

TFT LCD Monitor  
High resolution

TFT LCD Monitor  
High resolution

*U90D*

***U90D***

User's Reference



# Contents

## FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the 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 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 more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and 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.
- Only shielded interface cable should be used.

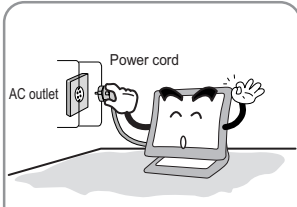
Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the user's authority to operate such equipment.

- 1. Precautions ..... 2
- 2. Items ..... 4
- 3. Setting up the LCD monitor ..... 5
  - How to connect the power cord and the several cables to the LCD monitor. .... 5
  - Plug & Play ..... 5
  - Warm-up Time ..... 5
- 4. Adjusting The Monitor ..... 6
  - How to use the Function Key. .... 6
  - Main OSD Menu ..... 6
  - PICTURE ..... 7
  - COLOR ..... 7
  - OSD ..... 7
  - MISC ..... 7
  - MWE ..... 7
- 5. Appendix ..... 8
  - Display Modes ..... 8
  - 15-pin D-Sub Connector ..... 9
  - DVI-D Connector ..... 9
  - Power Saver ..... 10
- 6. Troubleshooting ..... 11

# 1

## Precautions

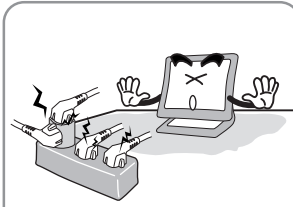
**Warning** : The following information will help you avoid the risk of electric shock, serious injury, and death.



Plug the power cord into a properly grounded outlet. There is the risk of electric shock.



If you hear a noise or smell smoke from the computer or adaptor, unplug the power cord immediately, and call the service center. There is the risk of electric shock or fire.



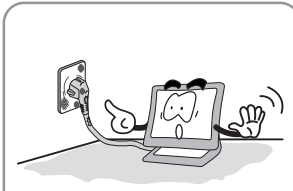
Do not overload an electrical outlet with too many devices. There is the risk of fire.



Do not unplug from the outlet by pulling the power cord or when your hands are wet. There is the risk of electric shock and fire.



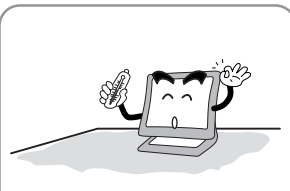
Do not bend the power cord excessively or place heavy objects on it. Keep children and pets away from the power cord as they may damage the power cord. There is the risk of electric shock and fire.



Do not use a damaged power cord or plug. Make sure the plug fits snugly into the outlet. There is the risk of electric shock or fire.

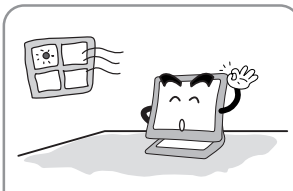


Do not expose the monitor to the direct sun light.



Keep the monitor away from high temperature, humidity, and dust.

- Operating environment =0~35degrees Celsius
- Operating environment =30~80relative humidity.



Do not block the fan louvers. There is the risk of fire or damage to the monitor.

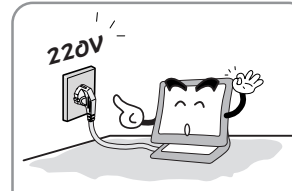


Do not allow any object or liquid to enter inside the monitor. There is the risk of electric shock, fire, or damage to the monitor.

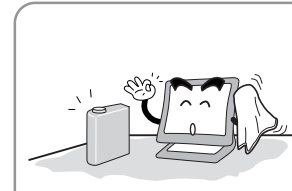


Do not attempt to disassemble, fix, or modify the monitor. There is the risk of electric shock or fire.

**Caution** : The following information will help you avoid the risk of minor or moderate injury, or damage to the monitor.



