

USER'S MANUAL

VIO-100/PC200 Series
VIO-200/PC200 Series
Industrial Panel PCs



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Prefaces

Revision

Revision	Description	Date
1.0	Manual Released	2018/12/27

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 by 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-110/PC200 VIO-110/PC210		
Item	Description	Q'ty
1	VIO-110/PC200 Series Panel PC	1
2	Panel Mount Kit	6
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-112/PC200 VIO-112/PC210		
Item	Description	Q'ty
1	VIO-112/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-115/PC200 VIO-115/PC210		
Item	Description	Q'ty
1	VIO-115/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-W115/PC200 VIO-W115/PC210		
Item	Description	Q'ty
1	VIO-W115/PC200 Series Panel PC	1
2	Panel Mount Kit	8
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-117/PC200 VIO-117/PC210		
Item	Description	Q'ty
1	VIO-117/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-119/PC200 VIO-119/PC210		
Item	Description	Q'ty
1	VIO-119/PC200 Series Panel PC	1
2	Panel Mount Kit	14
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-W121/PC200 VIO-W121/PC210		
Item	Description	Q'ty
1	VIO-W121/PC200 Series Panel PC	1
2	Panel Mount Kit	12
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-212/PC200 VIO-212/PC210		
Item	Description	Q'ty
1	VIO-212/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-215/PC200 | VIO-215/PC210

Item	Description	Q'ty
1	VIO-215/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-W215/PC200 | VIO-W215/PC210

Item	Description	Q'ty
1	VIO-W215/PC200 Series Panel PC	1
2	Panel Mount Kit	8
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-217/PC200 | VIO-217/PC210

Item	Description	Q'ty
1	VIO-217/PC200 Series Panel PC	1
2	Panel Mount Kit	10
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-219/PC200 | VIO-219/PC210

Item	Description	Q'ty
1	VIO-219/PC200 Series Panel PC	1
2	Panel Mount Kit	14
3	Utility DVD Driver	1
4	Screw Pack	1

VIO-W221/PC200 | VIO-W221/PC210

Item	Description	Q'ty
1	VIO-W221/PC200 Series Panel PC	1
2	Panel Mount Kit	12
3	Utility DVD Driver	1
4	Screw Pack	1

Ordering Information

Model No.	Product Description
VIO-110R/PC200-N4200	10.4" SVGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-110C/PC200-N4200	10.4" SVGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-110R/PC210-N4200	10.4" SVGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-110C/PC210-N4200	10.4" SVGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-112R/PC200-N4200	12.1" XGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-112C/PC200-N4200	12.1" XGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200

Model No.	Product Description
VIO-112R/PC210-N4200	12.1" XGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-112C/PC210-N4200	12.1" XGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-212R/PC200-N4200	12.1" XGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-212C/PC200-N4200	12.1" XGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-212R/PC210-N4200	12.1" XGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-212C/PC210-N4200	12.1" XGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-115R/PC200-N4200	15" XGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-115C/PC200-N4200	15" XGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-115R/PC210-N4200	15" XGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-115C/PC210-N4200	15" XGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-215R/PC200-N4200	15" XGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-215C/PC200-N4200	15" XGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-215R/PC210-N4200	15" XGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-215C/PC210-N4200	15" XGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W115R/PC200-N4200	15.6" 16:9 Full HD Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-W115C/PC200-N4200	15.6" 16:9 Full HD Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-W115R/PC210-N4200	15.6" 16:9 Full HD Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W115C/PC210-N4200	15.6" 16:9 Full HD Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W215R/PC200-N4200	15.6" 16:9 Full HD Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-W215C/PC200-N4200	15.6" 16:9 Full HD Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-W215R/PC210-N4200	15.6" 16:9 Full HD Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W215C/PC210-N4200	15.6" 16:9 Full HD Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-117R/PC200-N4200	17" SXGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-117C/PC200-N4200	17" SXGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-117R/PC210-N4200	17" SXGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-117C/PC210-N4200	17" SXGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket

Model No.	Product Description
VIO-217R/PC200-N4200	17" SXGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-217C/PC200-N4200	17" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-217R/PC210-N4200	17" SXGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-217C/PC210-N4200	17" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-119R/PC200-N4200	19" SXGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-119C/PC200-N4200	19" SXGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-119R/PC210-N4200	19" SXGA Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-119C/PC210-N4200	19" SXGA Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-219R/PC200-N4200	19" SXGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-219C/PC200-N4200	19" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-219R/PC210-N4200	19" SXGA Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-219C/PC210-N4200	19" SXGA Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W121R/PC200-N4200	21.5" 16:9 Full HD Resistive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-W121C/PC200-N4200	21.5" 16:9 Full HD Capacitive Touch Panel PC with Intel® Pentium® Processor N4200
VIO-W121R/PC210-N4200	21.5" 16:9 Full HD Resistive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W121C/PC210-N4200	21.5" 16:9 Full HD Capacitive Touch Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W221R/PC200-N4200	21.5" 16:9 Full HD Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-W221C/PC200-N4200	21.5" 16:9 Full HD Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200
VIO-W221R/PC210-N4200	21.5" 16:9 Full HD Resistive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket
VIO-W221C/PC210-N4200	21.5" 16:9 Full HD Capacitive Touch Thin Frame Panel PC with Intel® Pentium® Processor N4200, 2x Universal I/O Bracket

Optional Accessories

Model No.	Product Description
1-E09A06007	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

Chapter 1

Product Introductions

1.1 Overview

The VIO-100/PC200 and VIO-200/PC200 series Panel PC is based on Intel® Pentium® N4200 (Quad Core, 2.5GHz) processor. 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-100/PC200 and VIO-200/PC200 series Panel PC supports Multi-Mode Display Module (MDM) technology which makes it more flexible in system maintaining and upgrading. It offers modularize expansion I/O, rich connectivity interfaces, wide range (9~50V) DC power input, and high reliability even operating in temperature extremes.

Featuring with completely high functional, VIO-100/PC200 and VIO-200/PC200 series Panel PC 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), reverse protection, and wide range DC power input makes VIO-100/PC200 and VIO-200/PC200 series Panel PC are safety system for all industrial applications.



1.1.1 Key Features

- 10.4"~ 21.5" Multi-functional All-in-One Panel PCs
- Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- 1x 204-pin DDR3L SODIMM. Max up to 8GB
- 1x 2.5" SATA HDD bay, 1x mSATA, 1x CFast, 2x SIM socket
- 2x Full-size mini PCIe for communication or expansion modules
- 2x LAN
- 1x VGA, 1x DisplayPort
- 4x External RS-232/422/485, 2x Internal RS-232/422/485
- 2x USB 3.0, 2x USB 2.0
- 1x Line-out, 1x Mic-in
- 8x Isolated Digital Input, 8x Isolated Digital Output
- 9 to 50VDC wide range power input
- Designed with Aluminum Die-Casting Front Frame
- IP65 Compliant Front Panel
- 2x 2W Internal Speakers Built-in (VIO-110/ VIO-212 Series Only)
- 2x 5W Internal Speakers Built-in (VIO-112 Series Only)
- 2x 10W Internal Speakers Built-in
- Multi-language OSD Built-in

1.2 Hardware Specification

1.2.1 VIO-110R(C)/PC200 | VIO-110R(C)/PC210

Hardware Specification

Display

- LCD Size: 10.4" (4:3)
- Max. Resolution: 800 x 600 (SVGA)
- Brightness (cd/m²): 400
- Contrast Ratio: 700 : 1
- LCD Color: 16.2M
- Pixel Pitch (mm): 0.264 (H) x 0.264 (V)
- Viewing Angle (H-V): 160 / 130
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-110R/PC200 and VIO-110R/PC210 Only
- Projected Capacitive: VIO-110C/PC200 and VIO-110C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-110/PC210 Series Only)

Other Features

- Internal Speaker: AMP 2W + 2W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-110R(C)/PC200**
 - Dimension: 300 (W) x 238.5 (D) x 64.7 (H)mm
 - Weight: 4.69 ~ 4.74 kg
- **VIO-110R(C)/PC210**
 - Dimension: 300 (W) x 238.5 (D) x 86.7(H)mm
 - Weight: 5.24 ~ 5.69 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.2 VIO-112R(C)/PC200 | VIO-112R(C)/PC210

Hardware Specification

Display

- LCD Size: 12.1" (4:3)
- Max. Resolution: 1024 x 768 (XGA)
- Brightness (cd/m²): 500
- Contrast Ratio: 700 : 1
- LCD Color: 16.2M
- Pixel Pitch (mm): 0.24 (H) x 0.24 (V)
- Viewing Angle (H-V): 160 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-112R/PC200 and VIO-112R/PC210 Only
- Projected Capacitive: VIO-112C/PC200 and VIO-112C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-112/PC210 Series Only)

Other Features

- Internal Speaker: AMP 5W + 5W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-112R(C)/PC200**
 - Dimension: 338 (W) x 262 (D) x 61.7 (H)mm
 - Weight: 5.22 ~ 5.38 kg
- **VIO-112R(C)/PC210**
 - Dimension: 338 (W) x 262 (D) x 83.7 (H)mm
 - Weight: 5.34 ~ 5.88 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.3 VIO-212R(C)/PC200 | VIO-212R(C)/PC210

Hardware Specification

Display

- LCD Size: 12.1" (4:3)
- Max. Resolution: 1024 x 768 (XGA)
- Brightness (cd/m²): 500
- Contrast Ratio: 700 : 1
- LCD Color: 16.2M
- Pixel Pitch (mm): 0.24 (H) x 0.24 (V)
- Viewing Angle (H-V): 160 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-212R/PC200 and VIO-212R/PC210 Only
- Projected Capacitive: VIO-212C/PC200 and VIO-212C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-212/PC210 Series Only)

Other Features

- Internal Speaker: AMP 2W + 2W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-212R(C)/PC200**
 - Dimension: 319 (W) x 257 (D) x 61.7 (H)mm
 - Weight: 3.88 ~ 3.94 kg
- **VIO-212R(C)/PC210**
 - Dimension: 319 (W) x 257 (D) x 83.7 (H)mm
 - Weight: 4.41 ~ 4.47 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.4 VIO-115R(C)/PC200 | VIO-115R(C)/PC210

Hardware Specification

Display

- LCD Size: 15" (4:3)
- Max. Resolution: 1024 x 768 (XGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 700 : 1
- LCD Color: 16.2M
- Pixel Pitch (mm): 0.297 (H) x 0.297 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-115R/PC200 and VIO-115R/PC210 Only
- Projected Capacitive: VIO-115C/PC200 and VIO-115C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-115/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 65°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-115R(C)/PC200**
 - Dimension: 397 (W) x 306 (D) x 64.7 (H)mm
 - Weight: 6.12 ~ 6.22 kg
- **VIO-115R(C)/PC210**
 - Dimension: 397 (W) x 306 (D) x 86.7 (H)mm
 - Weight: 6.52 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.5 VIO-215R(C)/PC200 | VIO-215R(C)/PC200

Hardware Specification

Display

- LCD Size: 15" (4:3)
- Max. Resolution: 1024 x 768 (XGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 700 : 1
- LCD Color: 16.2M
- Pixel Pitch (mm): 0.297 (H) x 0.297 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-215R/PC200 and VIO-215R/PC1210 Only
- Projected Capacitive: VIO-215C/PC200 and VIO-215C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-215/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 65°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-215R(C)/PC200**
 - Dimension: 377 (W) x 301 (D) x 64.7 (H)mm
 - Weight: 5.23 ~ 5.26 kg
- **VIO-215R(C)/PC210**
 - Dimension: 377 (W) x 301 (D) x 86.7 (H)mm
 - Weight: 5.42 ~ 5.53 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.6 VIO-W115R(C)/PC200 | VIO-W115R(C)/PC210

Hardware Specification

Display

- LCD Size: 15.6" (16:9)
- Max. Resolution: 1920 x 1080 (Full HD)
- Brightness (cd/m²): 400
- Contrast Ratio: 700 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.17925 (H) x 0.17925 (V)
- Viewing Angle (H-V): 160 / 140
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-W115R/PC200 and VIO-W115R/PC210 Only
- Projected Capacitive: VIO-W115C/PC200 and VIO-W115C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-W115/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 70°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-W115R(C)/PC200**
 - Dimension: 432 (W) x 261 (D) x 70.7 (H)mm
 - Weight: 6.22 kg
- **VIO-W115R(C)/PC210**
 - Dimension: 432 (W) x 261 (D) x 92.5 (H)mm
 - Weight: 6.42 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.7 VIO-W215R(C)/PC200 | VIO-W215R(C)/PC200

Hardware Specification

Display

- LCD Size: 15.6" (16:9)
- Max. Resolution: 1920 x 1080 (Full HD)
- Brightness (cd/m²): 400
- Contrast Ratio: 700 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.17925 (H) x 0.17925 (V)
- Viewing Angle (H-V): 160 / 140
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-W215R/PC200 and VIO-W215R/PC210 Only
- Projected Capacitive: VIO-W215C/PC200 and VIO-W215C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-W215/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 70°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-W215R(C)/PC200**
 - Dimension: 398 (W) x 247 (D) x 70.7 (H)mm
 - Weight: 5.58 ~ 5.68 kg
- **VIO-W215R(C)/PC210**
 - Dimension: 398 (W) x 247 (D) x 92.7 (H)mm
 - Weight: 5.62 ~ 5.73 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.8 VIO-117R(C)/PC200 | VIO-117R(C)/PC210

Hardware Specification

Display

- LCD Size: 17" (4:3)
- Max. Resolution: 1280 x 1024 (SXGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 800 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.264 (H) x 0.264 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-117R/PC200 and VIO-117R/PC210 Only
- Projected Capacitive: VIO-117C/PC200 and VIO-117C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-117/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-117R(C)/PC200**
 - Dimension: 431.5 (W) x 344 (D) x 70.5 (H)mm
 - Weight: 7.69 ~ 7.73 kg
- **VIO-117R(C)/PC210**
 - Dimension: 431.5 (W) x 344 (D) x 92.5 (H)mm
 - Weight: 7.89 ~ 7.93 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.9 VIO-217R(C)/PC200 | VIO-217R(C)/PC210

Hardware Specification

Display

- LCD Size: 17" (4:3)
- Max. Resolution: 1280 x 1024 (SXGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 800 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.264 (H) x 0.264 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-217R/PC200 and VIO-217R/PC210 Only
- Projected Capacitive: VIO-217C/PC200 and VIO-217C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-217/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 70°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-217R(C)/PC200**
 - Dimension: 407.5 (W) x 339 (D) x 70.5 (H)mm
 - Weight: 6.09 ~ 6.12 kg
- **VIO-217R(C)/PC210**
 - Dimension: 407.5 (W) x 339 (D) x 92.5 (H)mm
 - Weight: 6.13 ~ 6.18 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.10 VIO-119R(C)/PC200 | VIO-119R(C)/PC210

Hardware Specification

Display

- LCD Size: 19" (4:3)
- Max. Resolution: 1280 x 1024 (SXGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 1000 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.294 (H) x 0.294 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-119R/PC200 and VIO-119R/PC210 Only
- Projected Capacitive: VIO-119C/PC200 and VIO-119C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-119/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 50°C
- Storage Temp.: -20°C to 60°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-119R(C)/PC200**
 - Dimension: 470 (W) x 380 (D) x 71 (H)mm
 - Weight: 7.90 ~ 7.97 kg
- **VIO-119R(C)/PC210**
 - Dimension: 470 (W) x 380 (D) x 93 (H)mm
 - Weight: 7.93 ~ 8.17 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.11 VIO-219R(C)/PC200 | VIO-219R(C)/PC210

Hardware Specification

Display

- LCD Size: 19" (4:3)
- Max. Resolution: 1280 x 1024 (SXGA)
- Brightness (cd/m²): 350
- Contrast Ratio: 1000 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.294 (H) x 0.294 (V)
- Viewing Angle (H-V): 170 / 160
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-219R/PC200 and VIO-219R/PC210 Only
- Projected Capacitive: VIO-219C/PC200 and VIO-219C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-219/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 50°C
- Storage Temp.: -20°C to 60°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-219R(C)/PC200**
 - Dimension: 450 (W) x 375 (D) x 71 (H)mm
 - Weight: 7.18 ~ 7.25 kg
- **VIO-219R(C)/PC210**
 - Dimension: 450 (W) x 375 (D) x 93 (H)mm
 - Weight: 7.23 ~ 7.34 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.12 VIO-W121R(C)/PC200 | VIO-W121R(C)/PC210

Hardware Specification

Display

- LCD Size: 21.5" (16:9)
- Max. Resolution: 1920 x 1080 (Full HD)
- Brightness (cd/m²): 300
- Contrast Ratio: 5000 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.248 (H) x 0.248 (V)
- Viewing Angle (H-V): 178 / 178
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-W121R/PC200 and VIO-W121R/PC210 Only
- Projected Capacitive: VIO-W121C/PC200 and VIO-W121C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-W121/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 60°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-W121R(C)/PC200**
 - Dimension: 563.5 (W) x 336 (D) x 71 (H)mm
 - Weight: 8.32 ~ 8.37 kg
- **VIO-W121R(C)/PC210**
 - Dimension: 563.5 (W) x 336 (D) x 93 (H)mm
 - Weight: 8.62 ~ 8.67 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.2.13 VIO-W221R(C)/PC200 | VIO-W221R(C)/PC210

Hardware Specification

Display

- LCD Size: 21.5" (16:9)
- Max. Resolution: 1920 x 1080 (Full HD)
- Brightness (cd/m²): 300
- Contrast Ratio: 5000 : 1
- LCD Color: 16.7M
- Pixel Pitch (mm): 0.248 (H) x 0.248 (V)
- Viewing Angle (H-V): 178 / 178
- Backlight MTBF: 50000 hrs (LED Backlight)

Touch

- Resistive 5-Wire: VIO-W221R/PC200 and VIO-W121R/PC210 Only
- Projected Capacitive: VIO-W221C/PC200 and VIO-W121C/PC210 Only

System

- Processor: Intel® Pentium® Processor N4200, Quad Core, 2MB Cache, 2.5 GHz
- System Chipset: SOC integrated
- LAN Chipset: GbE1 & GbE2: Intel® I210-AT (Support Wake-on-LAN and PXE)
- Audio Codec: Realtek ALC888S
- System Memory: 1x 204-Pin DDR3L 1600/1867MHz SODIMM. Max. up to 8GB
- BIOS: AMI 128Mbit SPI BIOS
- Watchdog: Software Programmable Supports 1~255 sec. System Reset

Storage

- SSD/HDD: 1x External 2.5" SATA HDD Bay
- mSATA: 1x mSATA (Shared by 1x Mini PCIe)
- CFast: 1x CFast (Shared by 1x mSATA & 1x Mini PCIe)
- SIM Socket: 2x External SIM socket

Expansion

- Mini PCI Express: 2x Full-size Mini PCIe
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB+SATA)
 - 1x Full-size Mini PCIe socket with USIM socket (PCIe+USB)
- 2x Universal I/O Bracket (VIO-W221/PC210 Series Only)

Other Features

- Internal Speaker: AMP 10W + 10W
- OSD: LCD On/Off, Auto, Menu, Up and Down Multi-language

I/O

- VGA: 1x VGA
- DisplayPort: 1x 1x DisplayPort
- COM
 - 4x RS-232/422/485
 - 2x RS-232/422/485 (internal)
- USB: 2x USB 3.0, 2x USB 2.0
- LAN: 2x RJ45
- Audio: 1x Mic-in, 1x Line-out
- DIO: 8 in / 8 out (Isolated)
- Others:
 - 3x WiFi Antenna Holes
 - 1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off

Operating System

- Windows: Windows 10
- Linux: Linux kernel 4.X

Power

- Power Mode: AT, ATX
- Power Supply Voltage: 9-50VDC
- Power Ignition Sensing: Power Ignition Management
- Power Connector: 3-pin Terminal Block
- Power Adaptor: Optional AC/DC 12V/5A, 60W
- Power Protection
 - OVP (Over Voltage Protection)
 - OCP (Over Current Protection)
 - Reverse Protection

Environment

- Operating Temp.: -10°C to 60°C
- Storage Temp.: -20°C to 60°C
- Relative Humidity: 10%~80% (non-condensing)
- IP Level: IP 65 Compliant Front Panel
- Standards / Certification: CE, FCC Class A

Physical

- Front Panel Construction: Die-cast Flat Surface
- **VIO-W221R(C)/PC200**
 - Dimension: 528.5 (W) x 324 (D) x 71 (H)mm
 - Weight: 7.78 ~ 7.83 kg
- **VIO-W221R(C)/PC210**
 - Dimension: 528.5 (W) x 324 (D) x 93 (H)mm
 - Weight: 7.82 ~ 7.93 kg
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

1.3 System I/O

1.3.1 Front

Antenna hole

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

SIM card

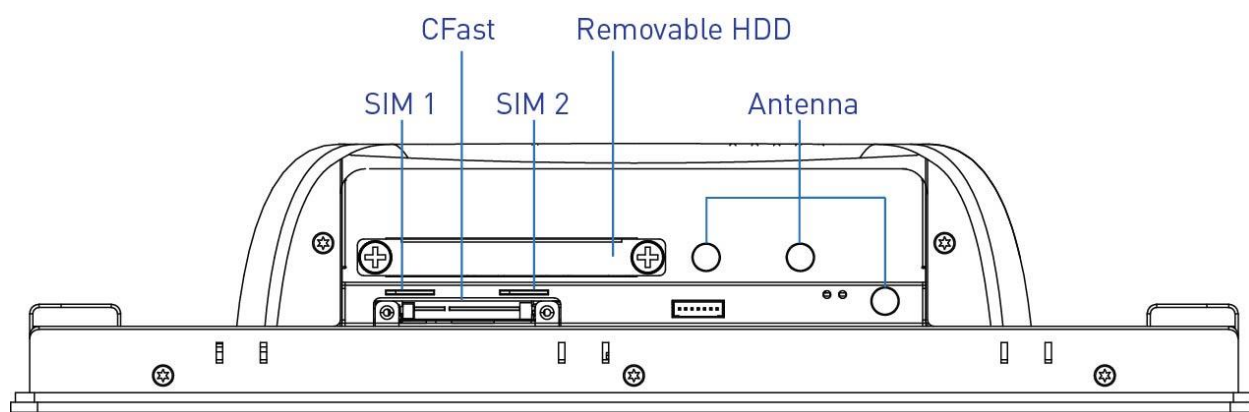
Used to insert SIM card

CFast Socket

Used to insert CFast card

Removable HDD Bay

Used to insert a 2.5" HDD or SSD



1.3.2 Rear

DC IN

Used to plug a DC power input with terminal block

LAN port

Used to connect the system to a local area network

VGA

Used to connect an analog VGA monitor

Line-out

Used to connect a speaker

DisplayPort

Used to connect a DisplayPort monitor

Mic-in

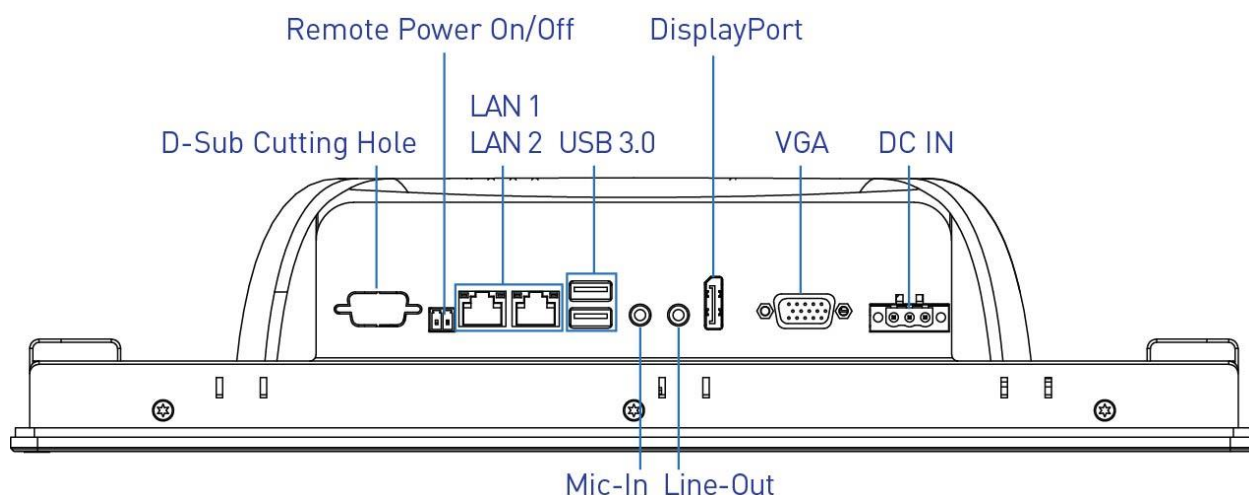
Used to connect a microphone

USB 3.0 port

Used to connect USB 3.0/2.0/1.1 device

Remote Power on/off Terminal Block

Used to plug a remote power on/off terminal block



1.3.3 Side (Left)

Universal I/O Bracket

Used to customized I/O output
(VIO-100/PC110 and VIO-200/PC110 series only)

COM port

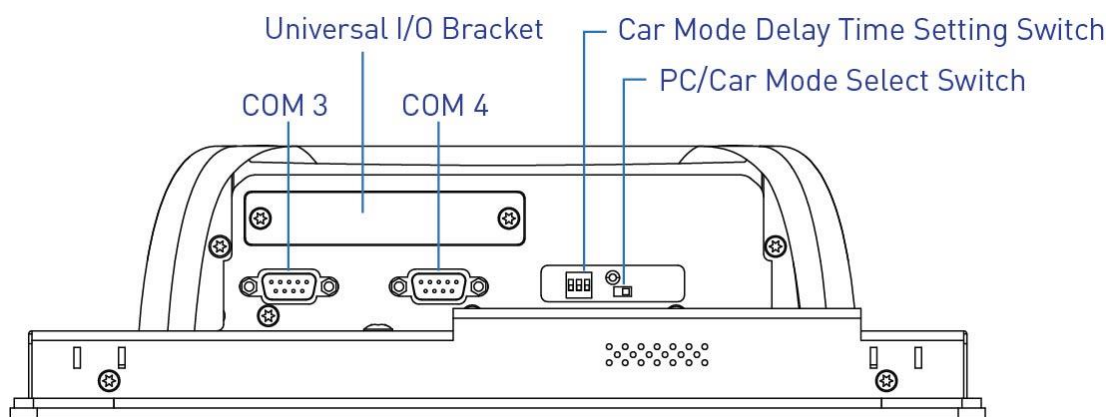
COM 3/4 support RS232/422/485 serial device

12V/24V mode select switch

Used to select Car power input voltage

DELAY TIME switch

Used to select Car power turn off delay-time



1.3.4 Side (Right)

COM port

COM 1/2 support RS232/422/485 serial device

USB 2.0 port

Used to connect USB 2.0/1.1 device

Digital I/O Terminal Block

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

Reset switch

Press to reset the system

Universal I/O Bracket

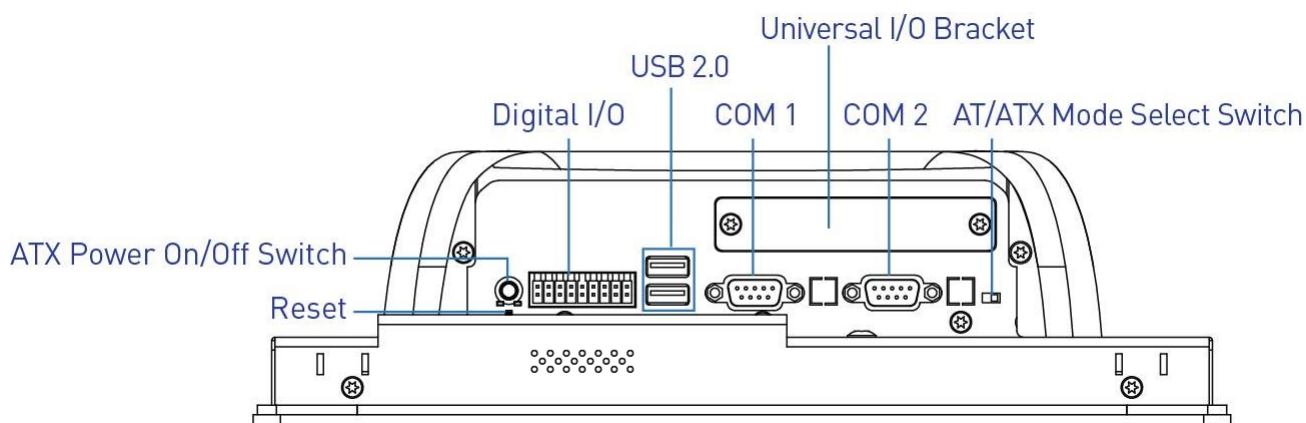
Used to customized I/O output
(VIO-100/PC110 and VIO-200/PC110 series only)

