OPM Series

Open Frame Monitor

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 encourage 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 B devices.

FCC Compliance Statement:

This equipment has been tested and found to comply with limits for a Class B digital 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.

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 unit s 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

The OPM Series is a collection of open frame monitors having a screen size ranging from 15" to 19". 15.6" and 18.5" models are widescreen and enable multiple windows or convenient panoramic viewing experience. It comes with a variety of display ports, including 1x HDMI, 1x DVI-D and 1x VGA, for various viewing options, and optional 1x USB port or 1x RS-232 port for touch functionality.

Checklist

- OPM Series
- User manual CD
- Quick installation Guide
- Power Adapter (optional)
- Power Cord (optional)

Features

- 15"/17"/19" square-screen (4:3/5:4) open frame LCD display
- 15.6"/18.5" widescreen (16:9) open frame LCD display
- 1x HDMI, 1x DVI-D, 1x VGA for video input
- Optional 1x COM for touch functionality (15"/17"/19" models)
- Optional 1x USB2.0 for touch functionality (15.6"/18.5" models)

■ Product Specifications

Model Name	OPM Series				
Display Size	15”	15.6”	17”	18.5”	19”
Aspect Ratio	4:3	16:9	5:4	16:9	5:4
Backlight	LED	LED	LED	LED	LED
Resolution	1024 x 768	1366 x 768	1280x1024	1366x768	1280x1024
Brightness (cd/m^2 ,typ.)	250	300	350	300	250
Contrast Ratio (typical)	700:1	500:1	1000:1	1000:1	1000:1
Colors	16.2M	262K / 16.7M	16.2M	16.7M	16.7M
Angle View (L/R/H/L)	85° / 85° / 80° / 80°	80° / 80° / 80° / 80°	85° / 85° / 80° / 80°	85° / 85° / 80° / 80°	85° / 85° / 80° / 80°
Touch	5-wire resistive (optional) / 10-point PCT (optional)				
External Display	1x HDMI (on rear) 1x DVI-D (on rear) 1x VGA (on rear)				
Audio	1x Line-in (on rear) 1x Line-out (on rear)				
USB	1x USB2.0 (Type A on rear for Touch, optional, 15.6" & 18.5" only)				
Serial Port	1x RS-232 (DB9 on rear for Touch, optional, 15", 17" & 19" only)				
Power	Connector: 2-Pin Phoenix Connector (on rear) Input Voltage: DC 12V (default) / DC 24V (optional)				
Button, Switch & Indicator	1x Power LED 1x Power Button 1x Menu / Enter Button 1x Up Button 1x Down Button 1x Exit Button				
Cooling	Passive				
Construction	Open Frame Metal Chassis				
Dimensions - W	373.5 mm (14.70")	425.1 mm (16.74")	424.0 mm (16.69")	491.6 mm (19.35")	424.0 mm (16.69")
Dimensions - H	279.5 mm (11.00")	272.6 mm (10.73")	343.3 mm (13.52")	312.5 mm (12.30")	343.3 mm (13.52")
Dimensions - D	50.0 mm	40.0 mm	52.0 mm	40.0 mm	52.0 mm

	(1.97")	(1.57")	(2.05")	(1.57")	(2.05")
Weight	2700 g (5.95 lb)	TBD	3400 g (7.50 lb)	3700 g (8.16 lb)	3800 g (8.38 lb)
Environmental	Operating Temperature: 0°C ~ 50°C / 32°F ~ 122°F Storage Temperature: -20°C ~ 70°C / -4°F ~ 158°F Humidity: 0% ~ 95%				
Mounting	Open Frame Mount VESA Mount Panel Mount (15.6" & 18.5" models only)				
Certification	CE, FCC Class A				