Use a proper voltage/current level indicated



Do not clean the LCD with abrasive chemicals. There is the risk of damage to the LCD.



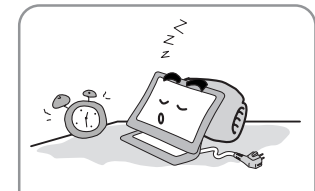
Do not scratch and damage the LCD with sharp objects.



Keep the monitor away from objects and electrical appliances that may generate electromagnetic fields.



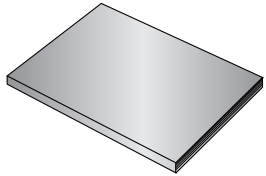
Place the monitor on a flat, stable surface. The monitor may fall and there is the risk of damage or injury



Unplug the power cord when the monitor is not in use for a prolonged period of time.

## 2

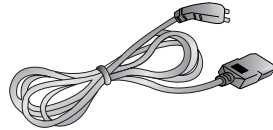
### Items



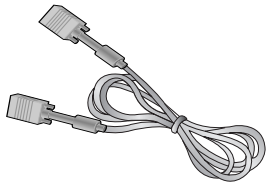
User Manual



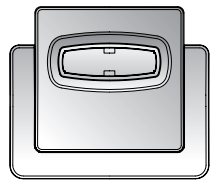
LCD Monitor



Power cord



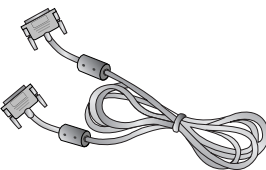
15-pin D-Sub Signal Cable



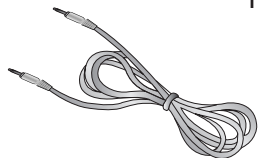
Stand



※ Push the hook until hanging



DVI-D Cable (Option)



Audio Cable

\*1

\*1 : For Audio Model Only.



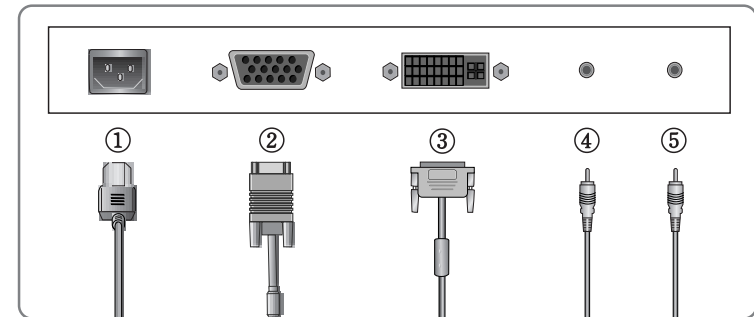
#### Notice

Please make sure the following items are included with your monitor.  
If any items are missing, contact your dealer.

## 3

### Setting up the LCD monitor

How to connect the power cord and the several cables to the LCD monitor.



| No. | Name         | Cable connections         |
|-----|--------------|---------------------------|
| 1   | Power        | Power Cord                |
| 2   | PC           | 15-pin D-Sub Signal Cable |
| 3   | DVI (Option) | DVI-D Cable*1             |
| 4   | SPK IN       | Audio Cable*2             |
| 5   | SPK OUT      | External Speaker Cable*2  |

\*1 : For DVI Model Only.

\*2 : For Audio Model Only.

#### Plug & Play

The adoption of the new VESA Plug and Play solution eliminates complicated and time consuming setup. It allows you to install your monitor in a Plug and Play compatible system without the usual hassles and confusion. Your PC system can easily identify and configure itself for use with your display. This monitor automatically tells the PC system its Extended Display Identification Data (EDID) using Display Data Channel (DDC) protocols so the PC system can automatically configure itself to use the flat panel display.

#### Warm-up Time

All LCD monitors need time to become thermally stable whenever you turn on the monitor after letting the monitor be turned off for a couple of hours. Therefore, to achieve more accurate adjustments for parameters, allow the LCD monitor to be warmed up for at least 30 minutes before making any screen adjustments.

