OPD-212A/215A/217A

Open Frame
Industrial LCD Displays

OPD-212A/ 215A/ 217A Manual 3rd Ed
March 2008

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Packing List

The LCD monitor comes with the following standard parts shown as below. Check and make sure they are included and in good condition. If anything is missing or damaged, contact the dealer immediately.

- 1   Industrial Display Panel

- 1   Utility CD-ROM
  Contains User's Manual (in PDF format), Drivers and Utilities

- 1   Power adapter

- 1   VGA cable 1.8m

- Panel mounting kits

- Screws bag

- Adapter cable saddle

- Waterproof sponge

- Cable. RS-232 (optional)

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

Safety & Warranty

1. Read these safety instructions carefully.

2. Keep this user's manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.

4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.

7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.

12. Never pour any liquid into an opening. This could cause fire or electrical shock.

13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

14. If any of the following situations arises, get the equipment

checked by service personnel:

   a.   The power cord or plug is damaged.

   b.   Liquid has penetrated into the equipment.

   c.   The equipment has been exposed to moisture.

   d.   The equipment does not work well, or you cannot get it to

        work according to the users manual.

   e.   The equipment has been dropped and damaged.

   f.   The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.

FCC

Warning!

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

Caution:
   It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Below Table for China RoHS Requirements

产品中有毒有害物质或元素名称及含量

AAEON Display

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

O：表示该有毒有害物质在该部件所有均质材料中的含量均在
　　 SJ/T 11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出
　　 SJ/T 11363-2006 标准规定的限量要求。

备注：
一、此产品所标示之环保使用期限，系指在一般正常使用状况下。
二、上述部件物质触控模块为选购品。

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Chapter 1 General Information

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Chapter 3   On Screen Display Control

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Appendix A Troubleshooting

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1

General Information

1.1 Introduction

Thank you for purchasing of the Industry Display Panel TFT LCD monitor - a marvelous contribution of cutting edge technology.

The LCD monitor has been designed with serious thoughts to present the best performance for most applications. Symbol of elegance, its compact and slim profile is well suited in working locations where space is at a premium.

The TFT LCD monitor displays sharper, more brilliant, crisper and flicker-free images. Complying with the power management regulations of VESA DPMS, the LCD monitor is extremely energy efficient and a power saver. Plus, the LCD monitor has extremely low radiation emissions and near zero electromagnetic fields which are supreme benefits.

Fully compatible with PC system, the LCD monitor provides full interface for all sorts of related standards. Supported by "Plug & Play" complying with DDC1/DDC2B, installing the LCD monitor is absolutely trouble free.

The On Screen Display menu provides user a convenient interface to make right adjustment for optimum display performance.

1.2 Open Frame Structure Illustration

Open Frame LCD Display   Bezel   Closed Frame LCD Display
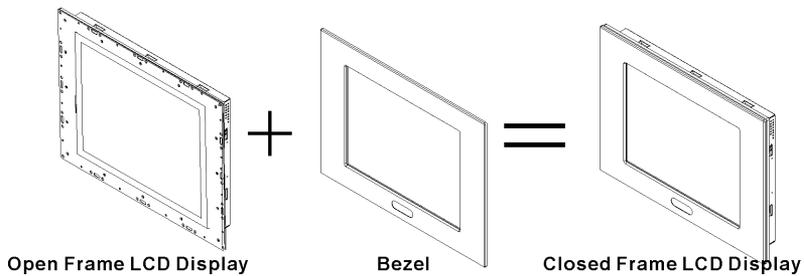
1.3 Features of Display Panels

This menu provides full range of analog interface LCD panels, which are 12.1"(SVGA), 15"(XGA) and 17" (SXGA) high-brightness, long lifetime TFT LCD monitors.

● Stainless steel open-frame architecture

● 12.1" SVGA (800x600 resolution)
  15" XGA (1024 x 768 resolution)
  17" SXGA (1280 x 1024 resolution) color TFT LCD display

● Analog RGB signals directly input with A/D board interface offering multi-scan function

● RS-232, adapter, VGA terminals and AV+S Video input

● OSD (On Screen Display) function for display adjustment

● Touchscreen (Optional)

● AC-in/ DC-out external power adapter

● Swivel ARM: VESA 75/100 standard

● Aluminum front bezel (Optional)

● Auto detect NTSC, PAL

● Adapter holder

1.4 General Specification

- **Construction**   Stainless steel open-frame architecture

- **Mounting**   Panelmount or Swivel ARM

- **Input signal**   RGB, Composite video, S-Video

- **Control**   OSD (On Screen Display) on the rear panel

- **Power Supply**   External power adapter

- **Dimension**

  OPD-212A:
  350(W) x 275(H) x 48.7(D) mm
  without bezel
  366(W) x 291(H) x 54.7(D) mm
  with standard bezel
  483(W) x 310(H) x 54.7(D) mm
  with rackmount bezel

  OPD-215A:
  428(W) x 320(H) x 53.3(D) mm
  without bezel
  444(W) x 336(H) x 59.3(D) mm
  with standard bezel
  483(W) x 354.8(H) x 59.3(D) mm
  with rackmount bezel