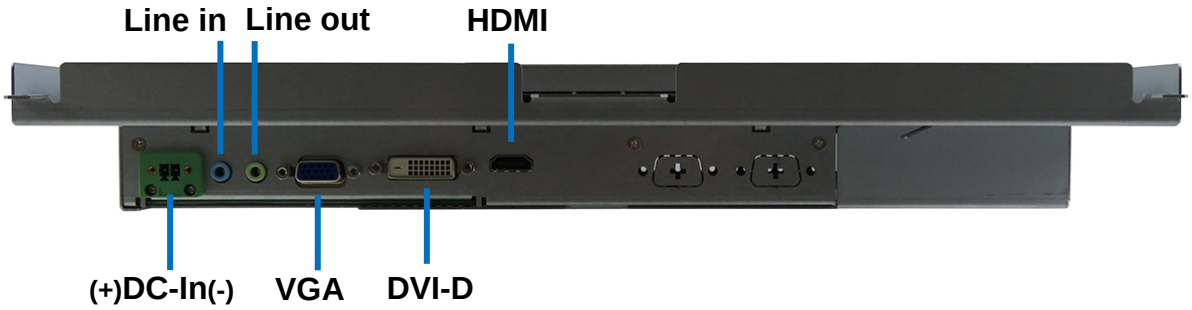
Table 1 Product Specifications

■ System tour

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

■ I/Os

Square-screen Models (15"/17"/19")



Widescreen Models (15.6"/18.5")

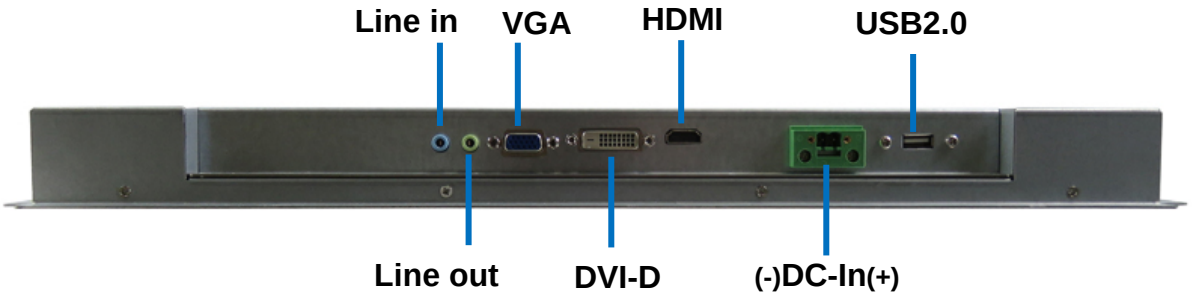


Figure 1 I/Os

Power Input

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

HDMI

HDMI connector for display input

DVI-D

DVI-D is an acronym which means Digital Video Interface Digital. Essentially it is a cable that connects two devices producing an input image on a screen.

