

USER'S MANUAL

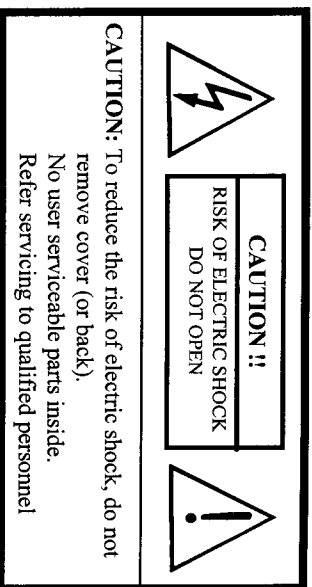
15" TFT LCD Monitor



Table of Contents

1. Caution and Warning.....	2
2. FCC Requirements.....	3
3. Product Safety Precautions.....	4
4. Introduction.....	5
5. Hardware Installation.....	6
5-1 Unpacking.....	6
5-2 Installation.....	6
5-3 Video Input Pin Assignment.....	9
6. The Display Timing.....	10
6-1 Applicable video timing.....	10
7. The Display Controls.....	12
7-1 Display Controls.....	12
7-2 Screen Adjustment Operation Procedure.....	13
8. The Screen Adjustment.....	14
8-1 Main Menu.....	14
8-2 How to use AUTO CONFIG	18
9. Troubleshooting Tips.....	19
10. Specification.....	20
11. ANNEX:Option.....	22

1. Caution and Warning



WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS MONITOR TO RAIN OR MOISTURE.

“HIGH VOLTAGE EXISTS ON THE BACK LIGHT POWER LEAD OF THIS MONITOR. BEFORE SERVICING, DETERMINE THE PRESENCE OF HIGH VOLTAGE BY CONNECTING THE H.V. METER BETWEEN THE BACK LIGHT POWER LEAD AND CHASSIS ONLY.”

2. FCC Requirements

[“]This device complies with part 15 of the 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.”

The equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict 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 harmful interference to radio or television 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 measure:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and the receiver.
 - Connect the equipment into 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.
- Shielded interconnected cables and shield power cords must be employed with this equipment to insure compliance with the pertinent RFD emission limits governing this device.

Changes or modifications no expressly approved by the manufacturer could void the user authority to operate the equipment.

Notice of Compliance with Canadian Interference-causing Equipment Regulations

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

3. Product Safety Precautions

Follow all warnings and instructions marked on the product.

Do not use this product near water.

This display should be installed on a solid horizontal base.

When cleaning, use only a neutral detergent cleaner with a soft damp cloth. Do not spray with liquid or aerosol cleaners.

Do not expose this display to direct sunlight or heat. Hot air may cause damage to the cabinet and other parts.

Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the display from overheating. Do not block ventilation slots and openings with objects or install the display in a place where ventilation may be hindered.

This display should be operated from the type of power source indicated on the AC/DC adapter.

Do not install this display near a motor or transformer where strong magnetism is generated. Images on the display will become distorted and the color irregular.

Do not allow metal pieces or objects of any kind fall into the display from ventilation holes.

Do not attempt to service this unit yourself. Removal of the display cover may expose you to dangerous voltage or other risks. Refer all servicing to qualified service personnel.

Unplug this product from the wall outlet and refer servicing to qualified service personnel in the event that:

1. Liquid is spilled into the product or the product is exposed to rain or water.
2. The product does not operate normally when the operating instructions are followed.
3. The product has been dropped or the cabinet has been damaged.
4. The product exhibits a distinct change in performance, indicating a need for service.
5. Power cord or plug is damaged or frayed.

4. Introduction

Welcome to enjoy the fantastic sightseeing world. This new technology will bring you the whole new feeling about the "monitor". We show here some of the major advantages of the LCD monitor. You will really find some other advantages when you use it.