  OPD-217A:
  482(W) x 398(H) x 57.2(D) mm
  without bezel
  483(W) x 399(H) x 63.2(D) mm
  with standard bezel
  483(W) x 399(H) x 63.2(D) mm
  with rackmount bezel

- **Gross Weight**   OPD-212A: 7.7Kg
  OPD-215A: 11.9Kg

OPD-217A: 14.8Kg

TouchScreen (Optional)

- **Type**   8-wire, Analog resistive

- **Resolution**   2048 x 2048

- **Light transmission**   OPD-212A/OPD-215A: 75%
  OPD-217A: 76% ±2

- **Controller**   RS-232 interface (optional)

Environmental

- **Operating temperature**   32°F ~113°F (0°C to 45°C)

- **Vibration**   5-500Hz, 1G random vibration

- **Shock**   15G peak acceleration (11 msec. Duration)

- **EMC**   FCC / CE Class A

- **Safety**   UL (for OPD-215-E series only)

1.5 Detailed Specification of OPD-212A/215A/217A

OPD-212A

Panel

- Type   Color TFT
- Size   Diagonal "12.1"
- Brightness   350 cd/m^2 (TYP.)
- Back light MTBF   50,000 hrs
- Pixel Pitch   0.3075(H) x 0.3075(V) mm
- Viewing Angle   140°
  (Horizontal)
- Viewing Angle (Vertical) 120°
- Resolution   800 x 600
- Display Modes   Full Screen in 640x480,
                                      800x600 Mode
- Color   262K

Power Consumption

- On- Working   60Watts (Max.)
- Input Voltage   AC 100-240V~1.8A, 50~60Hz
- Output   DC 12V / 5A(Max)

OPD-215A

Panel

- Type   Color TFT
- Size   Diagonal "15"
- Brightness   250 cd/m^2 (TYP.)
- Back light MTBF   50,000 hrs
- Pixel Pitch   0.297(H) x 0.297(V) mm
- Viewing Angle   150°
  (Horizontal)
- Viewing Angle (Vertical) 145°
- Resolution   1024 x 768
- Display Modes   Full Screen in 640x480,
  800x600, 1024x768 Mode
- Color   262K

Power Consumption

- On- Working   60Watts (Max.)
- Input Voltage   AC 100-240V~1.8A, 50~60Hz
- Output   DC 12V / 5A(Max)

OPD-217A

Panel

- Type   Color TFT
- Size   Diagonal 17"
- Brightness $260cd/m^2$ (TYP.)
- Back light MTBF   50,000hrs
- Contrast Ratio   400: 1
- Pixel Pitch   0.264(H) x 0.264(V) mm
- Viewing Angle 140°
  (Horizontal)
- Viewing Angle (Vertical) 140°
- Resolution   1280 x 1024
- Display Modes   Full Screen in 640x480, 800x600, 1024x768, 1280x1024 Mode
- Color   16.2M

**Power Consumption**

- On- Working   60Watts (Max.)
- Input Voltage   AC 100-240V~1.8A, 50~60Hz
- Output   DC 12V / 5A(Max)

1.6 Dimension

OPD-212A　　　Unit:mm

483.0
88.9
57.2
310.4
88.9

330.0
48.7
85.7

366.0
248.4
186.9
291.0

Front Bezel Size

30.0
75.0
115.0
275.0
75.0
255.0

70.0　100.0　100.0　70.0
350.0
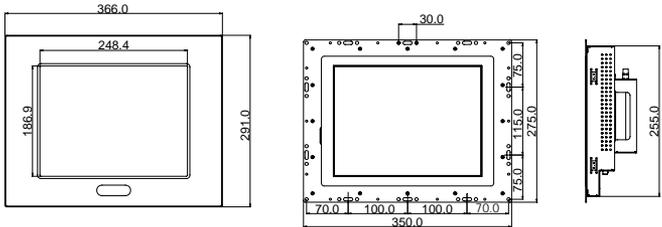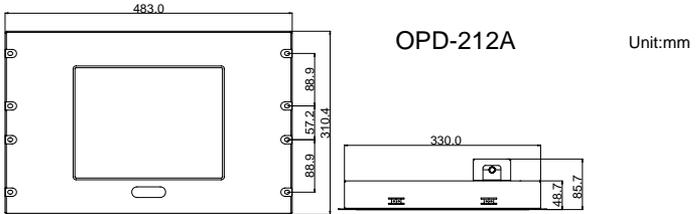
Chassis Cutout Size:333*258 mm
LCD Cutout Size:248.4*186.9 mm