VGA

D-Sub 15 pin VGA connector for display input

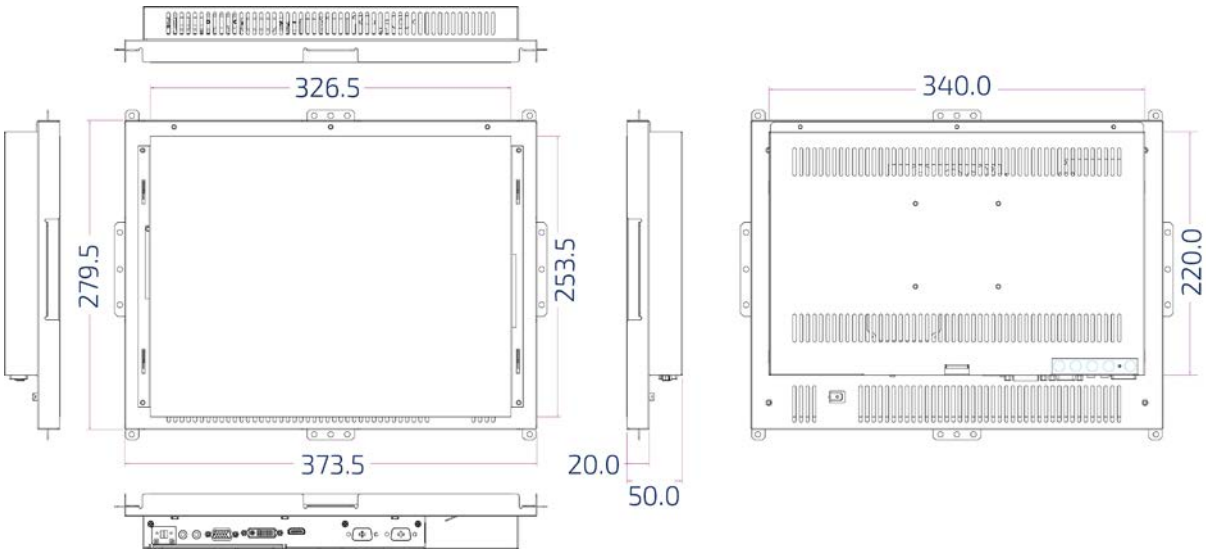
Line Out

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

Line-In

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

Mechanical Dimensions



Dimension: 373.5 x 279.5 x 50.0 mm (W x H x D)

Figure 2 Mechanical Dimensions (15" Model)

Dimension: 425.1 x 272.6 x 40.0 mm (W x H x D)

Figure 3 Mechanical Dimensions (15.6" Model)

Dimension: 424.0 x 343.3 x 52.0 mm (W x H x D)

Figure 4 Mechanical Dimensions (17" Model)

Dimension: 491.6 x 312.5 x 40.0 mm (W x H x D)

Figure 5 Mechanical Dimensions (18.5" Model)

Dimension: 424.0 x 343.3 x 52.0 mm (W x H x D)

Figure 6 Mechanical Dimensions (19" Model)

Chapter 2

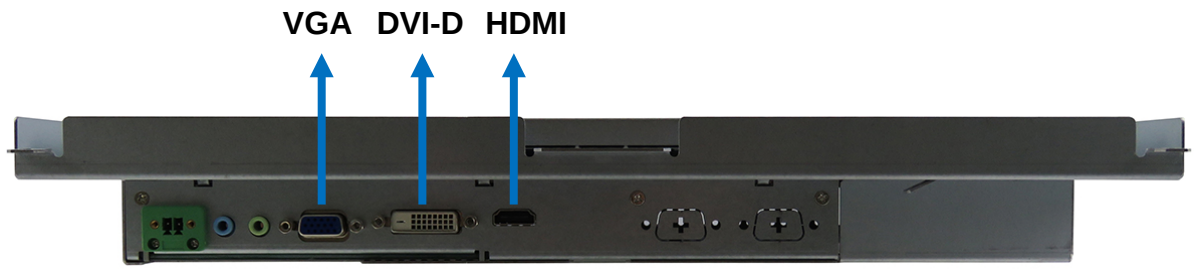
Getting Started

■ Setting up your PC

■ Connecting the monitor

Connect the HDMI / VGA/ DVI-D cable from your display to the HDMI / VGA/ DVI-D port.

Square-screen Models (15"/17"/19")



Widescreen Models (15.6"/18.5")

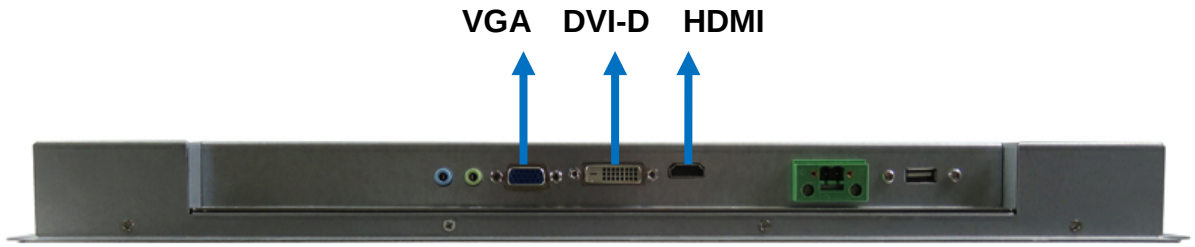


Figure 7 VGA / DVI-D / HDMI

■ Turning on the system

1. Connect the power adapter cable to the DC IN of the OPM Series
2. Connect the power cable to the power adapter
3. Connect the power cable to a power outlet
4. Press the power button to turn on the monitor

