OPC-1562/1852/2152

15.6"/18.5"/21.5" Widescreen Fanless Open Frame Panel PC with Intel® Apollo Lake SoC Processor, Pentium® N4200

User's Guide

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Safety Instructions

■ Before You Begin

Before handling the product, read the instructions and safety guidelines on the following pages to prevent damage to the product and to ensure your own personal safety. Refer to the "Advisories" section in the Preface for advisory conventions used in this user's guide, including the distinction between Warnings, Cautions, Important Notes, and Notes.

- Always use caution when handling/operating a computer. Only qualified, experienced, authorized electronics service personnel should access the interior of a computer. The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- Use extreme caution when installing or removing components. Refer to the installation instructions in this user's guide for precautions and procedures. If you have any questions, please contact our Post-Sales Technical Support.
- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or other means of security, and is controlled by authority responsible for the location.

WARNING

High voltages are present inside the chassis when the unit's power cord is plugged into an electrical outlet. Turn off system power, turn off the power supply, and then disconnect the power cord from its source before removing the chassis cover. Turning off the system power switch does not remove power to components.

■ When Working Inside a Computer

Before taking covers off a computer, perform the following steps:

1. Turn off the computer and any peripherals.
2. Disconnect the computer and peripherals from their power sources or subsystems to prevent electric shock or system board damage. This does not apply when hot swapping parts.
3. Follow the guidelines provided in “Preventing Electrostatic Discharge” on the following page.
4. Disconnect any telephone or telecommunications lines from the computer.

In addition, take note of these safety guidelines when appropriate:

- To help avoid possible damage to system boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

CAUTION

Do not attempt to service the system yourself except as explained in this user’s guide. Follow installation and troubleshooting instructions closely.

■ Preventing Electrostatic Discharge

Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedure to reduce the risk of damage to components. We strongly encourages you to follow proper ESD procedure, which can include wrist straps and smocks, when servicing equipment.
You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component's antistatic packing material until you are ready to install the component in a computer. Just before unwrapping the antistatic packaging, be sure you are at an ESD workstation or grounded. This will discharge any static electricity that may have built up in your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components at an ESD workstation. If possible, use antistatic floor pads and workbench pads.
- Handle components and boards with care. Don't touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.
- Do not handle or store system boards near strong electrostatic, electromagnetic, magnetic, or radioactive fields.

■ Instructions for Lithium Battery

WARNING

Danger of explosion when battery is replaced with incorrect type. Only replace with the same or equivalent type recommended by the manufacturer.

Do not dispose of lithium batteries in domestic waste. Dispose of the battery according to the local regulations dealing with the disposal of these special materials (e.g. to the collecting points for disposal of batteries)

Preface

■ How to Use This Guide

This guide is designed to be used as step-by-step instructions for installation, and as a reference for operation, troubleshooting, and upgrades.

■ Unpacking

When unpacking, follow these steps:

1. After opening the box, save it and the packing material for possible future shipment.
2. Remove all items from the box. If any items listed on the purchase order are missing, notify our customer service immediately.
3. Inspect the product for damage. If there is damage, notify our customer service immediately. Refer to “Warranty Policy” for the return procedure.

■ Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices.

FCC Compliance Statement:

This equipment has been tested and found to comply with limits for a Class Adigital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reason able protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radiofrequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by us could void the user's authority to operate the equipment.

NOTE

The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interference or to be noncompliant with the appropriate standards for its intended use.

■ Maintaining Your Computer

Environmental Factors

- **Temperature**

  The ambient temperature within an enclosure may be greater than room ambient temperature. Installation in an enclosure should be such that the amount of air flow required for safe operation is not compromised. Consideration should be given to the maximum rated ambient temperature. Overheating can cause a variety of problems, including premature aging and failure of chips or mechanical failure of devices.

  If the system has been exposed to abnormally cold temperatures, allow a two-hour warm-up period to bring it up to normal operating temperature before turning it on. Failure to do so may cause damage to internal components, particularly the hard disk drive.

- **Humidity**

  High-humidity can cause moisture to enter and accumulate in the system. This moisture can cause corrosion of internal components and degrade such properties as electrical resistance and thermal conductivity. Extreme moisture buildup inside the system can result in electrical shorts, which can cause serious damage to the system.

  Buildings in which climate is controlled usually maintain an acceptable level of humidity for system equipment. However, if a system is located in an unusually humid location, a dehumidifier can be used to maintain the humidity within an

acceptable range. Refer to the “Specifications” section of this user’s guide for the operating and storage humidity specifications.

- **Altitude**
  Operating a system at a high altitude (low pressure) reduces the efficiency of the cooling fans to cool the system. This can cause electrical problems related to arcing and corona effects. This condition can also cause sealed components with internal pressure, such as electrolytic capacitors, to fail or perform at reduced efficiency.

Power Protection

The greatest threats to a system's supply of power are power loss, power spikes, and power surges caused by electrical storms, which interrupt system operation and/or damage system components. To protect your system, always properly ground power cables and one of the following devices.

- **Surge Protector**

  Surge protectors are available in a variety of types and usually provide a level of protection proportional with the cost of the device. Surge protectors prevent voltage spikes from entering a system through the AC power cord. Surge protectors, however, do not offer protection against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.

- **Line Conditioner**

  Line conditioners go beyond the overvoltage protection of surge protectors. Line conditioners keep a system's AC power source voltage at a fairly constant level and, therefore, can handle brownouts. Because of this added protection, line conditioners cost more than surge protectors. However, line conditioners cannot protect against a complete loss of power.

- **Uninterruptible Power Supply**

  Uninterruptible power supply (UPS) systems offer the most complete protection against variations on power because they use battery power to keep the server running when AC power is lost. The battery is charged by the AC power while it is available, so when AC power is lost, the battery can provide power to the system for a limited amount of time, depending on the UPS system.
  UPS systems range in price from a few hundred dollars to several thousand dollars, with the more expensive units allowing you to run larger systems for a longer period of time when AC power is lost. UPS systems that provide only 5 minutes of battery power let you conduct an orderly shutdown of the system, but are not intended to provide continued operation. Surge protectors should be used with all UPS systems, and the UPS system should be Underwriters Laboratories (UL) safety approved.

Chapter 1

Introduction

■ Overview

OPC-1562/1852/2152 is a fanless open frame panel PC powered by Intel® Apollo Lake Processor, Pentium® N4200. It can be immediately integrated in many applications such as digital signage, kiosk and HMI automation. Besides a 15.6" / 18.5" / 21.5" widescreen display, it is equipped with 1x DP and 1x HDMI for additional video output. Touch screen can use either 5-wire resistive single-touch or 10-point PCT multi-touch panel depending on applications or requirements. The device reserves one mPCIe slot and one M.2 Key B slot, allowing users to install interface cards for specific application and connectivity.