ATX power on/off switch

Press to power-on or power-off the system

Reset switch

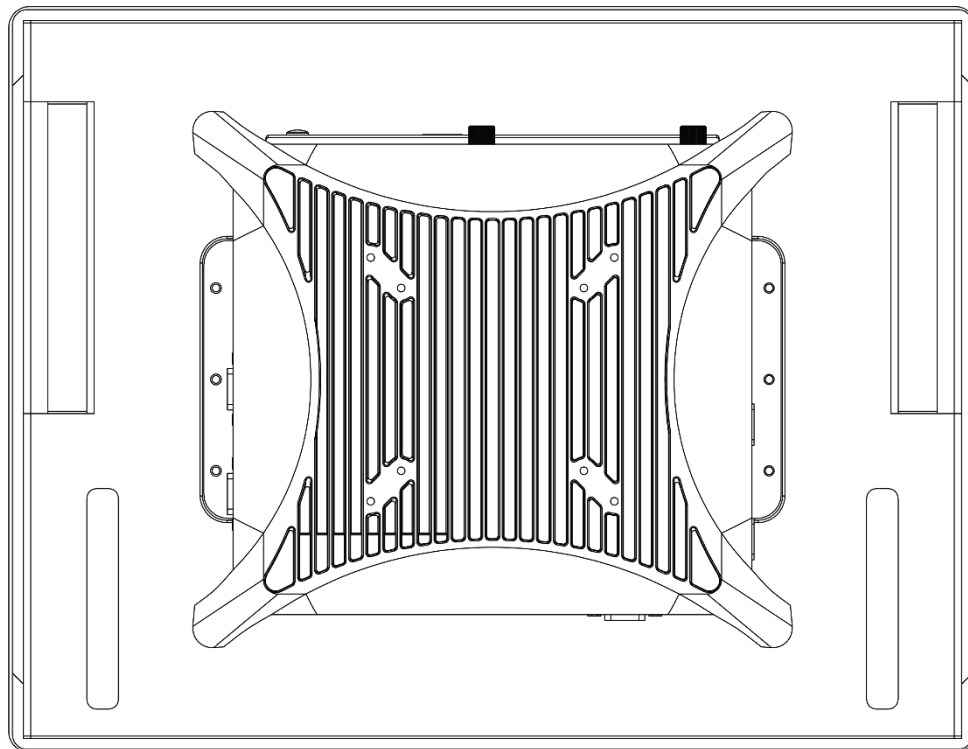
Press to reset the system



1.3.5 TOP

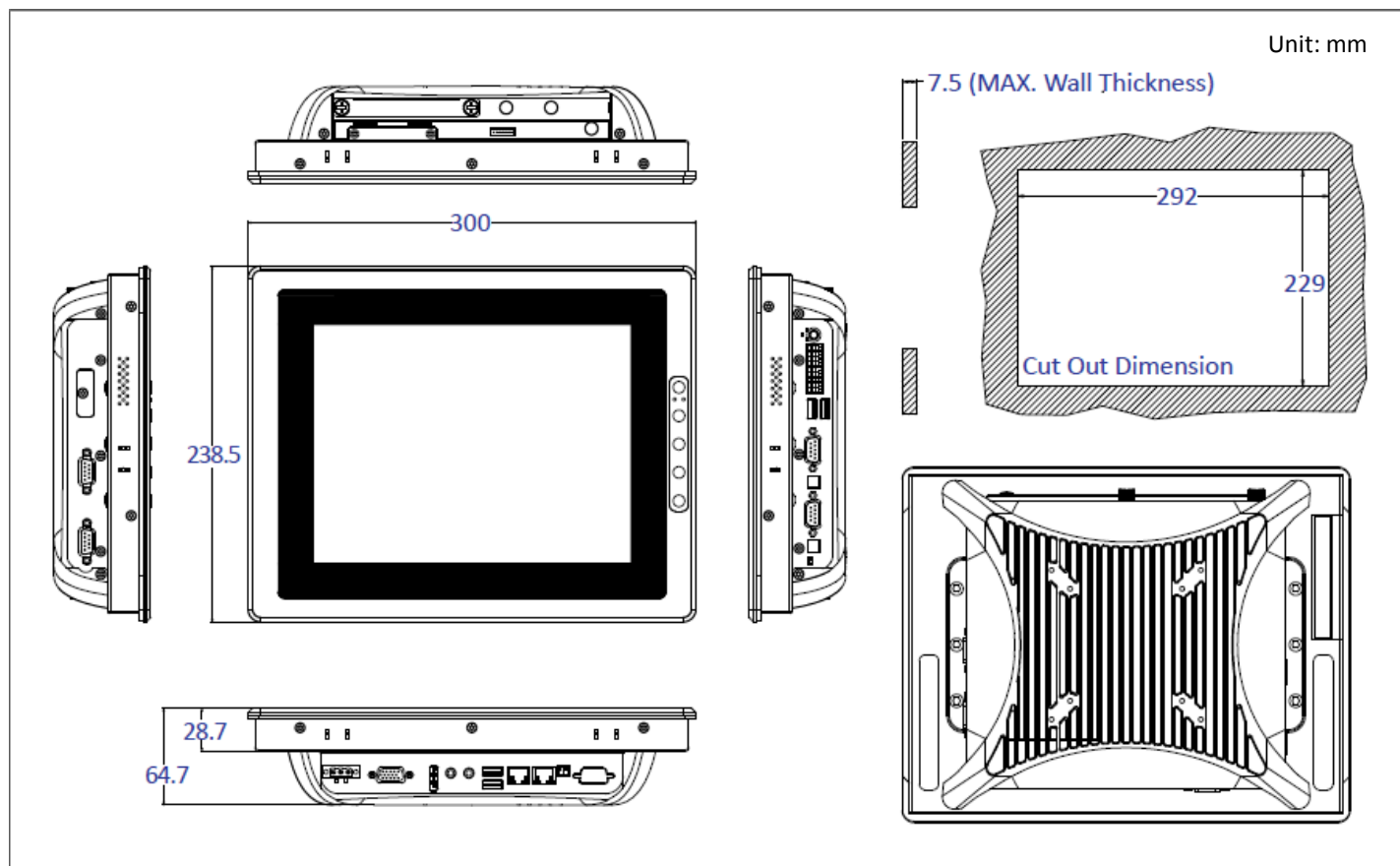
VESA Mounting Hole

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

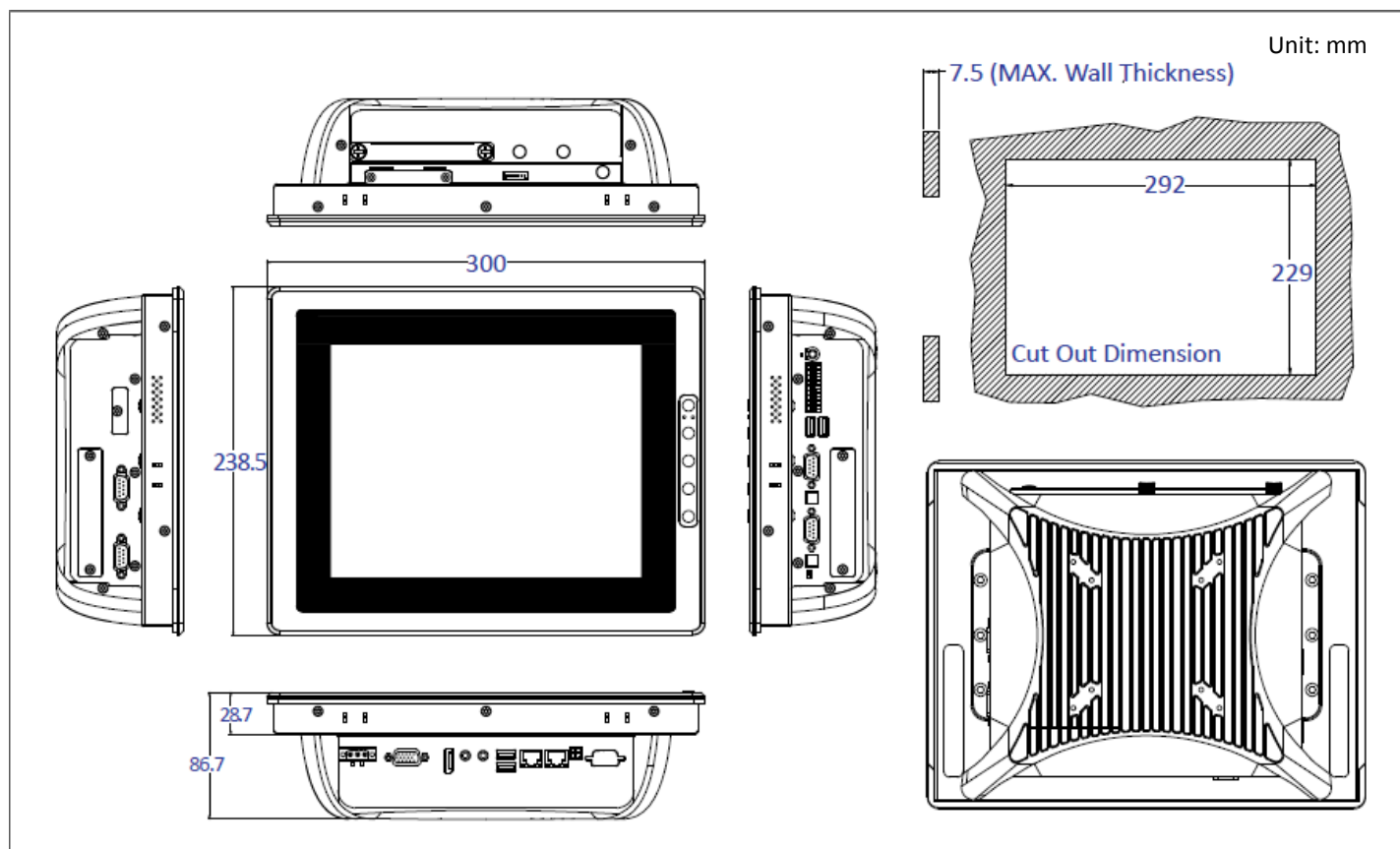


1.4 Mechanical Dimensions

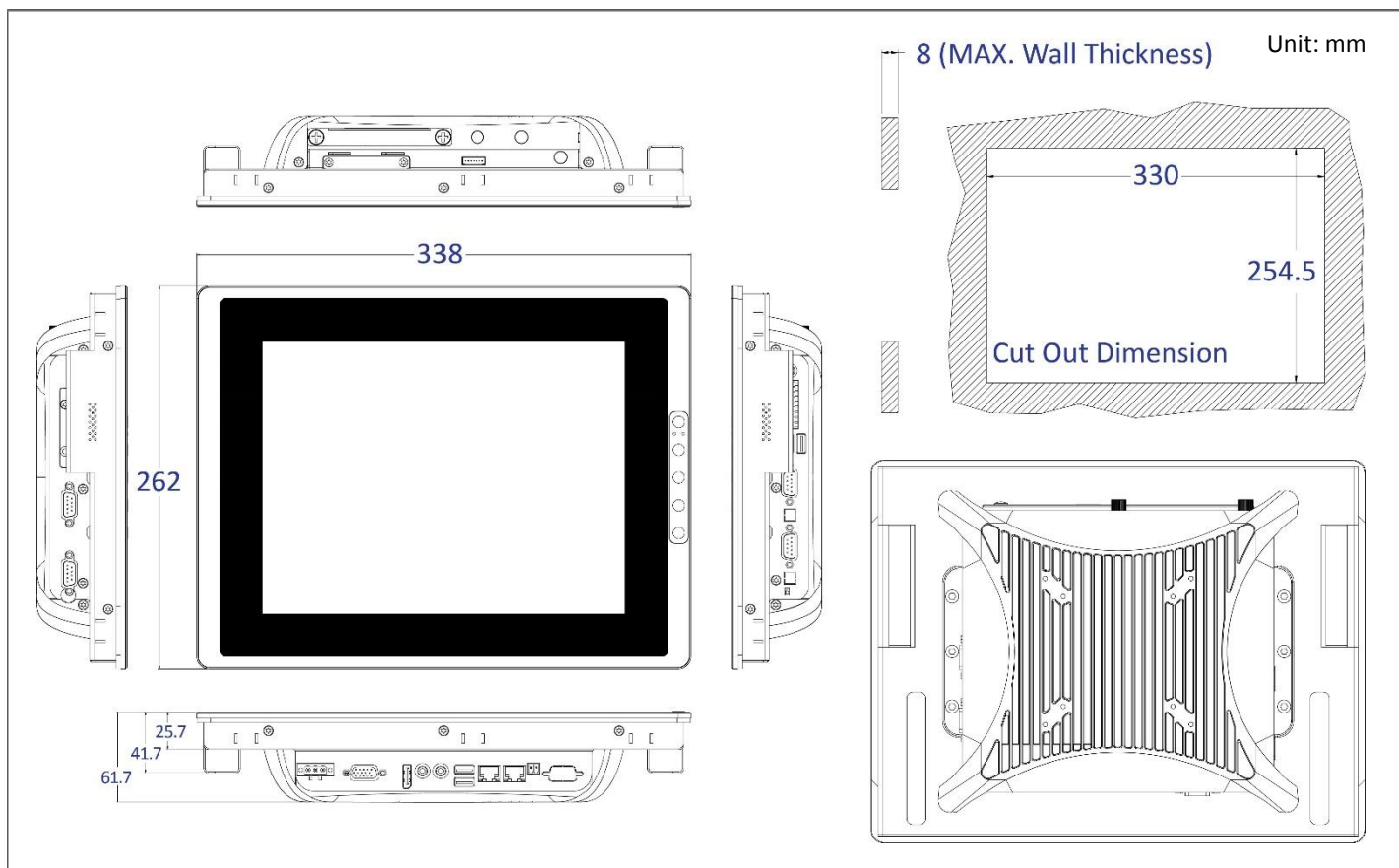
1.4.1 VIO-110R(C)/PC200



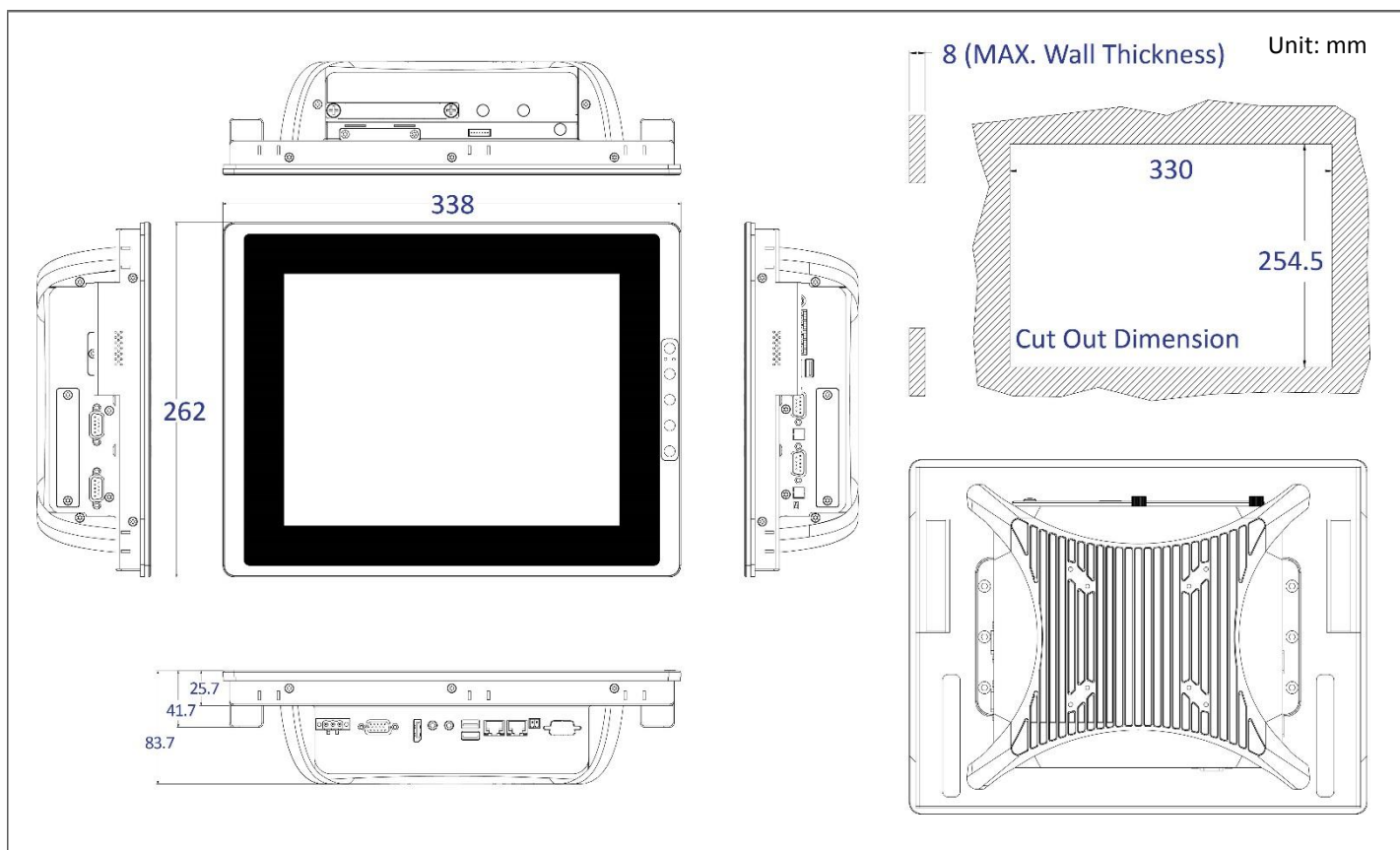
1.4.2 VIO-110R(C)/PC210



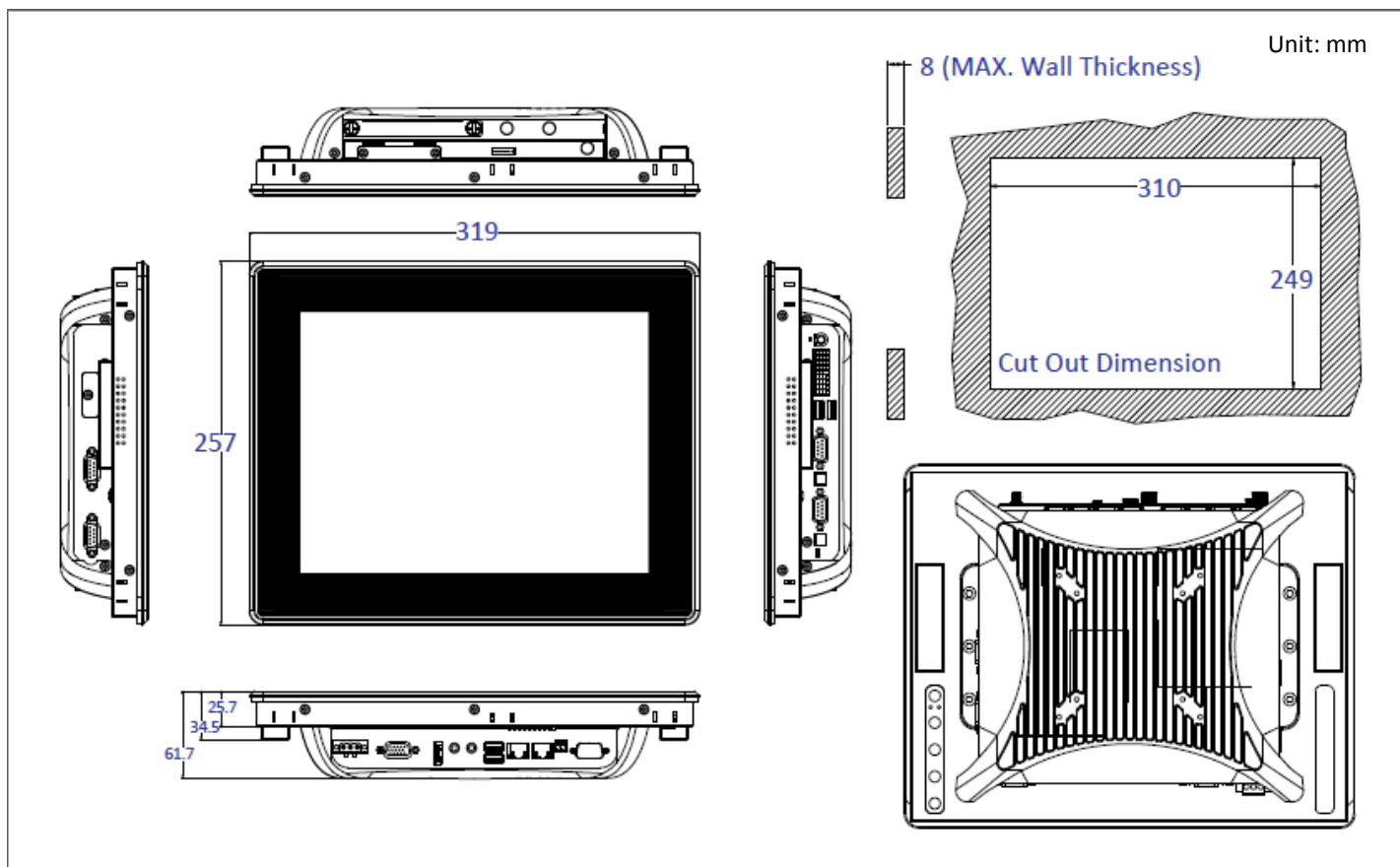
1.4.3 VIO-112R(C)/PC200



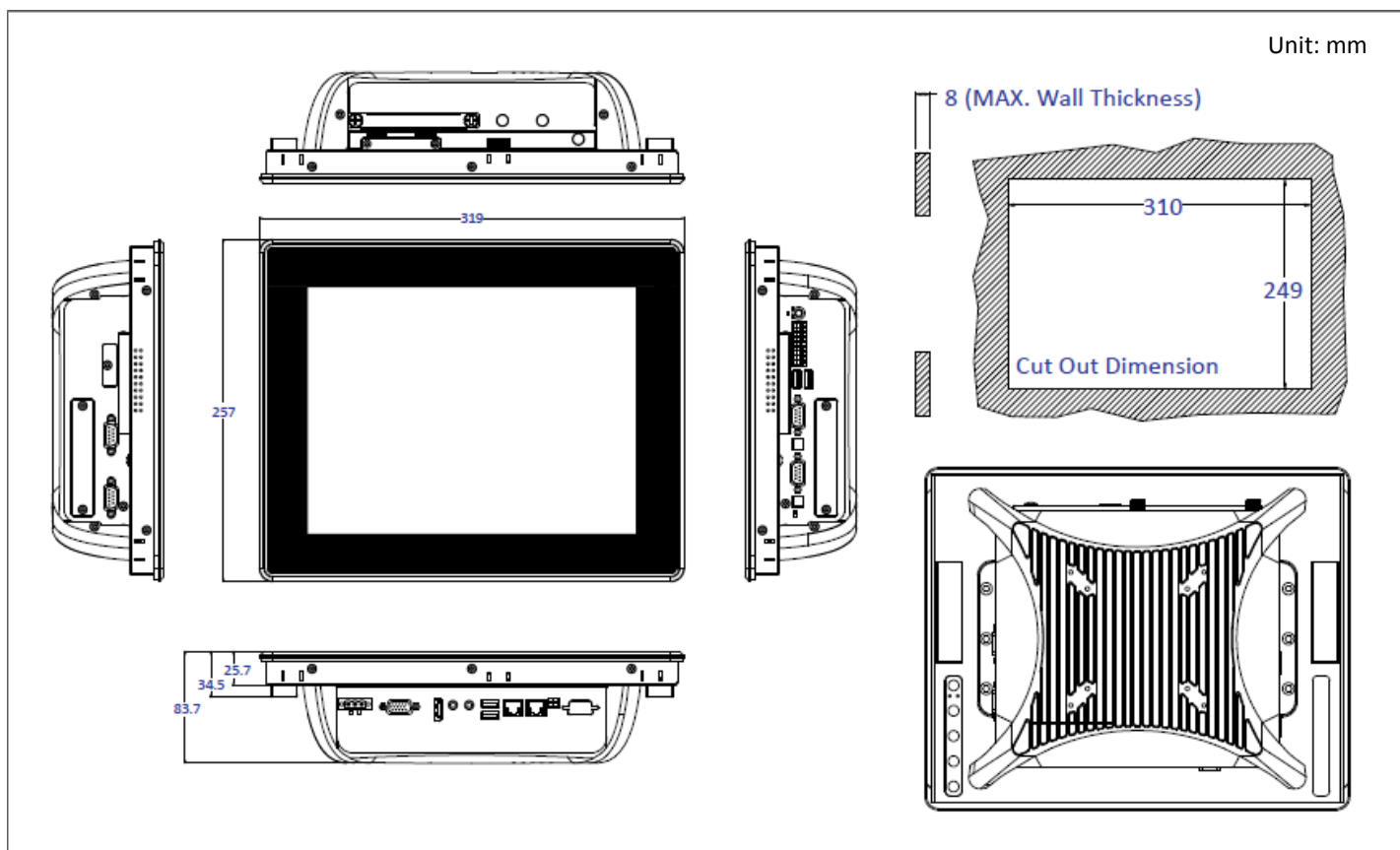
1.4.4 VIO-112R(C)/PC210



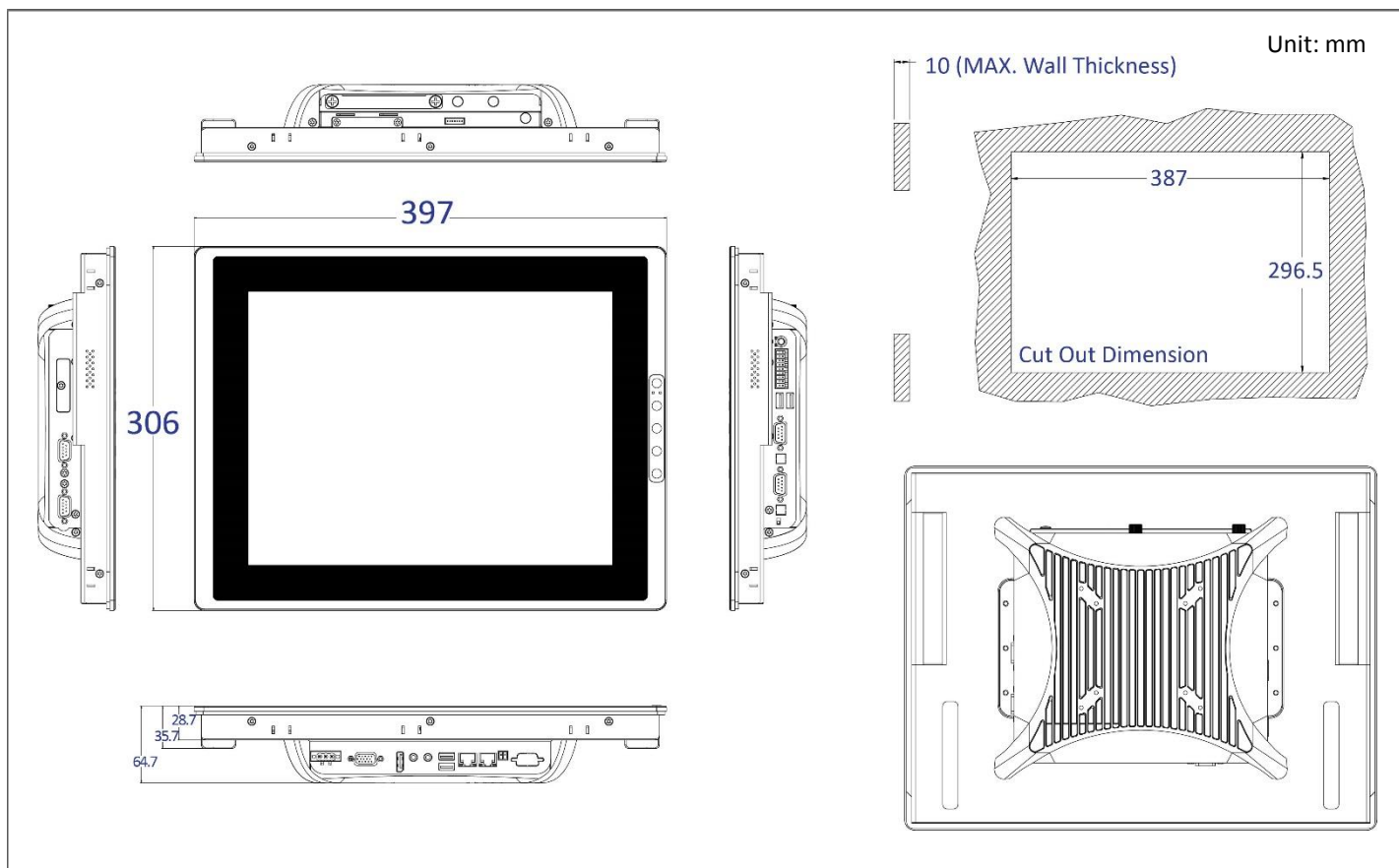
1.4.5 VIO-212R(C)/PC200



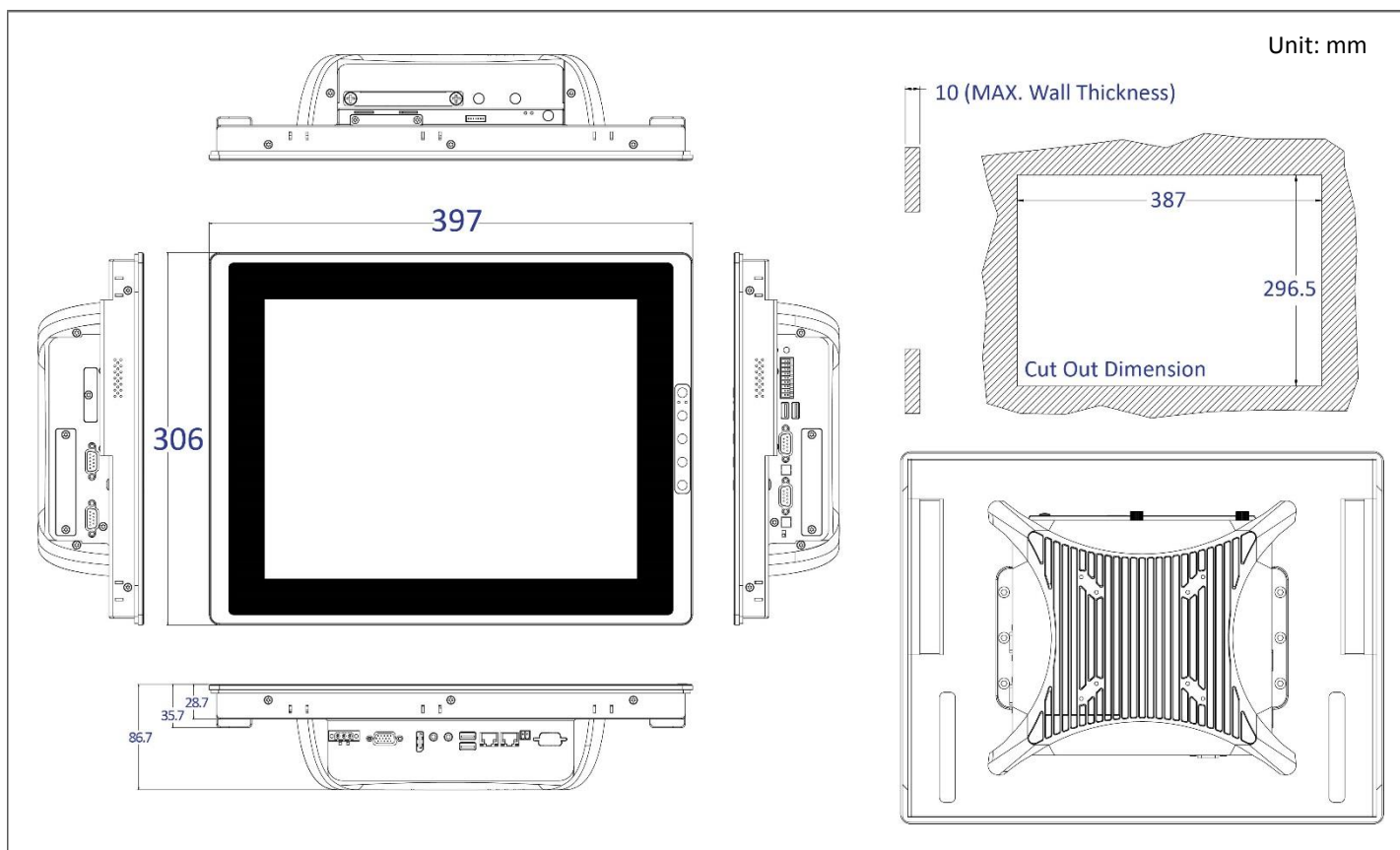
1.4.6 VIO-212R(C)/PC210



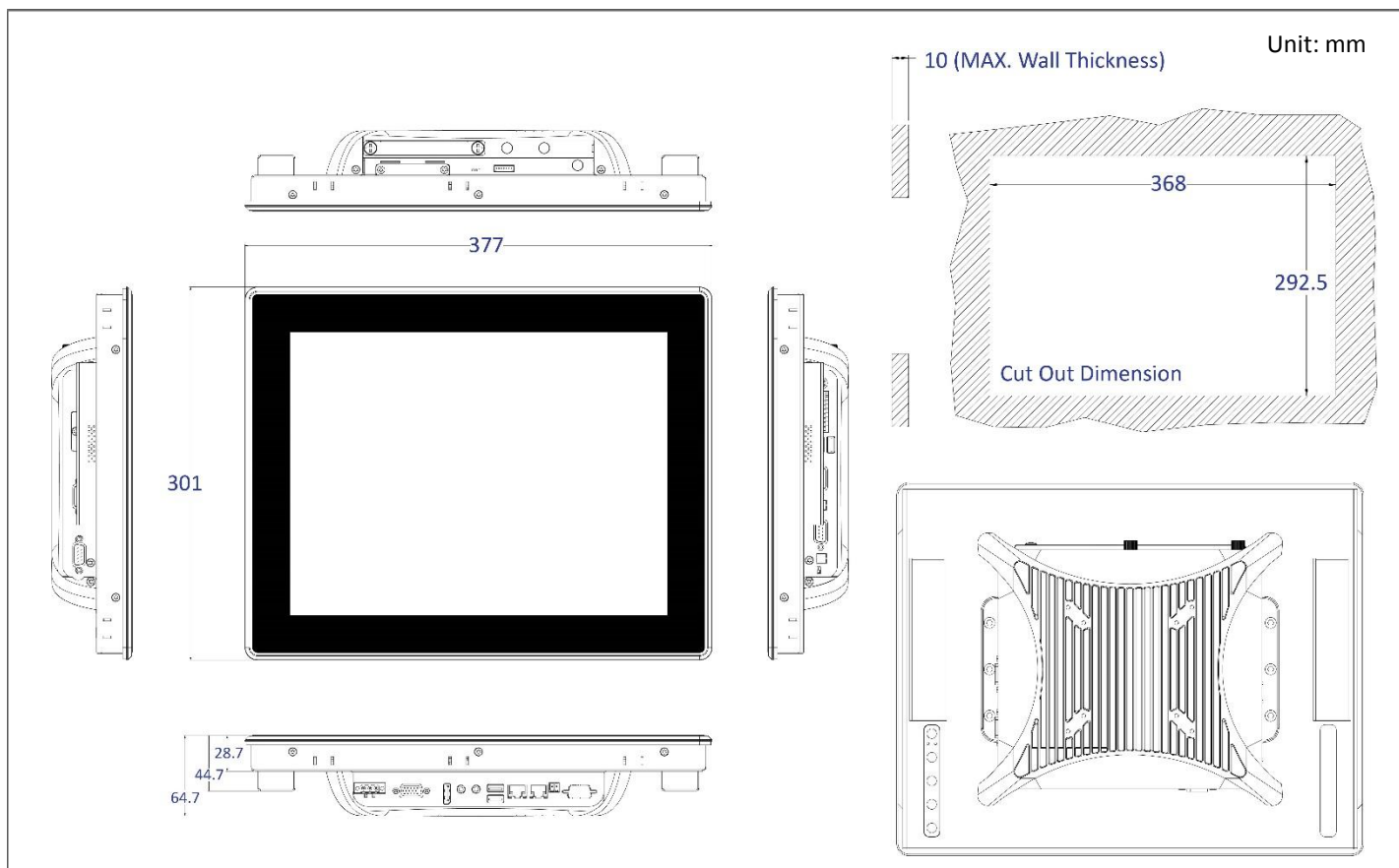
1.4.7 VIO-115R(C)/PC200



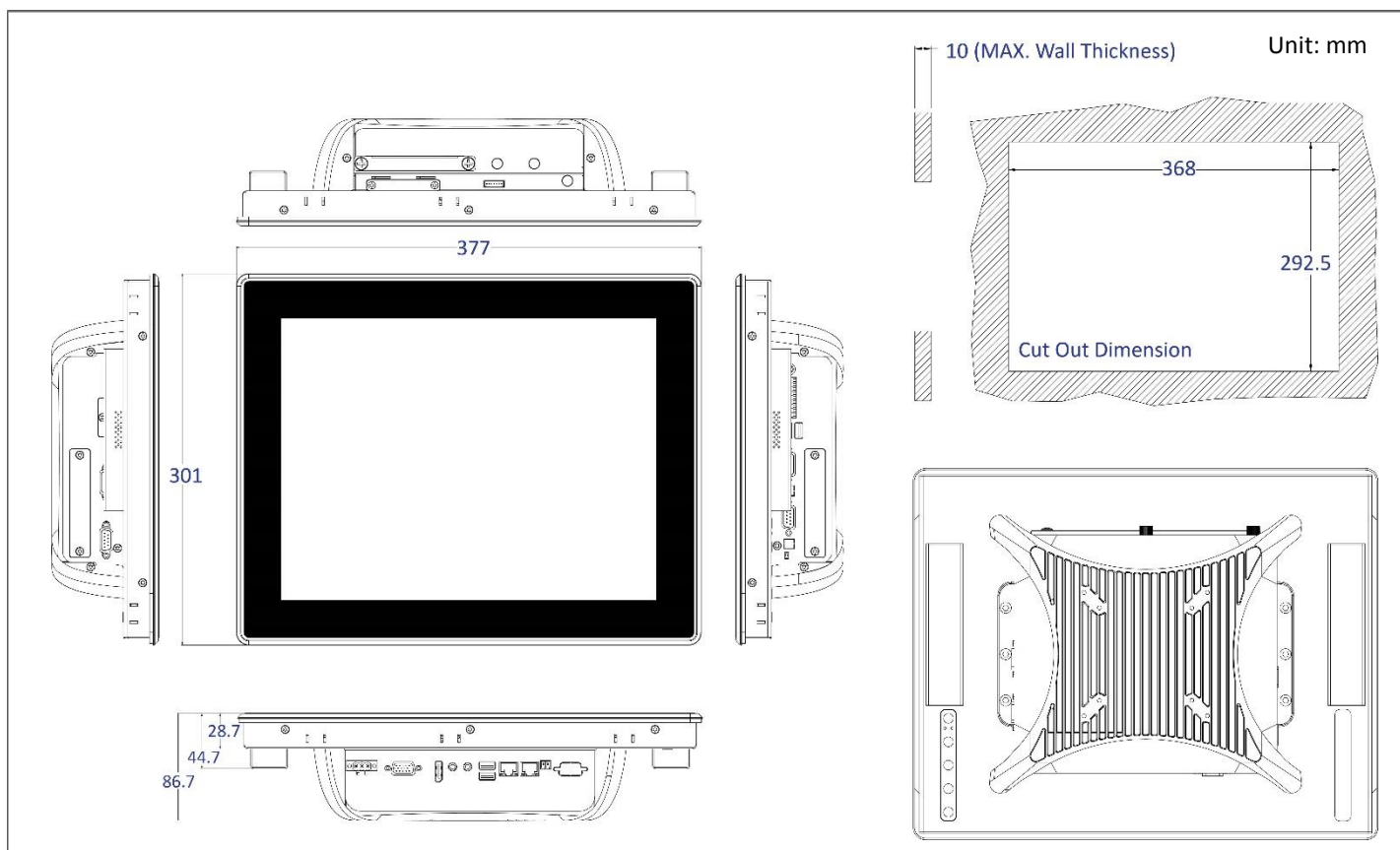
1.4.8 VIO-115R(C)/PC210



1.4.9 VIO-215R(C)/PC200

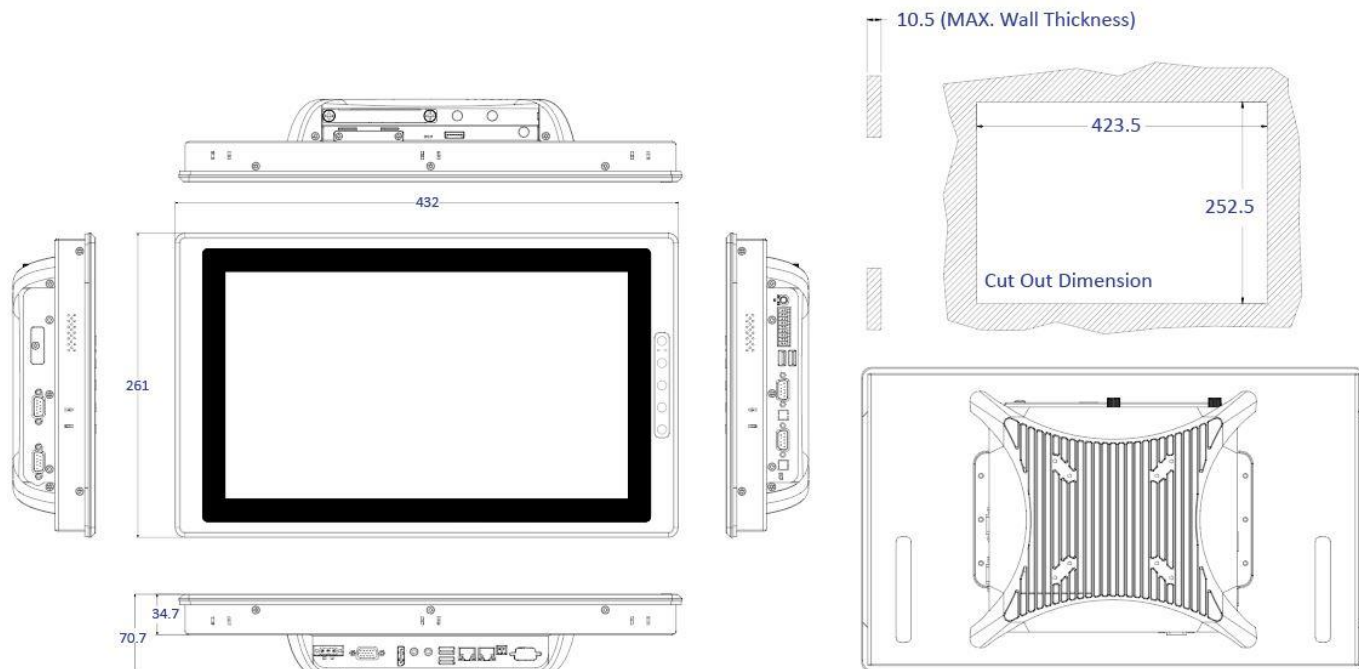


1.4.10 VIO-215R(C)/PC210



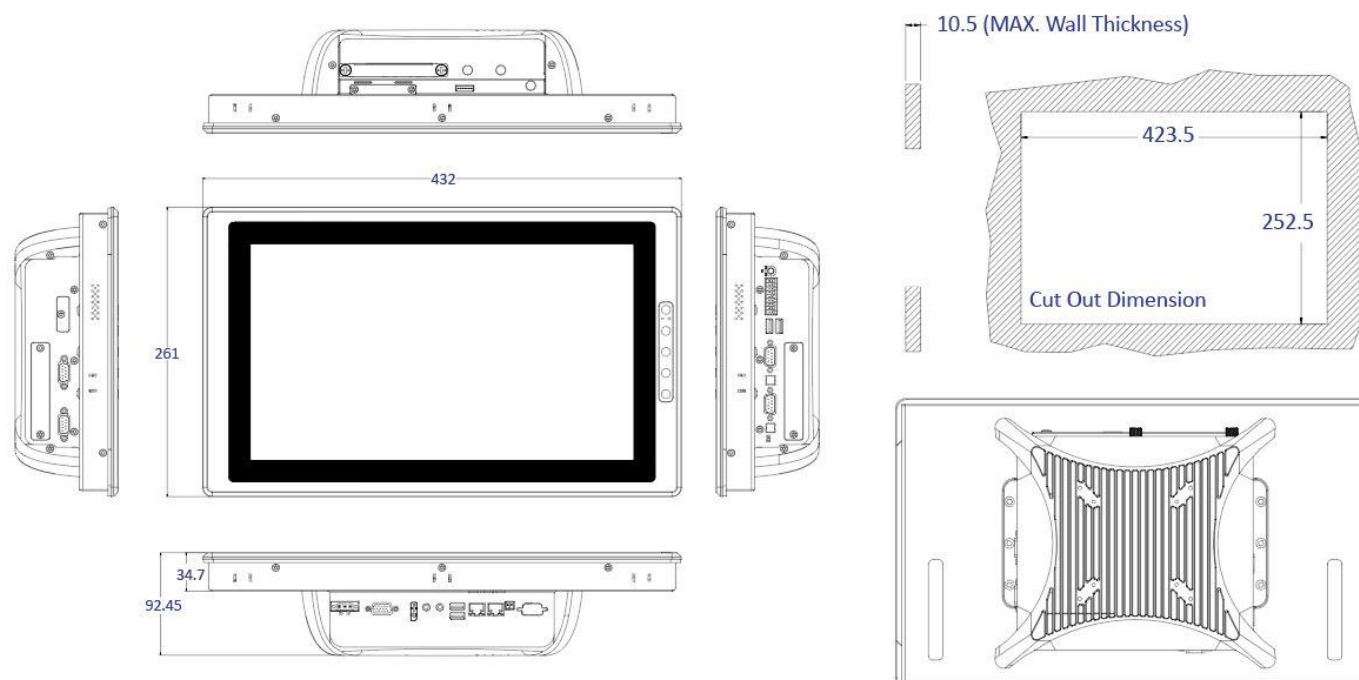
1.4.11 VIO-W115R(C)/PC200

Unit: mm

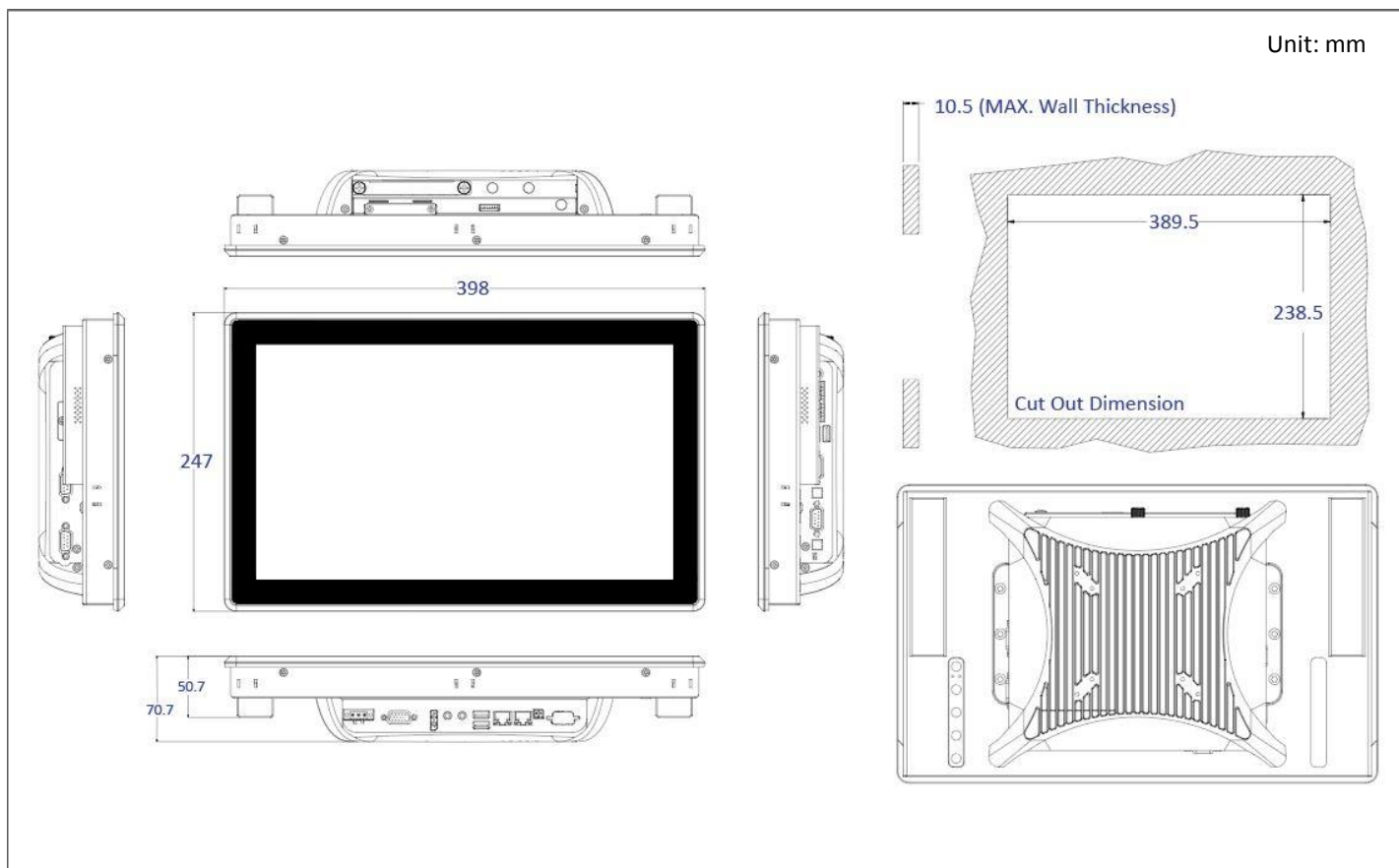


1.4.12 VIO-W115R(C)/PC210

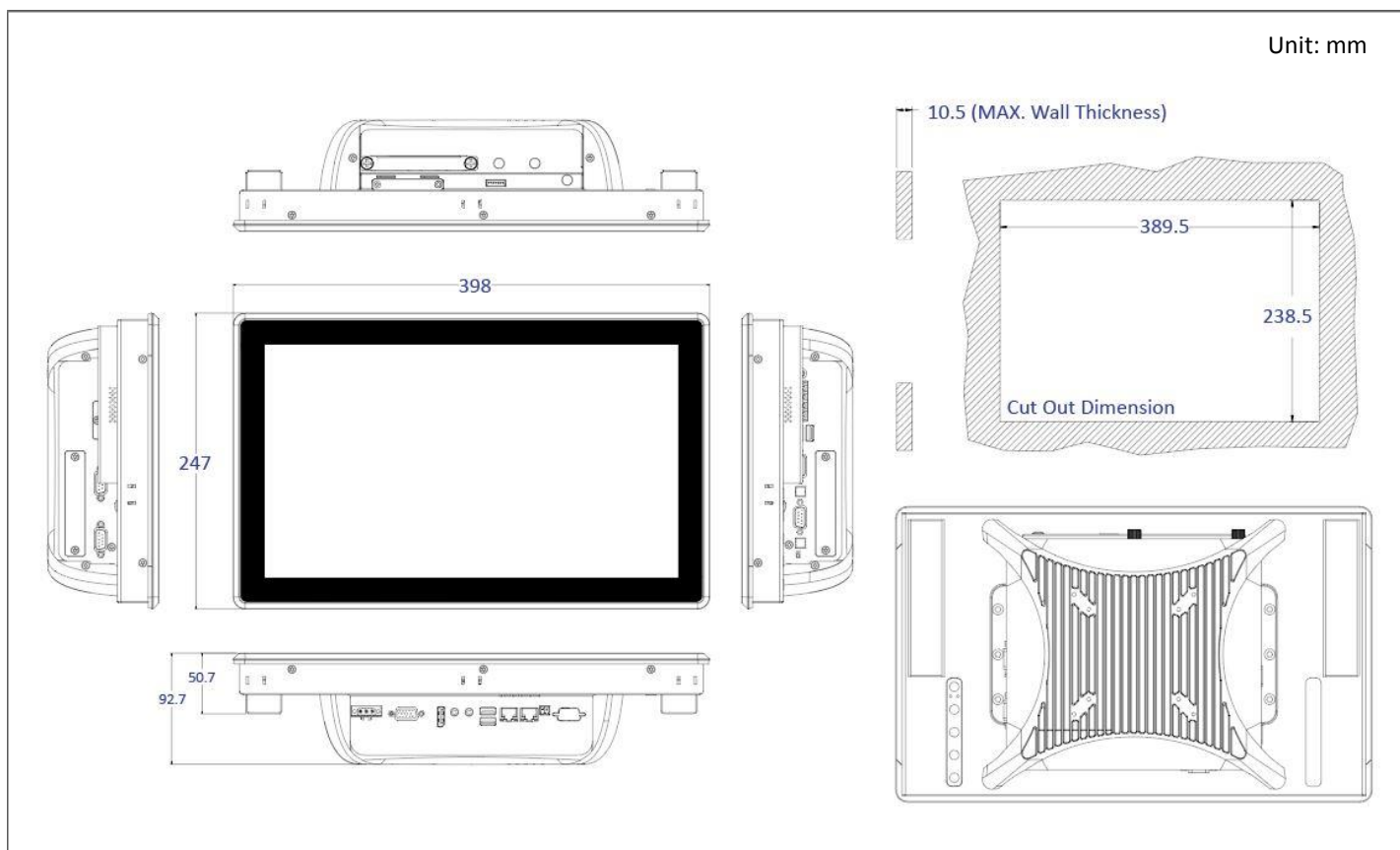
Unit: mm



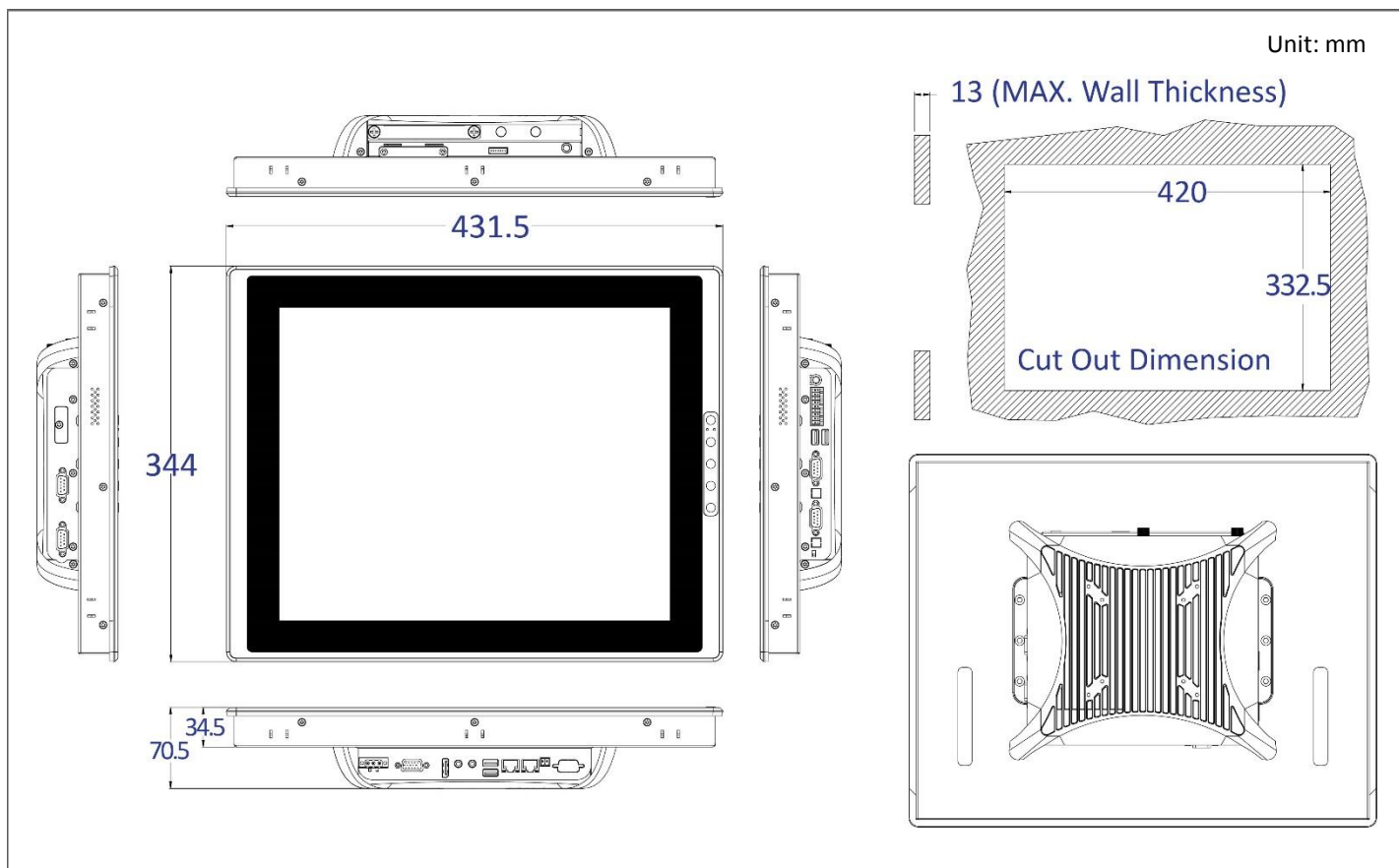
1.4.13 VIO-W215R(C)/PC200



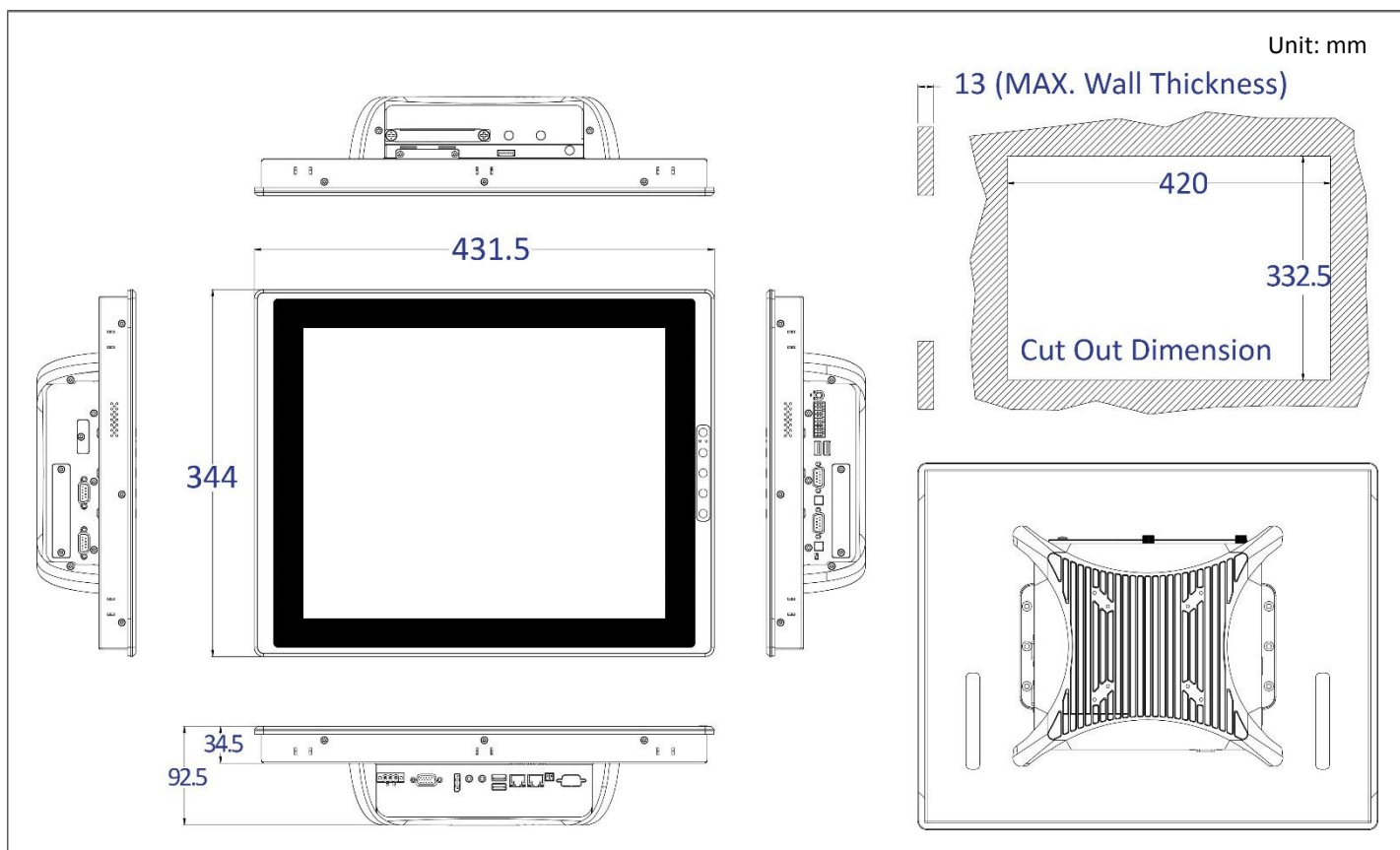
1.4.14 VIO-W215R(C)/PC210



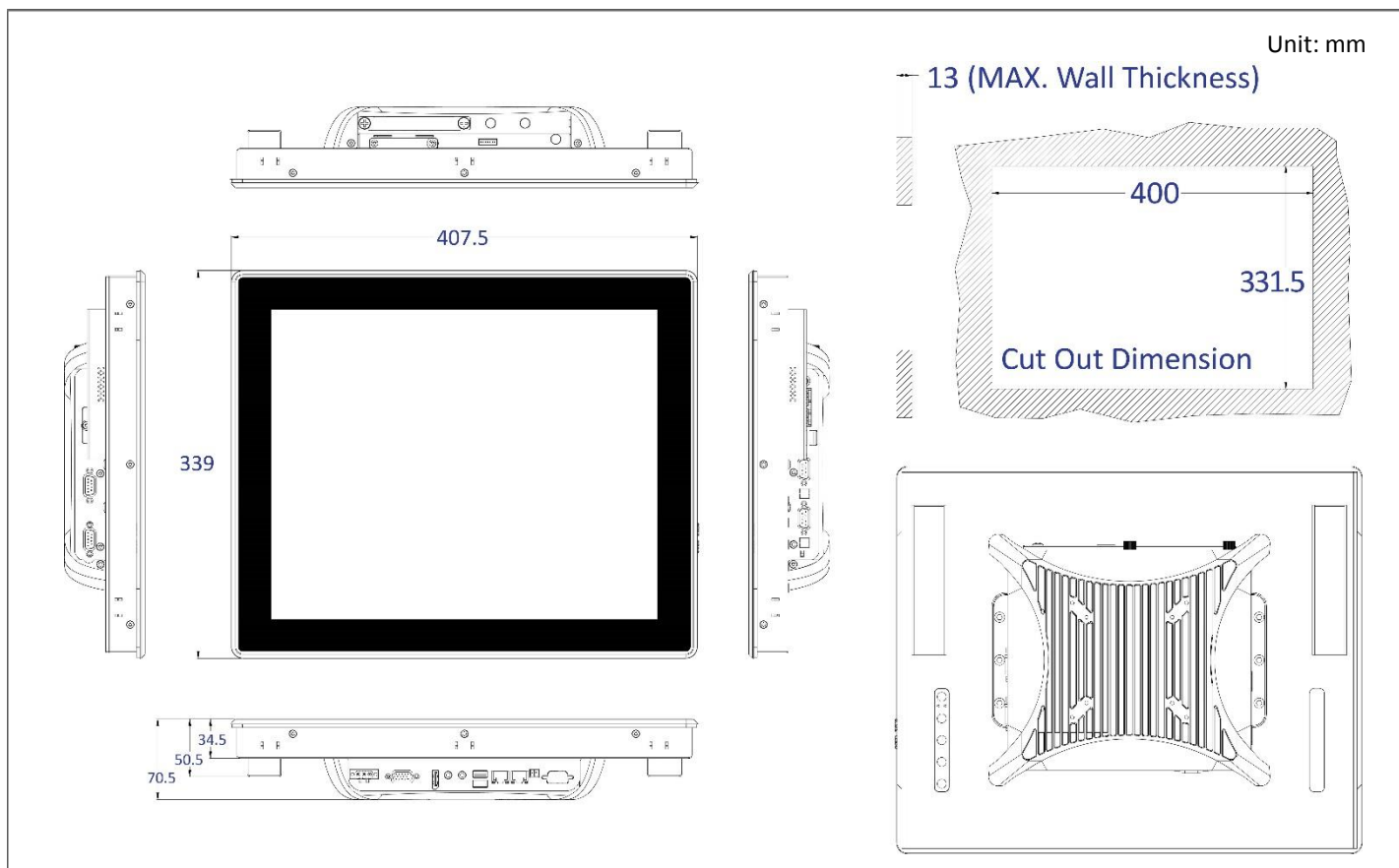
1.4.15 VIO-117R(C)/PC200



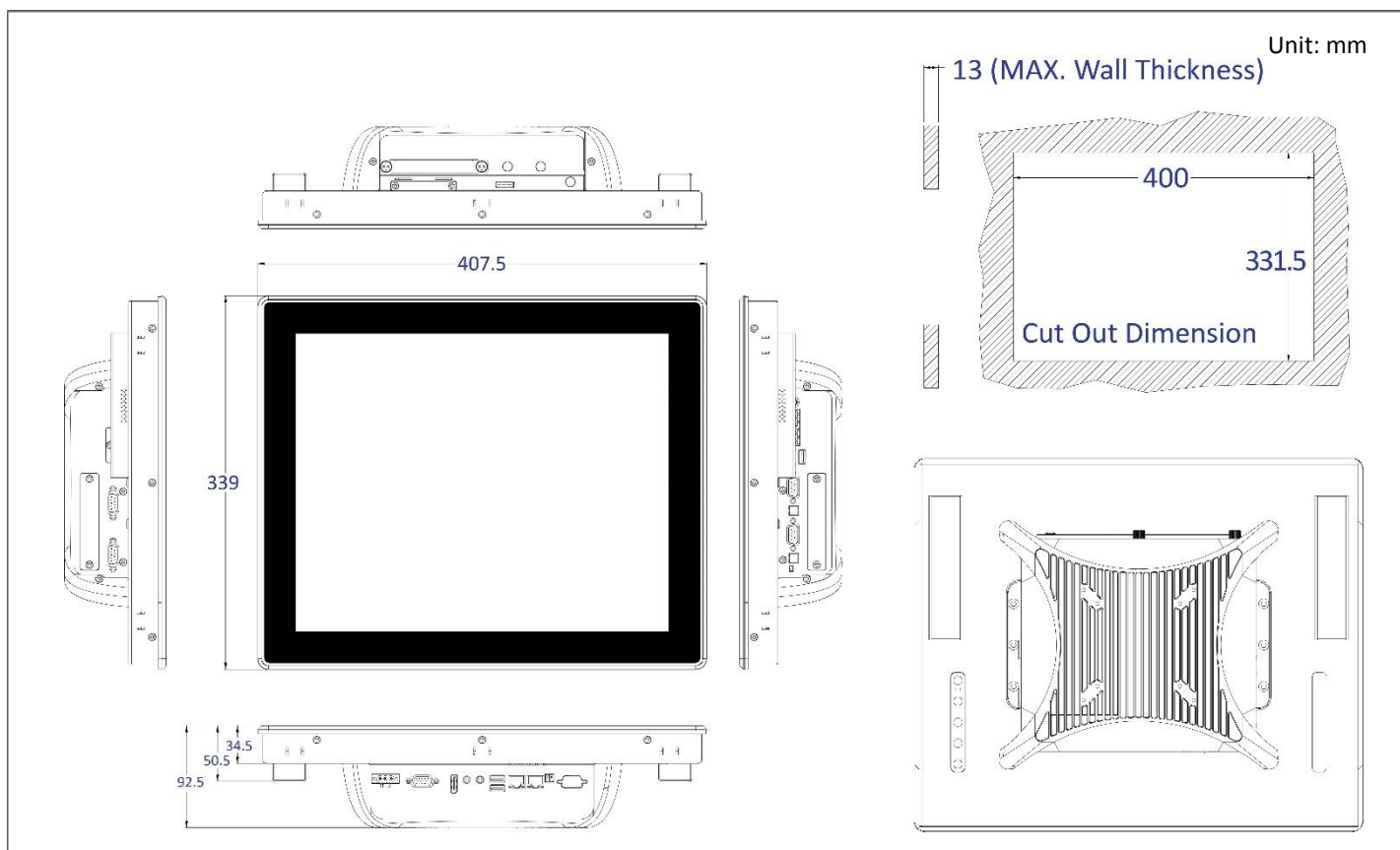
1.4.16 VIO-117R(C)/PC210



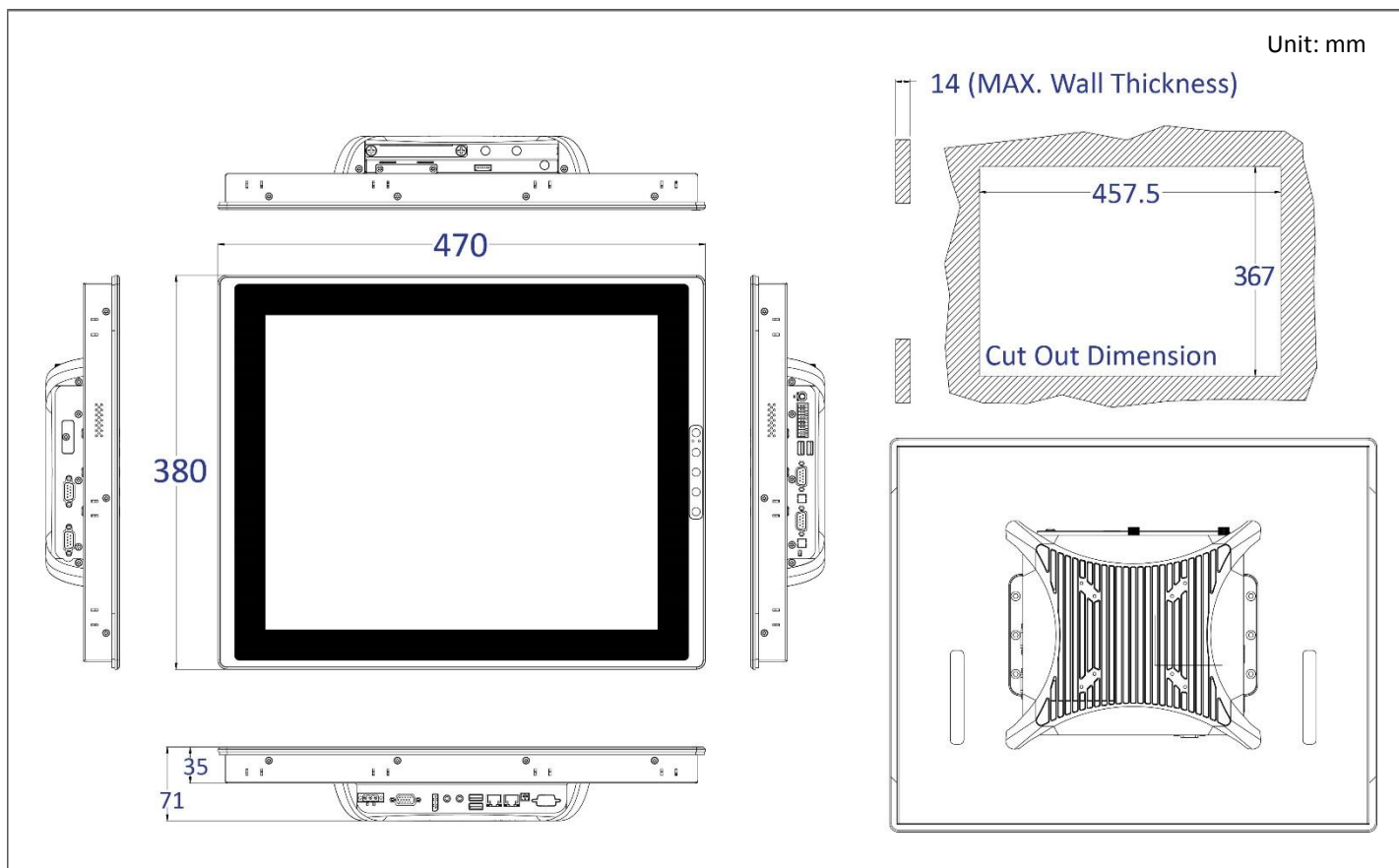
1.4.17 VIO-217R(C)/PC200



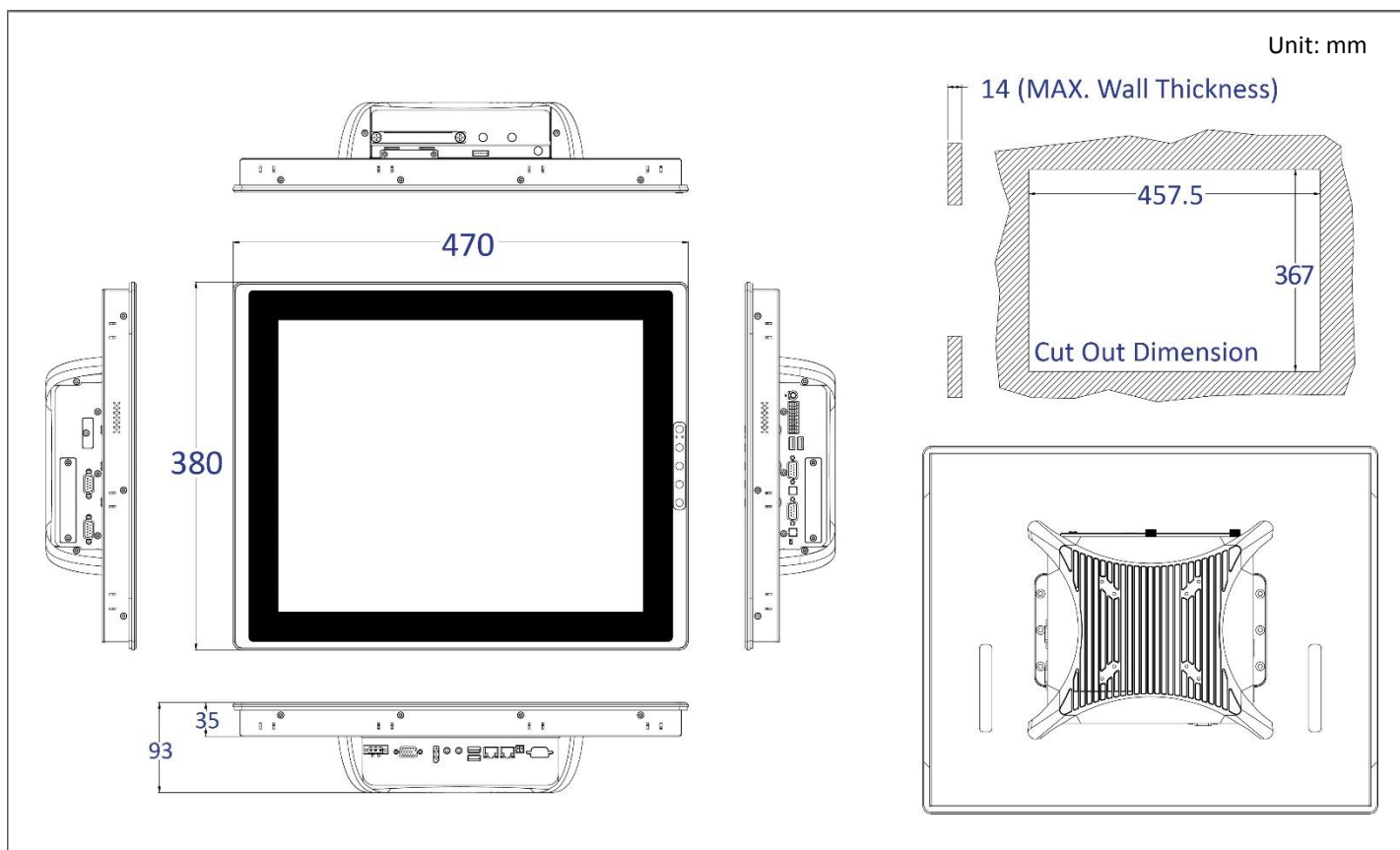
1.4.18 VIO-217R(C)/PC210



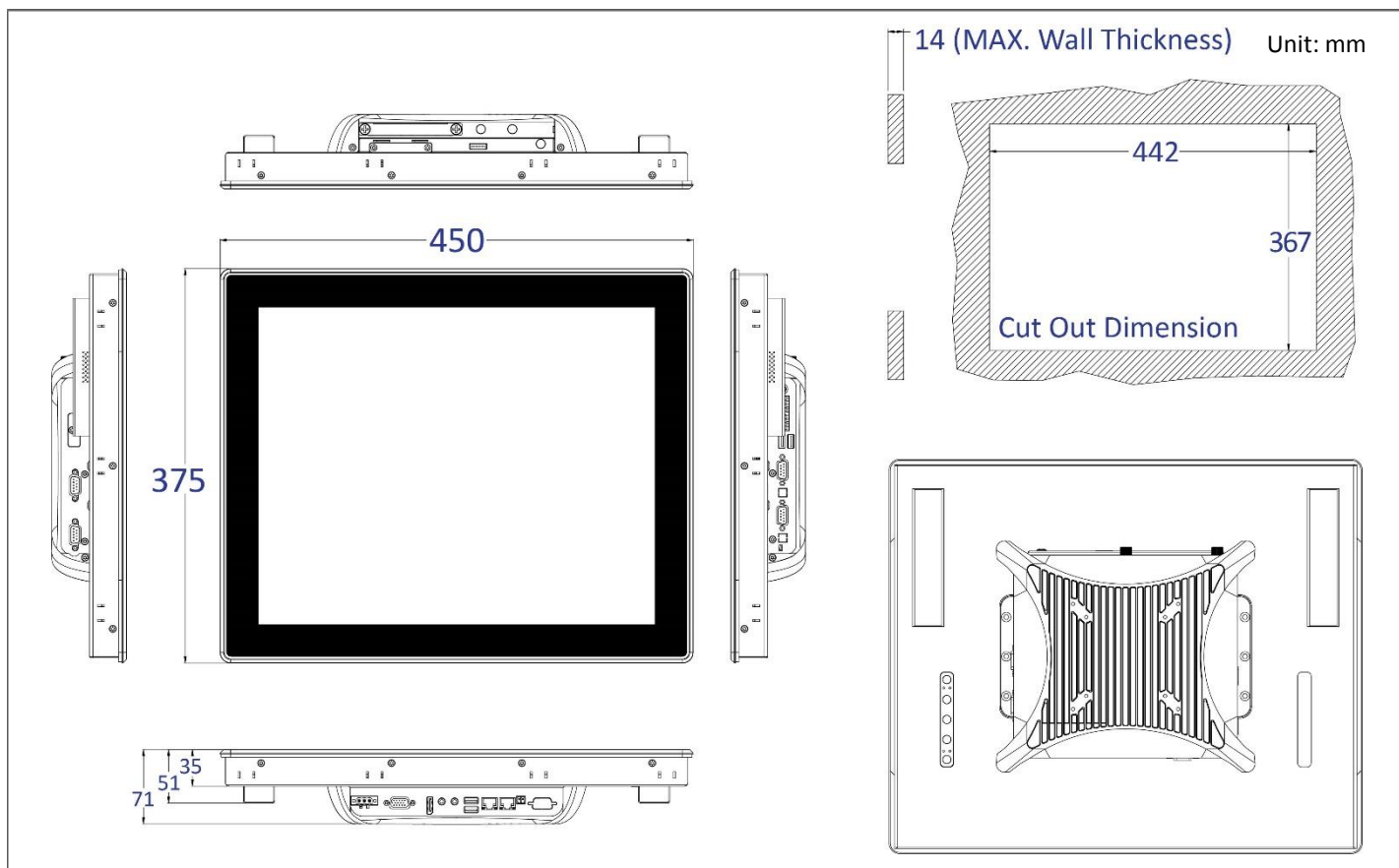
1.4.19 VIO-119R(C)/PC200



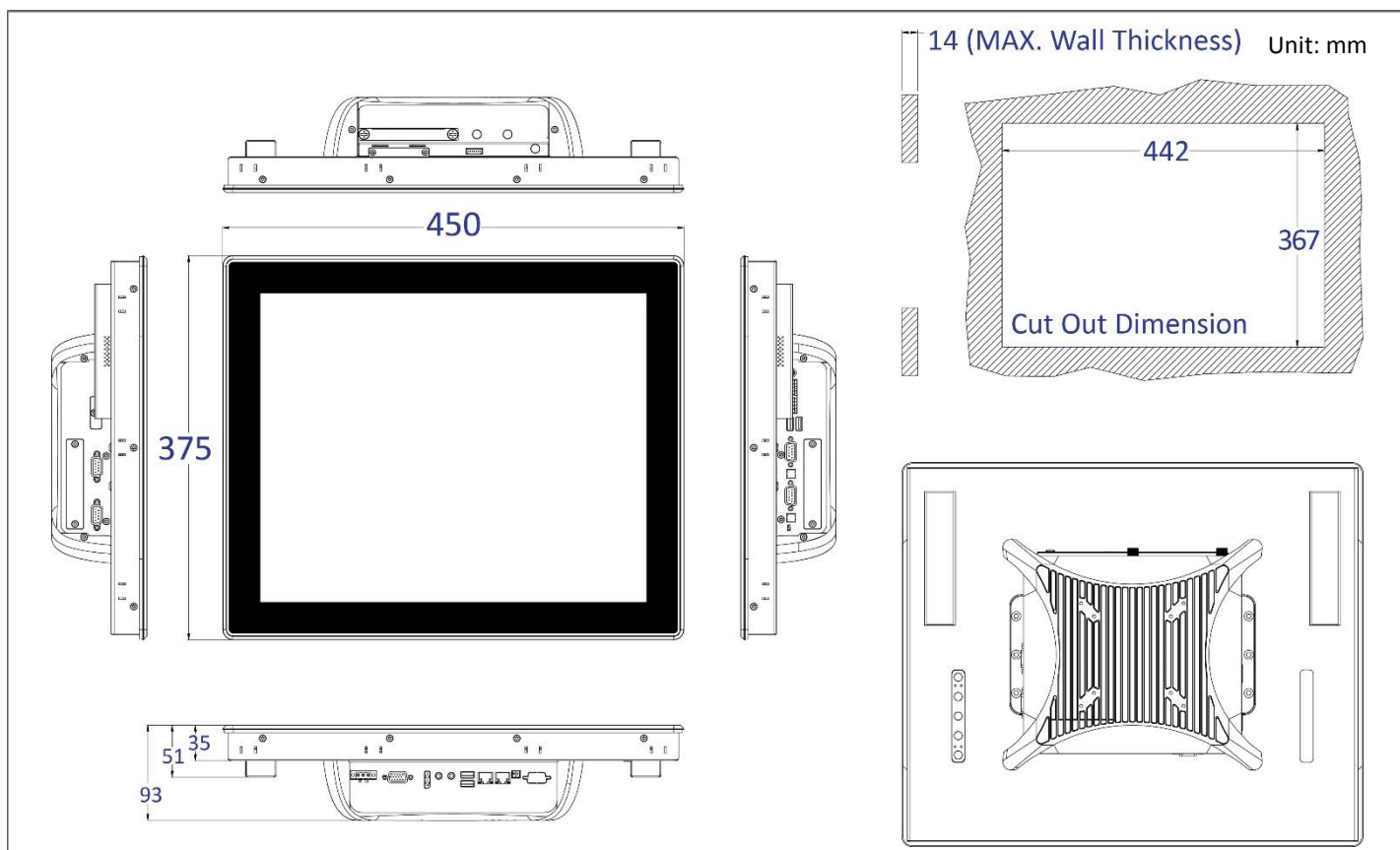
1.4.20 VIO-119R(C)/PC210



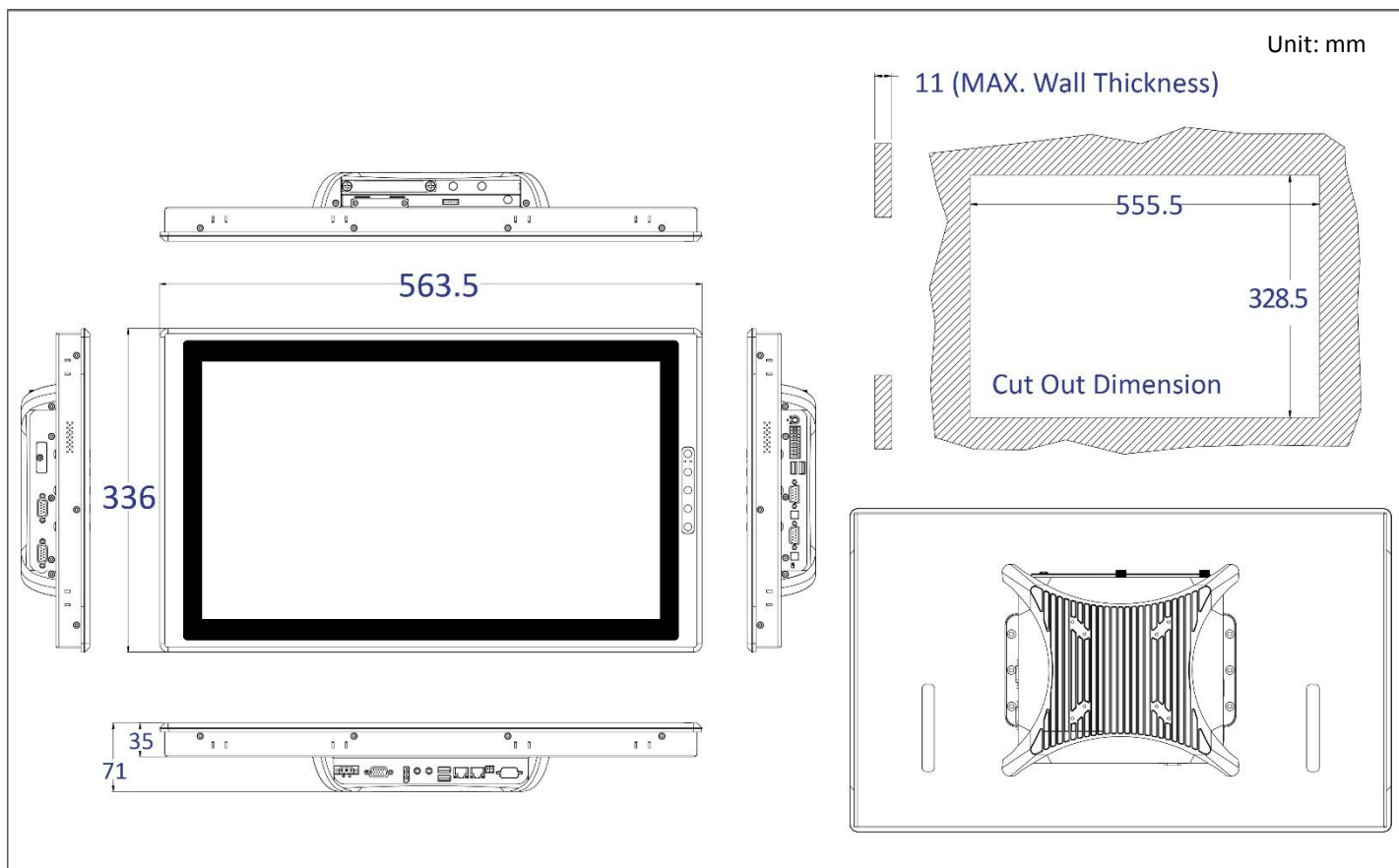
1.4.21 VIO-219R(C)/PC200



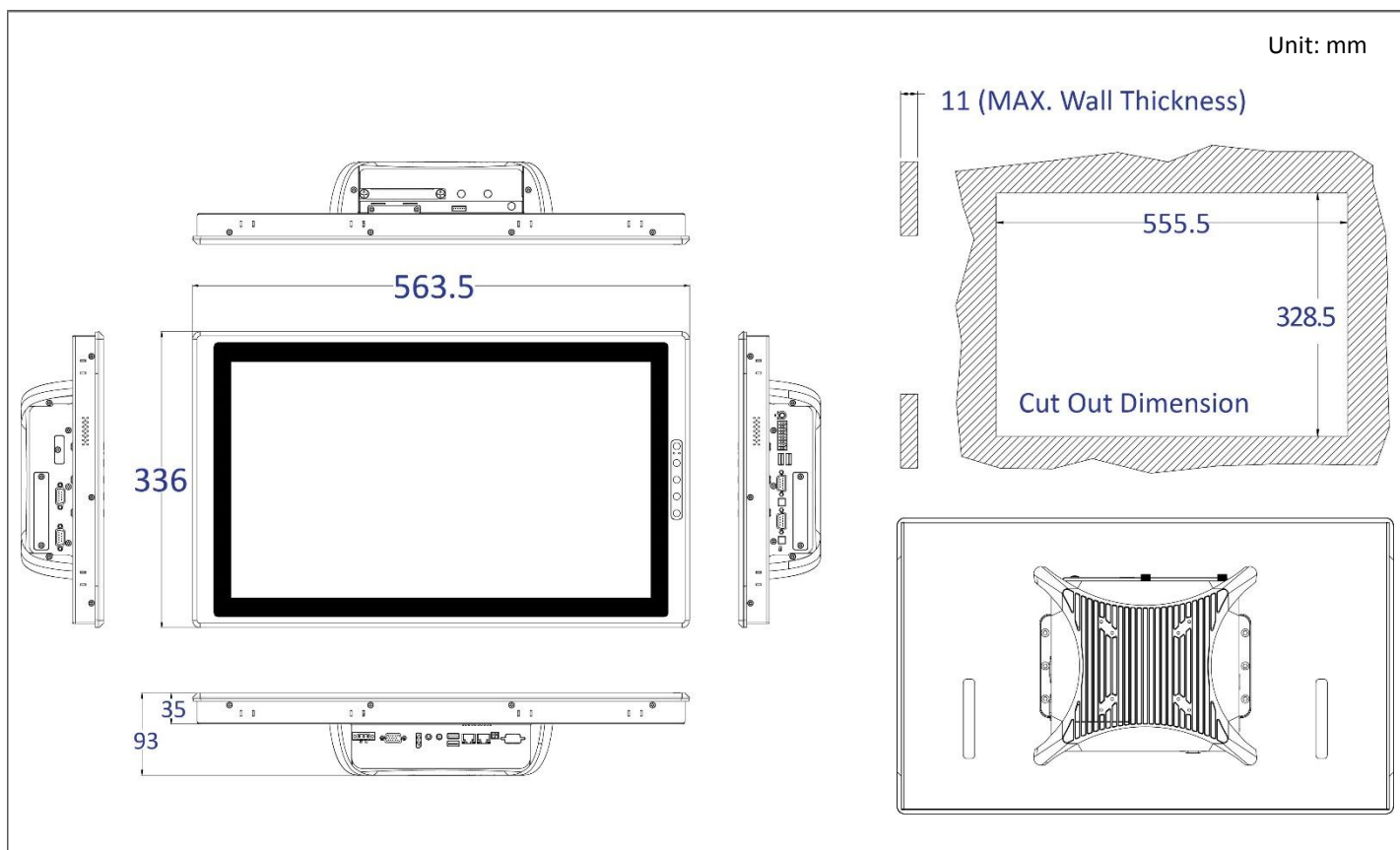
1.4.22 VIO-219R(C)/PC210



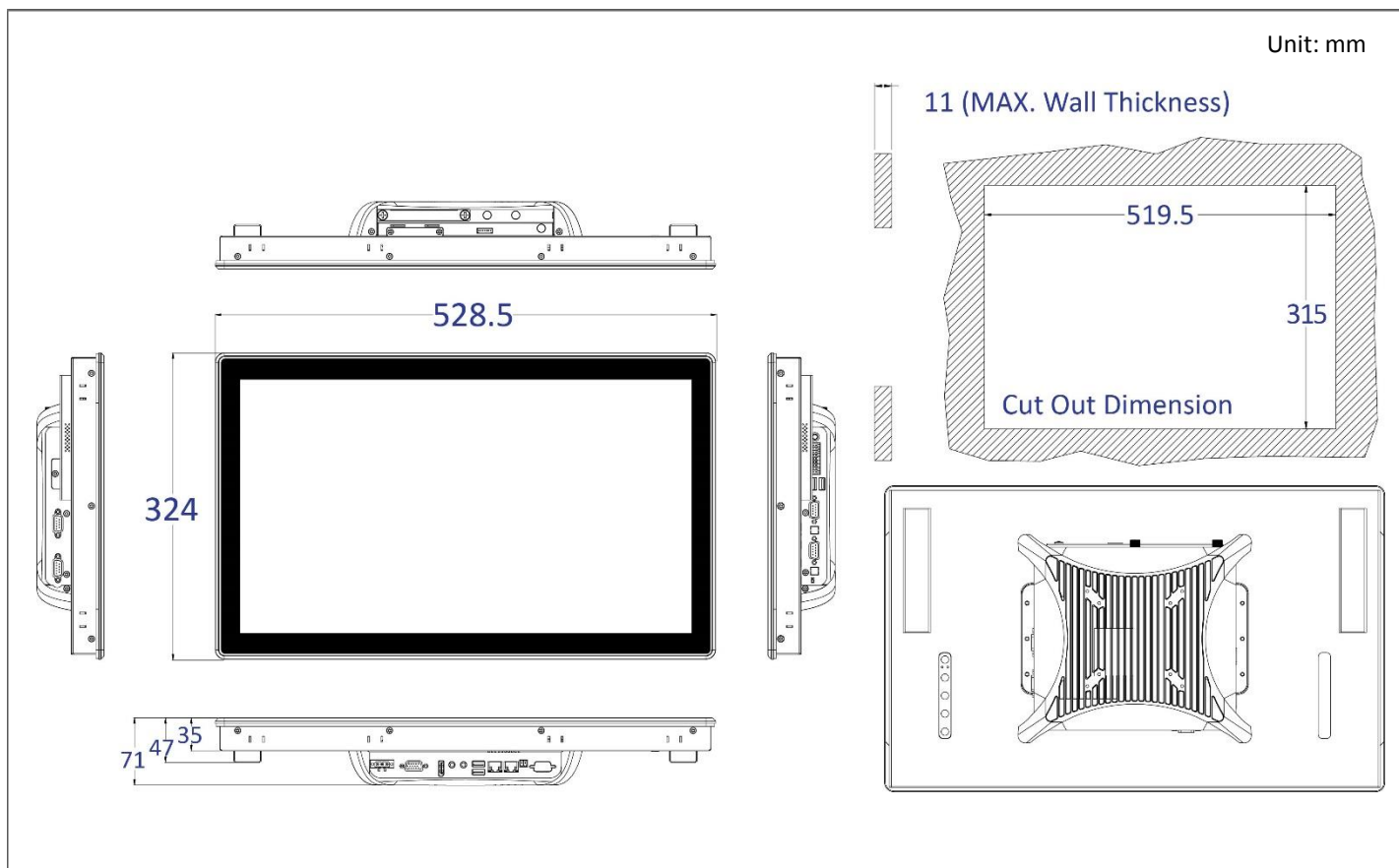
1.4.23 VIO-W121R(C)/PC200



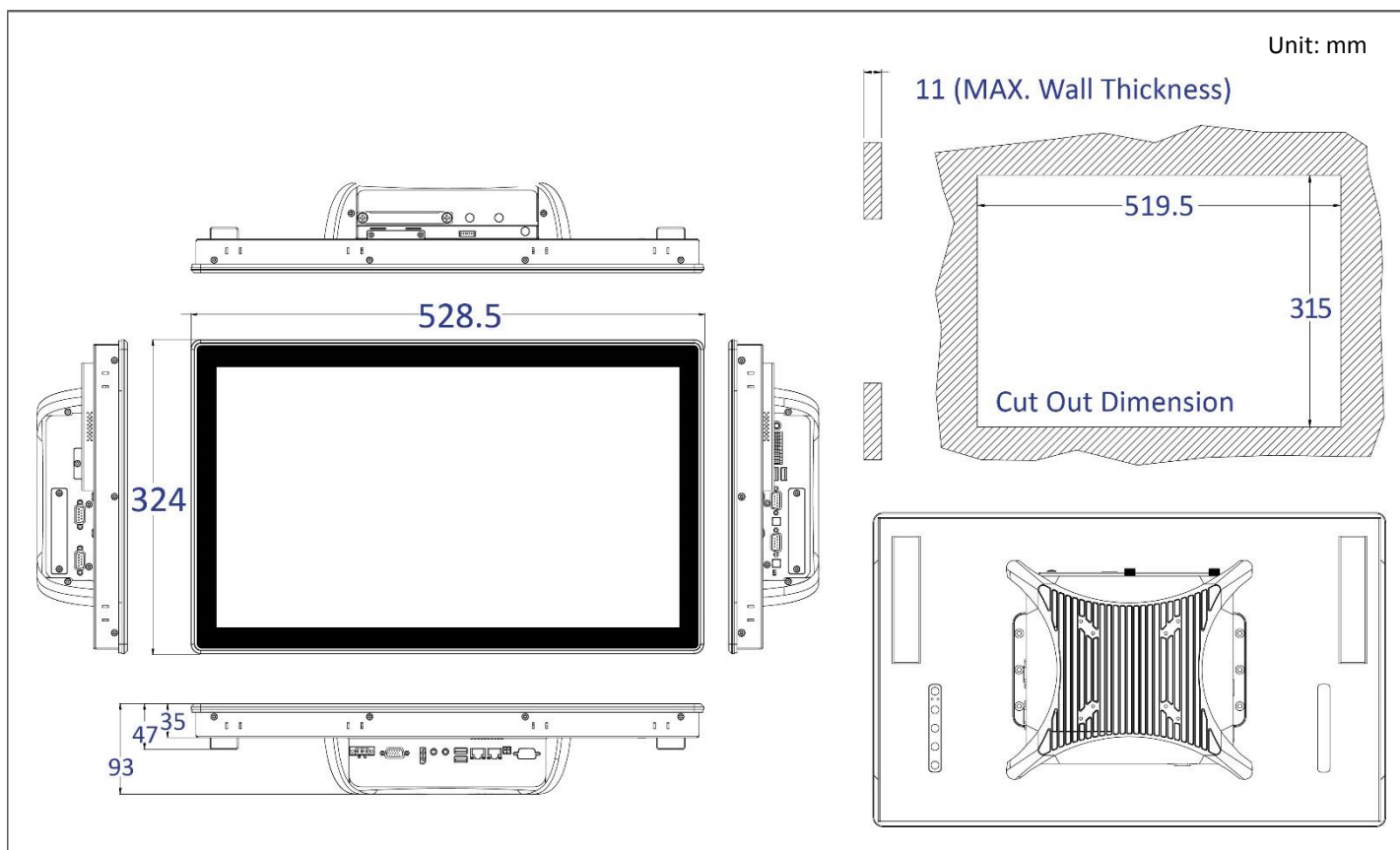
1.4.24 VIO-W121R(C)/PC210



1.4.25 VIO-W221R(C)/PC200



1.4.26 VIO-W221R(C)/PC210

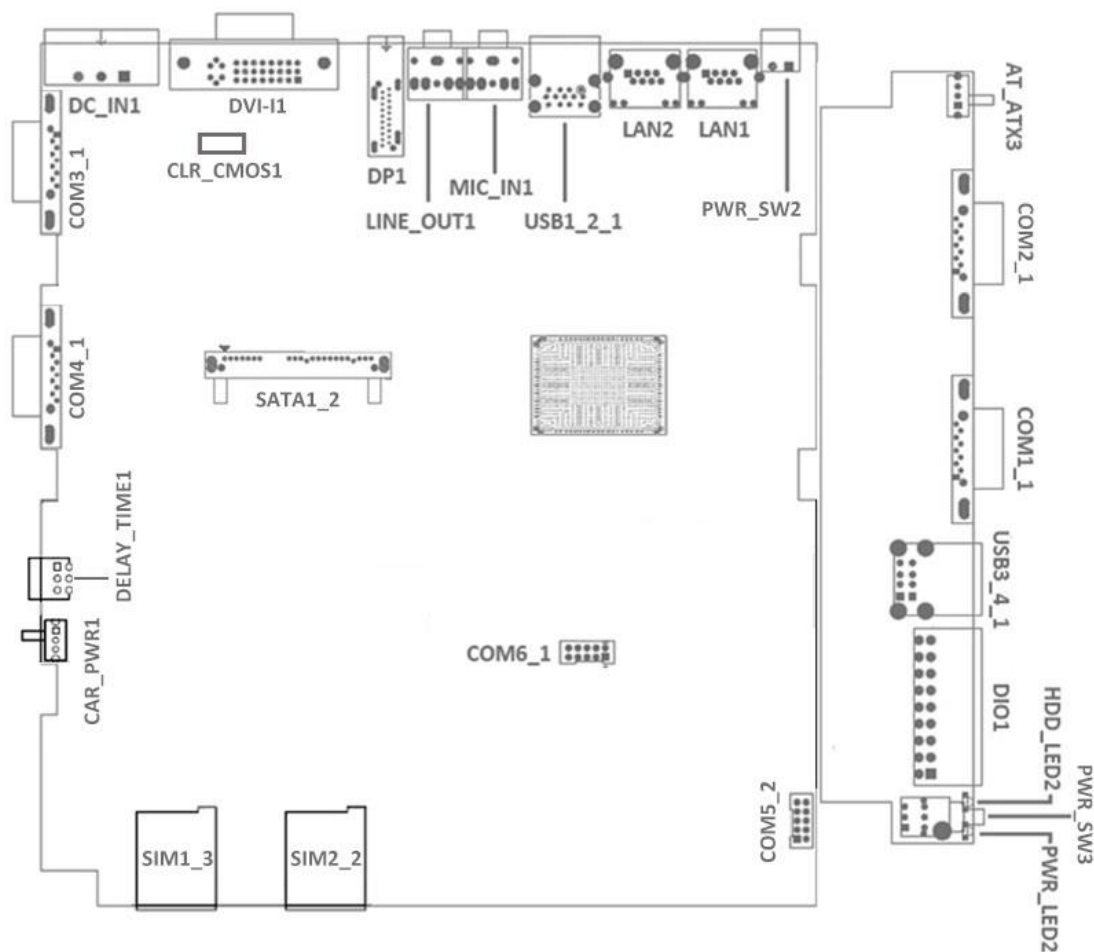


Chapter 2

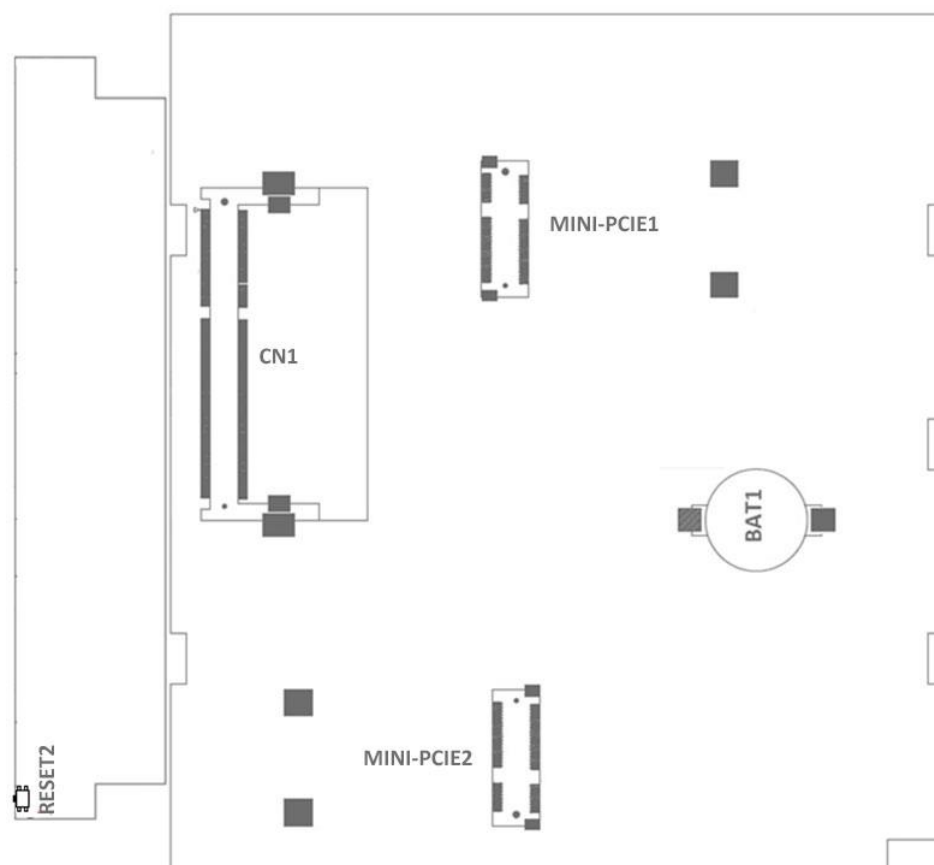
Switches and Connectors

2.1 Switch and Connector Locations

2.1.1 Top View



2.1.2 Bottom View



2.2 Connector / Switch Definition

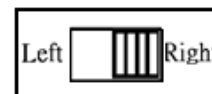
List of Connector / Switch

Connector Location	Definition
AT_ATX3	AT / ATX Power Mode Switch
CLR_CMOS1	Clear BIOS Switch
CFAST1_1	CFast Socket
PWR_SW3	Power Switch
RESET2	Reset Switch
USB1_2_1	USB 3.0 Port
