

TFT LCD Monitor  
High resolution

TFT LCD Monitor  
High resolution

HL220WS/HL220WD/HL220WA

***HL220WS/HL220WD/HL220WA***

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.

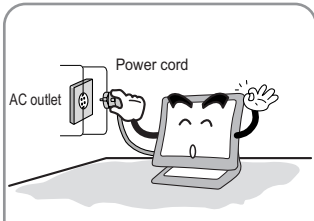
Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the users authority to operate such equipment.

- 1. Precautions ..... 2
- 2. Items ..... 4
  - Setting up the LCD monitor ..... 5
  - Plug & Play ..... 5
  - Warm-up Time ..... 5
- 3. How to use the Function Key ..... 6
- 4. Adjusting The Monitor ..... 7
  - PICTURE ..... 7
  - COLOR ..... 7
  - OSD ..... 7
  - MISC ..... 8
  - MWE ..... 8
- 5. Appendix ..... 9
  - Display Modes and frequency ..... 9
  - Power Save ..... 9
- 6. Troubleshooting ..... 10

# 1

## Precautions

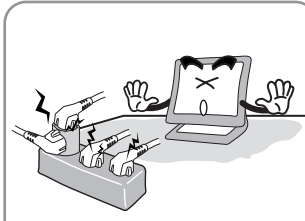
**Warning** : The following information will help you avoid the risk of electric shock, serious injury, and death.



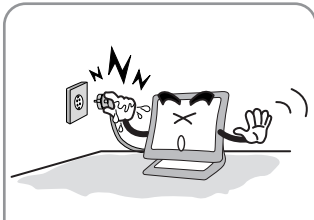
Plug the power cord into a properly grounded outlet. There is the risk of electric shock.



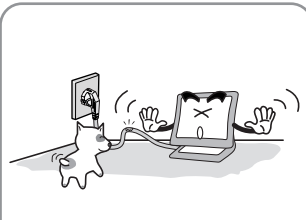
If you hear a noise or smell smoke from the computer or adaptor, unplug the power cord immediately, and call the service center. There is the risk of electric shock or fire.



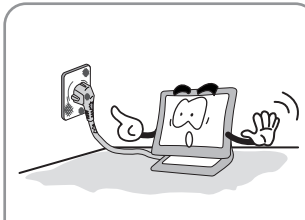
Do not overload an electrical outlet with too many devices. There is the risk of fire.



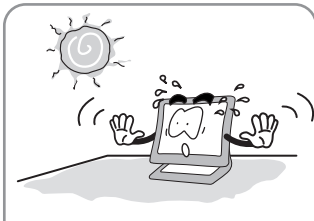
Do not unplug from the outlet by pulling the power cord or when your hands are wet. There is the risk of electric shock and fire.



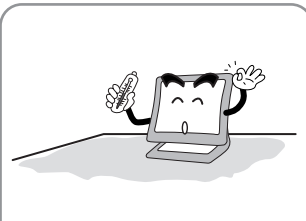
Do not bend the power cord excessively or place heavy objects on it. Keep children and pets away from the power cord as they may damage the power cord. There is the risk of electric shock and fire.



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.

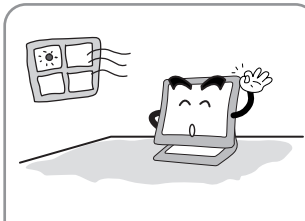


Do not expose the monitor to the direct sun light.



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

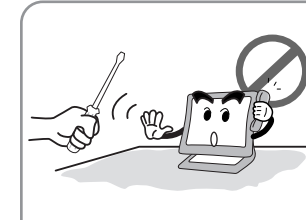
- Operating environment =0~25degrees Celsius
- Operating environment =30~80relative humidity.



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

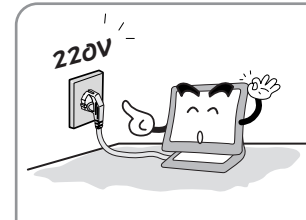


Do not allow any object or liquid to enter inside the monitor. There is the risk of electric shock, fire, or damage to the monitor.