OPD-215A　　　Unit:mm

483.0
101.6
76.2
354.8
101.6

402.0
53.3
90.3

444.0　6.0
336.0

428.0
30.0
79.0
75.0
320.0
75.0
79.0

59.3
6.0
296.0

88.0　120.0　120.0　88.0
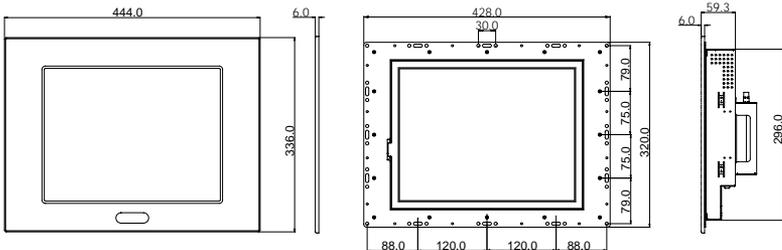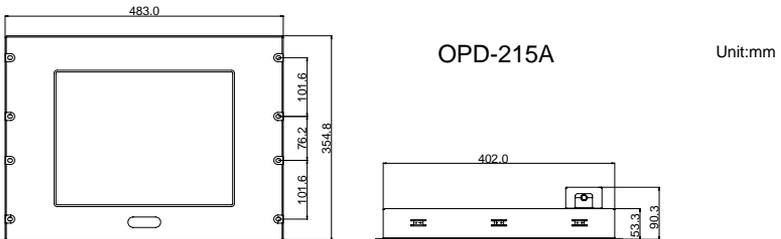
Front Bezel Size

Cutout Size:405*299 mm

OPD-217A

446.0

57.2

94.2

Unit:mm

6.0

101.6

120.6

399.0

101.5

483.0

Front Bezel Size

85.0

85.0

398.0

85.0

85.0

75.0   90.0   90.0   90.0   75.0

482.0

6.0

362.0
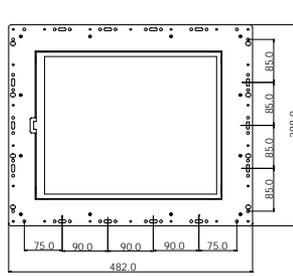
Cutout Size:449*365 mm

1.7 Waterproof Sponge Position

Inside sponge:

A. Tear off the protection paper on the self-adhesive side of the inside sponge.

B. Stick the sponge on the recessed area of the Aluminum bezel or customer's own bezel.
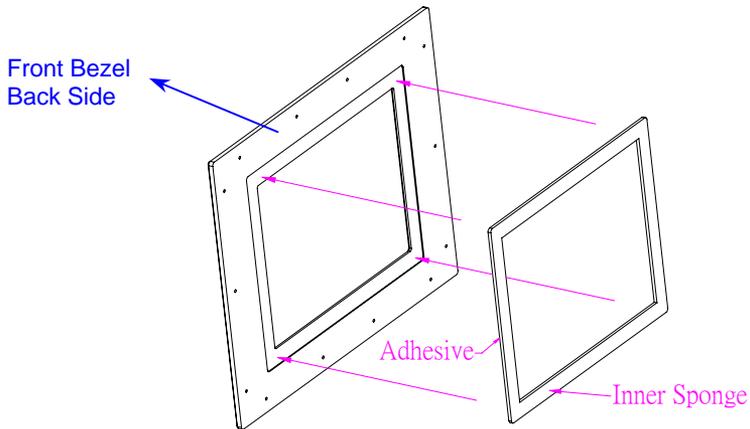
Outer sponge：

Press to close the outer sponge to the edge of the Panel PC.