USB3_4_1	USB 2.0 Port
SIM1_3, SIM2_2	SIM Card Socket
COM1_1, COM2_1, COM3_1, COM4_1	RS232 / RS422 / RS485 Connector
COM5_2, COM6_1	RS232 / RS422 / RS485 Connector
LAN1, LAN2	LAN Port
DC_IN1	3-pin DC 9~50V Power Input Connector
VGA1	VGA Connector
DP1	DisplayPort Connector
LINE_OUT1	Line-out Jack
MIC_IN1	Mic-in Jack
DIO1	8DI / 8DO Connector
PWR_SW2	Remote Power Switch
MINI-PCIE1	Mini PCI-Express / mSATA Socket
MINI-PCIE2	Mini PCI-Express Socket
SATA1_2	SATA with Power Connector
PWR_LED2	Power LED Status
HDD_LED2	HDD Access LED Status

2.3 Switches Definitions

AT_ATX1: AT / ATX Power Mode Switch

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



CLR_CMOS1: Clear BIOS Switch

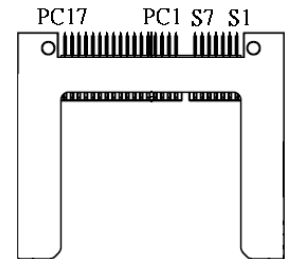
Switch	Definition
Off	Normal Status (Default)
ON	Clear BIOS



2.4 Connectors Definitions

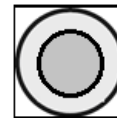
CFAST1_1: CFast Socket

Pin	Definition	Pin	Definition	Pin	Definition
S1	GND	PC1	NC	PC10	NC
S2	SATA_TXP1	PC2	GND	PC11	NC
S3	SATA_TXN1	PC3	NC	PC12	NC
S4	GND	PC4	NC	PC13	+3.3V
S5	SATA_RXN1	PC5	NC	PC14	+3.3V
S6	SATA_RXP1	PC6	NC	PC15	GND
S7	GND	PC7	GND	PC16	GND
		PC8	NC	PC17	NC
		PC9	NC		



PWR_SW3: Power Button

Pin	Definition	Pin	Definition
1	NC	4	GND
2	Power Button	5	NC
3	NC	6	GND



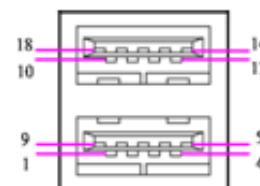
RESET1 : Reset Button

Pin	Definition
1	RESET
2	GND



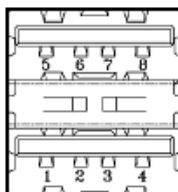
USB1_2_1: USB3.0 Connector, Type A

Pin	Definition	Pin	Definition
1	+5V	10	+5V
2	USB2_D0-	11	USB2_D1-
3	USB2_D0+	12	USB2_D1+
4	GND	13	GND
5	USB3_RX0-		USB3_RX1-
6	USB3_RX0+		USB3_RX1+
7	GND		GND
8	USB3_TX0-		USB3_TX1-
9	USB3_TX0+		USB3_TX1+

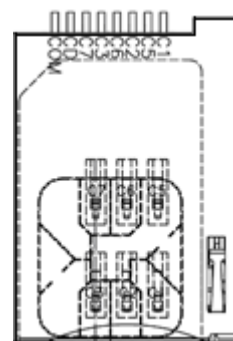


USB3_4_1: USB2.0 Connector, Type A

Pin	USB3_4_1 Definition
1	+5V
2	USB2_D2-
3	USB2_D2+
4	GND
5	+5V
6	USB2_D3-
7	USB2_D3+
8	GND

**SIM1_3, SIM2_2 : SIM Card Socket**

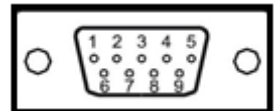
Pin	Definition	Pin	Definition
C1	UIM_PWR	C6	UIM_VPP
C2	UIM_RESET	C7	UIM_DATA
C3	UIM_CLK	CD	NC
C5	GND	COM	GND



COM1_1: RS232 / RS422 / RS485 Connector

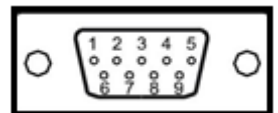
Connector Type: 9-pin D-Sub

Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD1	TX1-	DATA1-
2	RXD1	TX1+	DATA1+
3	TXD1	RX1+	
4	DTR1	RX1-	
5	GND	GND	GND
6	DSR1		
7	RTS1		
8	CTS1		
9	RI1		

**COM2_1: RS232 / RS422 / RS485 Connector**

Connector Type: 9-pin D-Sub

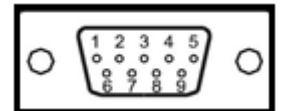
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD2	TX2-	DATA2-
2	RXD2	TX2+	DATA2+
3	TXD2	RX2+	
4	DTR2	RX2-	
5	GND	GND	GND
6	DSR2		
7	RTS2		
8	CTS2		
9	RI2		