Checklist

- OPC-1562/1852/2152
- Power Adapter
- Power Cord
- Driver CD
- Quick Installation Guide
- Optional Wireless LAN
- Optional Touch Panel Kit

Features

- 15.6"/18.5"/21.5" 16:9 10-point PCT multi-touch LCD Display
- Intel® Apollo Lake SoC Processor, Pentium® N4200
- 2x DDR3L SO-DIMM memory socket
- 1x DP, 1x HDMI for video output
- 2x GbE LAN for Ethernet
- 4x USB3.0, 2x RS-232/422/485 for peripheral connection
- 1x 2.5" SATA3.0 HDD / SSD, 1x mPCIe, 1x M.2 for storage and expansion
- Passive cooling design
- IP65-rated front design

- Glass hardness of 6H

■ Product Specifications

CPU Support	Intel® Pentium® N4200 (Quad Core, 2M Cache, up to 2.50 GHz, FCBGA1296, 6W)		
Memory	2x DDR3L SO-DIMM		
Graphic	Intel® HD Graphics 505		
LCD Display	OPC-1562	OPC-1852	OPC-2152
Size	15.6"	18.5"	21.5"
Aspect Ratio	16:9	16:9	16:9
Backlight	LED	LED	LED
Resolution	1366 x 768 WXGA	1366 x 768 WXGA	1920 x 1080 Full HD
Brightness (cd/m², typical)	300	300	250
Contrast Ratio (typical)	500:1	1000:1	5000:1
Color	262K / 16.7M	16.7M	16.7M
Viewing Angle (L, R, H, L)	80°, 80°, 80°, 80°	85°, 85°, 80°, 80°	89°, 89°, 89°, 89°
Touch Sensor	5-wire Resistive / 10-point PCT		
External Display	1x HDMI (3840 x 2160 @ 30Hz, on rear) 1x DP (4096 x 2160 @ 60Hz, on rear)		
Audio Chipset	Realtek ALC662		
Audio Interfaces	1x Line-in (on rear) 1x Line-out (on rear) 1x Mic-in (on rear)		
Ethernet	2x GbE LAN (RJ-45 on rear, Intel® I210-AT)		
USB	4x USB3.0 (Type A on rear)		
Serial Ports	2x RS-232/422/485 (DB9 on rear, auto flow control function for RS-485)		
Storage & Expansion	1x 2.5" SATA3.0 HDD / SSD 1x mPCIe (full size) 1x M.2 Key B (mixed w/ USB2.0 / SATA type 22x42) 1x SIM Card Cage (optional, switchable between mPCIe and M.2)		
Power Supply	Connector: Phoenix Connector (on rear) Input Voltage: DC 12V Power Adapter: AC to DC, 100V ~ 240V		
Firmware	BIOS: AMI uEFI BIOS w/ 128Mb SPI Flash Watchdog: Programmable WDT to generate system reset event H/W Monitor: Voltages, Temperatures Real Time Clock: Processor integrated RTC TPM: optional (Infineon SLB 9665 TPM 2.0)		
System Control &	1x Power Switch (on rear)		

Monitoring			
Cooling	Passive		
OS Support	Windows 10, Linux		
Construction	Open Frame Metal Chassis		
Dimensions (W x H x D)	OPC-1562	OPC-1852	OPC-2152
	425.1 x 272.6 x 40 mm / 16.74" x 10.73" x 1.57"	491.6 x 312.5 x 40 mm / 19.35" x 12.30" x 1.57"	546.6 x 341.6 x 40 mm / 21.52" x 13.45" x 1.57"
Weight	3450 g / 7.61 lb	TBD	TBD
Environment	Operation Temperature: 0°C ~ 50°C / 32°F ~ 122°F Storage Temperature: -20°C ~ 60°C / -4°F ~ 140°F Humidity: 0% ~ 95%		
Mounting	Open frame Mount, VESA Mount, Panel Mount		
Certification	CE, FCC Class A, IP65		

Table 1 OPC-1562/1852/2152 product specification

■ System tour

Refer to the diagrams below to identify the components of the system.

■ I/Os

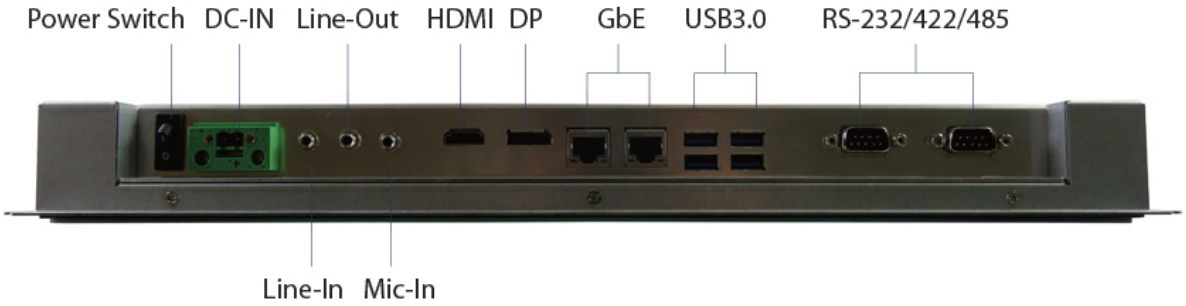


Figure 1 I/Os

Power Input

The supplied power adapter converts AC power to DC for use with this connector. Power supplied through this connector supplies power to the PC. To prevent damage to the PC, always use the supplied power adapter.

Power Switch

The power switch allows powering ON and OFF the system.

Ethernet

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

HDMI

HDMI connector for display output

DP

DP is a display interface used to connect a video source to a display device such as a computer monitor or a television set.

Line-IN (Blue)

The Line-in jack is designed to take input from a higher-powered sound source.

Line-Out (Green)

The stereo headphone jack is used to connect the system's audio out signal to amplified speakers or headphones.

MIC-IN (Pink)

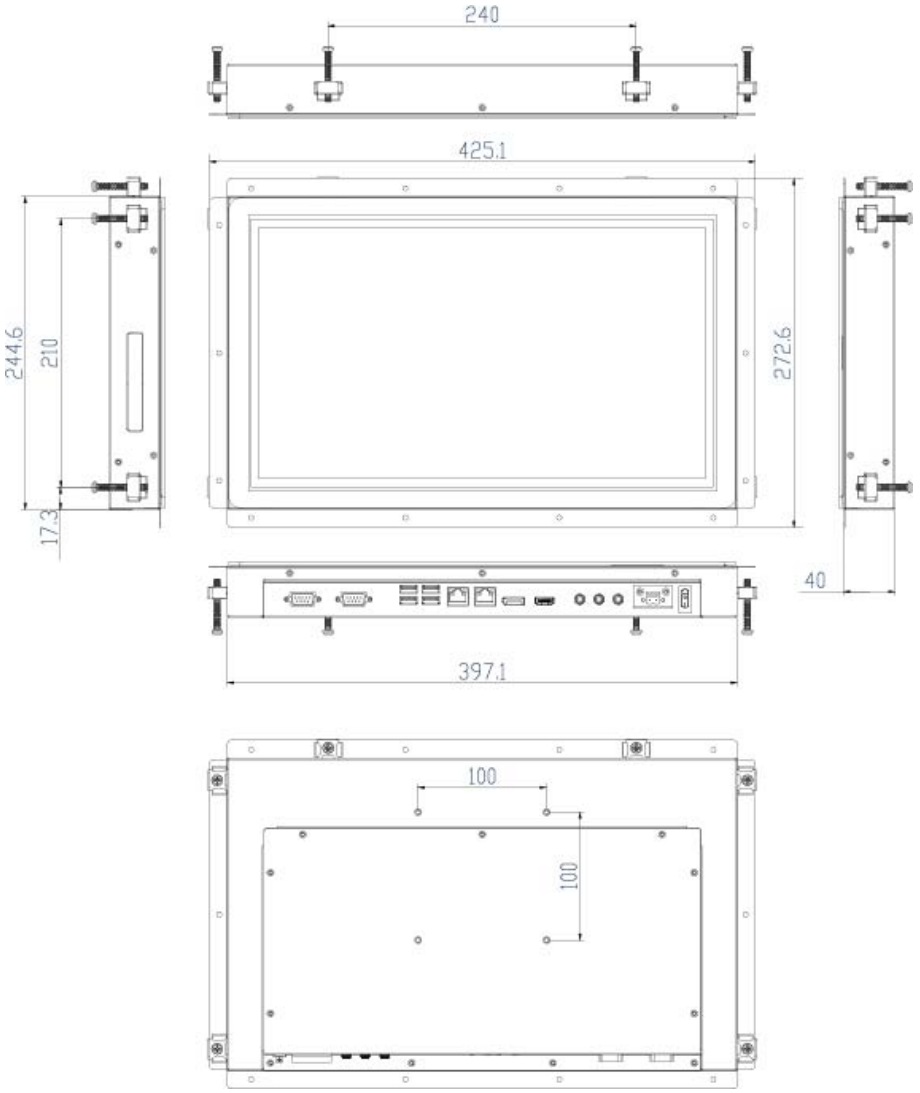
The microphone jack is designed to connect the microphone used for video conferencing, voice narrations, or simple audio recordings.