1. The character of low radiation and less flicker reduce the probability of harm for your health compared to traditional CRT monitor.
2. The LCD monitor weights only 4.7 / 5.9 Kgs, and its compact size requires only minimal desktop space. These two merits make this monitor easier to be transported and can be used in nearly any environmental.
3. The LCD monitor operates on low power consumption level offering savings on power bills and the earth resources.
4. The special design of the LCD cabinet is both attractive and ergonomic.
5. The usage of the LCD monitor is the same as the CRT monitor. There is no need to change the hardware of your computer, just plug and play..

5. Hardware Installation

This chapter will guide you the correct installation procedures of your LCD monitor.

5-1. Unpacking

After you unpack your LCD Monitor, please make sure that the following items are included in the carton and in good condition. If you find that any of these items are damaged or missing, please contact your dealer immediately.

- ◆ One LCD Monitor mounted on its stand
- ◆ 15-pin D-sub Video cable
- ◆ AC/DC adapter with 12V DC output
- ◆ AC power cord
- ◆ The user manual

5-2. Installation

This analog LCD display **DOES NOT** require any special drivers. Necessary drivers are supplied by the video card manufacturer and may be found on the diskettes supplied with the video card that came with your computer. Windows 95 / 98 drivers for both the display and the video card are supplied on the Windows 95 / 98 CD or diskettes. Unfortunately, Microsoft did not provide a complete listing of the displays on the initial retail release. You may use the standard **XGA (1024X768)** as the display type. The video card must also be set up correctly in Windows 95 / 98 and make sure the video output of the VGA card is on list in Section 6.1 or check your Video Card manual or Windows 95 / 98 Read me file for further information on Video Card. After the question listed above is solved, we continue the setup procedure as below.

5. Hardware Installation

1. Turn power off both Computer and Display before making any connection.
2. Install Display on the solid horizontal surface such as a table or desk.
3. Connect the power cable and the AC/DC adapter, then connect adapter to the back of the LCD monitor.
4. The LCD monitor comes with a 15-pin to 15-pin video cable, you may use this cable for both IBM PC's & compatibles and Macintosh.

IBM PC's & COMPATIBLES

Use of the 15-pin to 15-pin connector cable: Connect one end of the signal cable to the 15-pin connector to the rear of the Display; and the other end to the 15-pin connector on the rear of the computer.

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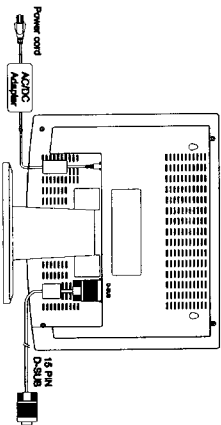
Use of the 15-pin to 15-pin connector cable: Connect one end of the signal cable to the 15-pin connector on the rear of the Display; connect a MAC adapter to the video connector on the rear of the AppleMacintosh computer. Then, plug the other end of the signal cable into the MAC adapter. (Contact your local Apple dealer for information on purchasing the correct conversion connector.)

5. Tighten the screws of the Display cable until the connectors are fastened securely.
6. Switch on power to the Display, then to the monitor.

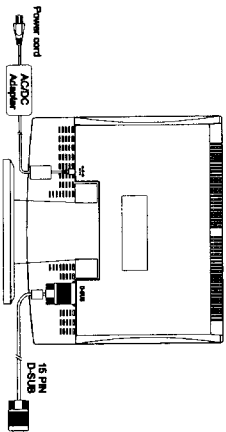
5. Hardware Installation

The following picture provides the connection outline

PD-70FA11 series



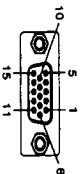
PD-70FA21 series



5. Hardware Installation

5-3. Video Input Pin Assignment

This section describes the pin assignment of the LCD's video connector. It is called 15 Pin Mini D-sub Connector.