Square-screen Models (15"/17"/19")

Widescreen Models (15.6"/18.5")

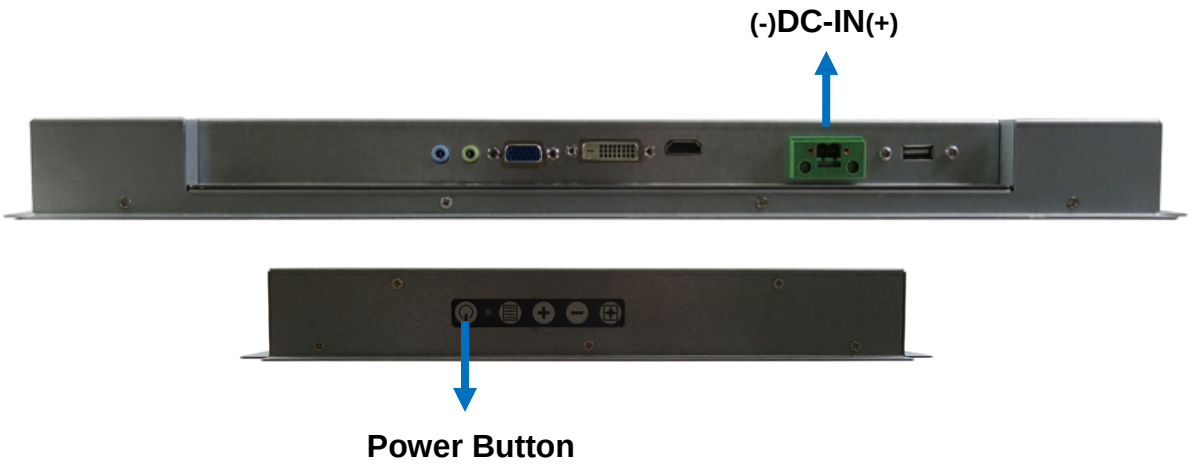
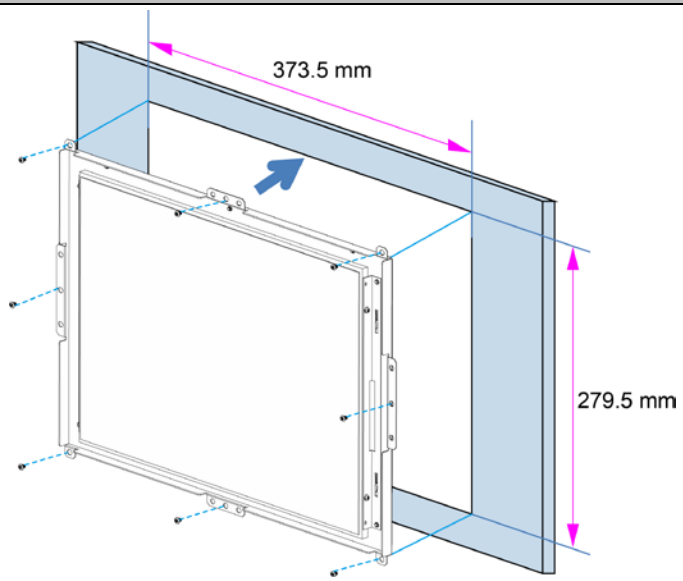