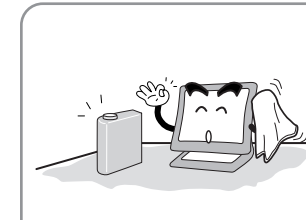


Do not attempt to disassemble, fix, or modify the monitor. There is the risk of electric shock or fire.

**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.



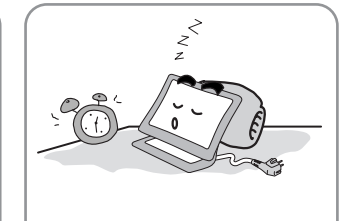
Do not scratch and damage the LCD with sharp objects.



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



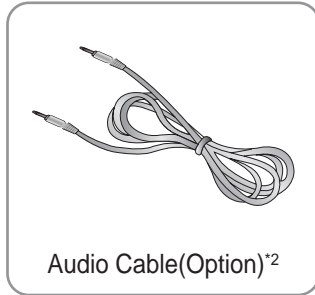
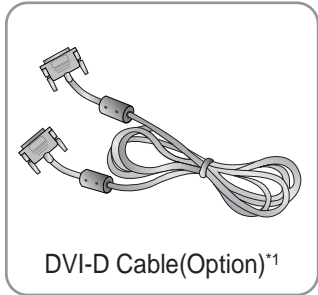
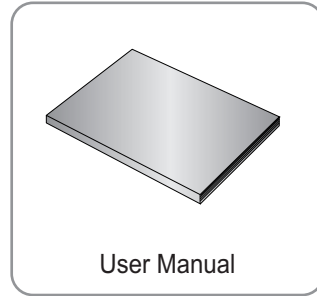
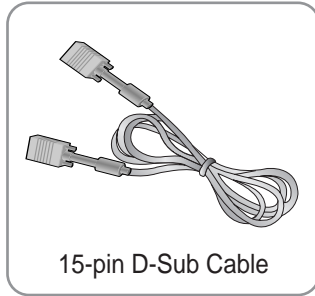
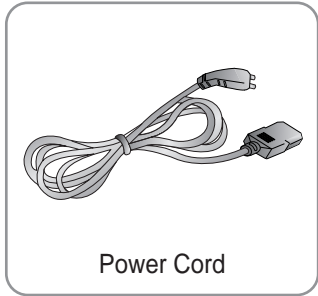
Place the monitor on a flat, stable surface. The monitor may fall and there is the risk of damage or injury



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

# 2

## Items



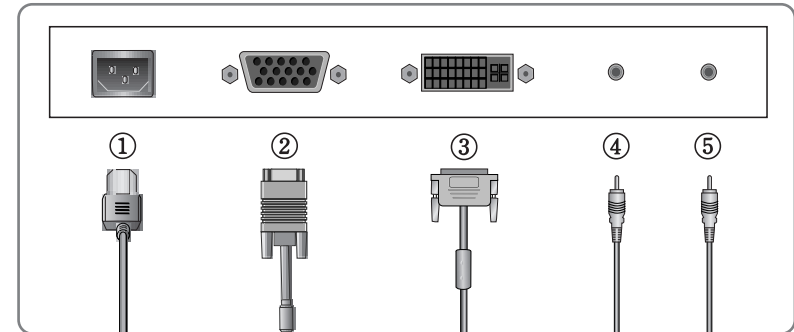
\*1 : For DVI Model Only.  
\*2 : For Audio Model Only.

### Kensington Security Slot

: This monitor offers you the opportunity to secure your monitor using a Kensington-type security device. Kensington lock is not included. Refer to your locking device documentation for installation instructions.  
(Kensington-type security slot location is on the back of the monitor.)

**Notice** Please make sure the following items are included with your monitor. If any items are missing, contact your dealer. Also we'd like to ask you to use our 'D-Sub' cable all the time, otherwise we are not in a position to be responsible for all the matters caused by that.

### Setting up 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 <sup>*1</sup> (Option)
4	SPK IN	Audio Cable <sup>*2</sup>
5	SPK OUT	External Speaker Cable <sup>*2</sup>

\*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.