COM3_1 : RS232 / RS422 / RS485 Connector

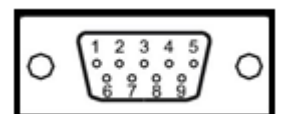
Connector Type: 2X5 10-pin box header, 2.54mm pitch

COM3_1			
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD3	TX3-	DATA3-
2	RXD3	TX3+	DATA3+
3	TXD3	RX3+	
4	DTR3	RX3-	
5	GND	GND	GND
6	DSR3		
7	RTS3		
8	CTS3		
9	RI3		

**COM4_1 : RS232 / RS422 / RS485 Connector**

Connector Type: 2X5 10-pin box header, 2.54mm pitch

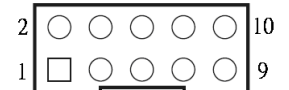
COM4_1			
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD4	TX4-	DATA4-
2	RXD4	TX4+	DATA4+
3	TXD4	RX4+	
4	DTR4	RX4-	
5	GND	GND	GND
6	DSR4		
7	RTS4		
8	CTS4		
9	RI4		



COM5_2 : RS232 / RS422 / RS485 Connector

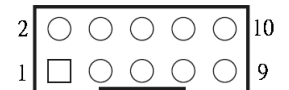
Connector Type: 2X5 10-pin box header, 2.54mm pitch

COM3_1			
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD5	TX5-	DATA5-
2	RXD5	TX5+	DATA5+
3	TXD5	RX5+	
4	DTR5	RX5-	
5	GND	GND	GND
6	DSR5		
7	RTS5		
8	CTS5		
9	RI5		

**COM6_1 : RS232 / RS422 / RS485 Connector**

Connector Type: 2X5 10-pin box header, 2.54mm pitch

COM4_1			
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD6	TX6-	DATA6-
2	RxD6	TX6+	DATA6+
3	TxD6	RX6+	
4	DTR6	RX6-	
5	GND	GND	GND
6	DSR6		
7	RTS6		
8	CTS6		
9	RI6		

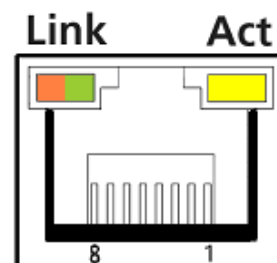


LAN1, LAN2: RJ45 with LEDs Port

Connector Type: RJ45 Connector

Pin	Definition	Pin	Definition
1	LAN1_MDI0P	5	LAN1_MDI2N
2	LAN1_MDI0N	6	LAN1_MDI1N
3	LAN1_MDI1P	7	LAN1_MDI3P
4	LAN1_MDI2P	8	LAN1_MDI3N

Pin	Definition	Pin	Definition
1	LAN2_MDI0P	5	LAN2_MDI2N
2	LAN2_MDI0N	6	LAN2_MDI1N
3	LAN2_MDI1P	7	LAN2_MDI3P
4	LAN2_MDI2P	8	LAN2_MDI3N

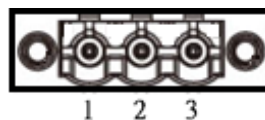


Link LED Status	Definition	Act LED Status	Definition
Steady Orange	1Gbps Network Link	Blinking Yellow	Data Activity
Steady Green	100Mbps Network Link	Off	No Activity
Off	10Mbps Network Link		

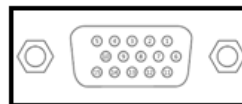
DC_IN1: DC Power Input Connector (+9~50V)

Connector Type: Terminal Block 1X3 3-pin, 5.0mm pitch

Pin	Definition
1	+9~50VIN
2	Power Ignition
3	GND

**VGA1: VGA Connector**

Pin	Definition	Pin	Definition
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	DDC_SDA
5	GND	13	HSYNC
6	RED_GND	14	VSYNC
7	GREEN_GND	15	DDC_SCL
8	BLUE_GND		



DP1: DisplayPort Connector

Pin	Definition	Pin	Definition
1	DP_LANE0_P	11	GND
2	GND	12	DP_LANE3_N
3	DP_LANE0_N	13	GND
4	DP_LANE1_P	14	GND
5	GND	15	DP_AUX_P
6	DP_LANE1_N	16	GND
7	DP_LANE2_P	17	DP_AUX_N
8	GND	18	DP_HPD
9	DP_LANE2_N	19	GND
10	DP_LANE3_P	20	DP_PWR

**LINE_OUT1 : Line-out Jack (Green)**

Connector Type: 5-pin Phone Jack

Pin	Definition
1	GND
2	OUT_R