Pin No.	Signal Connector
1	Red Video Signal
2	Green Video Signal
3	Blue Video Signal
4	N.C.
5	Ground
6	Ground for red video signal
7	Ground for green video signal
8	Ground for blue video signal
9	N.C.
10	Ground
11	N.C.
12	DDC data
13	Horizontal sync signal
14	Vertical sync signal
15	DDC clock

6. The Display Timing

6-1 Applicable video timing

The following table lists the better display quality modes that the LCD monitor provides. If the other video modes are input, the monitor will stop working or display unsatisfactory picture quality.

VESA MODES			
	Horizontal	Vertical	VCLK
Mode	Nominal Frequency +/- 0.5KHz	Nominal Frequency +/- 1 Hz	Nominal Pixel Clock (MHz)
DOS	720*400@70Hz 31.5KHz	70.0Hz	28.322MHz
	640*480@60Hz 31.5KHz	60.0Hz	25.175MHz
VGA	640*480@72Hz 37.9KHz	72.0Hz	31.500MHz
	640*480@75Hz 37.5KHz	75.0Hz	31.500MHz
	800*600@56Hz 35.2KHz	56.0Hz	36.000MHz
SVGA	800*600@60Hz 37.9KHz	60.0Hz	40.000MHz
	800*600@72Hz 48.0KHz	72.0Hz	50.000MHz
	800*600@75Hz 46.8KHz	75.0Hz	49.500MHz
	1024*768@60Hz 48.4KHz	60.0Hz	65.000MHz
	1024*768@70Hz 56.5KHz	70.0Hz	75.000MHz
XGA	1024*768@75Hz 60.0KHz	75.0Hz	78.750MHz

Table 6.1 Applicable video timing

6. The Display Timing

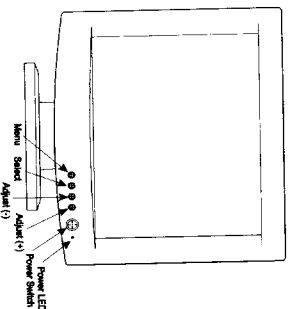
IBM MODES					
		Horizontal	Vertical		
Mode	Resolution	Total	Nominal Frequency +/- 0.5KHz	Nominal Frequency +/- 1Hz	Nominal Pixel Clock (MHz)
EGA	640*350@70Hz	800*449	31.469	70.086	25.175
CGA	640*400@70Hz		31.469	70.086	25.175
DOS	720*400@70Hz	900*449	31.469	70.087	28.322
VGA	640*480@60Hz	800*525	31.469	59.940	25.175
XGA	1024*768@72Hz		57.515	72.1	75.000
MAC MODES					
VGA	640*480@60Hz	800*525	31.469	59.940	25.175
	640*480@67Hz	864*525	35.000	66.667	30.240
SVGA	832*624@75Hz	1152*667	49.725	74.551	57.2832
XGA	1024*768@60Hz	1312*813	48.780	60.001	64.000
	1024*768@75Hz	1328*804	60.241	74.927	80.000

Table 6.2 Applicable video timing

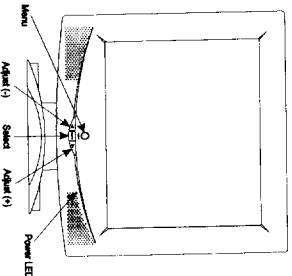
7. The Display Controls

7-1 Display Controls

PD-70FA11 series



PD-70FA21 series



1) MENU :

Enter or exit the OSD adjustment menu. It also Exit from the submenu back to previous menu.

2) SELECT:

To confirm the current selection.

3) ADJUST ▶ : (RIGHT)

To scroll up in menu or to increase value of selected item.

4) ADJUST ◀ : (LEFT)

To scroll down in menu or to decrease value of selected item

5) POWER SWITCH :

Pushing the power switch will turn the monitor on. Pushing it again to turn the monitor off.

5) POWER INDICATOR :

The LED will light with green color in normal on state, and will light with orange color in power saving mode.