Front Bezel

Sponge with adhesive

Outer Sponge
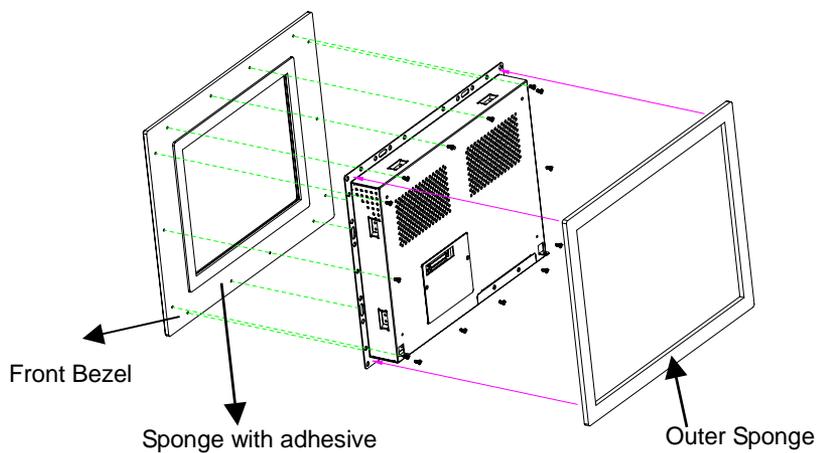
1.8 Exploded Diagram

OPD Series FRONT

Chapter

2
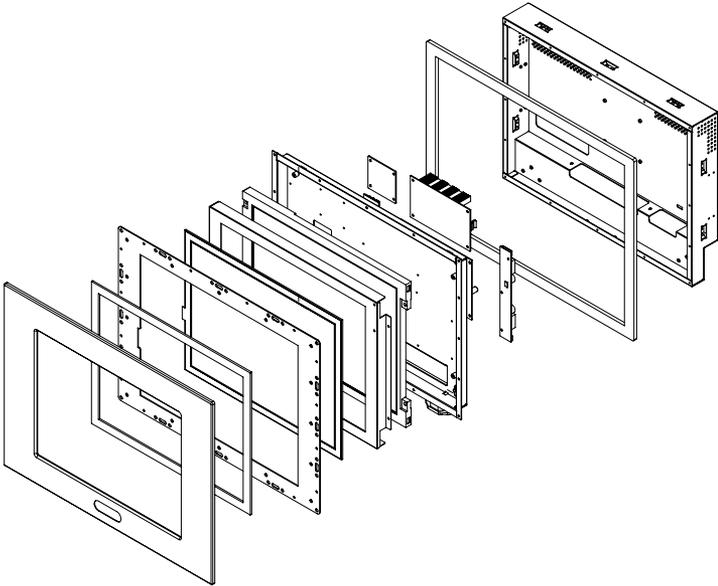
Hardware Installation

2.1 Before Unpacking

It is very important to locate the LCD monitor in a suitable environment.

●   The surface for placing the LCD monitor should be stable and level.

●   Make sure the place has good ventilation, and out of direct sunlight; away form sources of excessive dust, dirt, heat, water, moisture and vibration.

●   Convenience for connecting the LCD monitor to the related facilities should be well considered too.

2.2 Connecting Power

To power on the LCD monitor, use the provided AC-DC adapter and the power cord to connect to the power output socket of the monitor. Fasten the connections securely.

A "Surge Protection" device plugged between the AC-DC adapter and the wall outlet is recommended to prevent the effects of sudden current variations from reaching the LCD monitor. The sudden peaks of electricity may harm the LCD monitor.

2.3 Connecting to the Computer

● Turn off the computer and the LCD monitor before connecting them.

● Use the Monitor-to-PC VGA cable to connect the LCD monitor to your computer. The cable heads are the same on either side.

● Fasten the connections securely.
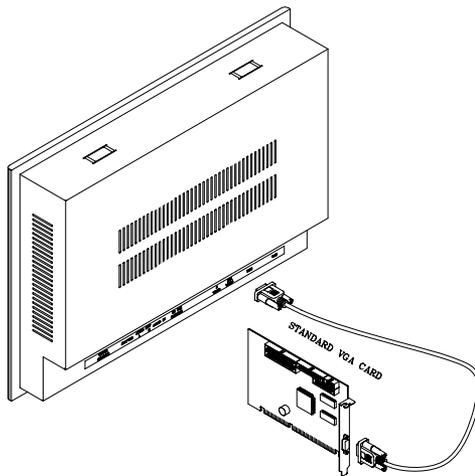
2.4 VGA Port Connector

It is a DB-15 VGA connector. The following table shows the pin-out assignments of this connector.
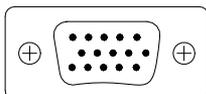
Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	N.C.
5	GND	6	GND
7	GND	8	GND
9	N.C.	10	GND
11	N.C.	12	SDA
13	HSYNC	14	VSYNC
15	SCL		

2.5 Serial Port Connector For Touch

It is a DB-9 COM Port connector. The following table shows the pin-out assignments of this connector.
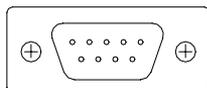
Pin	Signal	Pin	Signal
1	Not Used	2	RXD, Receive Data
3	TXD, Transmit Data	4	Not Used
5	GND, Ground	8	Not Used
4	Not Used	9	Not Used
5	Not Used	10	Not Used

2.6 Panel Mounting

These display panels can be placed on a shelf or table, or mounted onto the wall. To mount them onto the wall, you need the mounting brackets, which you will find in the accessory box. Follow the steps described below:

● Slide the display panel into cutout on the wall.

● Tighten the brackets until the display panel is firmly secured to the wall.