Figure 8 Turning on the system

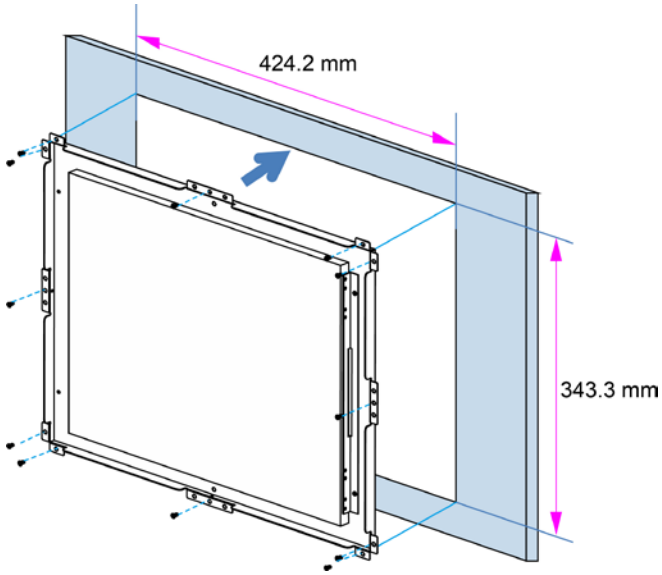
■ Open Frame Mounting

The open frame monitor 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)
15" Model
 **Step 1**: Make a cutout on the fixture, eg. wall. (Cutout: 373.5 x 279.5 mm) **Step 2**: Insert the monitor into the cutout of the fixture from the front side. **Step 3**: Fasten 8 screws from the front side. (3 on top / bottom, 1 on right / left edges respectively)
15.6" Model
Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 397.1 x 244.6 mm)

Step 2: Insert the monitor 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)

17"/19" Model



Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 424.2 x 343.3 mm)
Step 2: Insert the monitor into the cutout of the fixture from the front side.
Step 3: Fasten 12 screws from the front side. (3 on each edge respectively)

18.5" Model

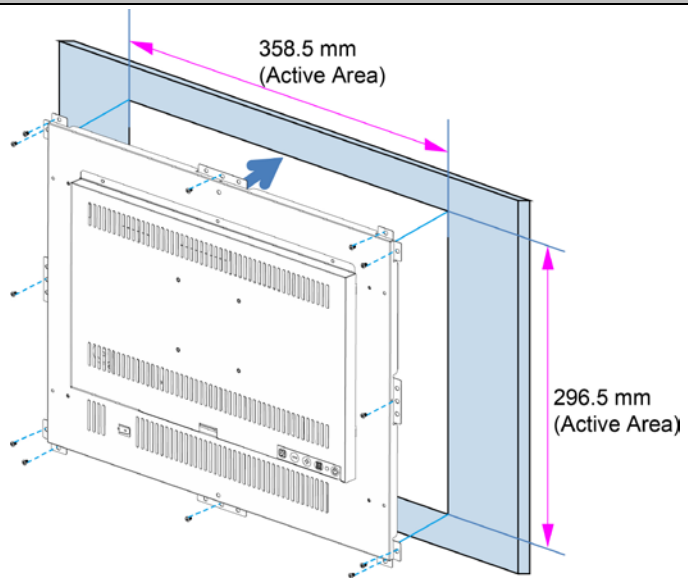
Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 463.6 x 284.5 mm)
Step 2: Insert the monitor into the cutout of the fixture from the front side.
Step 3: Fasten 14 screws from the front side. (4 on top / bottom, 3 on right / left edges respectively)

Figure 9 Open frame mount (front mount) and cut-out hole

Rear Mount (Inside Mount)
15" Model
Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 326.5 x 253.5 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 8 screws from the rear side. (3 on top / bottom, 1 on right / left edges respectively)
15.6" Model
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)

17" Model



Step 1: Make a cutout on the fixture, eg. wall. (Cutout: 358.5 x 296.5 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 12 screws from the rear side. (3 on each edge respectively)

18.5" Model

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)