COM

D-Sub 9 pin connector for RS-232/422/485 connection

Mechanical Dimensions

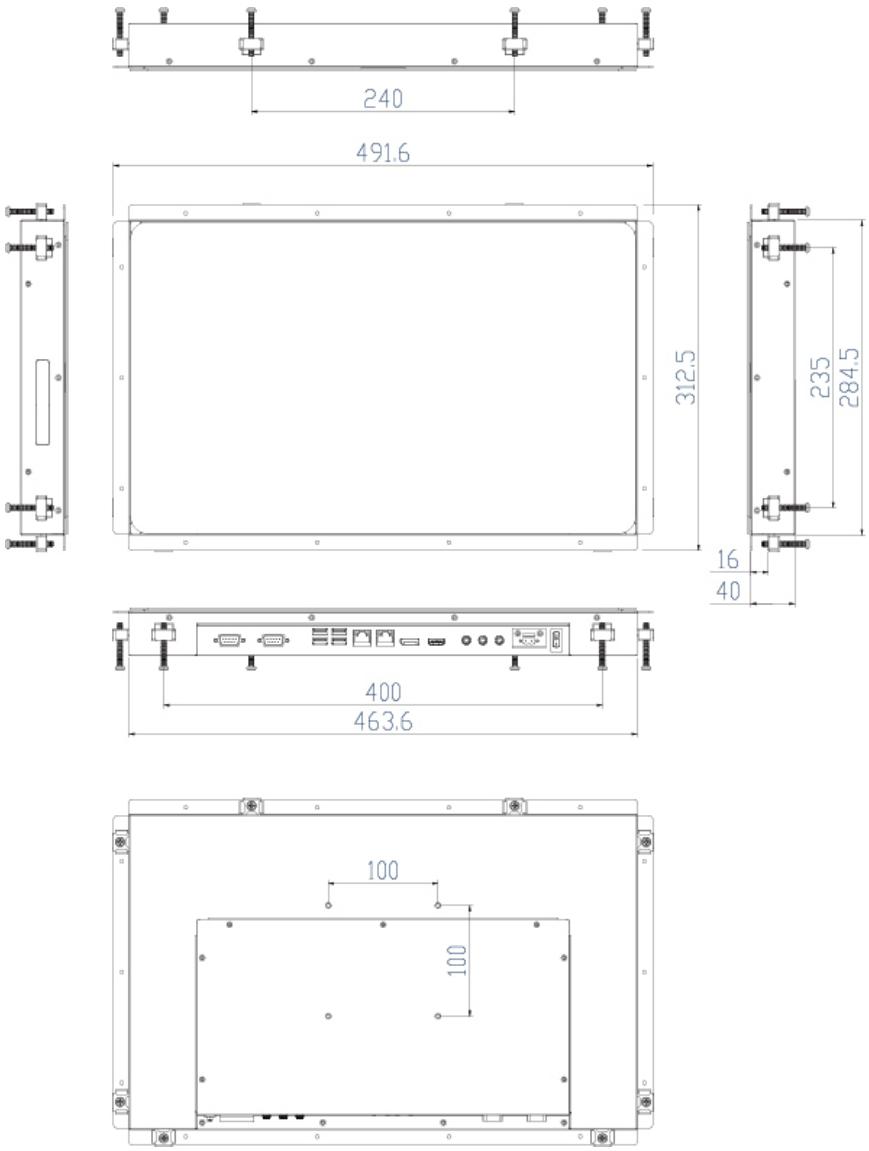
OPC-1562



425.1 x 272.6 x 40 mm (W x H x D)