3	NC
4	GND
5	OUT_L

**MIC_IN1: Microphone Jack (Pink)**

Connector Type: 5-pin Phone Jack

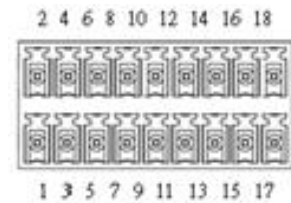
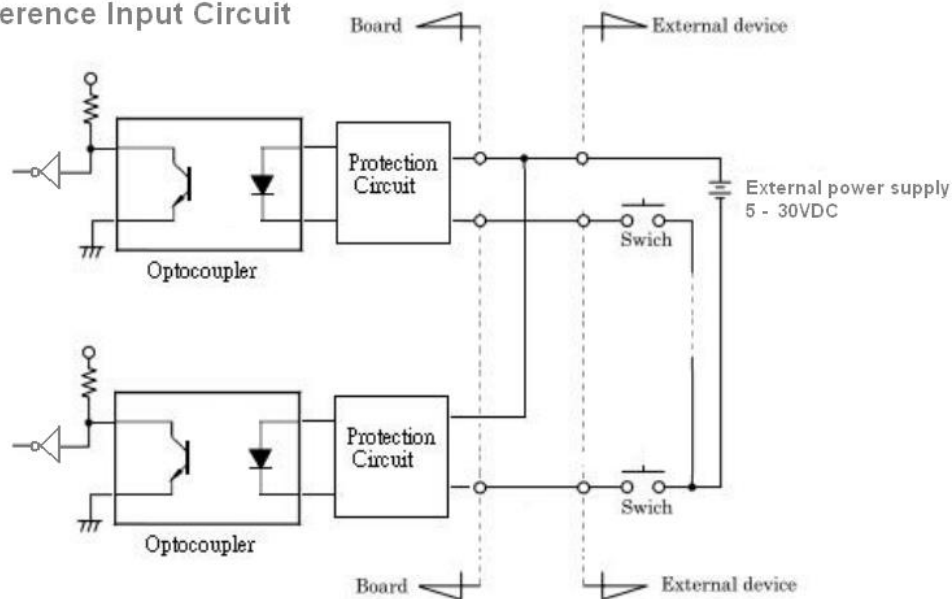
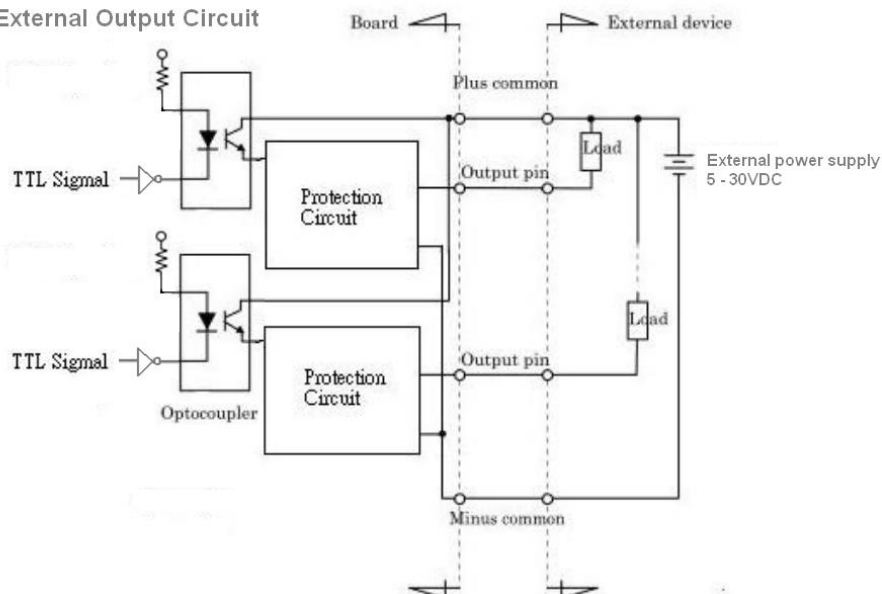
Pin	Definition
1	GND
2	MIC_R
3	NC
4	GND
5	MIC_L

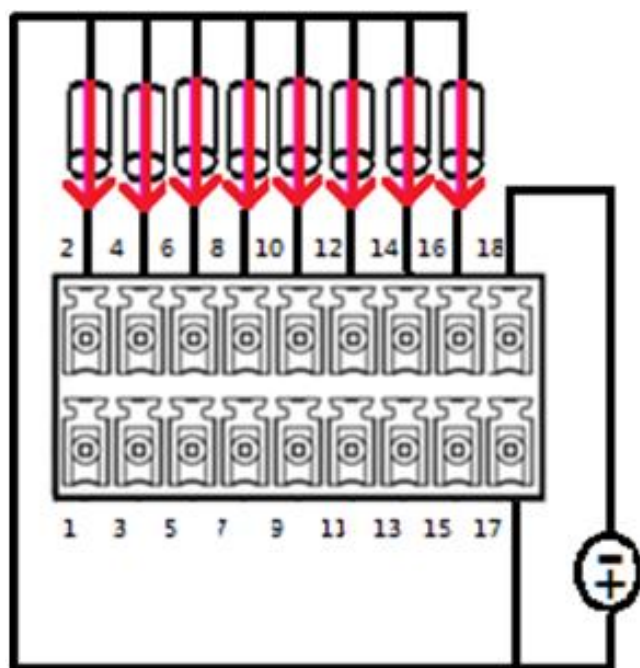
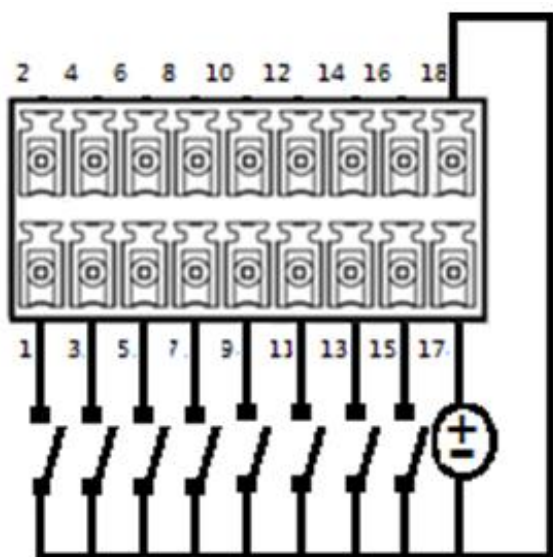


DIO1: Digital Input / Output Connector

Connector Type: Terminal Block 2X9 18-pin, 3.5mm pitch

Pin	Definition	Pin	Definition
1	DI1	2	DO1
3	DI2	4	DO2
5	DI3	6	DO3
7	DI4	8	DO4
9	DI5	10	DO5
11	DI6	12	DO6
13	DI7	14	DO7
15	DI8	16	DO8
17	External DC INPUT	18	External GND

**Reference Input Circuit****External Output Circuit**

**PWR_SW2 : Remote Power Switch**

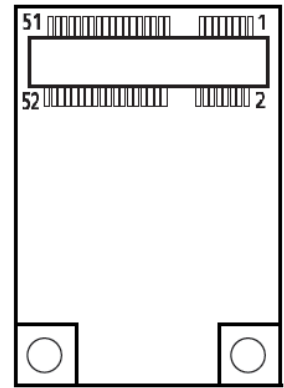
Connector Type: Terminal Block 1X2 2-pin, 3.5mm pitch

Pin	Definition
1	Power Button
2	GND

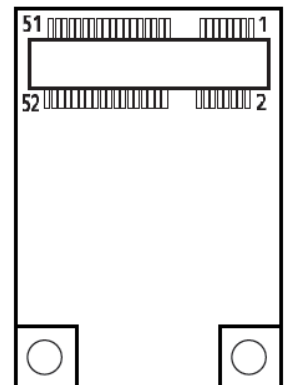


MINIPCIE1: Mini PCI-Express / mSATA Socket

Pin	Definition	Pin	Definition	Pin	Definition
1	WAKE#	19	NC	37	GND
2	+3.3V	20	+3.3V	38	USB_D5+
3	NC	21	GND	39	+3.3V
4	GND	22	PCIE_RST#	40	GND
5	NC	23	PCIE_RXN3 (SATA_RXN1)	41	+3.3V
6	+1.5V	24	+3.3V	42	NC
7	CLKREQ3#	25	PCIE_RXP3 (SATA_RXP1)	43	GND
8	USIM1_VCC	26	GND	44	NC
9	GND	27	GND	45	NC
10	USIM1_DATA	28	+1.5V	46	NC
11	PCIE_CLKN3	29	GND	47	NC
12	USIM1_CLK	30	SMB_CLK	48	+1.5V
13	PCIE_CLKP3	31	PCIE_TXN3 (SATA_TXN1)	49	NC
14	USIM1_RST	32	SMB_DATA	50	GND
15	GND	33	PCIE_TXP3 (SATA_TXP1)	51	NC
16	USIM1_VPP	34	GND	52	+3.3V
17	NC	35	GND		
18	GND	36	USB_D5-		

**MINIPCIE2: Mini PCI-Express**

Pin	Definition	Pin	Definition	Pin	Definition
1	WAKE#	19	NC	37	GND
2	+3.3V	20	+3.3V	38	USB_D6+
3	NC	21	GND	39	+3.3V
4	GND	22	MINIPCIE_RST#	40	GND
5	NC	23	PCIE_RXN4	41	+3.3V
6	+1.5V	24	+3.3V	42	NC
7	CLKREQ4#	25	PCIE_RXP4	43	GND
8	USIM2_VCC	26	GND	44	NC
9	GND	27	GND	45	NC
10	USIM2_DATA	28	+1.5V	46	NC
11	PCIE_CLKN4	29	GND	47	NC
12	USIM2_CLK	30	SMB_CLK	48	+1.5V
13	PCIE_CLKP4	31	PCIE_TXN4	49	NC
14	USIM2_RST	32	SMB_DATA	50	GND
15	GND	33	PCIE_TXP4	51	NC
16	USIM2_VPP	34	GND	52	+3.3V
17	NC	35	GND		
18	GND	36	USB_D6-		



SATA1_2: SATA with Power Connector

Pin	SATA1_2 Definition	Pin	SATA1_2 Definition
1	GND	12	GND
2	SATA_TXP0	13	GND
3	SATA_TXN0	14	+5V
4	GND	15	+5V
5	SATA_RXN0	16	+5V
6	SATA_RXP0	17	GND
7	GND	18	GND
8	+3.3V	19	GND
9	+3.3V	20	+12V
10	+3.3V	21	+12V
11	GND	22	+12V



PWR_LED2: Power LED Status

Pin	Definition
1	POWER LED+
2	POWER LED-

**HDD_LED2: HDD Access LED Status**

Pin	Definition
1	HDD LED+
2	HDD LED-



Chapter 3

Front Panel Controls

3.1 Users Controls



3.1.1 Power Button

Turns the monitor on or off.