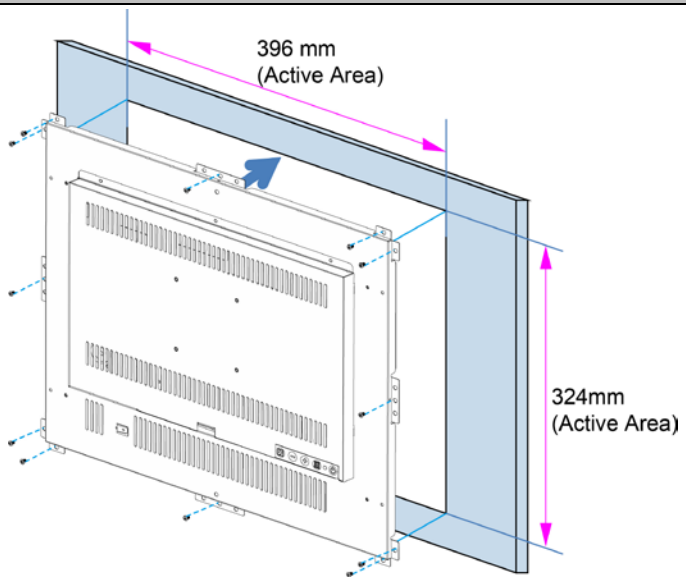
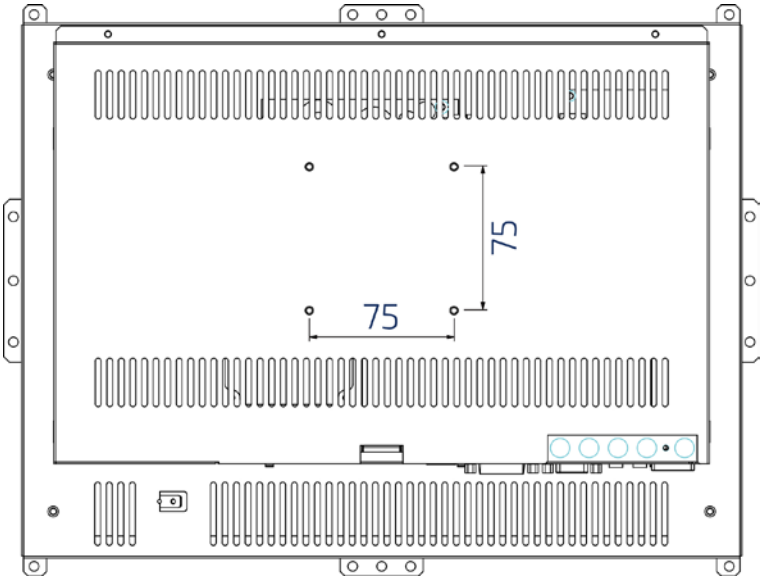
19" Model
 **Step 1**: Make a cutout on the fixture, eg. wall. (Cutout: 396 x 324 mm based on active area of the panel) **Step 2**: Align the active area of the panel with the cutout of the fixture from the rear side. **Step 3**: Fasten 12 screws from the rear side. (3 on each edge respectively)

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

■ VESA Mounting

The square-screen models (15"/17"/19") comes with VESA FDMI 75 standard mounting holes while the widescreen models (15.6"/18.5") with VESA FDMI 100 standard mounting holes as shown below. Use 4 screws with the appropriate length for your mounting bracket.

Square-screen Models (15"/17"/19")



Widescreen Models (15.6"/18.5")

Figure 11 VESA Mounting Hole Locations

NOTE

To fasten the metal shelf, your monitor must comply with VESA75 or VESA100 standard. The VESA mounting kit is optional.

■ Panel Mounting

The 15.6" / 18.5" 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 12 Panel Mount Cut-out hole and maximum panel thickness (15.6" Model)

Figure 13 Panel Mount Cut-out hole and maximum panel thickness (18.5" Model)

Below are the demonstrations of how to do panel mounting.

