

## **ATTACHMENT K – USERS MANUAL**

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# FCC Warning

## Class B Computing Device

### Information to the User

This 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 accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television 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 and for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

### FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE: In order for an installation of this product to maintain compliance with the limits for a Class B device, shielded cables must be used.

## Introduction

**The Monitor has an active matrix TFT (Thin-Film Transistor) LCD (Liquid Crystal Display).**

**This monitor is designed for use in small working areas or for those who need more working space on the desk.**

### Features

- The monitor is a 18.1 inch (18.1 inches viewable) intelligent microprocessor based monitor.
- USB(Universal Serial Bus) ports at the back of the monitor are prepared for the USB cable and hub. You can easily and flexibly connect USB - designed devices such as a mouse, keyboard - to the monitor for true Plug and Play function.
- The monitor has two signal connectors (D-sub and DVI) so that it can support both an existing analog input (D-sub) and an advanced standard digital input (DVI). Two computers can be simultaneously used while connected to this monitor.
- Digitally controlled auto-scanning is done with the microprocessor for horizontal scan frequencies between 30 and 80kHz, and vertical scan frequencies between 56 - 85Hz. The microprocessor-based intelligence allows the monitor to operate in each frequency mode with the precision of a fixed frequency monitor.
- You can adjust the height of the screen and also rotate it 90° clockwise.  
**(\* For detailed information, please refer to the CD provided with the manual.)**
- Plug and play capability if supported by your system.
- This monitor has E-DDC function.\*
- Compliant with the following regulated specifications :\*
  - EPA ENERGY STAR
  - Swedish TCO'99

ENGLISH

\* For detailed information, please refer to the Reference Guide provided.

## Connecting the Monitor

To set up the monitor, ensure that the power is turned off to the monitor, computer system, and other attached devices, then follow these steps:

- 1 Place the monitor in a convenient, well-ventilated location near your computer.
- 2 To adjust height of your monitor, unlock the stand lock on top of the stand. Push the stand lock at arrows shown(A).
- 3 Removed the stand cover of the monitor to connect the cables.
- 4 Connect the signal cable.

■ When connecting the DVI signal cable .....Figure 1

Connect the end of monitor signal cable to the port on the rear panel of the monitor through the slot and cable holder on Stand. 1 Connect the other end to the DVI port on the rear panel of the computer and tighten the screws. 2

■ When connecting the Dsub signal cable

PC ..... Figure 2

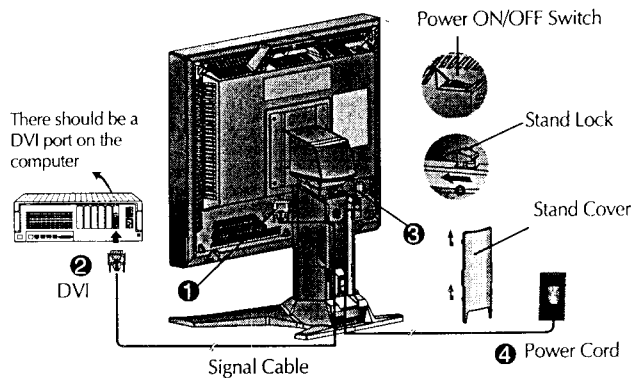
Connect one end of the monitor signal cable to either of the connectors 1 on the rear panel of the monitor. Connect the other end to the Dsub port on the rear panel of the computer and tighten the screws. 2

MAC ..... Figure 3

Connect one end of the monitor signal cable to either of the connectors 1 on the rear panel of the monitor. Connect the other end of the monitor signal cable to the rear panel of Macintosh computer through a Macintosh adapter and then tighten screws. 2

- 5 One end of the AC power cord is connected into the AC power connector on the back of the monitor 3

Figure 1



Note: If you see the "OUT OF RANGE" message, check to make sure your system is set to one of the factory preset modes (see page A10), or is set to a resolution and refresh rate within the specification limits of this monitor.

## Connecting the Monitor

Figure 2

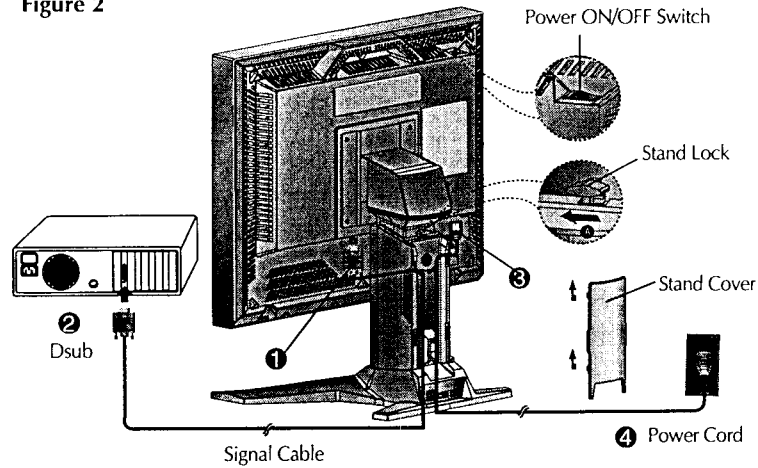
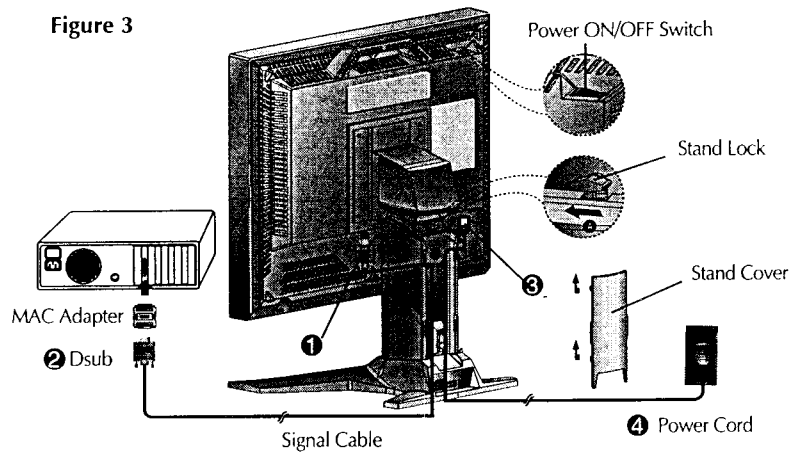