3.1.2 LED

1. Blue indicates power on.
2. Yellow indicates HDD access status.

3.1.3 MENU / Enter Button

Press to view the OSD menu. Press it again to enter a selection in the OSD menu.

3.1.4 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.

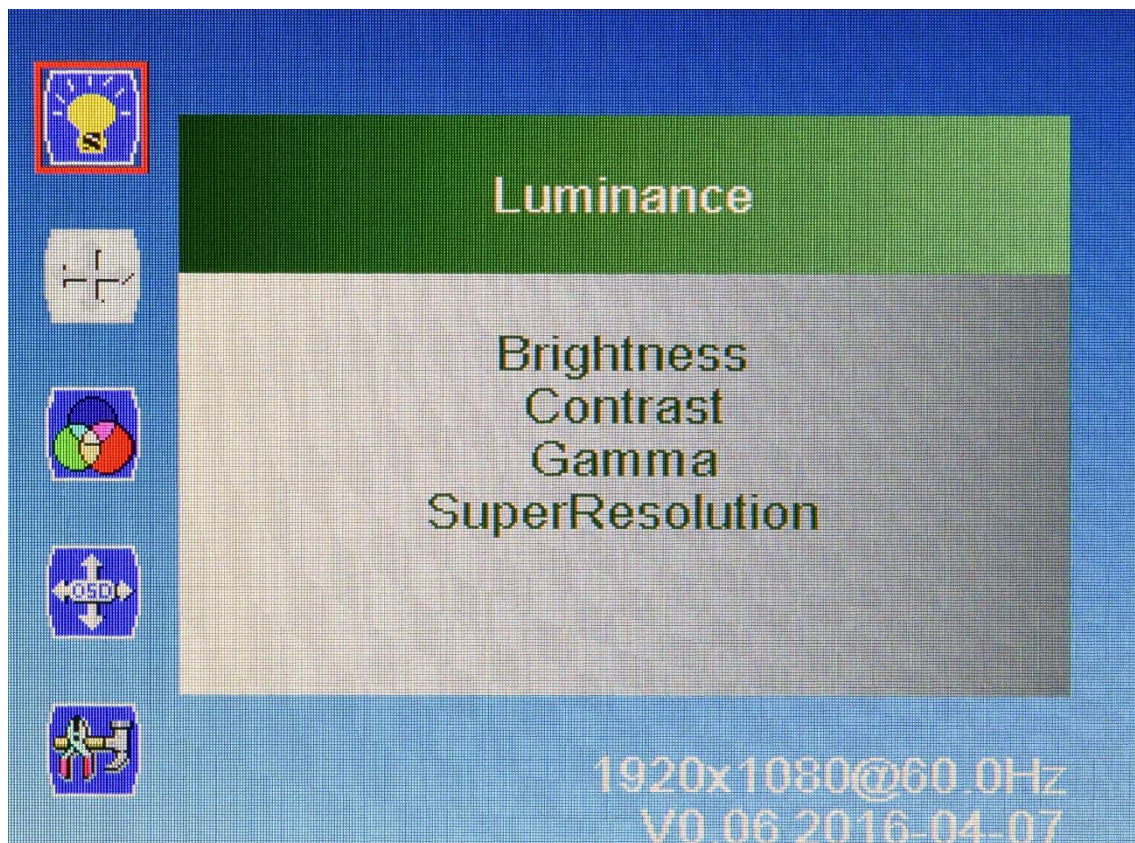
3.1.5 Decrease Button

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.

3.1.6 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 .

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

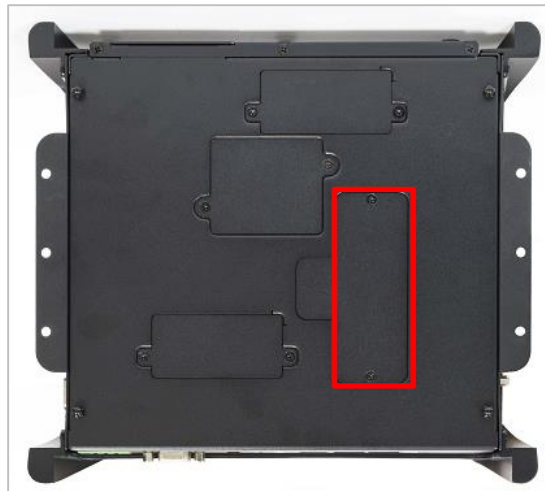
4.1 Set torque force to 3.5 kgf-cm to execute all the screwing and unscrewing

**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 SODIMM cover in the below circled area for installing memory module.



2. Insert memory module from 45 degree direction.

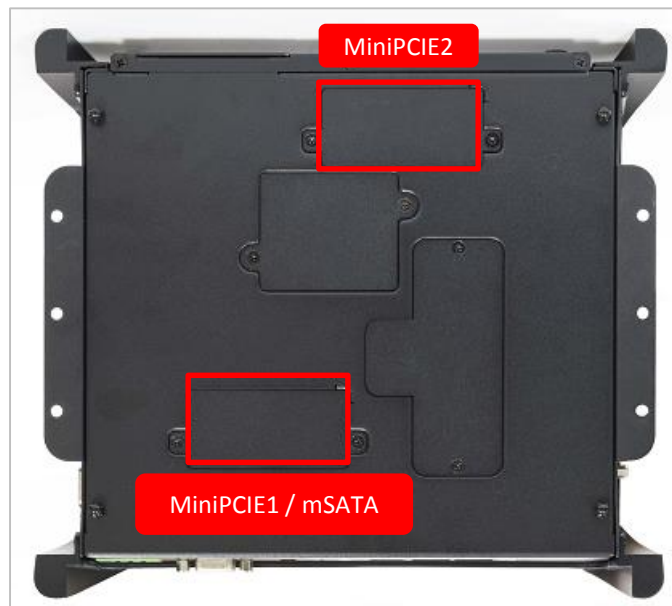


3. Press the memory module vertically downward until you hear the "click" sound. Make sure the memory module is firmly in place.



4.3 Installing mini PCIe card / mSATA

1. Two mini PCIe slots are available for PC200 series. MiniPCI-E1 supports mSATA.



2. Insert mini PCIe card or mSATA module from 45 degree direction.



3. Press the mini PCIe card or mSATA module down and lock it with two screws (M2x3.7L).



4.4 Installing HDD on removable SATA HDD bay

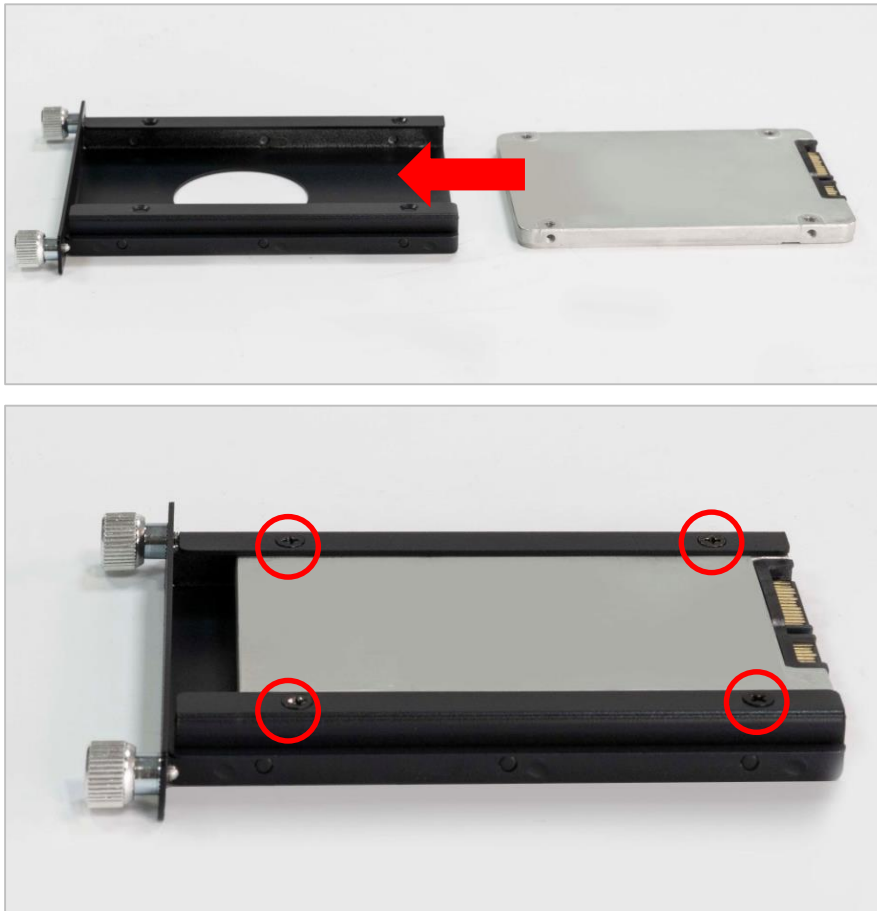
1. One removable SATA HDD bays is available for PC200 Series



2. Unscrew the two sun screws circled below to take out the removable SATA HDD bay.



3. Lock the 2.5" HDD with HDD bracket using four screws (M3x4L).



4. Slide the HDD bracket back and then fasten the sun screws.



4.5 Installing CFast card

1. One CFast socket is available for PC200 series. Unscrew two screws to remove the bracket.



2. Insert CFast card into the socket until you hear the “click” sound.



3. The socket is push-push type. Push the installed CFast card again to remove it.



4.6 Installing SIM card

1. For PC200 Series, two SIM card slots are available on system chassis between removable HDD bay and CFast slot.

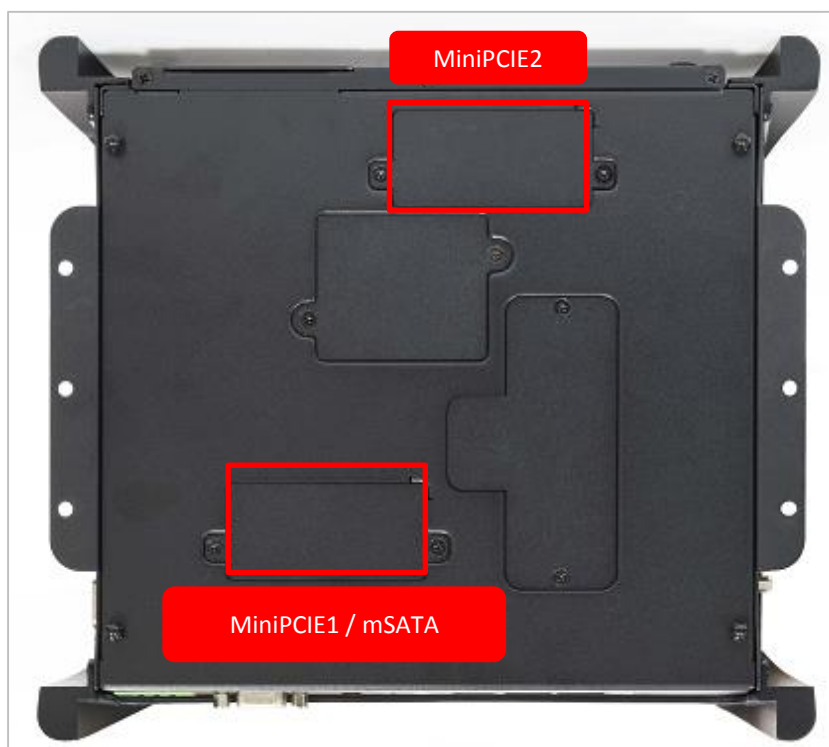


2. Press the SIM card in until you hear the "click" sound.



3. Please note that the installation of SIM 1 and SIM 2 has to match the installation of mini PCIe slots.

SIM Card Socket Number	Matching Mini PCIe Slot
SIM 1	MiniPCIE1 / mSATA
SIM 2	MiniPCIE2



4. To uninstall SIM card, simply press the installed SIM card and then the card will be pushed out

4.7 Removing chassis bottom cover

1. Unscrew the 6 screws (M3x5L) below.



2. Remove the top cover of PC module.



4.8 Installing antenna

1. Three antenna holes are available for PC200 series.



2. Remove antenna hole cover on the system panel.



3. Have antenna jack penetrate through the hole.



4. Put on washer and fasten the nut with antenna jack.



5. Attach the RF connector at the cable-end onto the communication module.



6. Assemble the antenna and antenna jack together.



4.9 Assemble 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 six screws (M3X5L) to lock the system body with top cover.



4.10 Connecting PC module with VIO display module

1. Hold the PC module with its connector facing towards the connector on the back of VIO display module.



2. Press the PC module downward to ensure two modules are firmly connected.



3. Lock the below 6 screws (M4X5L) to finish assembly.



Chapter 5

BIOS Setup

5.1 BIOS Introduction

The system BIOS software is stored on EEPROM. 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 or <F2> 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

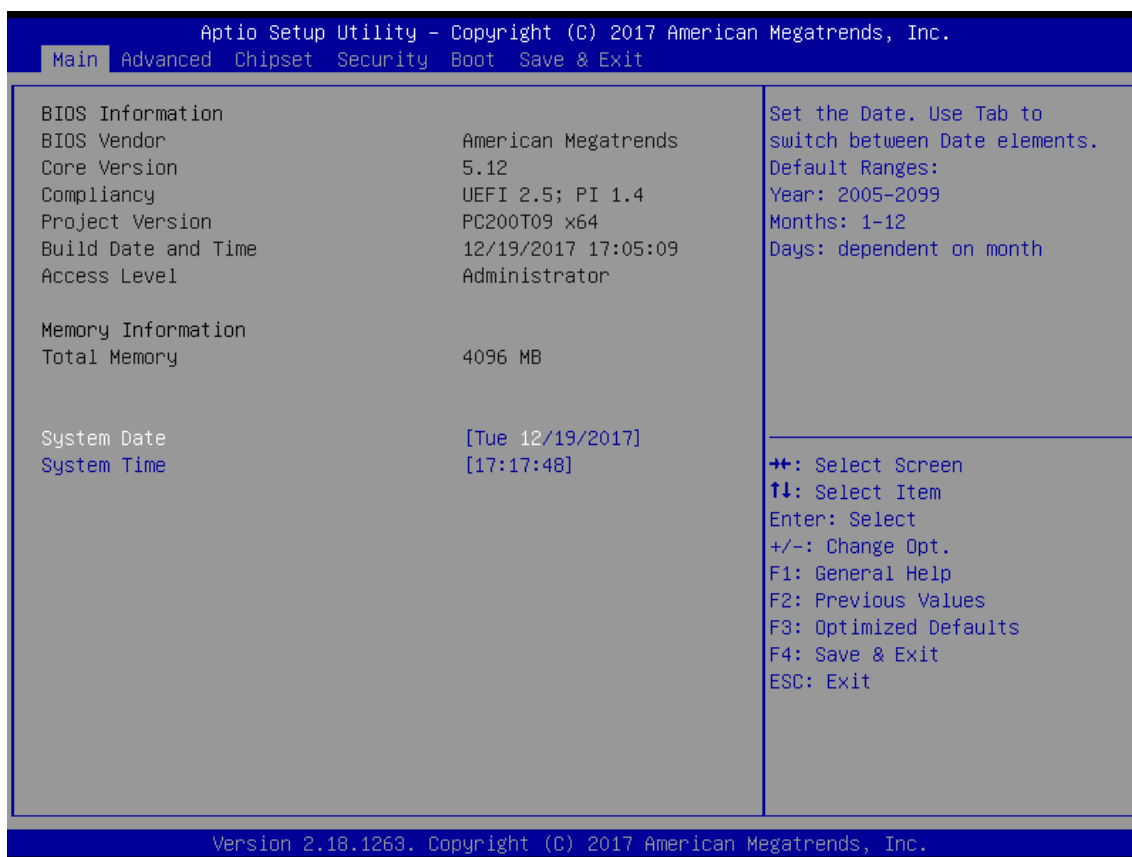
The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

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 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.



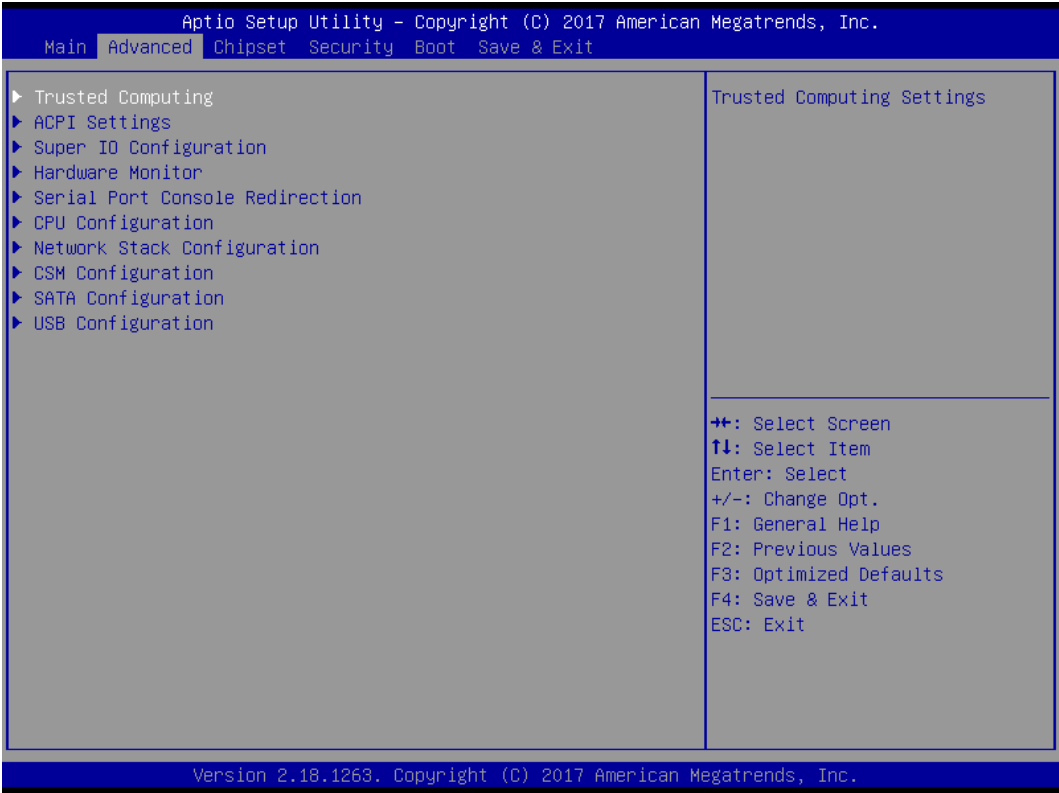
5.2.1 System Date

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

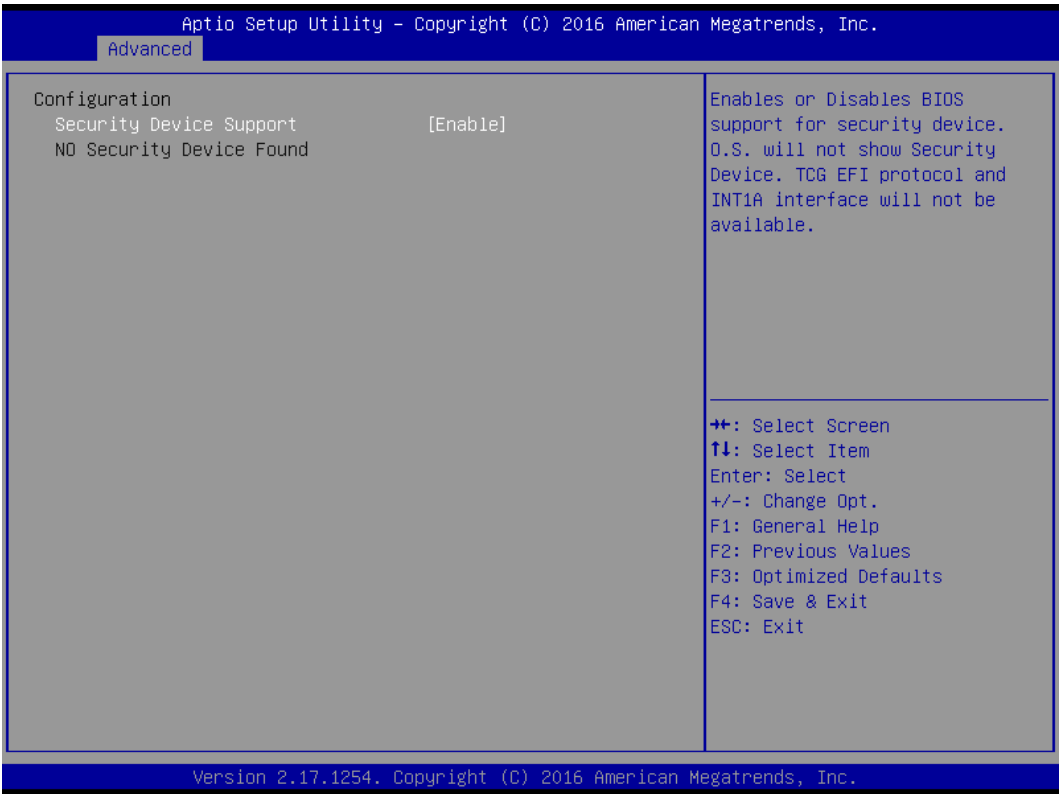
5.2.2 System Time

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

5.3 Advanced Setup

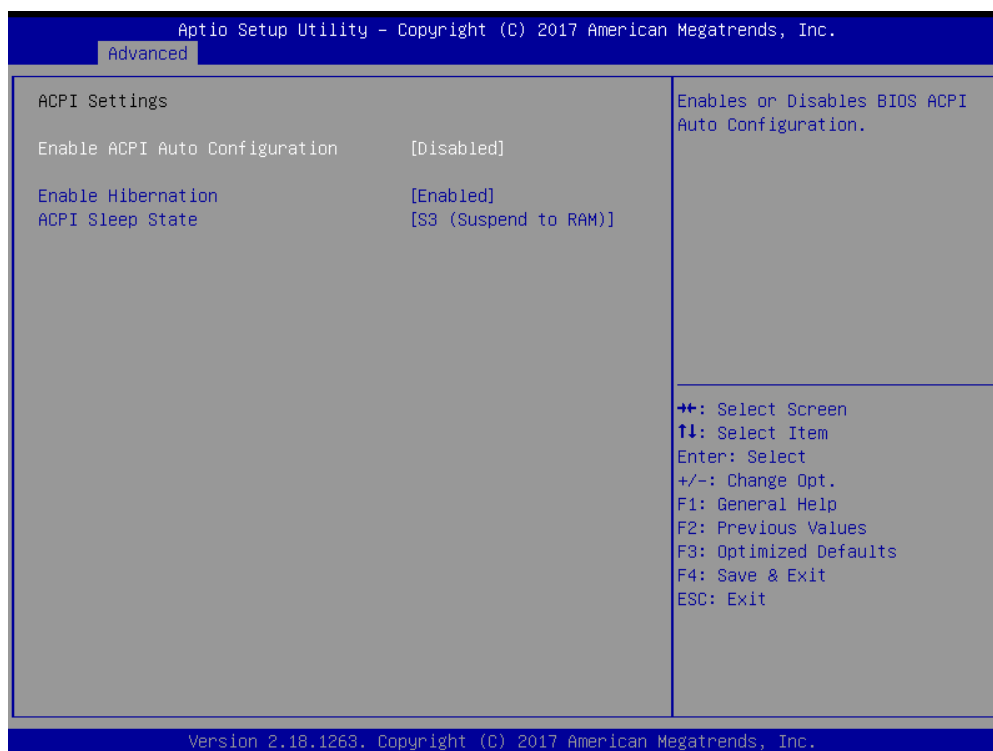


5.3.1 Trusted Computing (Optional)



- **Security Device Support**
Enable or disable TPM function

5.3.2 ACPI Settings



■ Enable ACPI Auto Configuration

This item allows you to enable or disable BIOS ACPI Auto Configuration.

■ Enable Hibernation

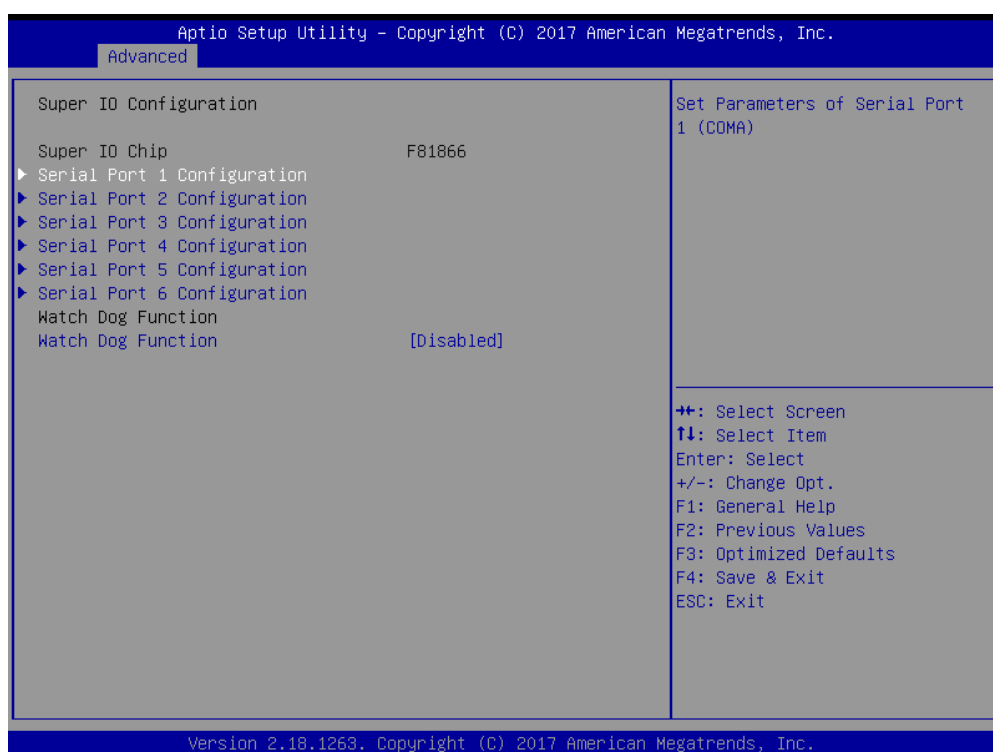
This item allows you to enable or disable system ability to hibernate.

■ ACPI Sleep State

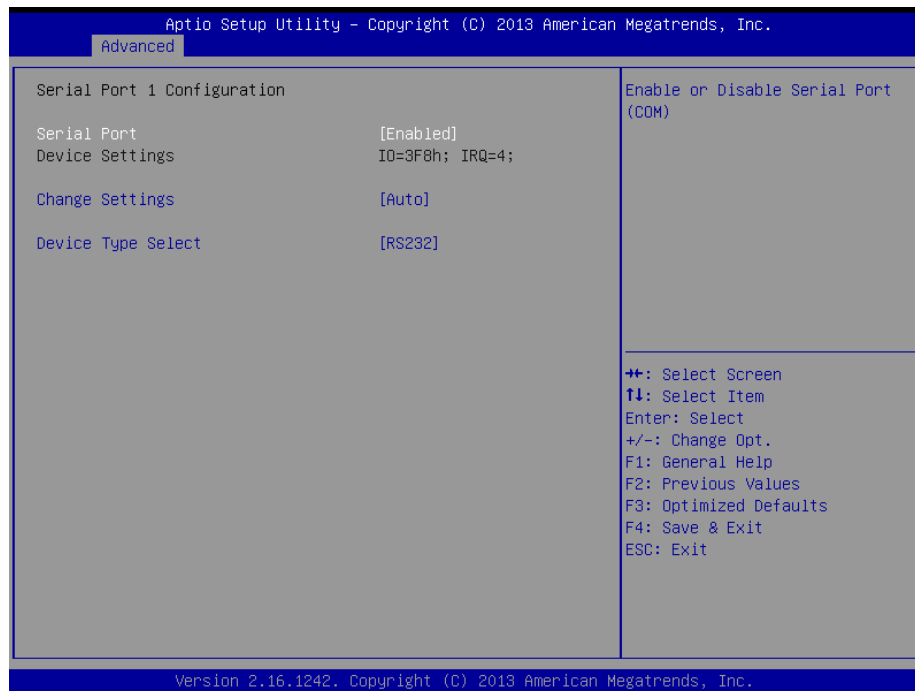
This item selects the highest ACPI sleep state the system will enter when the suspend button is pressed. Select <Suspend Disabled> or <S3 (Suspend to RAM)>.

5.3.3 Super IO Configuration

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



Serial Port 1 Configuration



- **Serial Port**

This item allows you to enable or disable serial port.

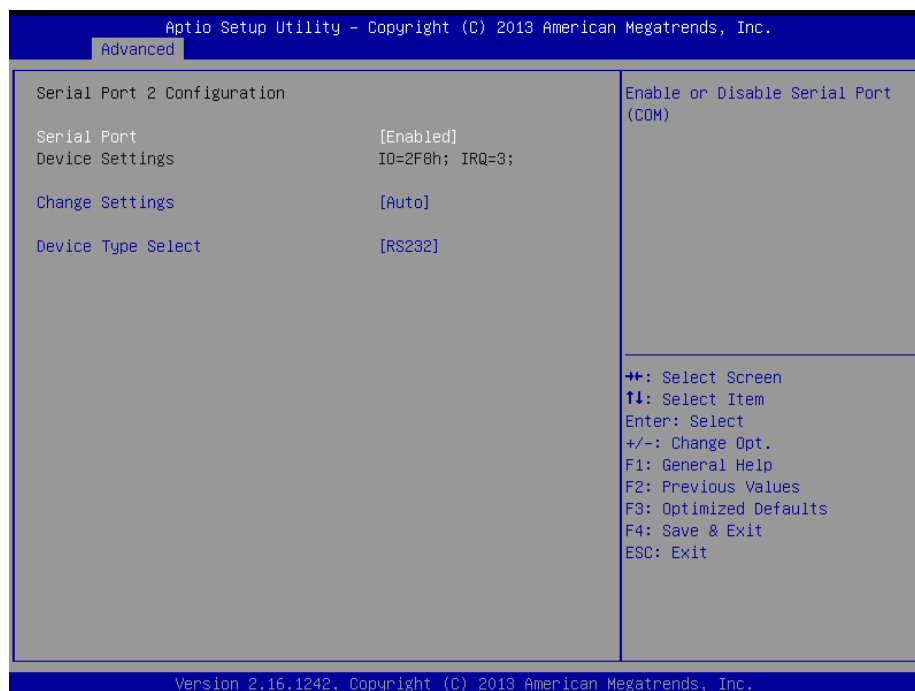
- **Change Settings**

This item allows you to change the address & IRQ settings of the specified serial port.