SPONGE   PANEL

MOUNT BRACKET

Sponge
Panel
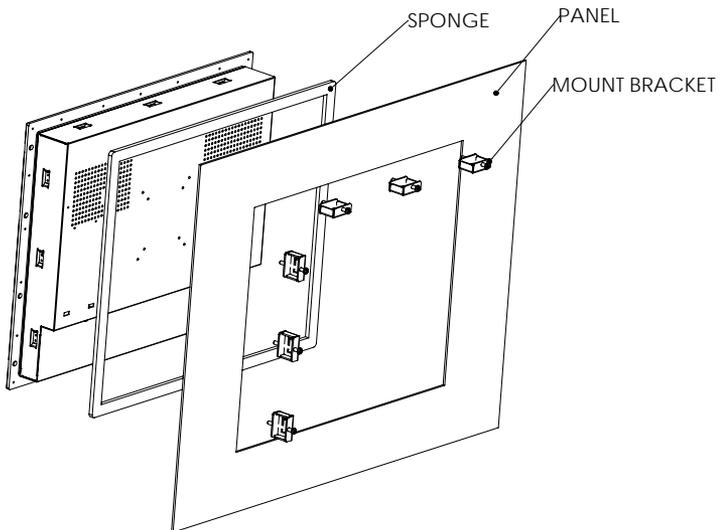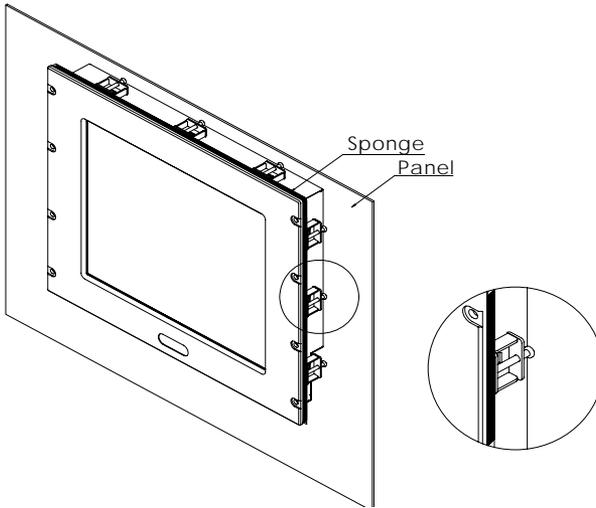
2.7 Rack Mounting (Optional)

Optional 19" rackmount frame is also available for all models.

Analog Rackmount

Chapter

3
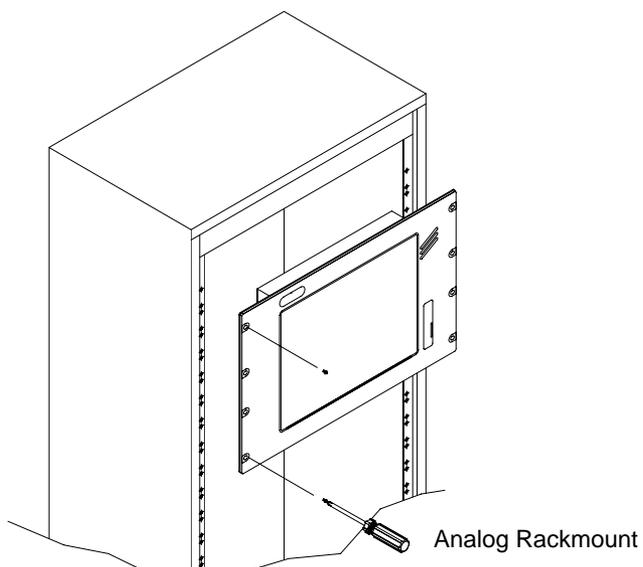
On Screen Display Control

3.1 On Screen Display (OSD) Control

The LCD monitor is very easy and simple to operate. There are five controls below on the rear panel. You can see their respective indicators.

AUTO   To auto adjust image position, pixel clock and phase. Whenever there is flicker happens, always press the AUTO button first.
The setting value will be automatically adjusted correctly and saved.

<u>Notice:</u>
The OPD series displays were designed to provide the best quality in 60-75MHz VGA frequency range. We recommend keeping the screen refresh rate within the range in order to obtain the optimum quality.

MENU   **Menu**

To activate the OSD Menu, press the Button. When locating an item you like to adjust in the OSD Menu, press to bring up the corresponding sub-menu for options.

▲   **Increase / Moving UP Button**

To move the locating cursor forward in the OSD Menu, press UP button. To increase the value while adjusting a parameter, press the ▲ button.

▼   **Decrease / Moving DOWN Button**

To move the locating cursor backward in the OSD Menu, press the ▼ button. To decrease the value while adjusting a parameter, press ▼ button.

⏻   **Power Switch**

Push up the Power Switch to turn on/off the LCD monitor backlight and the power LED will light up Green/Red.

Display Menu

There are twelve options in the OSD Menu. Press the Menu button to choose the items you would like to adjust.

<**Main Menu**>

ADB100A AAEON Inc

InputSource
PIP Enable
AutoTune
Brightness
Contrast
Color
Quality
Position
Language
Recall
Save Exit
Cancel Exit

<**Input Source**>

VGA
AVideo
SVideo
Return

Select PC or Composite Video Input Source

To scroll through items and locate for adjustment in each page, presses Menu button to select. The display will automatically shut down when there's no input source been selected.

Source input diagram

DC-in Jack   VGA   Video-in   S-Video   Touchscreen

(AVideo) (SVideo)

<**PIP enable**>

AVideo

SVideo

PIP Off

Return
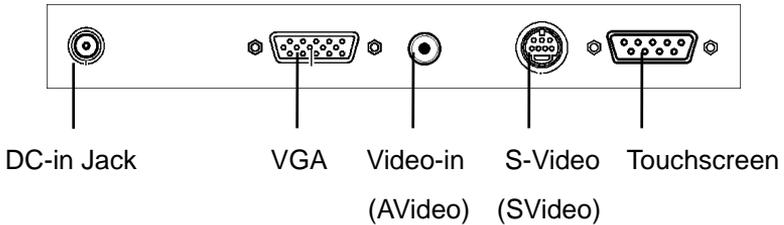
Picture-in-picture enable function allows you to view screen with VGA input and A-Video or S-Video sources at same time. Use up and down arrows to select major viewing source. Press Menu to enter your selection. The second input source window will be displayed on the bottom right corner.