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

Figure 14 Panel Mounting (15.6" Model)

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

Figure 15 Panel Mounting (18.5" Model)

Chapter 3

OSD Functions

■ Control Buttons

Button Name	Image	Functions
<Menu / Enter>		1. To turn on the OSD menu 2. To confirm the selection
<Up>		1. To move to the next functional icon 2. To move to the next setting item 3. To display the next setting option 4. To increase the setting
<Down>		1. To move to the previous functional icon 2. To move to the previous setting item 3. To display the previous setting option 4. To decrease the setting
<Exit>		1. To turn off the OSD menu 2. To move from a sub-menu to the main menu and save the changes made in the sub-menu

Table 2 OSD Control Button

■ Setting Instruction

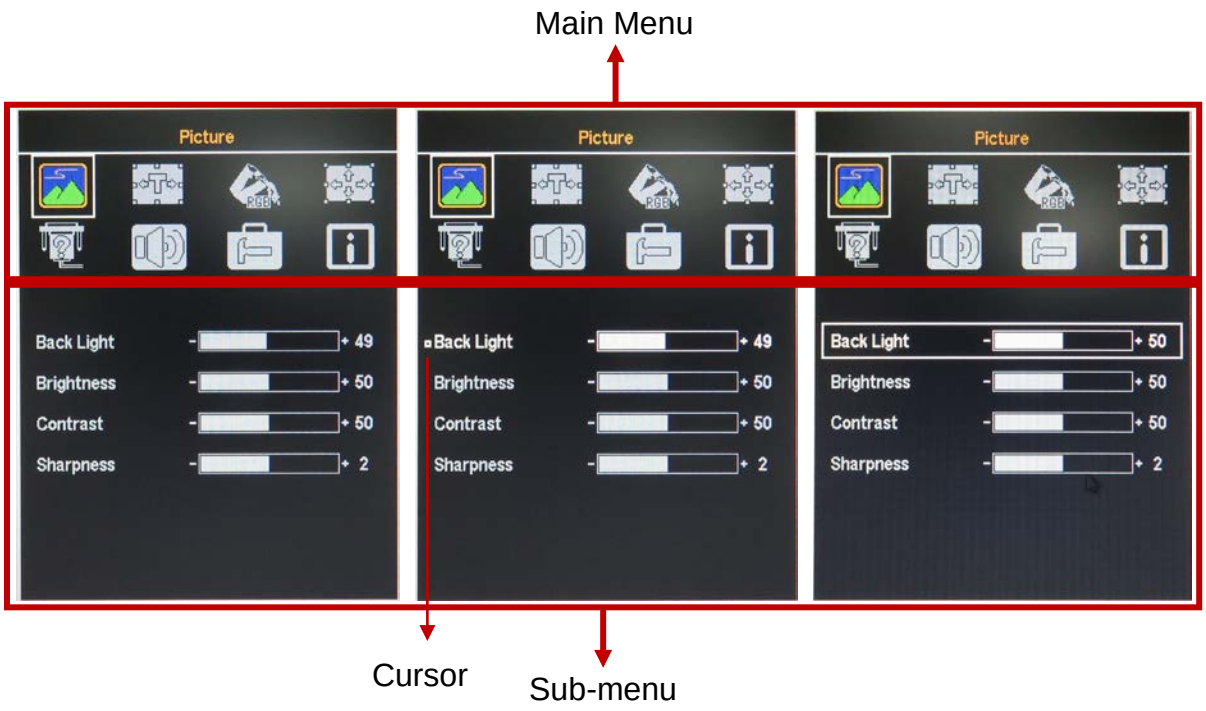


Figure 16 OSD Main Menu and Sub-menu

There are in total 8 functional icons in the main menu. One of the 8 icons will be displayed in colors to indicate the relationship with the setting items or information in the sub-menu below (as shown in the left figure above).

Use <Up> and / or <Down> button to move to the functional icon you want to operate or set and then press <Menu / Enter> button to enter the sub-menu under that functional icon. A cursor will appear in front of one of the setting items in the sub-menu when entering the sub-menu (as shown in the middle figure above).