- **Device Type Select**

Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

Serial Port 2 Configuration



- **Serial Port**

This item allows you to enable or disable serial port.

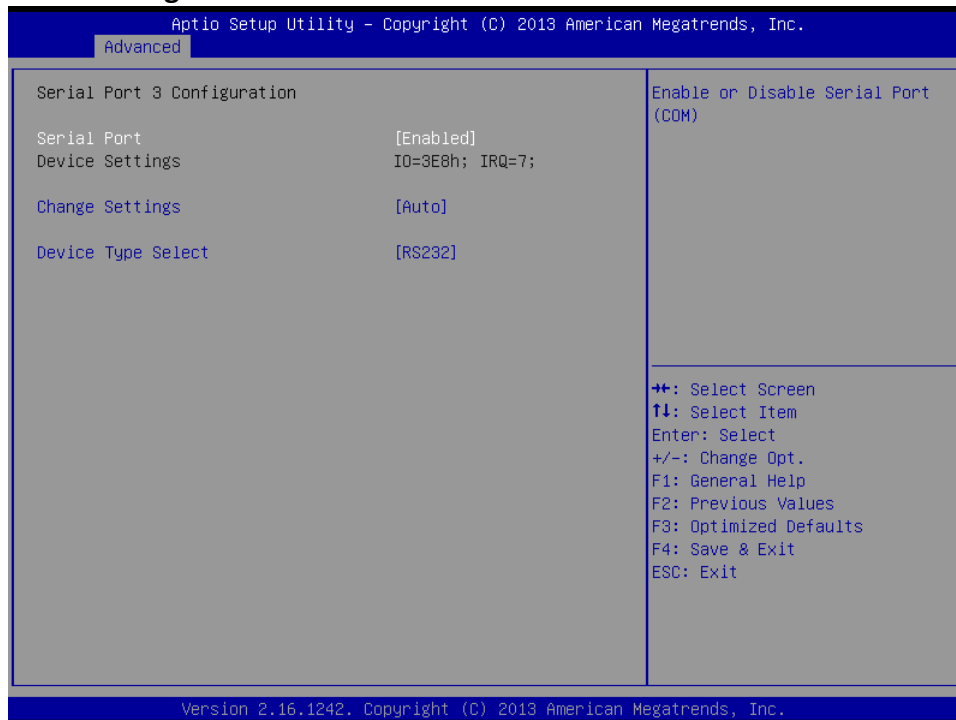
- **Change Settings**

This item allows you to change the address & IRQ settings of the specified serial port.

- **Device Type Select**

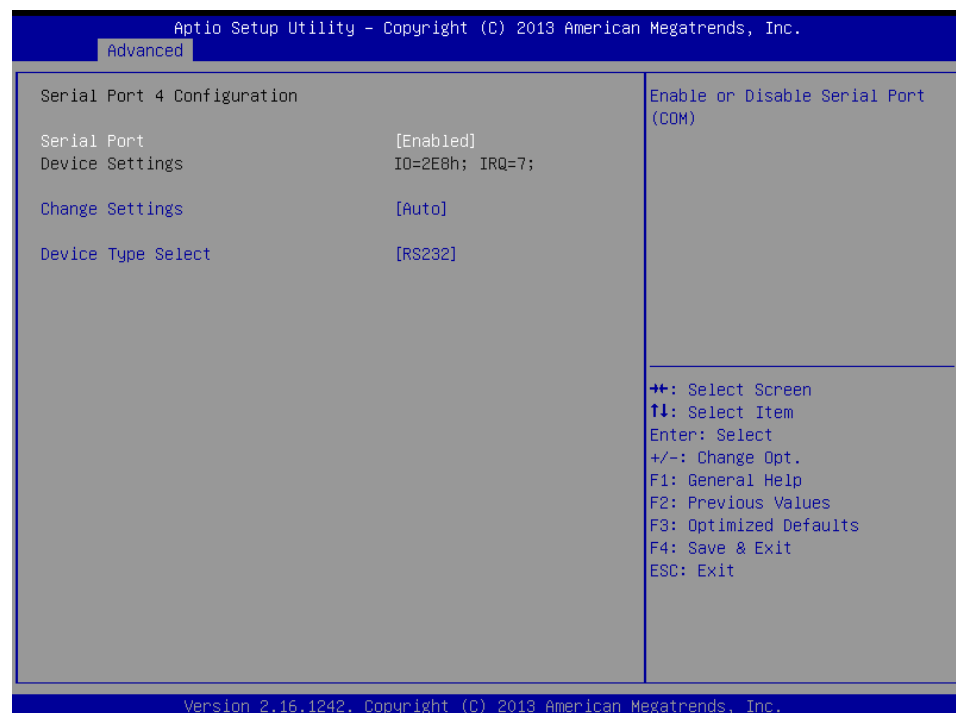
Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

Serial Port 3 Configuration



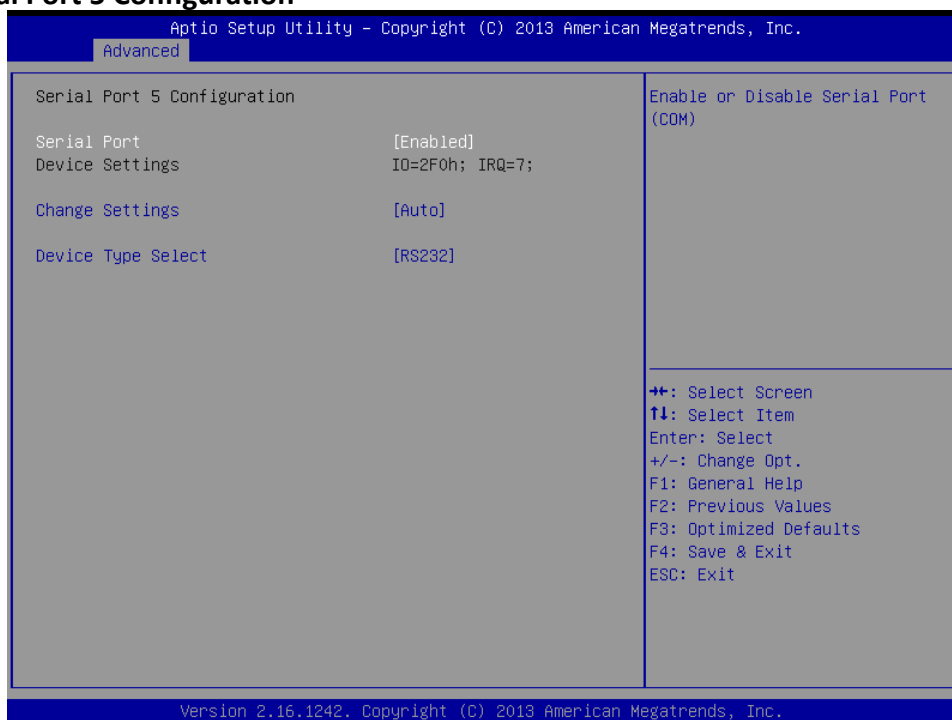
- **Serial Port**
This item allows you to enable or disable serial port.
- **Change Settings**
This item allows you to change the address & IRQ settings of the specified serial port.
- **Device Type Select**
Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

Serial Port 4 Configuration



- **Serial Port**
This item allows you to enable or disable serial port.
- **Change Settings**
This item allows you to change the address & IRQ settings of the specified serial port.
- **Device Type Select**
Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

Serial Port 5 Configuration



- **Serial Port**

This item allows you to enable or disable serial port.

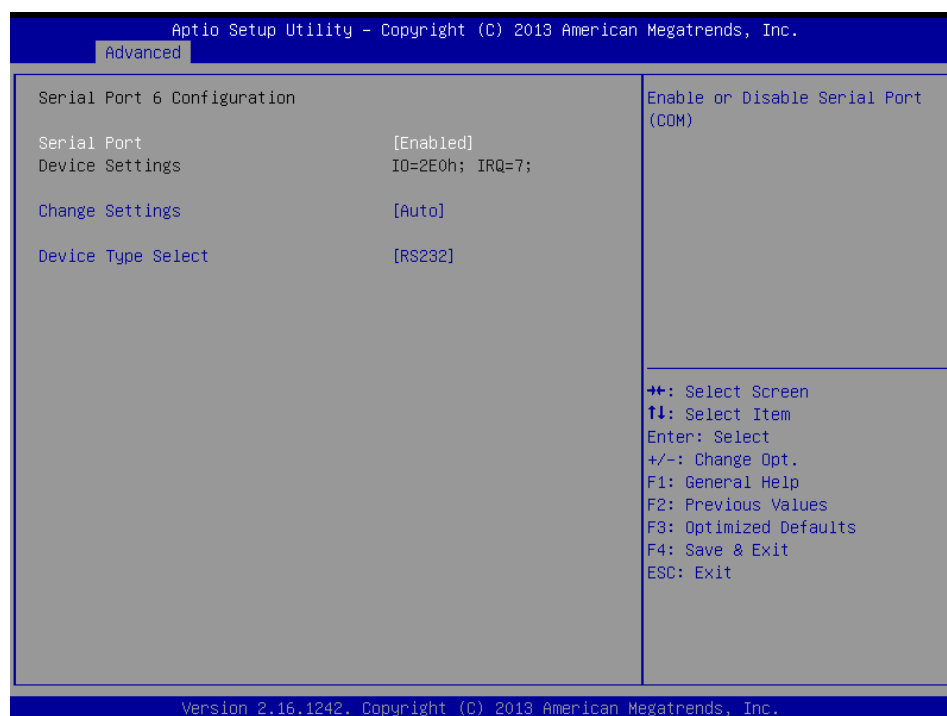
- **Change Settings**

This item allows you to change the address & IRQ settings of the specified serial port.

- **Device Type Select**

Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

Serial Port 6 Configuration



- **Serial Port**

This item allows you to enable or disable serial port.

- **Change Settings**

This item allows you to change the address & IRQ settings of the specified serial port.

- **Device Type Select**

Change the Serial interface. Select <RS232> ,<RS422 Full Duplex> or <RS485 Half Duplex> interface.

■ Watch Dog Function

This setting allows you to setup the system watch-dog timer, a hardware timer that generates a reset when the software that it monitors does not respond as expected each time the watch dog polls it.

● Watch Dog Timer Count Mode

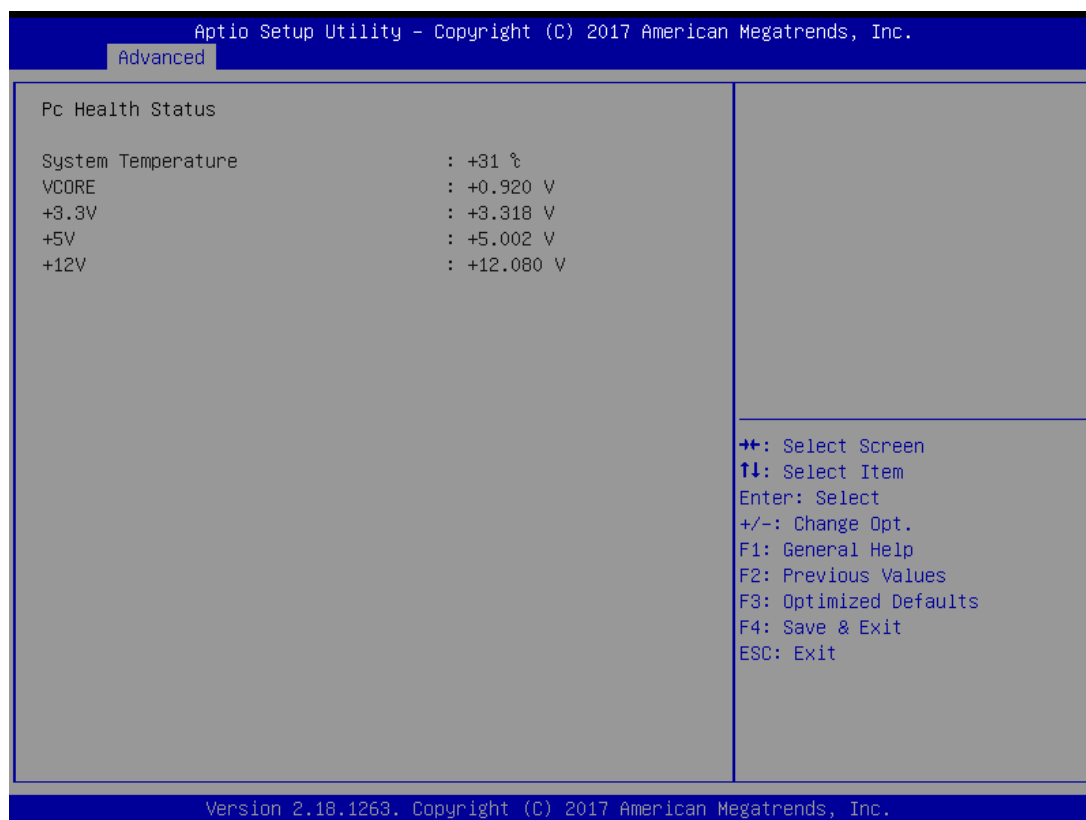
Change the Watch dog mode. Select <Second Mode> or <Minute Mode> mode.

● Watch Dog Timer Time Out Value

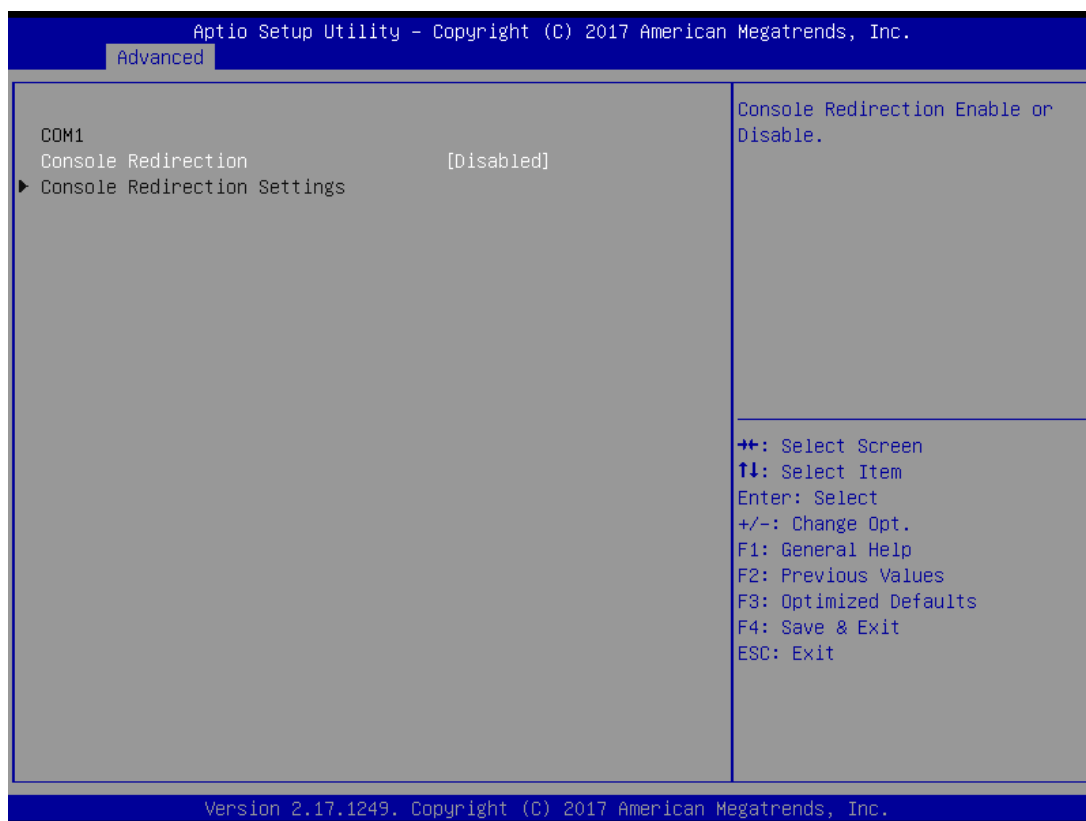
User can set a value in the range of 20 to 255.

5.3.4 Hardware Monitor

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



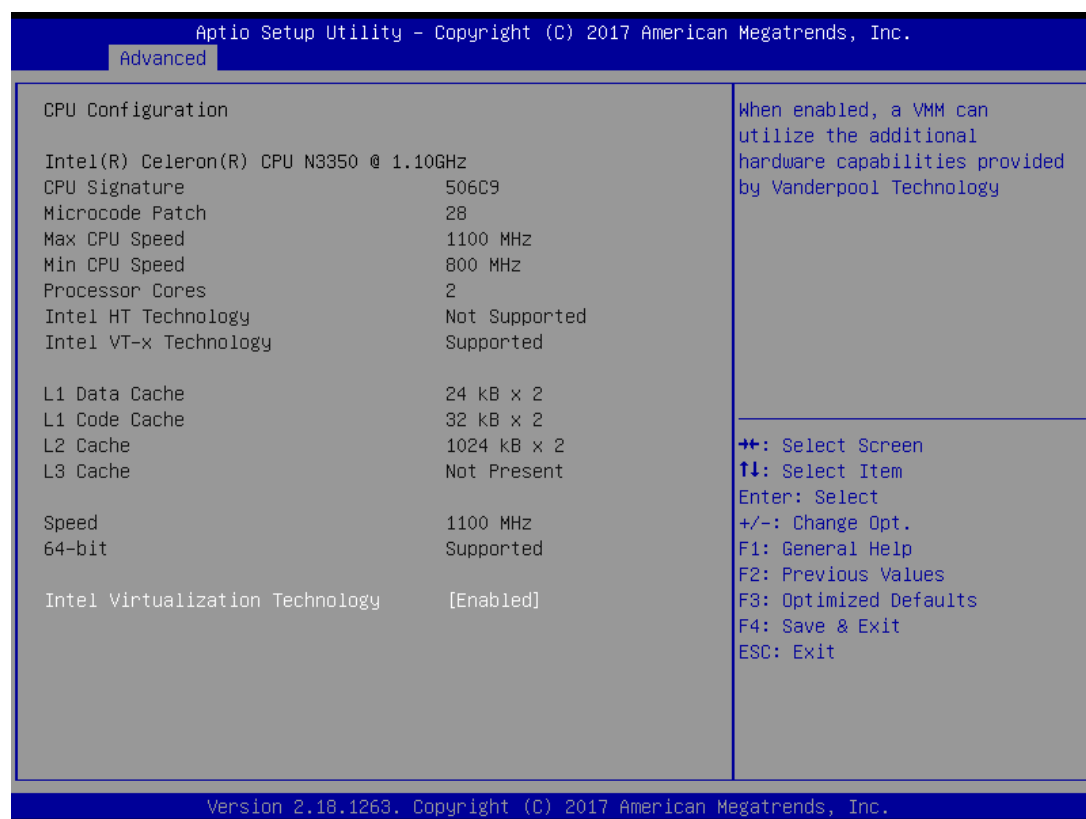
5.3.5 Serial Port Console Redirection



■ Console Redirection

These items allows you to enable or disable COM1 console redirection.

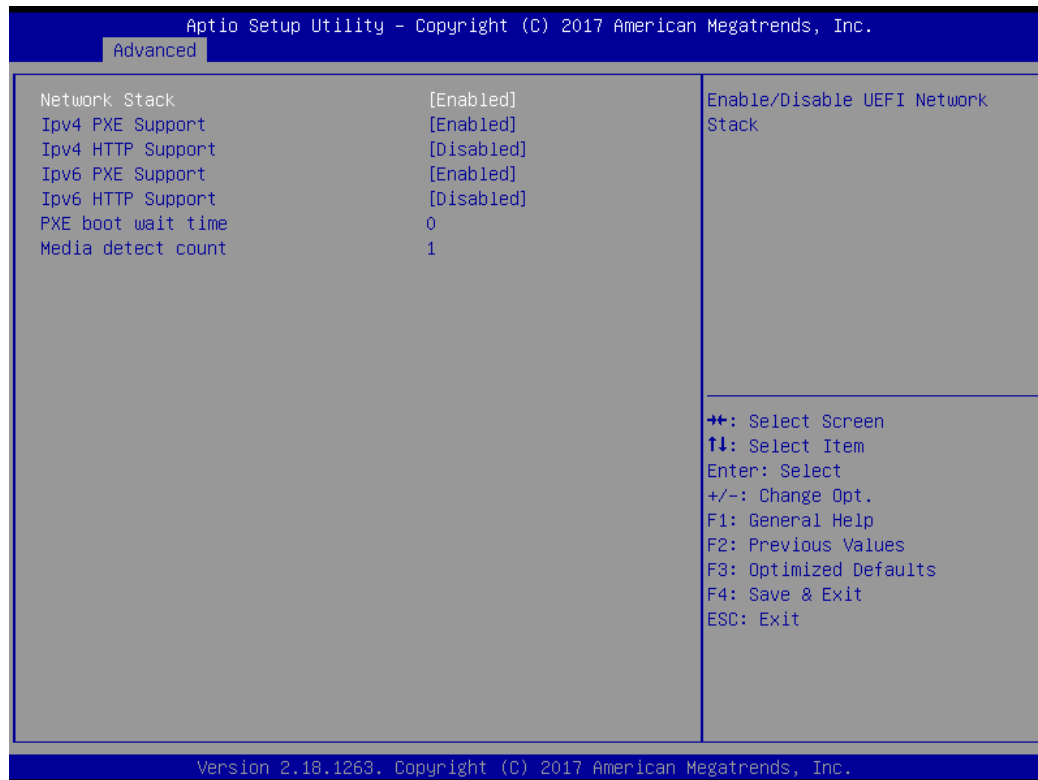
5.3.6 CPU Configuration



■ Intel Virtualization Technology

Virtualization enhanced by Intel Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple Virtual systems.

5.3.7 Network Stack Configuration



■ Network Stack

This item allows you to enable or disable UEFI network stack.

● IPv4 PXE Support

This item allows you to enable or disable IPv4 PXE Support. This item is configurable only when Network Stack is enabled.

● IPv4 HTTP Support

This item allows you to enable or disable HTTP boot support for IPv4. This item is configurable only when Network Stack is enabled.

● Ipv6 PXE Support

This item allows you to enable or disable IPv6 PXE Support. This item is configurable only when Network Stack is enabled.

● IPv6 HTTP Support

This item allows you to enable or disable HTTP boot support for IPv4. This item is configurable only when Network Stack is enabled.

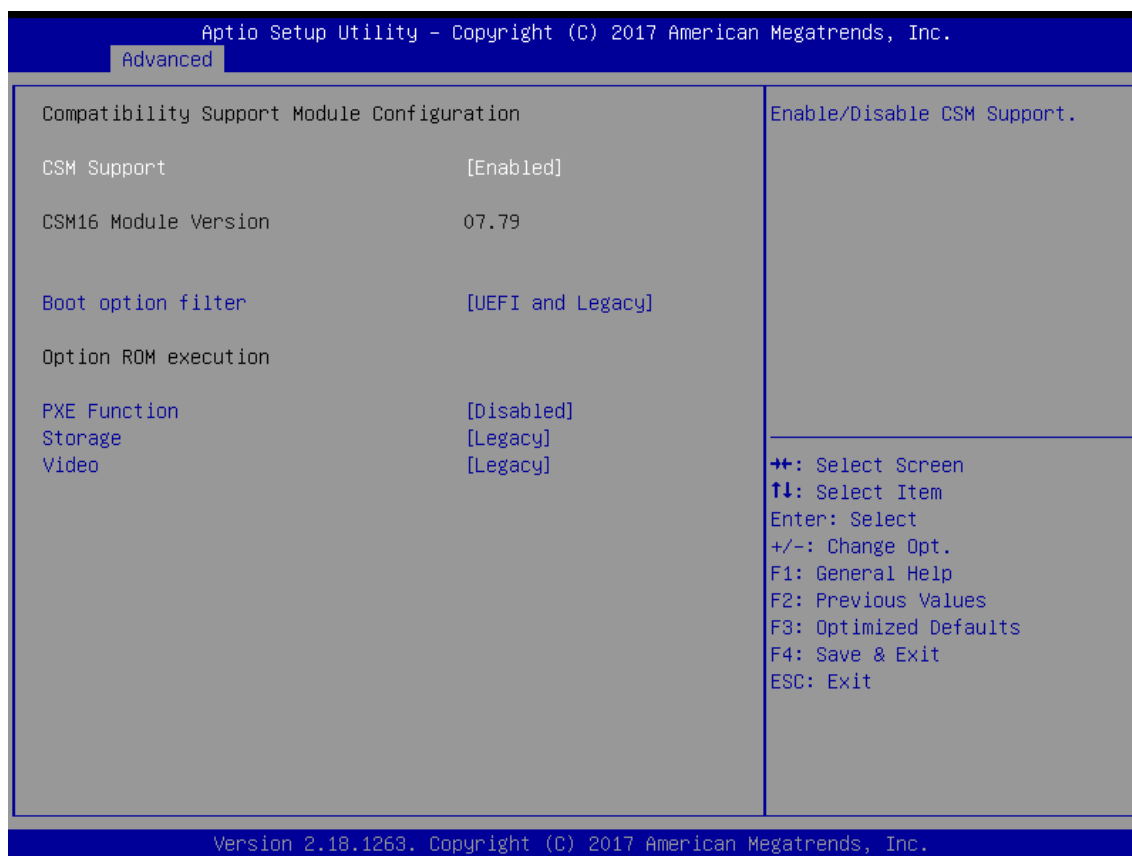
● PXE boot wait time

This item allows you to configure how long to wait before you can press to abort the PXE boot. This item is configurable only when Network Stack is enabled.

● Media detect count

This item allows you to set the number of times to check the presence of media. This item is configurable only when Network Stack is enabled.

5.3.8 CSM Configuration



■ CSM Support

Enables or disables UEFI CSM (Compatibility Support Module) to support a legacy PC boot process.

■ Boot option filter

This item allows you to select which type of operating system to boot.

UEFI and Legacy: Allows booting from operating systems that support legacy option ROM or UEFI option ROM.

Legacy only: Allows booting from operating systems that only support legacy option ROM.

UEFI only: Allows booting from operating systems that only support UEFI option ROM.

This item is configurable only when CSM Support is set to Enabled.

■ PXE Function

This item allows you to enable or disable PXE function.

■ Storage

This setting allows you to select whether to enable the UEFI or legacy option ROM for the storage device controller.

Do not launch: Disables option ROM.

UEFI only: Enables UEFI option ROM only.

Legacy only: Enables legacy option ROM only.

■ Video

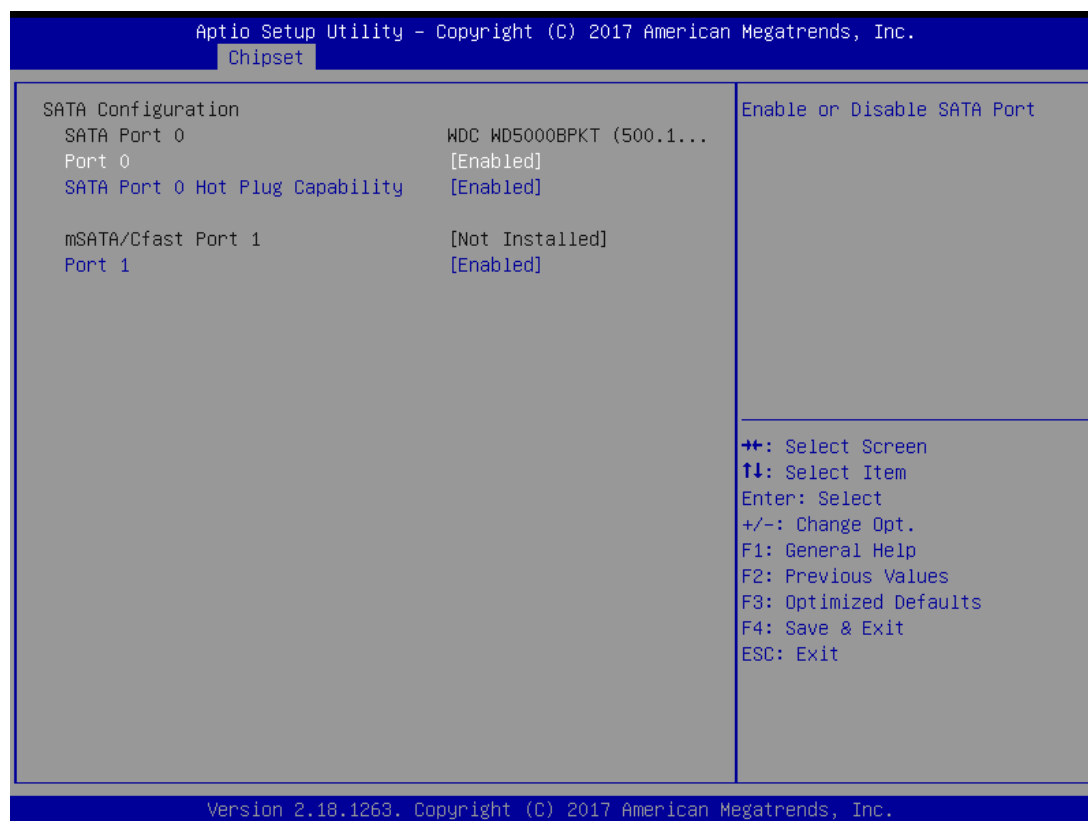
This item allows you to select whether to enable the UEFI or legacy option ROM for the storage device controller.

Do not launch: Disables option ROM.

UEFI only: Enables UEFI option ROM only.

Legacy only: Enables legacy option ROM only.

5.3.9 SATA Configuration



■ SATA Port 0

This item allows you to enable or disable SATA Port 0.