### How to use the Function Key.

MENU : 1. First click : The OSD main menu appears.  
2. Second click : The OSD menu disappears.

AUTO : When you push Auto button, this will optimize image quality automatically.

MODE : You can change the display mode. (PC ↔ DIGITAL)\*1

MUTE : Sound Mute On/Off button.\*2

Power : Power On/Off toggle button.

SEL : Select a command function.

▼ : 1. Move the on-screen highlighted command item to the next one.  
2. Decrease the current option value.

▲ : 1. Move the on-screen highlighted command item to the Previous one.  
2. Increase the current option value.

VOL : You can adjust the volume.\*2

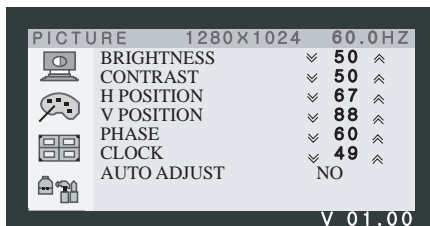
MWE : You can manually adjust the screen to your environment on the computer.  
Ex) Internet, Games, Movies...

\*1 : For DVI Model Only.

\*2 : For Audio Model Only.

### Main OSD Menu

When you push the menu button, you can see below main OSD menu.



### PICTURE

- BRIGHTNESS : Changes the overall light intensity of the images being displayed.
- CONTRAST : Changes the ratio of light intensity between the brightest white and darkest black.
- H POSITION : Moves to the Left/Right.\*1
- V POSITION : Moves to the Top/Bottom.\*1
- PHASE : When image is not clear, you can use clock/phase menu.\*1
- CLOCK : When image is not clear, you can use clock/phase menu.\*1
- AUTO ADJUST : You can select "AUTO ADJUST", this will optimize image quality automatically.\*1

\*1 : For Analog Mode Only.

### COLOR

Color adjustment needs to be only for Analog mode.

- COLOR : There are user, bluish and reddish modes.  
In case user has to set up "RED", "GREEN", "BLUE" in person, please select user mode.
- RED, GREEN, BLUE : You can adjust red, green and blue values that you want.
- AUTO COLOR : Automatic adjust color(white level) for various input sources white level.

### OSD

- OSD H POSI : Moves the OSD menu to the horizontal direction.
- OSD V POSI : Moves the OSD menu to the vertical direction.
- OSD TIMER : Shows the OSD Time displays from 10 to 40 sec.
- TRANSPARENCY : You can adjust OSD Transparency.

### MISC

- LANGUAGE : Selects language in OSD menu.
- RECALL : Discards current setting and replaced all parameters with the factory default values.
- INPUT SELECT : You can change the display mode.(Analog ↔ Digital)
- AUDIO : Sound Mute On/Off function.\*2
- VOLUME : You can adjust the volume.\*2

Notice : The first set-up was done when the goods are released from the factory.  
After finishing the first set-up, please press Auto and optimize the screen.

\*2 : For Audio Model Only.

### MWE

When you press MWE button, you can get into the following picture.

- ENTERTAIN : Movies, Video games
- TEXT : Documents
- INTERNET : Internet
- NORMAL : Normal

