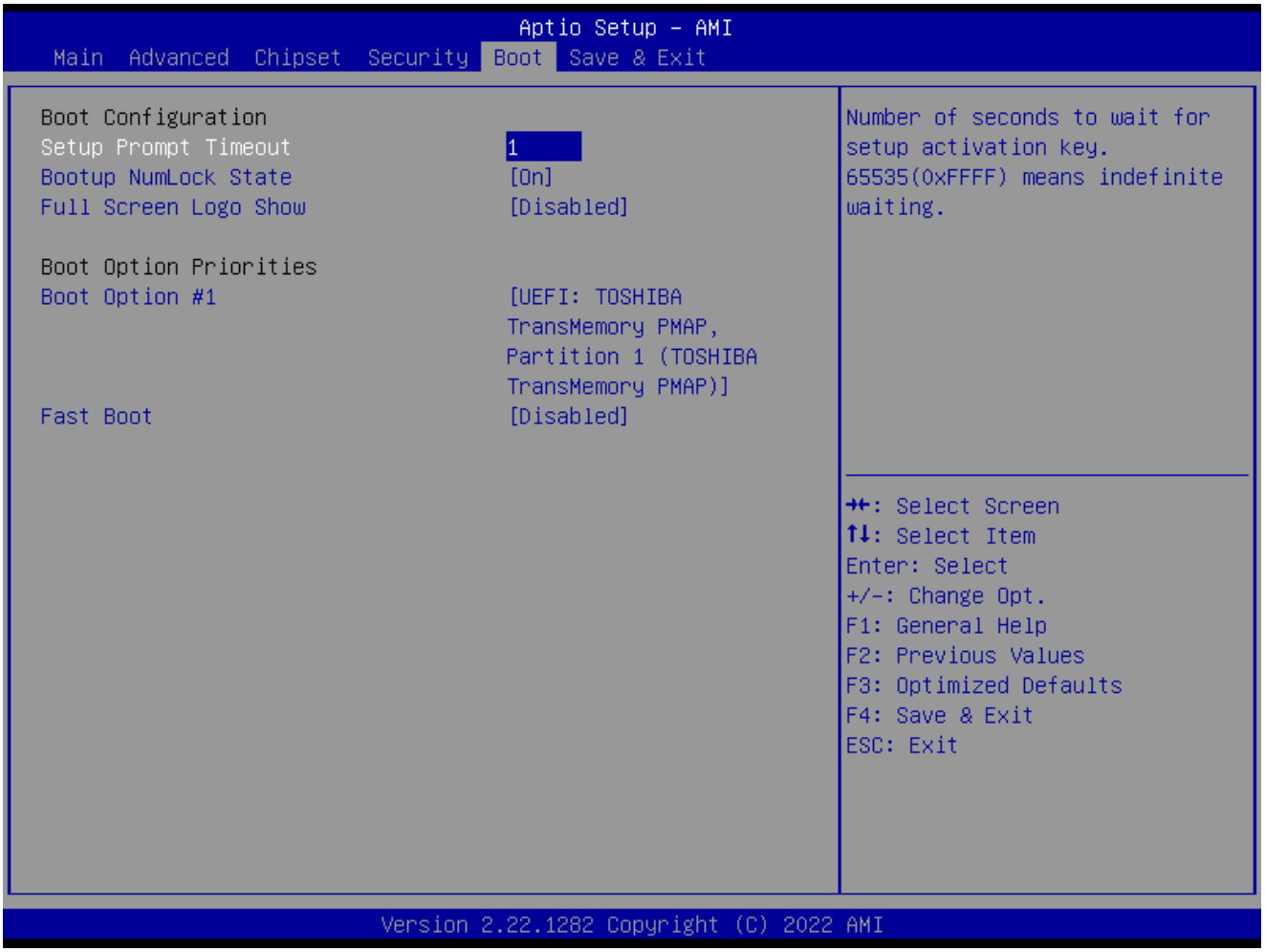
■ Key Management



Item	Options	Description
Factory Key Provision	Disabled **[Default]** , Enabled	Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode

5.6 Boot

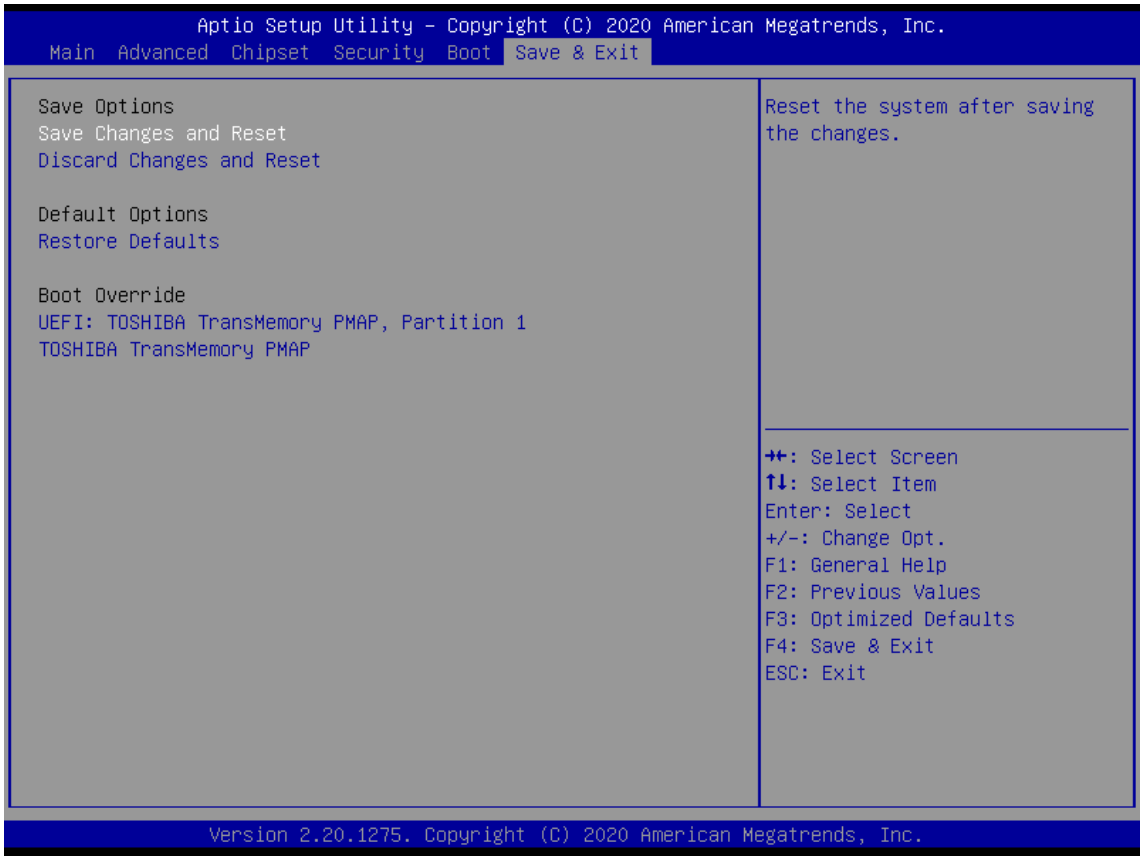
This menu allows you to setup the system boot options.



Item	Options	Description
Setup Prompt Timeout	1**[Default]**	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** , Off	Select the Keyboard NumLock state.
Full Screen Logo Show	Disabled**[Default]** , Enabled	Enables or disables Full Screen Logo Show option.
Fast Boot	Disabled**[Default]** , Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option #1		Set the system boot order.

5.7 Save & Exit

This setting allows users to configure the boot settings.



Save Changes and Reset

This item allows user to reset the system after saving the changes. This item allows user to reset the system after saving the changes.

Discard Changes and Reset

This item allows user to reset the system without saving any changes.

Restore Defaults

Use this item to restore /load default values for all the setup options.

Appendix

WDT & GPIO

This appendix provides the sample codes of WDT (Watch Dog Timer) and GPIO (General Purpose Input/ Output).

WDT Sample Code

WDT Setting

Psuedo Code

// IO Address 0xA16 is time value
// IO Address 0xA15 is WDT enable and configuration
Example, Set 0xA16=-0x03, 0xA15=0x31, it will reset after 3 seconds

```
#define TimePort          0xA16
#define TimeEnablePort  0xA15

WriteByte (TimePort,0x03)
WriteByte (TimeEnablePort,0x31)
```

GPIO Sample Code

GPIO Setting

IO_DI8	I/O 0xA03h Bit7	IO_DO8	I/O 0xA02h Bit7
IO_DI7	I/O 0xA03h Bit6	IO_DO7	I/O 0xA02h Bit6
IO_DI6	I/O 0xA03h Bit5	IO_DO6	I/O 0xA02h Bit5
IO_DI5	I/O 0xA03h Bit4	IO_DO5	I/O 0xA02h Bit4
IO_DI4	I/O 0xA03h Bit3	IO_DO4	I/O 0xA02h Bit3
IO_DI3	I/O 0xA03h Bit2	IO_DO3	I/O 0xA02h Bit2
IO_DI2	I/O 0xA03h Bit1	IO_DO2	I/O 0xA02h Bit1
IO_DI1	I/O 0xA03h Bit0	IO_DO1	I/O 0xA02h Bit0

The GPIO function is provided by SIO, and it can be accessed through its GPIO port. To access the GPIO register, write value to data port. The configuration on the PC100-EHL is described as below.

Psuedo Code

```
#define GPI_ADDR    0xA03h
#define GPO_ADDR  0xA02h

// 0xA03h is Pin Status(default 0xFF )(at IO_DI1(Bit0) ~  IO_DI8(Bit7))
ByteData = ReadByte (GPI_ADDR)      //Read current Pin Status

//Offset 0xA02h default setting is 0x5F (output pin set to output high) (at IO_DO1(Bit0) ~  IO_DO8(Bit7))
ByteData = 0xFF                          //set IO_DO1~ IO_DO8 to high
WriteByte (GPO_ADDR, ByteData)
```

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