Combinations are as follows:

VGA (main source) + A-Video (2nd source)
VGA (main source) + S-Video (2nd source)

Press Return to previous menu.

<AutoTune>

To automatically tune the display to the best image size, position and phase.

<Brightness>
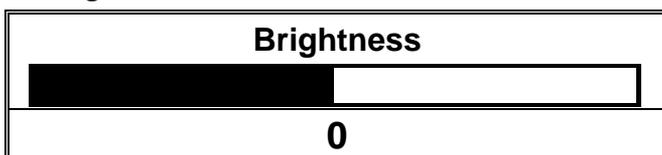
Brightness
0

To adjust the brightness level of the image, using up and down arrows
button.

<Contrast>

Contrast
35
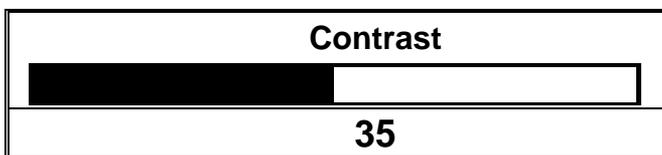
To adjust the difference between the light and dark areas, using up and down arrows button.

<Color>

9300
7500
6550
User
Return

9300: To set the color temperature to 9300K.

7500: To set the color temperature to 7500K.

6550: To set the color temperature to 6550K.

User: To set the RGB color temperature by user defines.

Press Return to previous menu.

<Quality>

ADV.   TUNE
Size
Phase
Text/Gfx
Sharpness
Return

ADV.   TUNE: To further tuning the image size, phase, and sharpness. **Please make use of this feature whenever the VGA input has been changed.**

Size: To expand the image of full screen or to shrink the image to normal (1piexl to 1piexl).

Phase: To adjusts the phase of pixel frequency. Use the function when there is a pixel noise.

Text/Gfx: To exchange to the text or graphic mode (Not for Windows OS).

Sharpness: To adjust sharpness of the image.

Press Return to previous menu.

<Position>

Image Pos.
OSD Pos.
Speed En.
Speed Adj.
Return

Image Pos.: To adjust the Horizontal & Vertical position of the image.

OSD Pos: To adjust the Horizontal & Vertical position of the OSD Menu.

Speed En. and Speed Adjust: To adjust OSD Menu display speed.

Press Return to previous menu.

<Language>

Only English is available.

<Recall>

When you run the function, the monitor will be setting to the last status of the saving value.

<Save Exit>

To save all setting value and exit.

<Cancel Exit>

To cancel all setting value and exit.

Hotkey Control

The Hot key control allows you to instant activate frequent use function without browsing OSD menu.

⏻ **+ AUTO**　　　After power on, press the **AUTO** button for 3 – 5 seconds, The monitor will reset the parameters to default value.

Chapter

4

Driver Installation

The first time you start Windows with a new monitor, the system will detect OPD display and automatically detect and install the Plug-and-Play device driver.

However, manual installation might be needed when your video card does not comply with DDC1/DDCB2 standard, the system can only detect Windows Default Monitor, not the OPD displays.

When your system detects Windows Default Monitor or cannot detect the display at all, follows the step-by-step installation guide below. The drivers for manual installation are provided in the supporting CD-ROM.

4.1 Display Driver Installation

Windows 98

1. Insert the supporting CD-ROM into your CD-ROM Driver.

2. Click "**Start**" button and look for "**Control Panel**" under "**Settings**" menu.
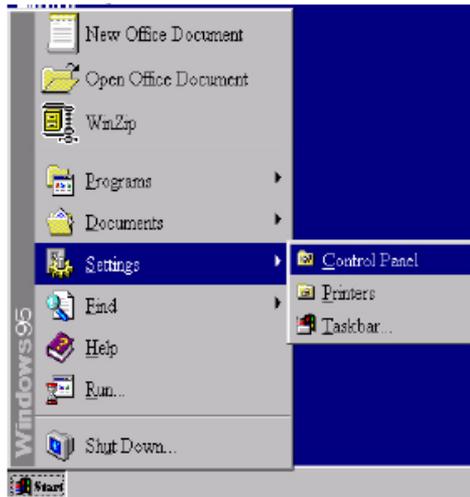
3.   Double click the "**display**" icon in the **control panel**.