## Display Modes

| Mode | Resolution  | Horizontal Frequency(KHz) | Vertical Frequency(Hz) | Pixel Clock Frequency(MHz) | Sync Polarity(H/V) |
|------|-------------|---------------------------|------------------------|----------------------------|--------------------|
| VGA  | 720 X 400   | 31.468                    | 70.087                 | 28.322                     | -/+                |
|      | 640 X 480   | 31.468                    | 59.940                 | 25.175                     | -/-                |
|      |             | 35.000                    | 66.670                 | 30.240                     | -/-                |
| SVGA | 800 X 600   | 37.879                    | 60.300                 | 40.000                     | +/+                |
|      |             | 48.077                    | 72.188                 | 50.000                     | +/+                |
|      |             | 46.875                    | 75.000                 | 49.500                     | +/+                |
| XGA  | 1024 X 768  | 48.363                    | 60.004                 | 65.000                     | -/-                |
|      |             | 56.476                    | 70.000                 | 75.000                     | -/-                |
|      |             | 60.023                    | 75.029                 | 78.750                     | +/+                |
| SXGA | 1280 X 1024 | 63.981                    | 60.020                 | 108.000                    | +,-/+,-            |
|      |             | 79.976 *1                 | 75.025 *1              | 135.000 *1                 | +/+ *1             |
|      |             |                           |                        |                            |                    |

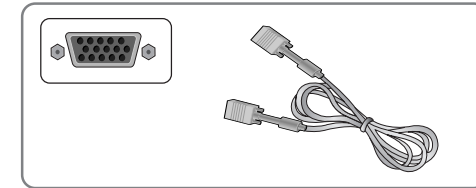
※ The optimal resolution is 1280 × 1024@60Hz

\*1 : For Analog Model Only.

## 15-pin D-Sub Connector

- Input signal : Analog RGB
- 15-pin D-Sub connector

| Pin No. | Signal Name        | Pin No. | Signal Name         | Pin No. | Signal Name     |
|---------|--------------------|---------|---------------------|---------|-----------------|
| 1       | Analog Red Input   | 6       | Analog Red Ground   | 11      | Ground          |
| 2       | Analog Green Input | 7       | Analog Green Ground | 12      | DDC Data        |
| 3       | Analog Blue Input  | 8       | Analog Blue Ground  | 13      | Horizontal Sync |
| 4       | Ground             | 9       | No Connect          | 14      | Vertical Sync   |
| 5       | DDC Ground         | 10      | Sync Ground         | 15      | DDC Clock       |

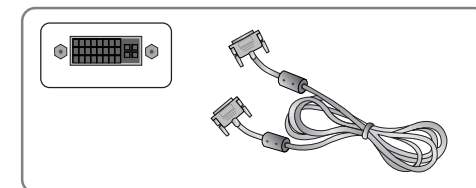


15-pin D-Sub Signal Cable

## DVI-D Connector

- Input signal : Digital
- DVI-D Connector

| Pin No. | Signal Name          | Pin No. | Signal Name | Pin No. | Signal Name |
|---------|----------------------|---------|-------------|---------|-------------|
| 1       | TMDS DATA2-          | 9       | TMDS DATA1- | 17      | TMDS DATA-  |
| 2       | TMDS DATA2+          | 10      | TMDS DATA1+ | 18      | TMDS DATA+  |
| 3       | DGND                 | 11      | DGND        | 19      | DGND        |
| 4       | NC                   | 12      | NC          | 20      | NC          |
| 5       | NC                   | 13      | NC          | 21      | NC          |
| 6       | DDC CLOCK            | 14      | +5V POWER   | 22      | DGND        |
| 7       | DDC DATA             | 15      | AGND        | 23      | TMDS CLOCK+ |
| 8       | Analog vertical Sync | 16      | NC          | 24      | TMDS CLOCK- |



DVI-D Cable

### Power Saver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods.

| State | Power consumption | Recovery Time | LED Color |
|-------|-------------------|---------------|-----------|
| ON    | Under 40W         | –             | Green     |
| OFF   | Less than 2W      | Within 2 sec  | Amber     |