Figure 2 OPC-1562 Mechanical Dimensions

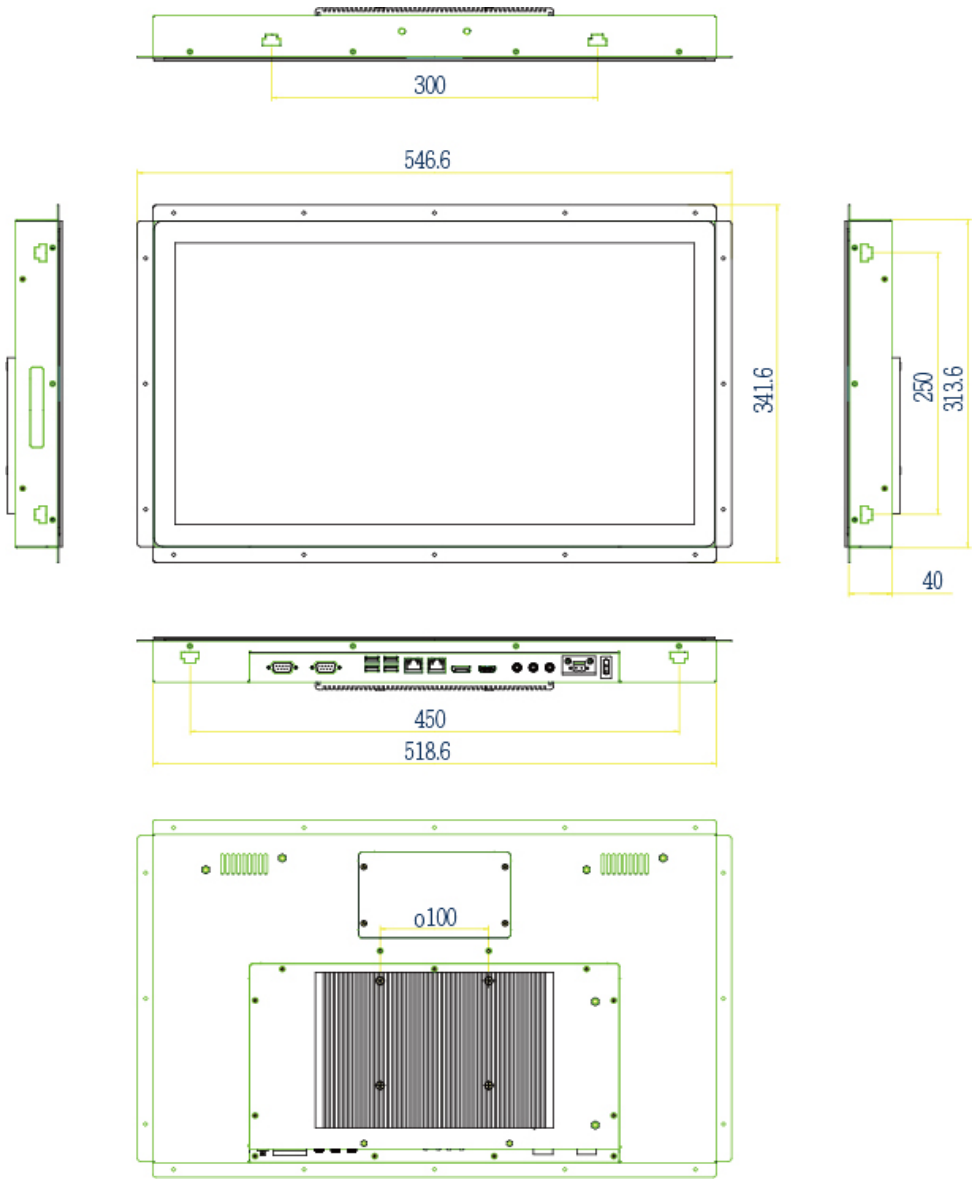
OPC-1852



491.6 x 312.5 x 40 mm (W x H x D)

Figure 3 OPC-1852 Mechanical Dimensions

OPC-2152



546.6 x 341.6 x 40 mm (W x H x D)

Figure 4 OPC-2152 Mechanical Dimensions

Chapter 2

Getting Started

■ Setting up your PC

■ Connecting the monitor

Connect the HDMI / DP cable from your display to the HDMI / DP port.

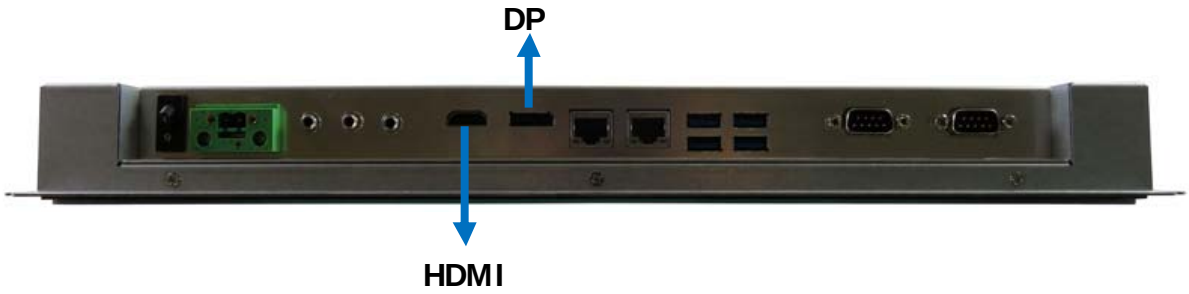


Figure 5 HDMI / DP

■ Connecting USB mouse & keyboard

Your OPC-1562/1852/2152 does not come with a keyboard and mouse, but you can use any USB keyboard or mouse with your computer.

Figure 6 Connect USB mouse & keyboard

NOTE

Using a third-party USB mouse or keyboard may require software drivers. Check the manufacturer's website for the latest software drivers.

■ Connecting to a network device

Connect one end of a network cable to the LAN port on the system rear panel and the other end to a hub or switch.

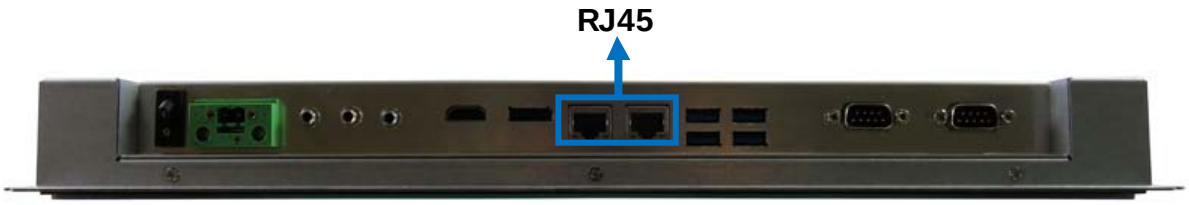
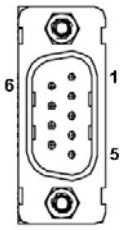


Figure 7 RJ45 connector

■ COM ports

COM ports with the pin definitions.

COM1~COM2 RS-232 / 422 / 485 Port DB-9



Pin	RS-232	RS-422	Half Duplex RS-485	Full Duplex RS-485
1	DCD	TX-	DATA-	TX-
2	RXD	RX+	N/A	RX+
3	TXD	TX+	DATA+	TX+
4	DTR	RX-	N/A	RX-
5	GND	GND	GND	GND
6	DSR	N/A	N/A	N/A
7	RTS	N/A	N/A	N/A
8	CTS	N/A	N/A	N/A
9	+5V	+5V	+5V	+5V

Figure 8 COM ports

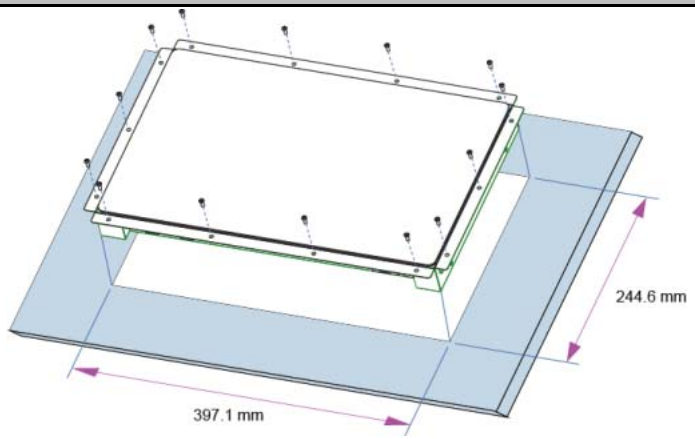
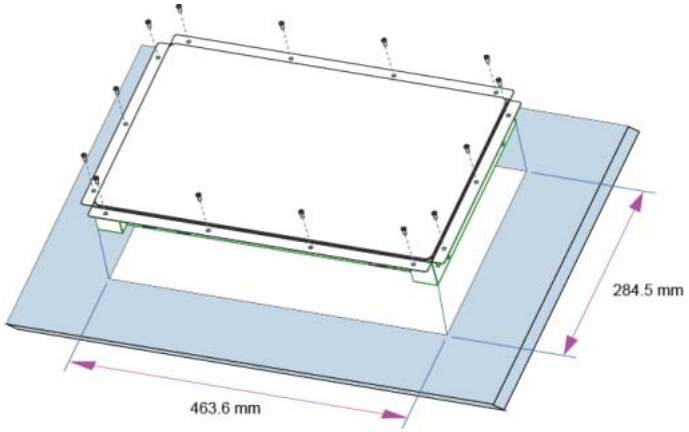
■ Turning on the system

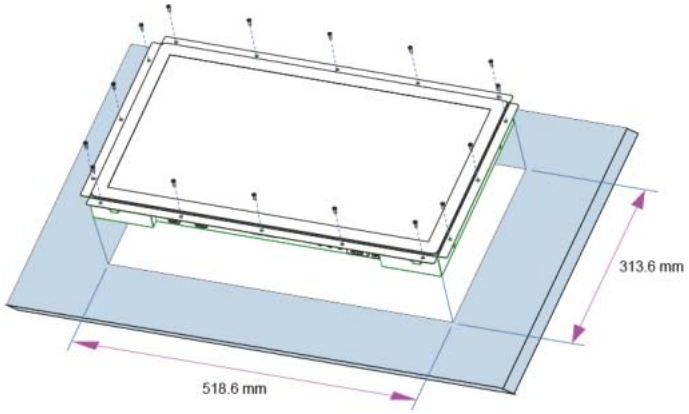
1. Connect the power adapter cable to the Phoenix connector (DC IN) of the OPC-1562/1852/2152
2. Connect the power cable to the power adapter
3. Connect the power cable to a power outlet
4. Press the power switch to turn on the system

Figure 9 Turning on the system

■ Open Frame Mounting

The open frame panel PC can be open frame mounted by screws from either outside or inside. The required cutout for open frame mounting is shown below.