4.   From the "**Display Properties**" window, select the
      "settings" tab. Click the "**Advanced Properties**" button
      on the bottom right corner.
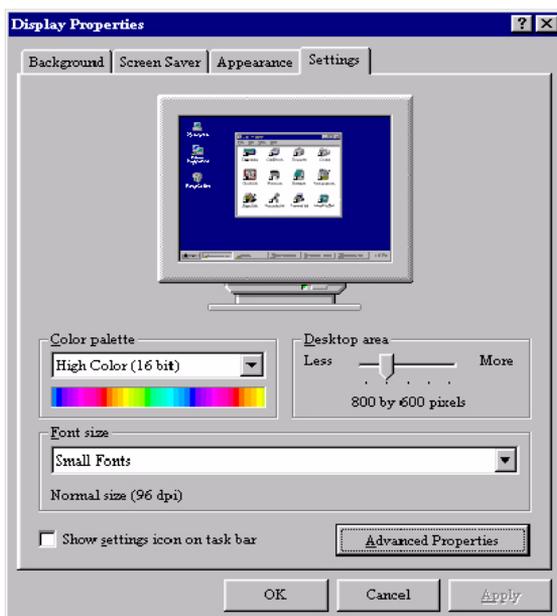
5. Select the "**Monitor**" tab.   Click the "**Change**" button in the top right corner.
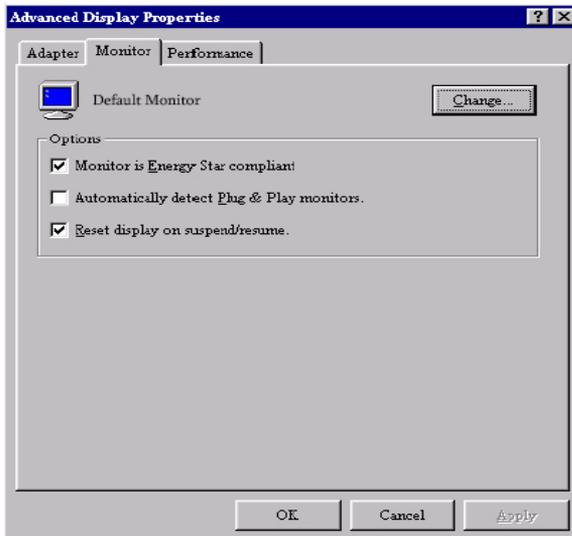
6. Now the "**Update Device Driver Wizard**" opens. Confirm by clicking "**Update".**

7. Select "**Display a list of all drivers in a specific location, so you can select the driver you want.**" and press "**Next**".

8. Now click the "**Have disk**" button in the bottom right corner. Another window appears, select the "**Browse**" button. Look for the ".inf" file extension for drivers update.
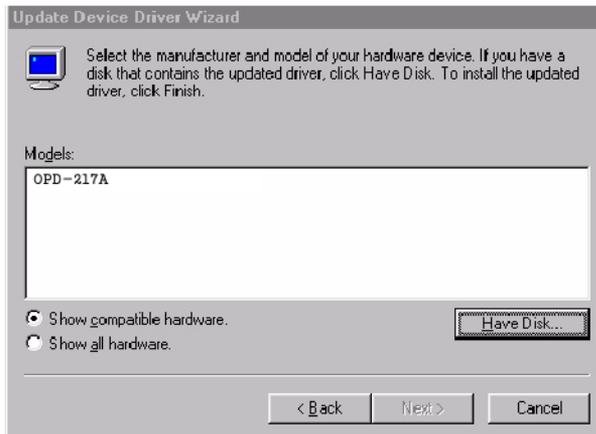
9.   Close "**Update Device Driver Wizard**" by click "Finish" to complete the installation.

Windows 2000

1.   Repeat steps 1 – 4 as in Windows 98 setup.

5.   Select the "Monitor" tab.   Click the "**Properties**" button.

6.   Select "**Driver**" tab then click "**Update Driver**".
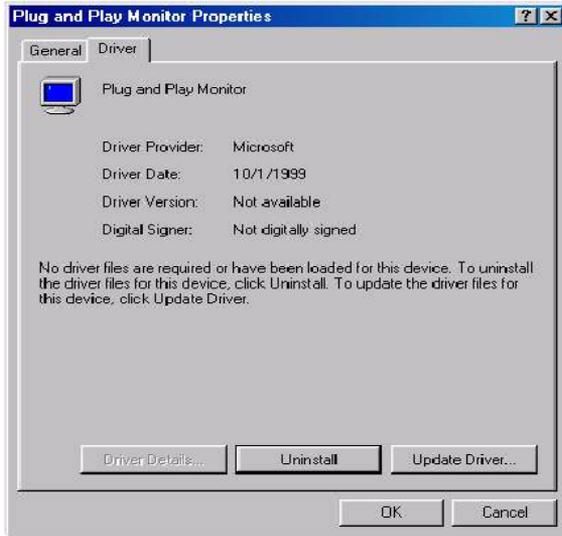
7.   The "**Upgrade Device Driver Wizard**" will pop up. Then Click "**Next**".