| What you see   | Suggested Actions   |
|--|---|
| Screen is blank and power indicator is off   | Ensure that the power cord is firmly connected and the LCD monitor is on.   |
| “VIDEO MODE NOT SUPPORTED” message   | <ul style="list-style-type: none"> <li>• Check the maximum resolution and the frequency of the video adaptor.</li> <li>• Compare these values with the data in the Display Modes Timing Chart.</li> </ul>   |
| “NO SIGNAL” message  | <ul style="list-style-type: none"> <li>• Ensure that the signal cable is firmly connected to the PC or video sources.</li> <li>• Ensure that the PC or video sources are turned on.</li> </ul>  |
| Image is not stable and may appear to vibrate  | <ul style="list-style-type: none"> <li>• Check that the display resolution and frequency from your PC or video board is an available mode for your monitor. On your computer check : Control Panel, Display, Settings</li> <li>• Note : Your monitor supports multiscan display functions within the following frequency domain:</li> </ul> |
| The image is too light or too dark   | <ul style="list-style-type: none"> <li>• Adjust the Brightness and Contrast.</li> <li>• Refer to the Brightness/Contrast</li> </ul>   |
| The image color is not good  | <ul style="list-style-type: none"> <li>• Adjust the Color</li> <li>• Refer to the Color</li> </ul>  |
| Image is not centered on the screen  | <ul style="list-style-type: none"> <li>• Executes Auto Adjustment.</li> </ul>   |
| Screen is blank and power indicator light is steady amber or blinks every 0.5 or 1 seconds | <ul style="list-style-type: none"> <li>• The monitor is using its power management system.</li> <li>• Move the computer’s mouse or press a key on the keyboard.</li> </ul>  |

## Appendix A. Specifications

| MODE                        |                           | Analog   | Digital          |
|-----------------------------|---------------------------|--|------------------|
| Panel                       | Type                      | TFT active matrix                                |                  |
|                             | Size                      | 19 inch  |                  |
|                             |                           | 376.32 × 301.056(mm)                             |                  |
|                             | Pixel Pitch               | 0.294 × 0.294(mm)                                |                  |
| Display Color               | 8-bit (16,777,216 colors) |  |                  |
| Display Resolution          | Basic                     | 1280 × 1024@60Hz                                 |                  |
|                             | Maximum                   | 1280 × 1024@75Hz                                 | 1280 × 1024@60Hz |
| Frequency                   | Horizontal                | 31.5 ~ 80KHz                                     | 31 ~ 64KHz       |
|                             | Vertical                  | 56 ~ 75Hz  | 59 ~ 61Hz        |
| Connectors                  |                           | 15-pin D-Sub Connector                           | DVI-D Connector  |
|                             |                           | Speaker Input / Headphone Output (Audio Cable)*1 |                  |
| Tilting Degree (U/D)        |                           | -5° ~ 25° Degree                                 |                  |
| Plug&Play                   |                           | VESA DDC 1/2B                                    |                  |
| Power                       | Input                     | Internal type : 100~240VAC, 50/60Hz, 0.7A        |                  |
|                             | Consumption               | Under 40W  |                  |
|                             | Standby mode              | 2W less  |                  |
| Power Management            |                           | Power Saver                                      |                  |
| Environmental Consideration | Temperature               | 0~35°C (32° F~95° F)                             |                  |
|                             | Humidity                  | 90% less   |                  |
| Dimensions                  | Outside                   | 426mm(W) × 193mm(H) × 406mm(D)                   |                  |
| Weight                      | Monitor                   | 5.0Kg  |                  |
|                             | Carton                    | 1.5Kg  |                  |

\*1 : For Audio Model Only.

※ The specification of this monitor is subject to be changed without notice to improve performance.

## English



### Disposal of Used Electrical & Electronic Equipment

The meaning of the symbol on the product, its accessory or packaging indicates that this product shall not be treated as household waste. Please, dispose of this equipment at your applicable collection point for the recycling of electrical & electronic equipments waste. In the European Union and Other European countries which there are separate collection systems for used electrical and electronic product. By ensuring the correct disposal of this product, you will help prevent potentially hazardous to the environment and to human health, which could otherwise be caused by unsuitable waste handling of this product. The recycling of materials will help conserve natural resources. Please do not therefore dispose of your old electrical and electronic equipment with your household waste. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.