Front Mount (Outside Mount)
OPC-1562
 **Step 1**: Make a cutout on the fixture, eg. wall. (Cutout: 397.1 x 244.6 mm) **Step 2**: Insert the panel PC into the cutout of the fixture from the front side. **Step 3**: Fasten 14 screws from the front side. (4 on top / bottom, 3 on right / left edges respectively)
OPC-1852
 **Step 1**: Make a cutout on the fixture, eg. wall. (Cutout: 463.6 x 284.5 mm) **Step 2**: Insert the panel PC into the cutout of the fixture from the front side. **Step 3**: Fasten 14 screws from the front side. (4 on top / bottom, 3 on right / left edges respectively)
OPC-2152

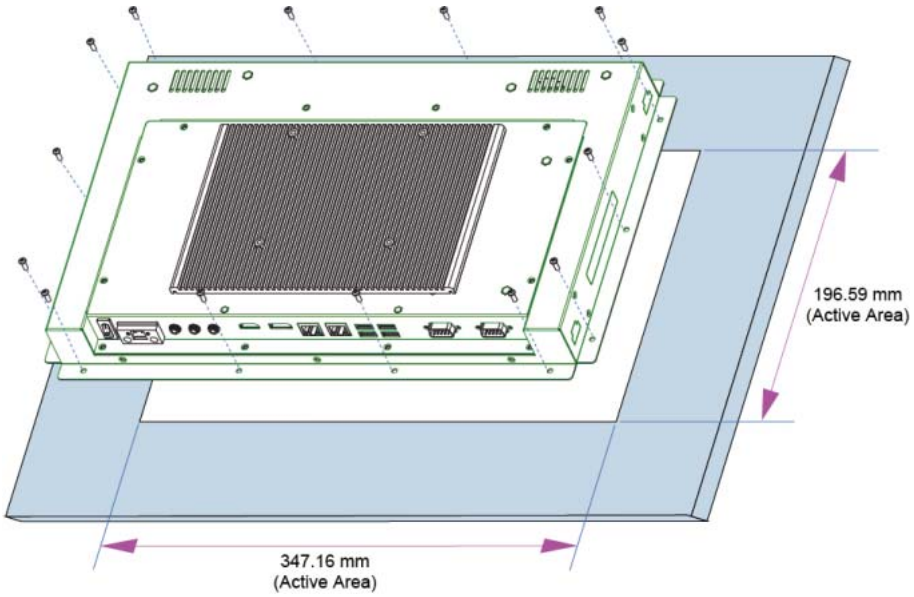


Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 518.6 x 313.6 mm)
Step 2: Insert the panel PC into the cutout of the fixture from the front side.
Step 3: Fasten 16 screws from the front side. (5 on top / bottom, 3 on right / left edges respectively)

Figure 10 Open frame mount (front mount) and cut-out hole

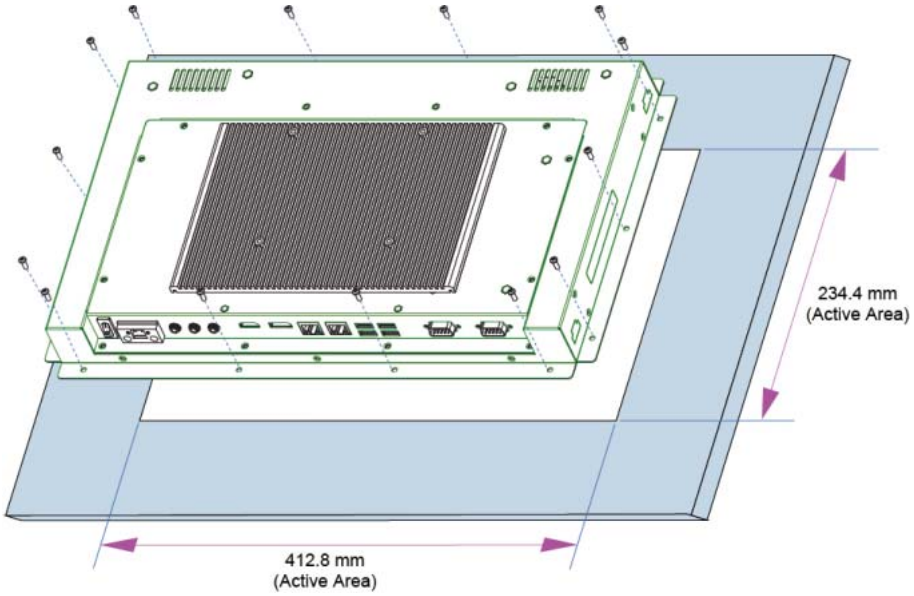
Rear Mount (Inside Mount)

OPC-1562



Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 347.16 x 196.59 mm based on active area of the panel)
Step 2: Align the active area of the panel with the cutout of the fixture from the rear side.
Step 3: Fasten 14 screws from the rear side. (4 on top / bottom, 3 on right / left edges respectively)

OPC-1852

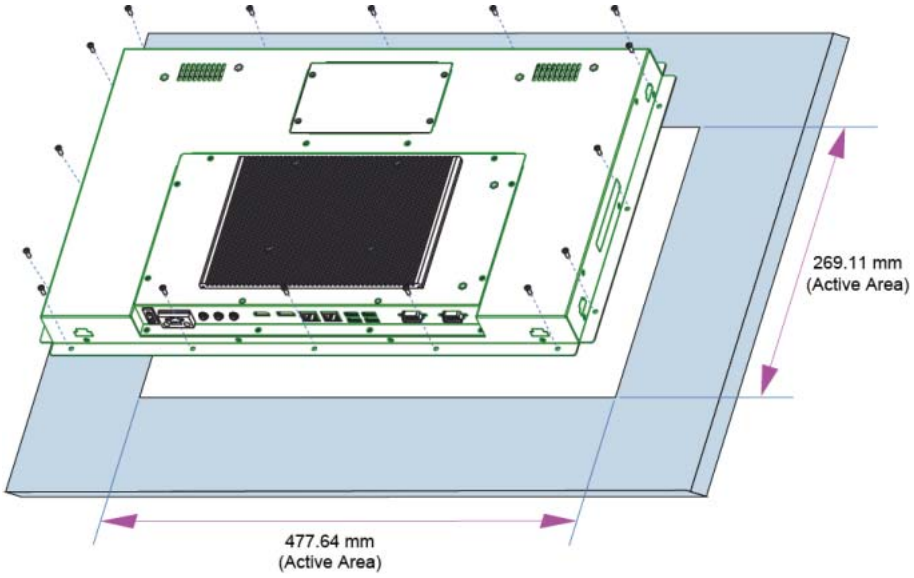


Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 412.8 x 234.4 mm based on active area of the panel)

Step 2: Align the active area of the panel with the cutout of the fixture from the rear side.