**Notice** When the condition of the screen is not good, please press the button "AUTO". (This function may cause some noises on the screen according to VGA Cards)

# 3

## How to use the Function Key

**MENU**

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

**SEL/AUTO**

- SEL : Select a command function.
- Auto : This will optimize image quality automatically.\*1

**MUTE / ▲**

- 1. Move the on-screen highlighted comand item to the previous one.
  - 2. Increase the current option value.
- MUTE : Sound Mute On/Off button.\*2

**VOL / ▼**

- 1. Move the on-screen highlighted comand item to the next one.
  - 2. Decrease the current option value.
- VOL: You can adjust the volume.\*2

**MODE**

You can change the display mode.

**MWE**

You can manually adjust the screen to your environment on the computer.



Power On/Off toggle button.

\*1 : For Analog Mode Only.

\*2 : For Audio Model Only.

# 4

## Adjusting The Monitor

### Adjusting brightness

- 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.



### Notice

Most of the graphic cards are OK, but some of them are not compatible with the monitor once in a while, which causes some noises on the screen. In this case, you can select "Auto Adjust" to solve this matter immediately.

### COLOR

Color adjustment needs to be only for Analog mode.

- COLOR TEMP : 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 40sec.
- 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.\*1
- AUDIO : Sound Mute On/Off function. \*2
- SCREEN SIZE : You can select '16:10' or '4:3'

\*1 : For DVI Model Only. \*2 : For Audio Model Only.



### 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.

## MWE (Media Windows Enhancement)

This is the function adjusting its colors and brightness that are suitable for the user's system.

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

- TEXT : Documents
- GAME: Games.
- MOVIE : Movies.
- SPORTS : Sports.
- SMOOTH : Smooth.
- USER: Users.

## Display Modes and frequency

Mode	Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)	Pixel Clock Frequency(MHz)	Sync Polarity(H/V)
VGA	720×400	31.468	70.087	28.322	-/+
	640×480	31.468	59.940	25.175	-/-
		35.000	66.670	30.240	-/-
		37.500	75.000	31.500	-/-
SVGA	800×600	37.879	60.300	40.000	+/+
		48.077	72.188	50.000	+/+
		46.875	75.000	49.500	+/+
XGA	1024×768	48.363	60.004	65.000	-/-
		56.476	70.000	75.000	-/-
		60.023	75.029	78.750	+/+
SXGA	1280×1024	63.981	60.020	108.000	+,-/+,-
		79.976	75.025	135.000	+/+
WSXGA	1680×1050	64.674	59.883	119.000	+/-

## Power Save

This monitor has a built-in power management system called PowerSave. 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 60W	—	Green
OFF	Less than 2W	Within 2 sec	Amber

## 6

## Troubleshooting

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	<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>

## Specifications

MODE		Analog	Digital
Panel	Type	TFT active matrix	
	Size	22 inch wide	
		473.76 × 296.1 (mm)	
	Pixel Pitch	0.282 × 0.282 (mm)	
Display Color	8-bit (16,777,216 colors)		
Display Resolution	Basic	1680 × 1050 @60Hz	
	Maximum	1680 × 1050 @60Hz	
Frequency	Horizontal	31.5 ~ 80KHz	31 ~ 64KHz
	Vertical	56 ~ 75Hz	59 ~ 61Hz
Connectors		15pin D-Sub Connector	DVI-D Connector
		Speaker Input / Headphone Output (Audio Cable)*1	
Tilting Degree (U/D)		-5° ~20° Degree	
Plug&Play		VESA DDC 1/2B	
Power	Input	Internal type : 100~240V AC, 50/60Hz, 0.9A	
	Consumption	Under 60W	
	Standby mode	2W less	
Power Management		Power Save	
Environmental Consideration	Temperature	0~25°C (32°F~95°F)	
	Humidity	90% less	
Dimensions	Outside	524.7mm(W) × 415.2mm(H) × 216.8mm(D)	
Weight		6.6Kg	

\*1 : For Audio Model Only.

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.



### FCC NOTICE

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 UNDESIRABLE  
OPERATION.

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 communication. 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 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.

NOTE : The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.