7. The Display Controls

7-2 Screen Adjustment Operation Procedure

1) Entering the screen adjustment

The setting switches are normally at stand-by. Push the MENU button once to display the main menu of the screen adjustment. The adjustable items will be displayed in the main menu.

2) Entering the settings

Use the Adjust ◀ and Adjust ▶ buttons to select the desired setting icon and push the SELECT button to enter sub-menu.

3) Change the settings

After the sub-menu appears, use the Adjust ◀ and Adjust ▶ buttons to change the setting values.

4) Save

After finishing the adjustment, push the SELECT button to memorize the setting.

5) Return & Exit the main menu

To go back to the previous menu or exit the screen adjustment, push the MENU button. When no operation is done around 60 sec(default OSD timeout), it goes back to the stand-by mode and no more switching is accepted except MENU to restart the setting.

8. The Screen Adjustment

8-1 Main Menu

The OSD main menu (Figure 8-1) is displayed on screen when MENU key is pressed. The OSD menu is a combination of graphic and text display. The first line always shows the current selected or active menu item. The bottom line of main menu shows information of the input image.

The LEFT and RIGHT keys are used to scroll through items within the menu. The selected item is highlighted as the scrolling move along. The SELECT key is used to activate the highlighted item. During this state, MENU key is used to closed the OSD menu from the screen.

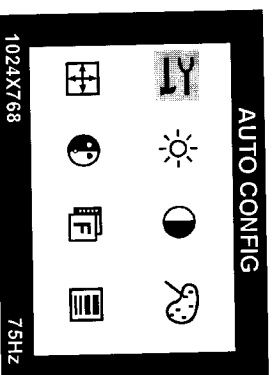


Figure 8-1

8. The Screen Adjustment

The OSD adjusting menu:

- **AUTO CONFIG**
The main menu item " AUTO CONFIG " is used to perform automatic configuration of the phase , clock , vertical and horizontal positioning. A confirmation box is displayed to confirm the user selection. The default selection in the box is " NO " and is highlighted by a yellow bar. If the MENU key is pressed, the main menu is re-displayed and nothing is changed. A message " Please Wait " is displayed after " YES " is selected and automatic configuration is started. After the process is completed successfully, a message " Completed " is displayed. Otherwise a message " Aborted " is displayed to indicate process failed.
- **BRIGHTNESS**
Setup the brightness of the panel.
- **CONTRAST**
The Contrast menu item is used to adjust image contrast.
- **COLOR**
The main menu item "COLOR" is a sub-menu which contains items to adjust the PC graphic imaging.
 - RED : The item "RED" is used to adjust the gain of red channel in ADC. A slider with current value is displayed.
 - GREEN : The item "GREEN" is used to adjust the gain of green channel in ADC. A slider with current value is displayed.
 - BLUE : The item "BLUE" is used to adjust the gain of blue channel in ADC. A slider with current value is displayed.
- **POSITION**
Setup the image position within the panel. There are three items : H-POSITION , V-POSITION & AUTO.
 - H-POSITION : H-Position is used to adjust the horizontal image position manually. A slider with current value is displayed.

8. The Screen Adjustment

-V-POSITION : V-Position is used to adjust the vertical image position manually. A slider with current value is displayed.

-AUTO : Auto is used to center the image automatically. Both horizontal and vertical position are adjusted such that the image is centered on the panel. A confirmation box A confirmation box is displayed to confirm the user selection. The default selection in the box is " NO " and is highlighted by a yellow bar. If the MENU key is pressed, the main menu is re-displayed and nothing is changed. A message " Please Wait " is displayed after " YES " is selected and automatic configuration is started. After the process is completed successfully, a message " Completed " is displayed. Otherwise a message " Aborted " is displayed to indicate process failed.



IMAGE

Configure the image frequency. There are three items : PHASE · CLOCK & AUTO PHASE.

-PHASE : Reduce horizontal stripes in the screen image.