Step 3: Fasten 14 screws from the rear side. (4 on top / bottom, 3 on right / left edges respectively)

OPC-2152



Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 477.64 x 269.11 mm based on active area of the panel)

Step 2: Align the active area of the panel with the cutout of the fixture from the rear side.

Step 3: Fasten 16 screws from the rear side. (5 on top / bottom, 3 on right / left edges respectively)

Figure 11 Open frame mount (rear mount) and cut-out hole

■ VESA Mounting

The product comes with VESA FDMI 100 standard mounting holes as shown below. Use 4 screws with the appropriate length for your mounting bracket.

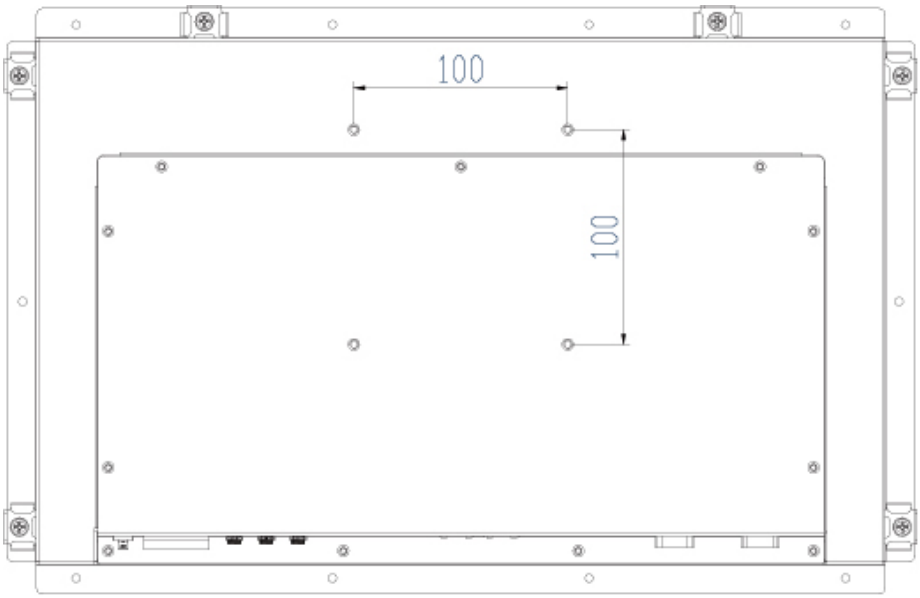


Figure 12 VESA Mounting Hole Locations

NOTE

To fasten the metal shelf, your monitor must comply with VESA100 standard. The VESA mounting kit is optional.

■ Panel Mounting

The open frame panel PC can be panel mounted and comes with brackets and screws for this purpose. The required cutout for panel mounting and maximum panel thickness is shown below.

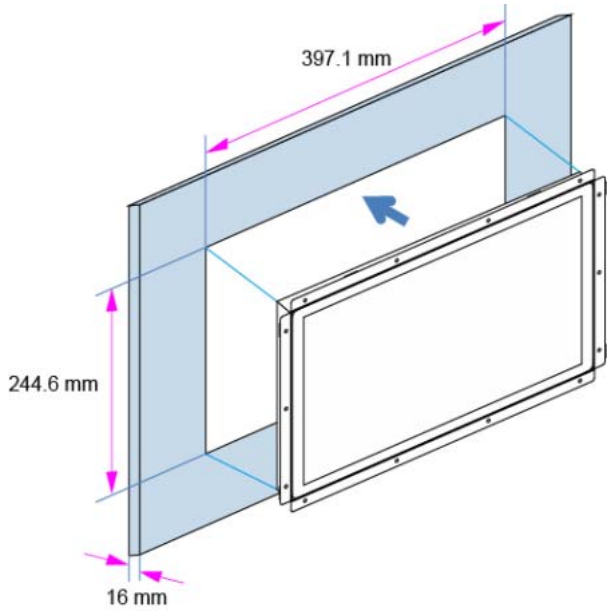


Figure 13 OPC-1562 Panel Mount Cut-out hole and maximum panel thickness

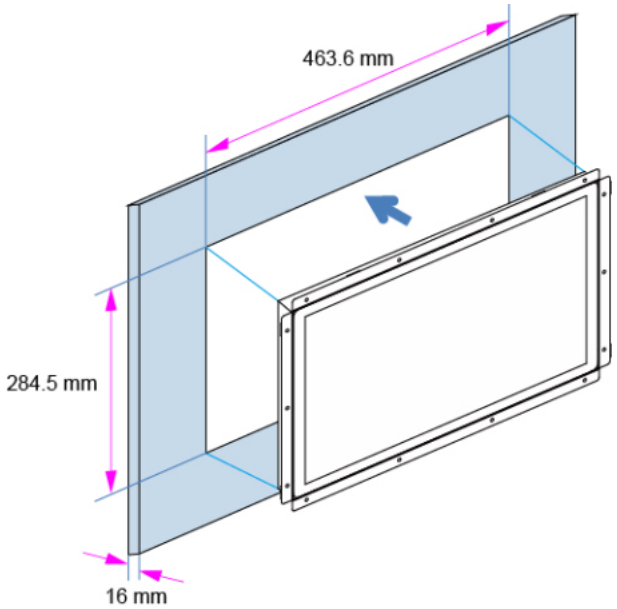


Figure 14 OPC-1852 Panel Mount Cut-out hole and maximum panel thickness

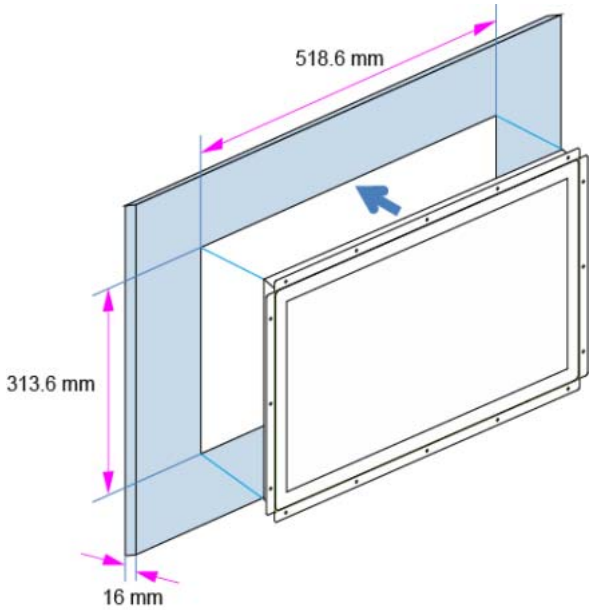
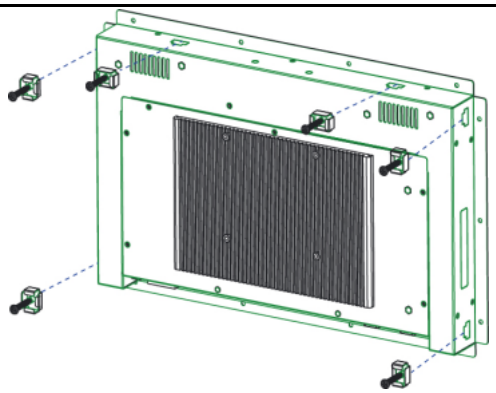


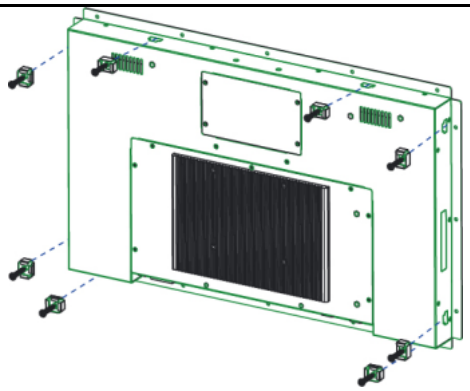
Figure 15 OPC-2152 Panel Mount Cut-out hole and maximum panel thickness

Below are the demonstrations of how to do panel mounting.