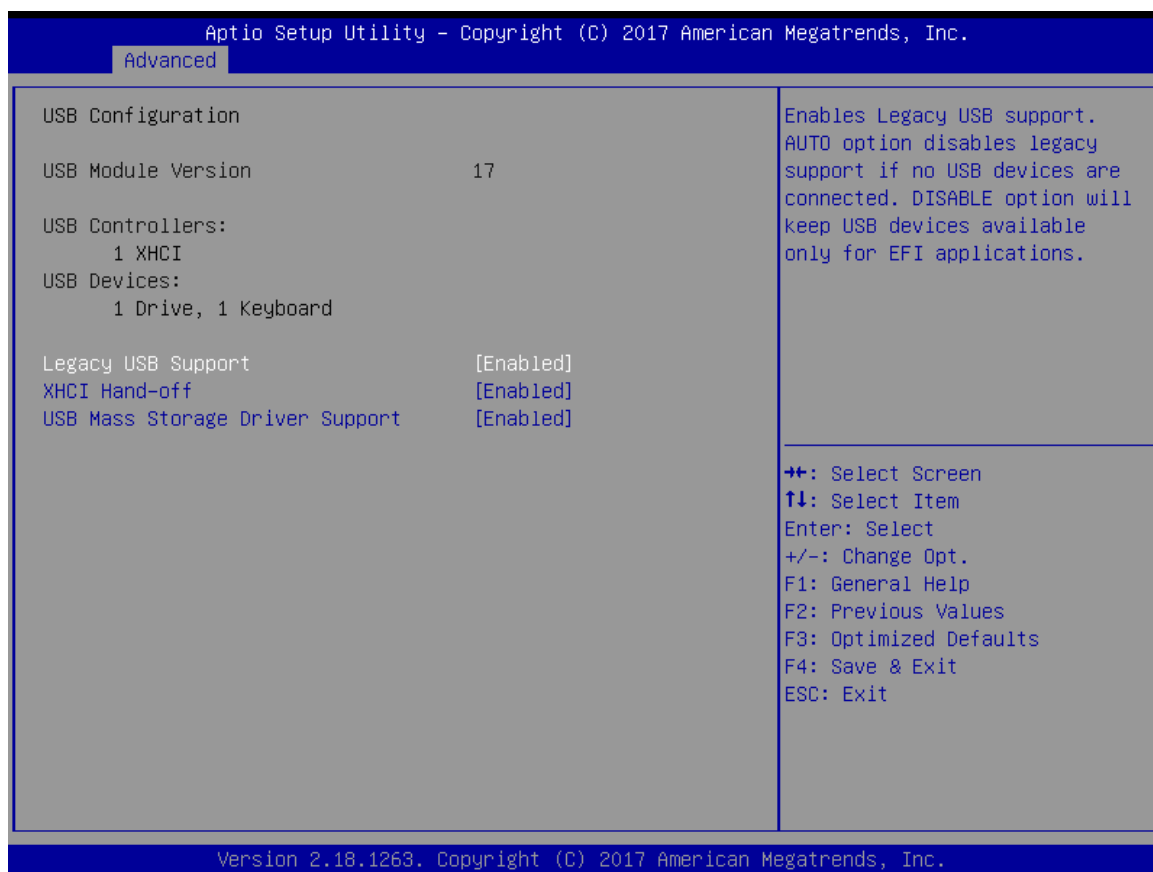
■ SATA Port 0 Hot Plug Capability

This item allows you to enable or disable SATA Port 0 hot plug function.

■ SATA Port 1/mSATA/CFast

This item allows you to enable or disable SATA Port 1.

5.3.10 USB Configuration



■ Legacy USB Support

Allows USB keyboard/ mouse to be used in MS-DOS.

■ XHCI Hand-off

Determines whether to enable XHCI (USB3.0) Hand-off feature for an operating system without XHCI (USB3.0) Hand-off support.

■ USB Mass Storage Driver Support

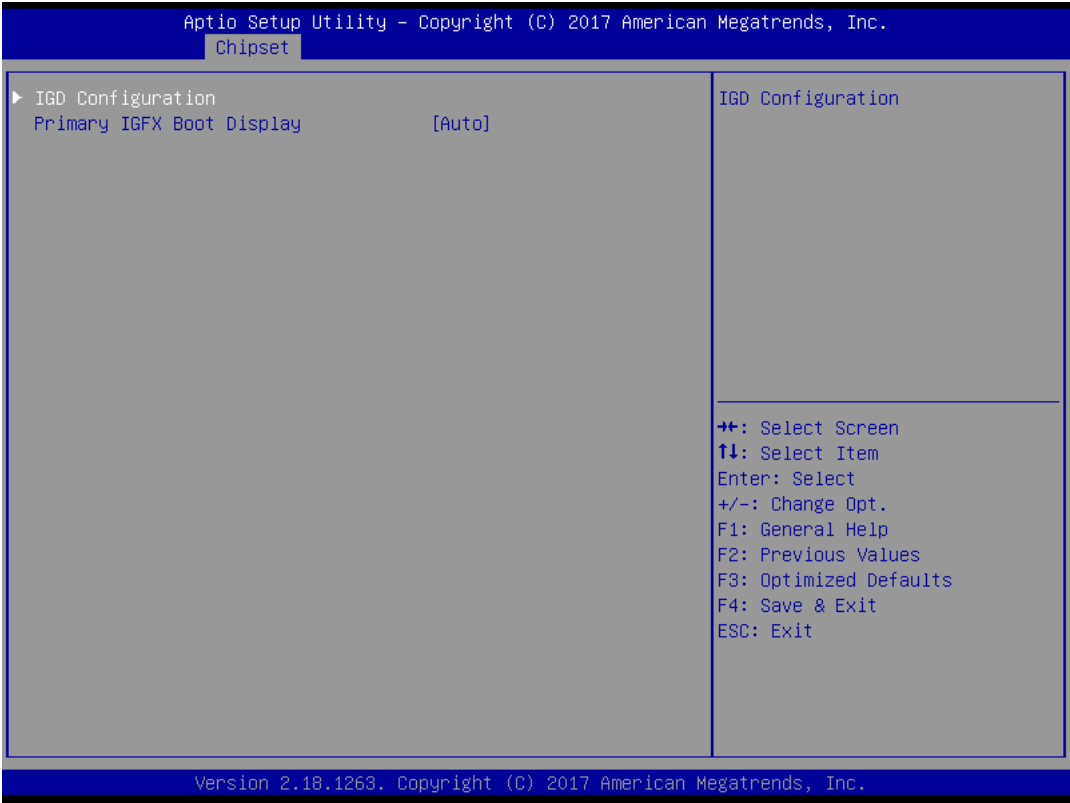
Enables or disables support for USB storage devices.

5.4 Chipset



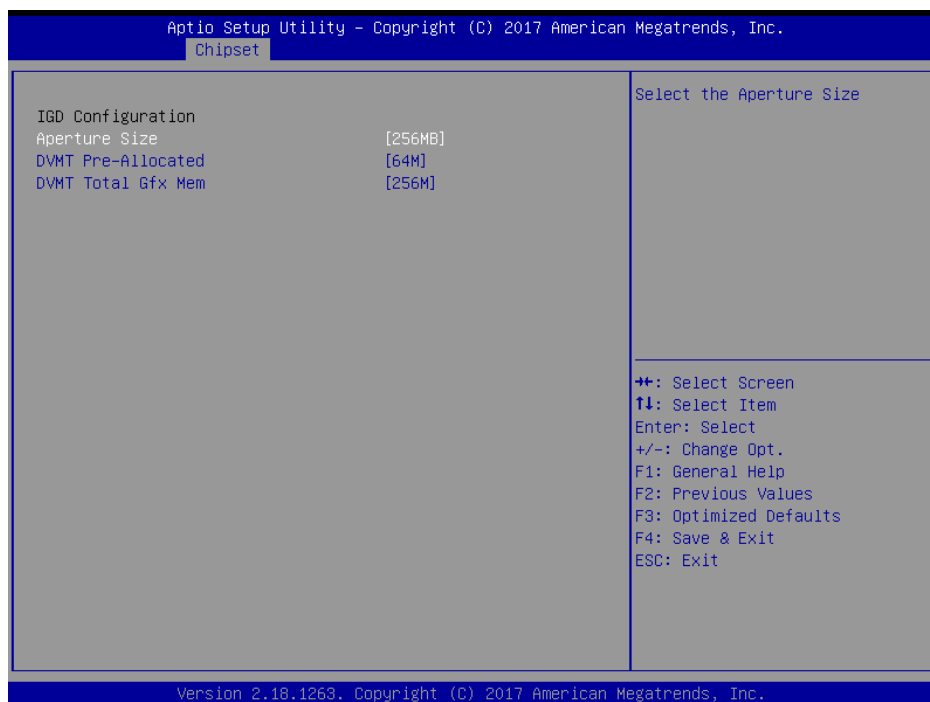
5.4.1 North Bridge

This section provides information on the installed memory size and memory/onboard graphics-related configuration options.



■ Intel IGD Configuration

This section provides onboard graphics-related configuration options.



- **Aperture Size**

This item selects the Aperture Size. Select <128MB>, <256MB> or <512MB>.

- **DVMT Pre-Allocated**

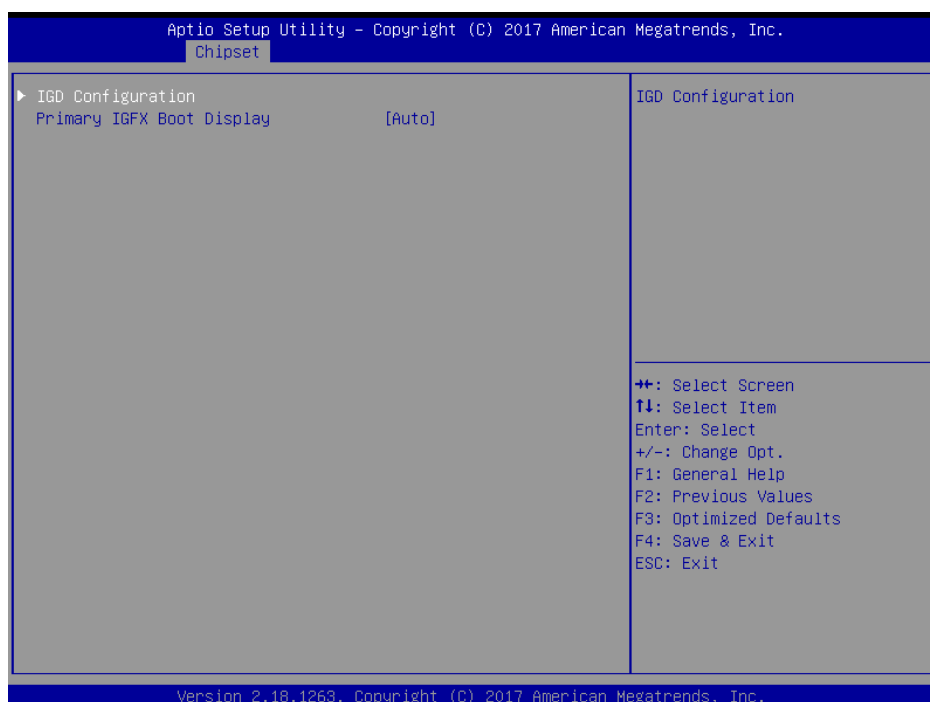
This item selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device. . Select <64M>, <96M>, <128M>, <160M>, <192M>, <224M>, <256M>, <288M>, <320M>, <352M>, <384M>, <416M>, <448M>, <480M> or <512M>.

- **DVMT Total Gfx Mem**

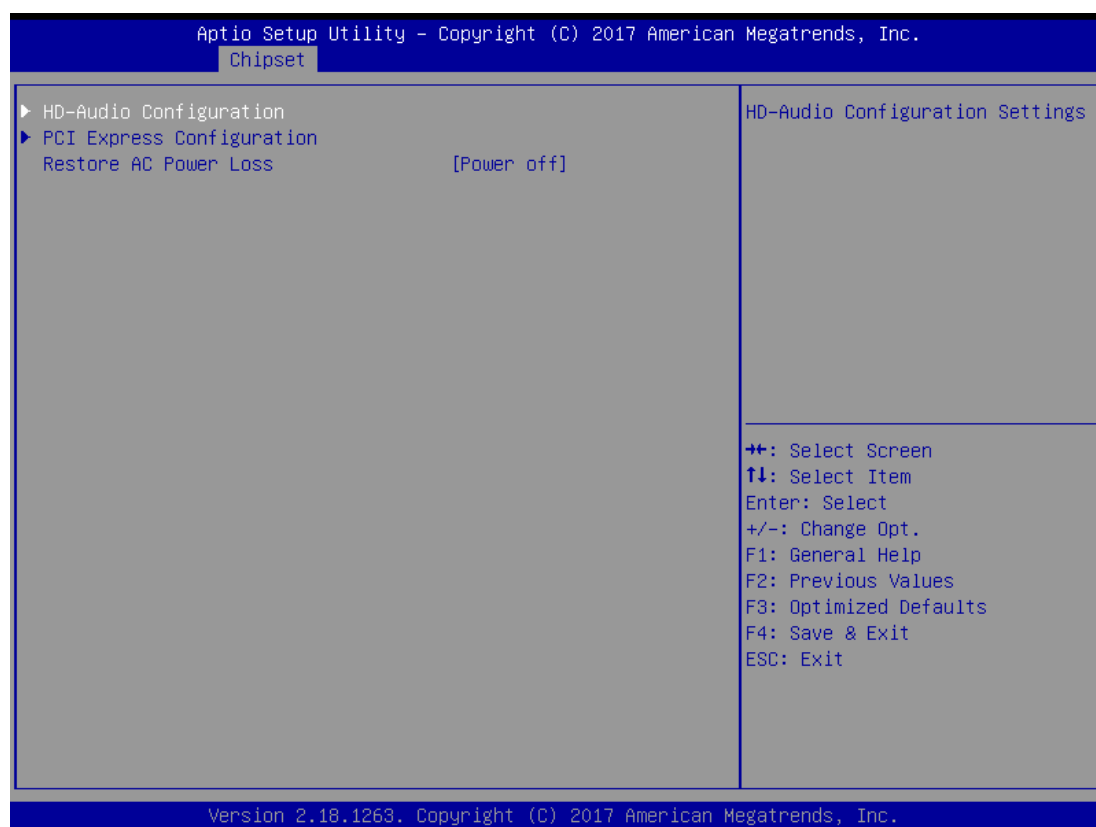
This item selects DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device. Select <128MB>, <256MB> or <Max>.

■ Primary IGFX Boot Display

Change the primary IGFX boot display. Select <Auto>, <DP>, <VGA> or <DVI>.



5.4.2 South Bridge



■ HD-Audio Configuration

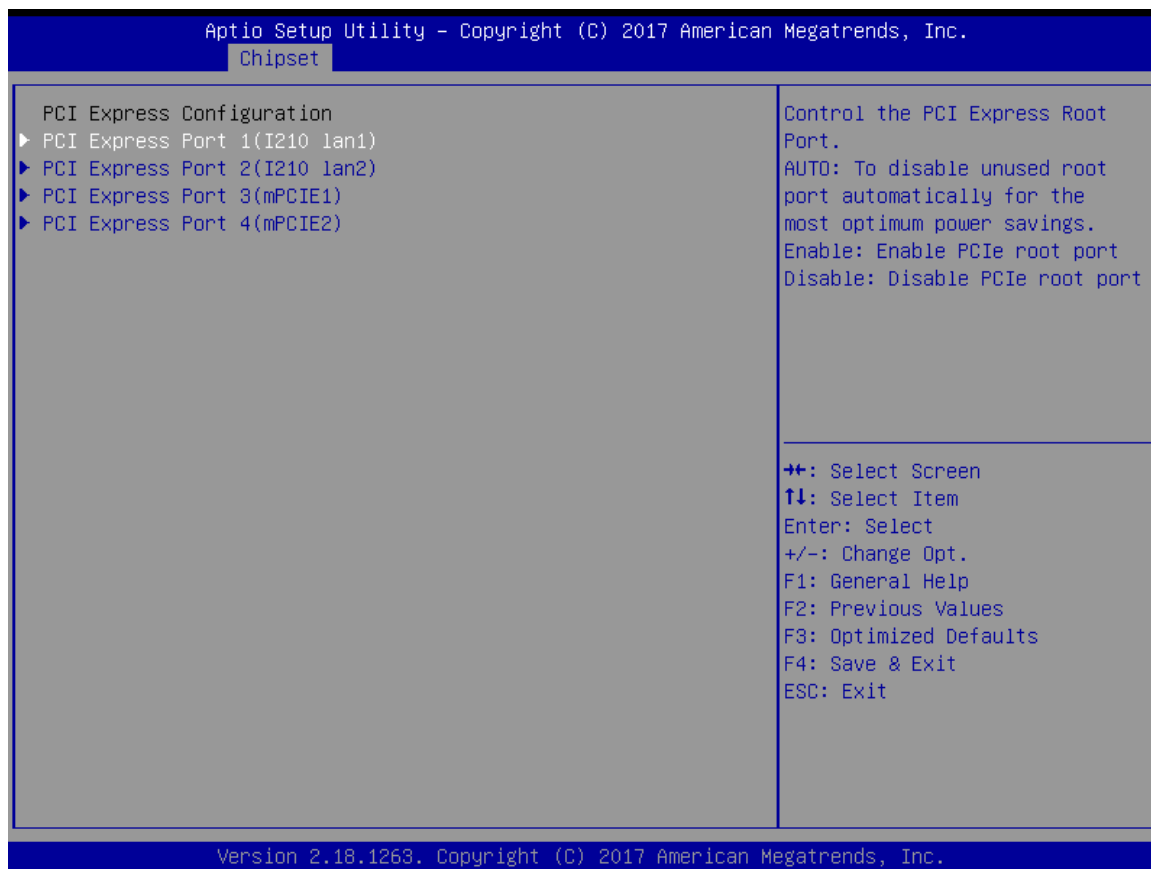
Control detection of the HD-Audio.

● HD-Audio Support

Enabled: HD-Audio will be unconditionally enabled.

Disabled: HD-Audio will be unconditionally disabled.

■ PCI Express Configuration



- **PCI Express Port 1 (I210 lan1)**

This item allows you to enable or disable PCI Express Port 1 (I210 lan1) in the Chipset.

- **Speed**

Change the PCIe Port Speed. Select <AUTO> ,<Gen 1> or <Gen 2>

- **PCI Express Port 2 (I210 lan2)**

This item allows you to enable or disable PCI Express Port 2 (I210 lan2) in the Chipset.

- **Speed**

Change the PCIe Port Speed. Select <AUTO> ,<Gen 1> or <Gen 2>

- **PCI Express Port 3 (4LAN_L/mPCIE1)**

This item allows you to enable or disable PCI Express Port 3 (4LAN_L/mPCIE1) in the Chipset.

- **Speed**

Change the PCIe Port Speed. Select <AUTO> ,<Gen 1> or <Gen 2>

- **PCI Express Port 4 (4LAN_R/mPCIE2/Riser)**

This item allows you to enable or disable PCI Express Port 4 ((4LAN_R/Mpcie2/Riser) in the Chipset.

- **Speed**

Change the PCIe Port Speed. Select <AUTO> ,<Gen 1> or <Gen 2>

■ Restore AC Power Loss

This item specifies whether your system will reboot after a power failure or interrupt occurs.

Available settings are:

Power Off: Leave the computer in the power off state.

Power On: Leave the computer in the power on state.

Last State: Restore the system to the previous status before power failure or interrupt occurred.

5.5 Security

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



5.5.1 Administrator Password

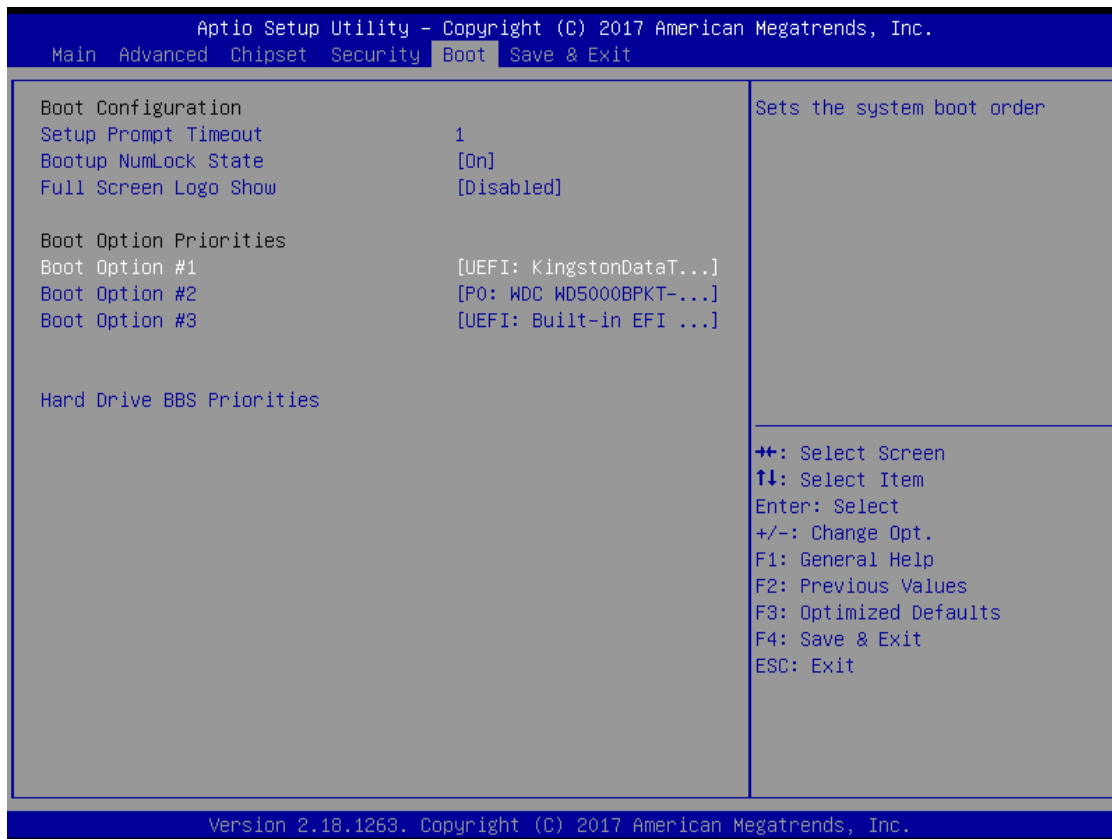
This item allows you to set Administrator Password.

5.5.2 User Password

This item allows you to set User Password.

5.6 Boot

This menu allows you to setup the system boot options.



5.6.1 Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key.

5.6.2 Bootup NumLock State

This item selects the keyboard NumLock state. Select <On> or <Off>.

5.6.3 Full Screen Logo Show

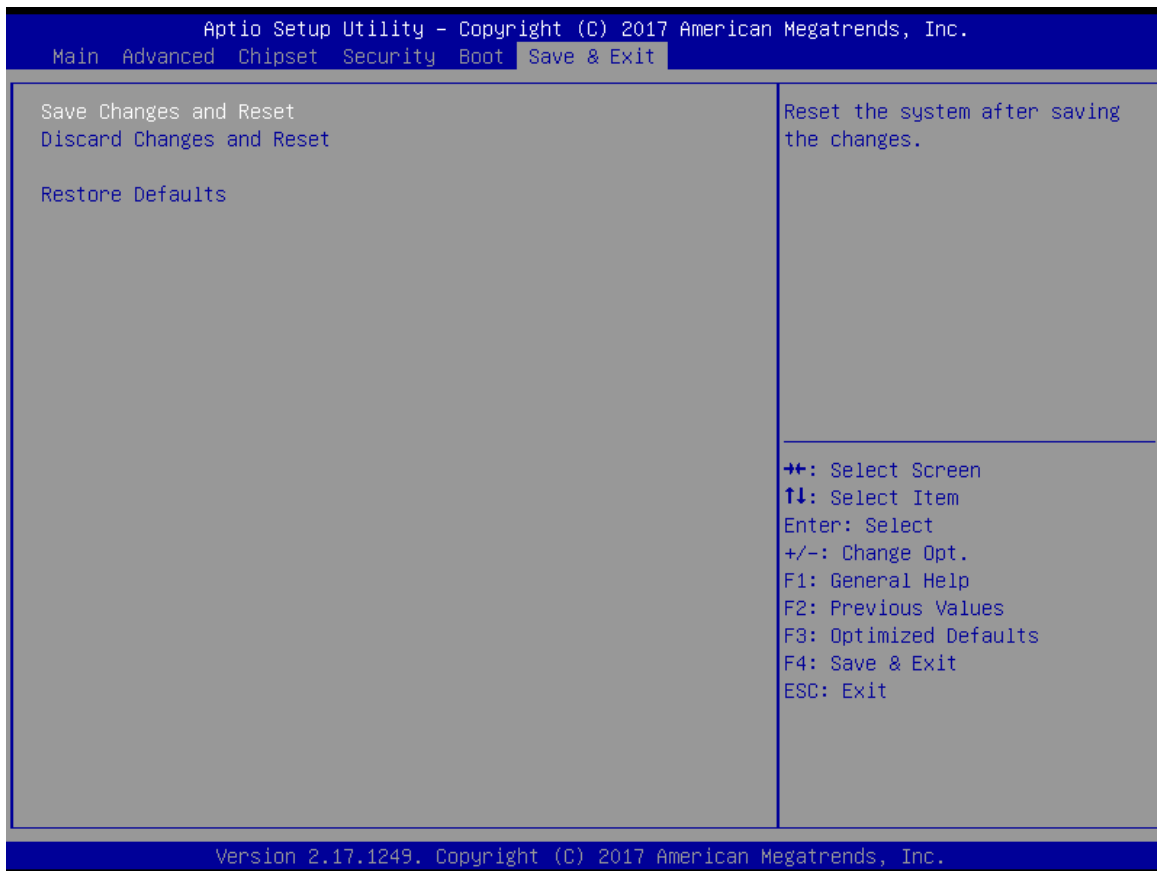
This item allows you to enable or disable Full Screen Logo Show function.

5.6.4 Boot Option Priorities

The items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

5.7 Save & Exit

This setting allows you to configure the boot settings.



5.7.1 Save Changes and Reset

This item allows you reset the system after saving the changes.

5.7.2 Discard Changes and Reset

Select this option to quit Setup without making any permanent changes to the system configuration.

5.7.3 Restore Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

Appendix

WDT & GPIO

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

WDT Sample Code

```

SIO_INDEX_Port      equ 04Eh
SIO_DATA_Port equ    04Fh
SIO_UnLock_Value    equ 087h
SIO_Lock_Value equ    0AAh
WatchDog_LDN        equ 007h
WDT_UNIT            equ 60h ;60h=second, 68h=minute, 40h=Disabled Watchdog timer
WDT_Timer           equ 30 ;ex. 30 seconds

```

Sample code:

;Enable config mode

```

mov     dx, SIO_INDEX_Port
mov     al, SIO_UnLock_Value
out     dx, al
jmp     short $+2      ;lo_delay
jmp     short $+2      ;lo_delay
out     dx, al

```

;Change to WDT

```

mov     dx, SIO_INDEX_Port
mov     al, 07h
out     dx, al
mov     dx, SIO_DATA_Port
mov     al, WatchDog_LDN
out     dx, al

```

;Active WDT

```

mov     dx, SIO_INDEX_Port
mov     al, 30h
out     dx, al
mov     dx, SIO_DATA_Port
in      al, dx
or      al, 01h
out     dx, al

```

;set timer

```

mov     dx, SIO_INDEX_Port
mov     al, 0F6h
out     dx, al
mov     dx, SIO_DATA_Port
mov     al, WDT_Timer
out     dx, al

```

;set UINT

```

mov     dx, SIO_INDEX_Port
mov     al, 0F5h
out     dx, al
mov     dx, SIO_DATA_Port
mov     al, WDT_UNIT
out     dx, al

```

;enable reset

```

mov     dx, SIO_INDEX_Port
mov     al, 0Fah
out     dx, al
mov     dx, SIO_DATA_Port
in      al, dx
or      al, 01h
out     dx, al

```

;close config mode

```

mov     dx, SIO_INDEX_Port
mov     al, SIO_Lock_Value
out     dx, al

```


GPIO Sample Code

● GPI 0 ~ GPI 3

	GPI 0	GPI 1	GPI 2	GPI 3
IO Address	0xA03h	0xA03h	0xA03h	0xA03h
Bit	4	5	6	7
Sample code	#1			

● GPO 0 ~ GPO 3

	GPO 0	GPO 1	GPO 2	GPO 3
IO Address	0xA02h	0xA02h	0xA02h	0xA02h
Bit	0	1	2	3
Sample code	#2			

```

GPI_REG    equ 0A03h
GPO_REG    equ 0A02h
GPO_0      equ 00000001b

```

Sample Code:

#1 : Get GPI 0 status

; Get GPI 0 Pin Status Register

```

In      al, GPI_REG
;al bit4 = GPI 0 status

```

#2 : Set GPO 0 status to high

; Set GPO 0 Pin to High

```

mov     dx, GPO_REG
in      al, dx
or      al, GPO_0
out     dx, al
;al bit0 = GPO 0 status

```

● GPI 4 ~ GPI 7

	GPI 4	GPI 5	GPI 6	GPI 7
IO Address	0xA06h	0xA06h	0xA06h	0xA06h
Bit	0	1	2	3
Sample code	#3			

● GPO 4 ~ GPO 7

	GPO 4	GPO 5	GPO 6	GPO 7
IO Address	0xA06h	0xA07h	#5	0xA04h
Bit	4	7	0	7
Sample code	#4		#5	

```

GPI_REG    equ 0A06h
GPO_REG    equ 0A06h
GPO_4      equ 00010000b

```

Sample Code:

#3 : Get GPI 4 status

; Get GPI 4 Pin Status Register

```

In      al, GPI_REG
;al bit0 = GPI 4 status

```

#4 : Set GPO 4 status to high

; Set GPO 0 Pin to High

```

mov     dx, GPO_REG
in      al, dx
or      al, GPO_4
out     dx, al
;al bit4 = GPO 4 status

```

#5 : GPO 6 must be accessed by gpio configuration (IO address is protected)
Set GPO 6 status to high

```
SIO_INDEX_Port equ 04Eh
SIO_DATA_Port equ 04Fh
SIO_UnLock_Value equ 087h
SIO_Lock_Value equ 0AAh
SIO_LDN_GPIO equ 06h
GPO_REG equ 0d1h
GPO_6 equ 00000001b
```

; Enable config mode

```
mov dx, SIO_INDEX_Port
mov al, SIO_UnLock_Value
out dx, al
jmp short $+2 ;lo_delay
jmp short $+2 ;lo_delay
out dx, al
```

; Switch GPIO Configuration for SIO LDN 0x06

```
mov dx, SIO_INDEX_Port
mov al, 07h
out dx, al
mov dx, SIO_DATA_Port
mov al, SIO_LDN_GPIO
out dx, al
```

; Set GPO 6 Pin to High

```
mov dx, SIO_INDEX_Port
mov al, GPO_REG
out dx, al
mov dx, SIO_DATA_Port
in al, dx
or al, GPO_6
out dx, al
```

;al bit0 = GPO 6 status

; Exit SIO

```
mov dx, SIO_INDEX_Port
mov al, SIO_Lock_Value
out dx, al
```