-CLOCK : Reduce vertical stripes in the screen image.

-AUTO PHASE : Auto Phase is used to start the automatic phase adjustment algorithm, which determines the best phase setting automatically. A confirmation box is displayed to confirm the user selection. The default selection in the box is " NO " and is highlighted by a yellow bar. If the MENU key is pressed, the main menu is re-displayed and nothing is changed. A message " Please Wait " is displayed after " YES " is selected and automatic configuration is started. After the process is completed successfully, a message " Completed " is displayed. Otherwise a message " Aborted " is displayed to indicate process failed.



VIDEO MODES

Video Modes is used to select a video mode which cannot be detected automatically. There are two sets of video modes displayed (For VESA or MAC standard).



MISC MENU

Miscellaneous setting. There are five items : RESET · PANEL COLOR · OSD TIMEOUT · OSD POSITION & SYSTEM INFO.

-RESET : Reset is used to reload all factory default parameters.

8. The Screen Adjustment

-PANEL COLOR : The user may select **STANDARD** or **ENHANCED** panel settings, depending on panel specifications. This function is used for expanding the displayable colors from 260,000 to true color (16 million).

-OSD TIMEOUT : The item "OSD Timeout" is used to setup the OSD idle timeout. If no active action, key press or automatic configuration for a defined period, the OSD menu will be closed.

-OSD POSITION : The item is used to setup the OSD menu position. The item "OSD Position" is used to setup the OSD menu position. The OSD menu horizontal and vertical position is adjusted separately. Each position adjustment item will bring up the slider window. The maximum value of the sliders are based on the size of the OSD menu.

-SYSTEM INFO : The system info menu provides the user with detailed information regarding the current input format and version (VERSION · V-FREQ · H-FREQ · PIXELCLK · WIDTH & HEIGHT).

Note:

If you don't press any key during 15 ~ 60 seconds, the OSD will disappear by itself and not save the parameters.

8. The Screen Adjustment

8-2 How to use AUTO CONFIG Adjustment

This function can tune the parameters of **PHASE** - **CLOCK** - **H-POSITION** and **V-POSITION**.

Suggesting Adjustment Steps :

Step 1: Enter the Windows 95 / 98 Shut-down frame. (Note : The **Wallpaper** color CAN NOT be black.)

Step 2: Enter OSD Main Menu and Choose the 'AUTO CONFIG' item, then press **SELECT** key. The Picture will auto-adjust by itself. After 4 seconds, you can exit OSD and Shut-down frame.

Step 3: If you are not still satisfied with the picture quality, you could choose **CONTRAST** item in OSD Main Menu and adjust it.

Note:

1. If you don't like the effect of AUTO CONFIG adjustment, you can adjust **PHASE**, **CLOCK**,.... items in OSD.
2. AUTO CONFIG adjustment can be used in Windows 95 / 98 except black background frame, but the best effect is in the **SHUT DOWN** frame.
3. It is recommend to run "EDIT" program first, then do AUTO CONFIG adjustment in DOS mode.

9. Troubleshooting Tips

In the event that you experience trouble with your Display, check the following items before contacting the dealer from whom the Display was purchased. The most common problems usually involve an incorrectly an incorrect connection from the Video Card to the Display. We recommend that you also consult your Video Card User's manual during the Troubleshooting Procedure. Do not exceed the maximum refresh rate recommended for the display.

Problem	Troubleshooting Tip
No image on display screen	<ol style="list-style-type: none">1. Check that power cord of the Computer has been connected securely into wall outlet or grounded extension cable or strip.2.Check that power switch of the Display has been pressed and LED on the front of Display is lit.3.Check that Video (Signal) Cable from the Display has been securely and correctly connected.4.Check that Video Card is firmly seated in card slot of Computer motherboard.5.Check that the video input from the Video Card falls within the timing range (listed in the table of section 6) of the Display.