Step 1	Step 2	Step 3
Remove 6 Bracket Opening Covers from Bracket Openings with Phillips Screwdriver (2 on each top / side edge)	Insert a Panel Mount Bracket into each Bracket Opening	Secure Chassis to Panel by tightening the screws

Figure 16 Panel Mounting (OPC-1562)



Step 1	Step 2	Step 3
Remove 8 Bracket Opening Covers from Bracket Openings with Phillips Screwdriver (2 on each top / bottom / side edge)	Insert a Panel Mount Bracket into each Bracket Opening	Secure Chassis to Panel by tightening the screws

Figure 17 Panel Mounting (OPC-1852/2152)

Chapter 3

AMI BIOS Setup

■ Overview

This chapter provides a description of the AMI BIOS. The BIOS setup menus and available selections may vary from those of your product. For specific information on the BIOS for your product, please contact us.

NOTE: The BIOS menus and selections for your product may vary from those in this chapter. For the BIOS manual specific to your product, please contact us

AMI's ROM BIOS provides a built-in Setup program, which allows the user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM will not need to be changed unless there is a configuration change in the system, such as a hard drive replacement or when a device is added.
It is possible for the CMOS battery to fail, which will cause data loss in the CMOS only. If this happens you will need to reconfigure your BIOS settings.

■ Main Menu

The BIOS Setup is accessed by pressing the DEL key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. Once you enter the BIOS Setup Utility, the Main Menu will appear on the screen. The Main Menu provides System Overview information and allows you to set the System Time and Date. Use the “<” and “>” cursor keys to navigate between menu screens.

Table 2 BIOS Main Menu

BIOS SETUP UTILITY					
Main	Advanced	Power	Boot	Security	Save & Exit
Product Information					
Product Name		OPC-1562			
BIOS Version		R0.01 (x64)			
BIOS Build Date		07/05/2017			
TXE Version		3.0.13.1144			
CPU Information					
Intel® Pentium® CPU N4200 @ 1.10GHz					
Microcode Revision		28			
Processor Cores		4			
Memory Information					
Total Size		4096 MB (DDR3L)			
Frequency		1600 MHz			
System date		[Mon 09/18/2017]			
System time		[11:17:13]			
Access Level		Administrator			
→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit					
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■ Advanced Menu

Table 3 Advanced Menu

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Boot	Security	Save & Exit

Onboard LAN1 Controller	[Enabled]	
Onboard LAN2 Controller	[Enabled]	
Audio Controller	[Enabled]	
M.2 Device Type	[mSATA]	→←: Select Screen
> Display Configuration		↑↓: Select Item
> Super IO Configuration		Enter: Select
> CPU Chipset Configuration		+/-: Change Opt.
> SATA Configuration		F1: General Help
> USB Configuration		F2: Previous Values
> DIO Configuration		F3: Optimized Defaults
> Network Stack		F4: Save & Reset
> H/W Monitor		ESC: Exit

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Onboard LAN 1 Controller

Options: Disabled, Enabled

Onboard LAN 2 Controller

Options: Disabled, Enabled

Audio Controller

Options: Disabled, Enabled

M.2 Device Type

Options: mSATA, mPCI-E

Table 4 Advanced Menu – Display Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Display Configuration						
Primary Display	[IGD]					
UWA Frame Buffer Size	[256MB]					
DVMT Pre-Allocated	[64M]					→←: Select Screen
DVMT Total Gfx Mem	[256MB]					↑↓: Select Item
						Enter: Select
> AMI Graphic Output Protocol Policy						+/-: Change Opt.
Active LVDS	[Enabled]					F1: General Help
LVDS Panel Type	[1366x768	1CH]				F2: Previous Values
LVDS Panel Color Depth	[24Bit]					F3: Optimized Defaults
PWM Backlight Control	[By External]					F4: Save & Reset
LVDS Backlight Control - PWM	190					ESC: Exit
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Primary Display

Options: IGD, PCIe

UMA Frame Buffer Size

Options: 128MB, 256MB, 512MB

DVMT Pre-Allocated

Options: 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M

DVMT Total Gfx Mem

Options: 128M, 256M, MAX

Active LVDS

Options: Disabled, Enabled

LVDS Panel Type

Options: 800x600 1CH, 1024x768 1CH, 1280x1024 2CH, 1366x768 1CH, 1366x768 2CH, 1600x1200 2CH, 1920x1080 2CH

LVDS Panel Color Depth

Options: 18Bit, 24Bit

PWM Backlight Control

Options: By External, By Internal

Table 5 Advanced Menu – Super IO Configuration

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Boot	Security	Save & Exit

Super IO Chip Parameters >Serial Port 1 Configuration >Serial Port 2 Configuration >Serial Port 3 Configuration >Serial Port 4 Configuration >Serial Port 5 Configuration >Serial Port 6 Configuration	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

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Table 6 Advanced Menu – Super IO Configuration – Serial Port 1 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 1 Configuration					→←: Select Screen ↑↓: Select Item	
Serial Port	[Enabled]				Enter: Select	
Device Settings	IO=3F8h; IRQ=4;				+/-: Change Opt.	
Change Settings	[Auto]				F1: General Help	
Serial Port 1 Type	[RS232]				F2: Previous Values	
					F3: Optimized Defaults	
					F4: Save & Reset	
					ESC: Exit	
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=3F8h; IRQ=4;

IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Serial Port 1 Type

Options: RS232, RS422, RS485

RS485 Duplex Mode

Options: Half Duplex, Full Duplex

RS485 Auto Flow Control

Options: Disabled, Enabled

Table 7 Advanced Menu – Super IO Configuration – Serial Port 2 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 2 Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
Serial Port		[Enabled]				
Device Settings		IO=2F8h; IRQ=10;				
Change Settings		[Auto]				
Serial Port 2 Type		[RS232]				
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=2F8h; IRQ=10;

IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Serial Port 2 Type

Options: RS232, RS422, RS485

RS485 Duplex Mode

Options: Half Duplex, Full Duplex

RS485 Auto Flow Control

Options: Disabled, Enabled

Table 8 Advanced Menu – Super IO Configuration – Serial Port 3 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 3 Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
Serial Port		[Enabled]				
Device Settings		IO=3E8h; IRQ= 7;				
Change Settings		[Auto]				
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=3E8h; IRQ=7;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Table 9 Advanced Menu – Super IO Configuration – Serial Port 4 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 4 Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
Serial Port		[Enabled]				
Device Settings		IO=2E8h; IRQ=7;				
Change Settings		[Auto]				
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=2E8h; IRQ=7;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Table 10 Advanced Menu – Super IO Configuration – Serial Port 5 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 5 Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
Serial Port		[Enabled]				
Device Settings		IO=2F0h; IRQ=7;				
Change Settings		[Auto]				
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=2F0h; IRQ=7;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Table 11 Advanced Menu – Super IO Configuration – Serial Port 6 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Serial Port 6 Configuration					→←: Select Screen ↑↓: Select Item	
Serial Port		[Enabled]			Enter: Select	
Device Settings		IO=2E0h; IRQ=7;			+/-: Change Opt.	
Change Settings		[Auto]			F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
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Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto,