8.   The "**Upgrade Device Driver Wizard**" will pop up. Then Click "**Next**".

9.   In the next window, click "**Have Disk**", then "**Install From Disk**" window will pop up, click "**Browse**", the "**Located File**" will pop up. Look for the ".inf" file extension for drivers update
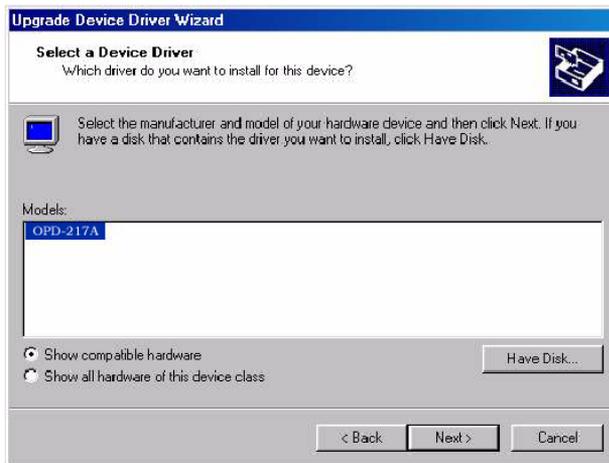
10. In the next window, click "**Have Disk**", then "**Install From Disk**" window will pop up, click "**Browse**", the "**Located File**" will pop up. Look for the ".inf" file extension for drivers update.


11. The **"Digital Signature Not Found"** window will appear, click **"Yes",** then click **"Finish".**
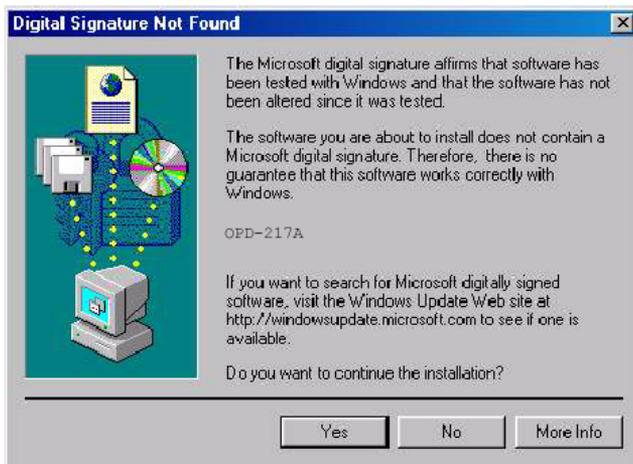
12. Now the new drivers are installed to your computer.

4.2 Touchscreen Driver Installation

For Touchscreen installation please refer to the excel file : **ReadMe_All-Prods-Touch-list.xls** to find out your match touscreen type and follow the installation guide in respective folders.

For the following models, please use the **Combo Tool kit** to install.

TF-OPD-212A-E1	TF-OPD-212AB-E1
TF-OPD-212ABT-E1	TF-OPD-212ABT-E2
TF-OPD-212AR-E1	TF-OPD-212ART-E1
TF-OPD-212AT-E1	TF-OPD-215A-F1
TF-OPD-215AB-F1	TF-OPD-215ABT-F1
TF-OPD-215AR-F1	TF-OPD-215ART-F1
TF-OPD-215AT-F1	TF-OPD-217A-F1
TF-OPD-217AB-F1	TF-OPD-217ABT-F1
TF-OPD-217AR-F1	TF-OPD-217ART-F1
TF-OPD-217AT-F1	
OPD-215AT-D1	OPD-215AT-D2
OPD-215ABT-D1	OPD-215ABT-D2
OPD-215ART-D1	OPD-215ART-D2
OPD-217AT-D1	OPD-217AT-E1
OPD-217ABT-D1	OPD-217ABT-E1
OPD-217ART-D1	OPD-217ART-E1

Appendix

A

Troubleshooting

A.1 Troubleshooting

To solve the following problems, you may need to refer to **Appendix A Standard Timing** for compatible display specifications.

● **Problem: Unclear or Unsteady Display**

Actions:

Activate the **AUTO** button. You might need to repeat   to find balanced values for a good quality.

If the **AUTO** button cannot solve the problem, try to manual fine tune following steps below:

1. If the image size does not fit the screen, adjust the **Size** setting value under "**Quality**" menu.

2. If there is image pixel noise appears,   adjust the **Phase** setting value under "**Quality**" menu. Pull and adjust the value bar to find out what is the best clarity range for your LCD display.

3. If the image is not centered after step 1 and 2, adjust **Image Position** under **"Position"** menu to center the image.

4. If you still have problem to fine-tune the image, call your local technical support for assistance.

● **Problem: No Display is shown on the LCD monitor.**

Actions:

1. Make sure the LCD monitor is powered on by checking if the Power LED is lit. Check if all the connections are secure and the system is running correctly.

2. If the power LED lights up green, but there is still nothing

displayed; connect your PC with another external monitor. If your PC works properly with that monitor, then it is possible that the VGA card timing of the system may be outside the LCD monitor's synchronous range. You may need a qualified technician for help.

● **Problem: "Not Supported Mode" is shown on the display.**

Action:

This could be a mistake you made in the OSD menu while choosing the INPUT SOURCE: RGB or VEDIO. Or, it is possible that you have chosen a timing that is outside the LCD monitor's synchronous range. Recall the factory default values may help to bring the screen back to normal.

● **Problem: The LCD monitor does not work properly under Windows, but it functions all right in DOS mode.**

Action:

Make sure the display mode you choose in Windows matches the LCD monitor.