Use <Up> and / or <Down> button to move to the setting item you want to set and then press <Menu / Enter> button to enter the setting mode. A frame will appear around the setting item when entering the setting mode. (as shown in the right figure above).

Use <Up> and / or <Down> button to display the next or previous setting option or increase or decrease the setting value and then press <Menu / Enter> or <Exit> button to confirm the selection and save the setting. The frame will disappear when

the setting is complete.

■ Function Instruction

Table 3 “Picture” Menu

	**Picture** ■ **Back Light** Options: 0 ~ 100 ■ **Brightness** Options: 0 ~ 100 ■ **Contrast** Options: 0 ~ 100 ■ **Sharpness** Options: 0 ~ 4

Table 4 “Image Setting” Menu

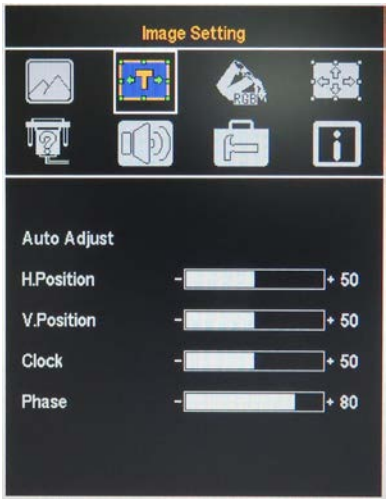
	**Image Setting** ■ **Auto Adjust** Options: N/A ■ **H.Position** Options: 0 ~ 100 ■ **V.Position** Options: 0 ~ 100 ■ **Clock** Options: 0 ~ 100 ■ **Phrase** Options: 0 ~ 100

Table 5 “Color” Menu

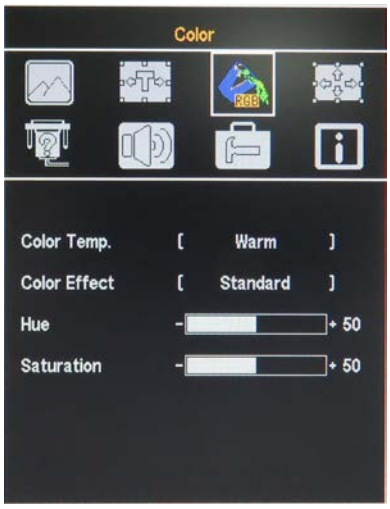
	**Color** ■ **Color Temp.** Options: Cool, Warm, User ■ **Color Effect** Options: Standard, Game, Movie, Photo, Vivid, User ■ **Hue** Options: 0 ~ 100 ■ **Saturation** Options: 0 ~ 100

Table 6 “Signal Source” Menu

	**Signal Source** Options: Auto Search, VGA 1, VGA 2, HDMI, DVI

Table 7 “Audio” Menu

	**Audio** ■ **Volume** Options: 0 ~ 100 ■ **Mute** Options: Off, On

Table 8 “OSD Menu” Menu

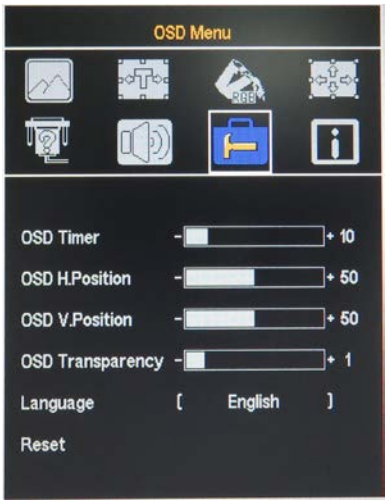
	**OSD Menu** ■ **OSD Timer** Options: 5 ~ 60 ■ **OSD H.Position** Options: 0 ~ 100 ■ **OSD V.Position** Options: 0 ~ 100 ■ **OSD Transparency** Options: 0 ~ 7 ■ **Language** Options: English, Français (French), Deutsch (German), Español (Spanish), 中文(Chinese) ■ **Reset** Options: N/A

Table 9 “Information” Menu

	**Information** Options: N/A