Abnormal Image.	<ol style="list-style-type: none">1.Check that the video input from the Video Card falls within the timing range (listed in the table of section 6) of the Display.2. Check that Video (Signal) Cable from the Display has been securely and correctly connected to the Video Connector at the rear side of the Computer.
Colors of image on screen are abnormal	<ol style="list-style-type: none">1. Check that Video (Signal) Cable from the displays has been securely and correctly connected to the 15-pin Video Connector at the rear side of the computer.
Disturbances on Screen	<ol style="list-style-type: none">1. OSD adjustment is incorrect. Please consult section 7 for OSD screen adjustment procedures.

10. Specification

Model	PD-70FA11
LCD panel type	Sharp 15.0" TFT
Resolution	XGA 1024X768 Max.
Pixel dimension	0.297 mm(H) x 0.297 mm (V)
LCD display color	262,144 Colors max.(18 Bit)
OSD control	Auto Config, Brightness, Contrast, Color, Position, Image, Video Modes, Misc Menu
Manual control	Menu, Select, Adjust (◀ ▶), Power.
Viewing angle	H : ± 70° max. V : ± 60° max.
Tilt	+30°, -5°
Contrast ratio	300 : 1 typ.
Brightness	200 cd/m ² Typ.
Response time	Rise : 10ms typ. ; Decay : 35ms typ.
Active display area	304.1 mm(H) x 228.1mm(V)
AC/DC adapter	Input : AC 100 ~ 240V, 50 ~ 60Hz Output : +12 V DC.
Input signal	Video : Analog 0.7 Vp-p, 75 ohms Sync. : TTL Level, Positive/Negative, Separate Sync.
Input connector	15 Pin D-Sub.
Power management	VESA DPMS Compatible
Regulation	Safety : UL, CSA, CE, TÜV/GS EMI : FCC-B
Dimensions	34 cm(W) x 32.5 cm(H) x 16.6 cm(D).
Weight	4.7 Kgs. (LCD Module only)
Accessory	VGA cable, AC/DC adapter, power cord.
Temperature	Operation : 0 ~ 40°C Storage : -25 ~ 60°C
Plug & Play	DDC 2B

10. Specification

Model	PD-70FA21
LCD panel type	Sharp 15.0" TFT
Resolution	XGA 1024X768 Max.
Pixel dimension	0.297 mm(H) x 0.297 mm (V)
LCD display color	262,144 Colors max.(18 Bit)
OSD control	AUTO CONFIG, Brightness, Contrast, Color, Position, Image, Video Modes, Misc Menu
Manual control	Menu, Select, Adjust (◀ ▶), Power.
Viewing angle	H : ± 70° max. V : ± 60° max.
Tilt	+30°, -5°
Contrast ratio	300 : 1 typ.
Brightness	200 cd/m ² Typ.
Response time	Rise : 10ms typ. Decay : 35ms typ.
Active display area	304.1 mm(H) x 228.1mm(V)
AC/DC adapter	Input : AC 100 ~ 240V, 50 ~ 60Hz Output : +12 V DC.
Input signal	Video : Analog 0.7 Vp-p, 75 ohms Sync. : TTL Level, Positive/Negative, Separate Sync.
Input connector	15 Pin D-Sub.
Power management	VESA DPMS Compatible
Dimensions	34 cm(W) x 32.5 cm(H) x 16.6 cm(D).
Weight	5.8 Kgs. (LCD Module only)
Accessory	VGA cable, AC/DC adapter, power cord.
Temperature	Operation : 0 ~ 40°C Storage : -25 ~ 60°C
Plug & Play	DDC 2B

11. ANNEX : Option

- Touch screen upgradeable
- Internal 2Wx2 Speaker / 1 microphone (only PD-70FA21)
- External earphone / microphone connector (only PD-70FA21)
- Volume tuner (only PD-70FA21)

- A.  Earphone
- B.  MIC. Microphone(built-in)
- C.  Volume Control