IO=2E0h; IRQ=7;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

Table 12 Advanced Menu – CPU Chipset Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
CPU Chipset Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
EIST	[Enabled]					
Turbo Mode	[Enabled]					
Active Processor Cores	[Disabled]					
Intel Virtualization Technology	[Enabled]					
VT-d	[Disabled]					
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EIST

Options: Disabled, Enabled

Turbo Mode

Options: Disabled, Enabled

Active Processor Cores

Options: Disabled, Enabled

Intel Virtualization Technology

Options: Disabled, Enabled

VT-d

Options: Disabled, Enabled

Table 13 Advanced Menu – SATA Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
SATA Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
SATA Controller		[Enabled]				
SATA Mode Selection		[AHCI]				
Serial ATA Port 1		[Not Installed]				
Port 1		[Enabled]				
mS ATA Port 1		Phison SSMP064 (64.0GB)				
Port 1		[Enabled]				
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SATA Controller

Options: Enabled, Disabled

Serial ATA Port 1

Options: Disabled, Enabled

mSATA Port 1

Options: Disabled, Enabled

Table 14 Advanced Menu – USB Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
USB Configuration					→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	
USB Devices: 1 Keyboard, 1 Point						
Legacy USB Support	[Enabled]					
XHCI Hand-off	[Enabled]					
USB Mass Storage Driver Support	[Enabled]					
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Legacy USB Support

Options: Enabled, Disabled

XHCI Hand-off

Options: Enabled, Disabled

USB Mass Storage Driver Support

Options: Disabled, Enabled

Table 15 Advanced Menu – DIO Configuration

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Boot	Security	Save & Exit

DIO Configuration		
User Configuration	[Disabled]	→←: Select Screen
DIO_0 Value	1	↑↓: Select Item
DIO_1 Value	1	Enter: Select
DIO_2 Value	1	+/-: Change Opt.
DIO_3 Value	1	F1: General Help
DIO_4 Value	1	F2: Previous Values
DIO_5 Value	1	F3: Optimized Defaults
DIO_6 Value	1	F4: Save & Reset
DIO_7 Value	1	ESC: Exit

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User Configuration

Options: Enabled, Disabled

DIO_0

Options: Output Low, Output High, Input

DIO_1

Options: Output Low, Output High, Input

DIO_2

Options: Output Low, Output High, Input

DIO_3

Options: Output Low, Output High, Input

DIO_4

Options: Output Low, Output High, Input

DIO_5

Options: Output Low, Output High, Input

DIO_6

Options: Output Low, Output High, Input

DIO_7

Options: Output Low, Output High, Input

Table 16 Advanced Menu – Network Stack

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Boot	Security	Save & Exit
Network Stack	[Disabled]				→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
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Network Stack

Options: Disabled, Enabled

Table 17 Advanced Menu – H/W Monitor

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Boot	Security	Save & Exit	
Pc Health Status						
>Smart FAN Configuration						
CPU Temperature		: +40 C				
System Temperature		: +40 C				
CPU Fan Speed		: N/A				→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
+VCORE		: +0.757 V				
+12V		: +12.164 V				
+5V		: +5.066 V				
+VMEM		: +1.197 V				
+3.3V		: +3.344 V				
+VRTC		: +3.152 V				
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Smart FAN Configuration

- **CPU FAN Setting**

  Options: Manual, Smart

Table 18 Power Manu

BIOS SETUP UTILITY		
Main Advanced **Power** Boot Security Save & Exit		
Power Configuration		
ACPI Sleep State	[S3 (Suspend to RAM)]	
Restore AC Power Loss	[Power Off]	
Power Saving Mode	[Disabled]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Resume Event control		
Resume By LAN 1 Device	[Disabled]	
Resume By LAN 2 Device	[Disabled]	
Resume By MPCIE1 Device	[Disabled]	
Resume By M2 Device	[Disabled]	
Resume By Ring Device	[Disabled]	
Resume By RTC Alarm	[Disabled]	
>WatchDog Timer Configuration		
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Restore AC Power Loss

Options: Power Off, Power On, Last State

Power Saving Mode

Options: Disabled, EUP Enabled

Resume By LAN1 Device

Options: Disabled, Enabled

Resume By LAN2 Device

Options: Disabled, Enabled

Resume By MPCIE1 Device

Options: Disabled, Enabled

Resume By M2 Device

Options: Disabled, Enabled

Resume By Ring Device

Options: Disabled, Enabled

Resume By RTC Alarm

Options: Disabled, Enabled

WatchDog Timer Configuration

- **WDT Function** [Disabled]

  Options: Disabled, Enabled

■ Boot Menu

Table 19 Boot Menu

BIOS SETUP UTILITY					
Main	Advanced	Power	**Boot**	Security	Save & Exit

Boot Configuration		→←: Select Screen
Full Screen LOGO Display	[Disabled]	↑↓: Select Item
Setup Prompt Timeout	1	Enter: Select
Bootup NumLock State	[On]	+/-: Change Opt.
		F1: General Help
CSM Support	[Disabled]	F2: Previous Values
Boot Option Filter	[UEFI Only]	F3: Optimized Defaults
		F4: Save & Reset
Boot Option Priorities		ESC: Exit

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Full Screen LOGO Display

Options: Disabled, Enabled

Bootup Numlock State

Options: On, Off

■ Security Menu

Table 20 Security Menu

BIOS SETUP UTILITY	
Main Advanced Power Boot **Security** Save & Exit	
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights The password length must be in the following range: Minimum Length 3 Maximum length 20 Administrator Password User Password	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
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■ Save & Exit Menu

Table 21 Save & Exit Menu

BIOS SETUP UTILITY	
Main Advanced Power Boot Security **Save & Exit**	
Save Changes and Reset Discard Changes and Reset Save Options Save Changes Discard Changes Restore Defaults	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
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Save Changes and Exit

Exit system setup after saving the changes. Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select [Yes] to save changes and exit.

Discard Changes and Exit

Exit system setup without saving any changes. Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

Discard Changes

Discards changes done so far to any of the setup values. This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.

Load Optimal Defaults

Load Optimal Default values for all the setup values. This option allows you to load optimal default values for each of the parameters on the Setup menus, which will provide the best performance settings for your system. The F9 key can be used for this operation.

Load Failsafe Defaults

Load Optimal Default values for all the setup values. This option allows you to load failsafe default values for each of the parameters on the Setup menus, which will

provide the most stable performance settings. The F8 key can be used for this operation.

Chapter 4

Driver Installation

If your OPC-1562/1852/2152 does not come with an operating system pre-installed, you will need to install an operating system and the necessary drivers to operate it. After you have finished assembling your system and connected the appropriate power source, power it up using the power supply and install the desired operating system.

You can download the drivers for the OPC-1562/1852/2152 from our website and install as instructed there. For other operating systems, please contact us.