Figure 3



- 6 Connect one end to a properly grounded AC outlet that is easily accessible and close to the monitor. 4
- 7 After connecting cables, put stand cover correctly into the holes under stand. If securely connected, you can hear click sound from the latch.
- 8 Power ON the PC, then the monitor.
- 9 If you see the NO SIGNAL message, check the signal cable and connectors.
- 10 After using the system, power OFF the monitor, then the PC.

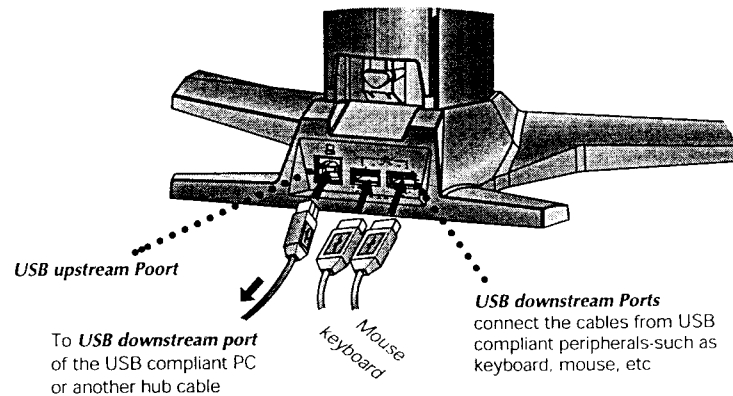
**NOTE:** The figure 3 shows the connection to an Apple Macintosh using a separately purchased adapter. For more information on adapter requirements, contact your authorized dealer, reseller, or service provider.

## Making use of USB (Universal Serial Bus)

USB (Universal Serial Bus) is an innovation in connecting your different desktop peripherals conveniently to your computer. By using the USB, you will be able to connect your mouse, keyboard, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. USB allows you to connect chain up to 120 devices on a single USB port, and you can “hot” plug (attach them while the computer is running) or unplug them while maintaining Plug and Play auto detection and configuration. This monitor has an integrated BUS-powered USB hub, allowing up to 2 other USB devices to be attached it.

### USB connection

1. Connect the upstream port of the monitor to the downstream port of the USB compliant PC or another hub using the USB cable. (Computer must have a USB port)
2. Connect the USB compliant peripherals to the downstream ports of the monitor.



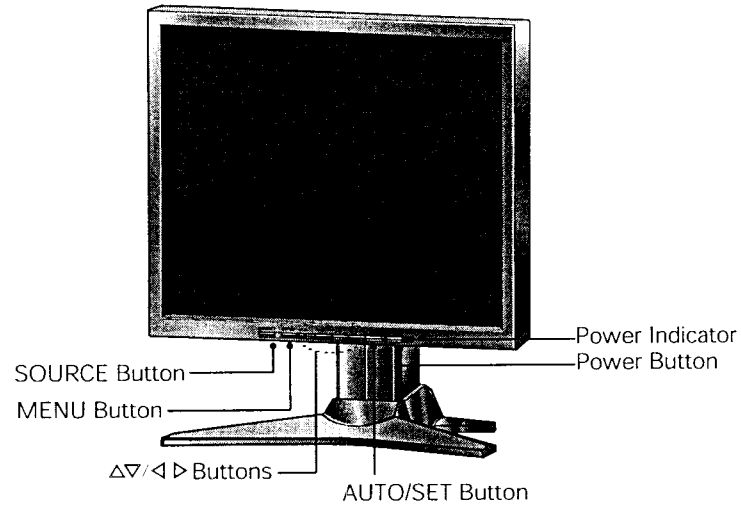
### NOTE

- To activate the USB hub function, the monitor must be connected to a USB compliant PC (OS) or another hub with the USB cable (enclosed).
- When connecting the USB cable, check that the shape of the connector at the cable side matches the shape at the connecting side.
- Even if the monitor is in a power saving mode, USB compliant devices will function when they are connected the USB ports (both the upstream and downstream) of the monitor.

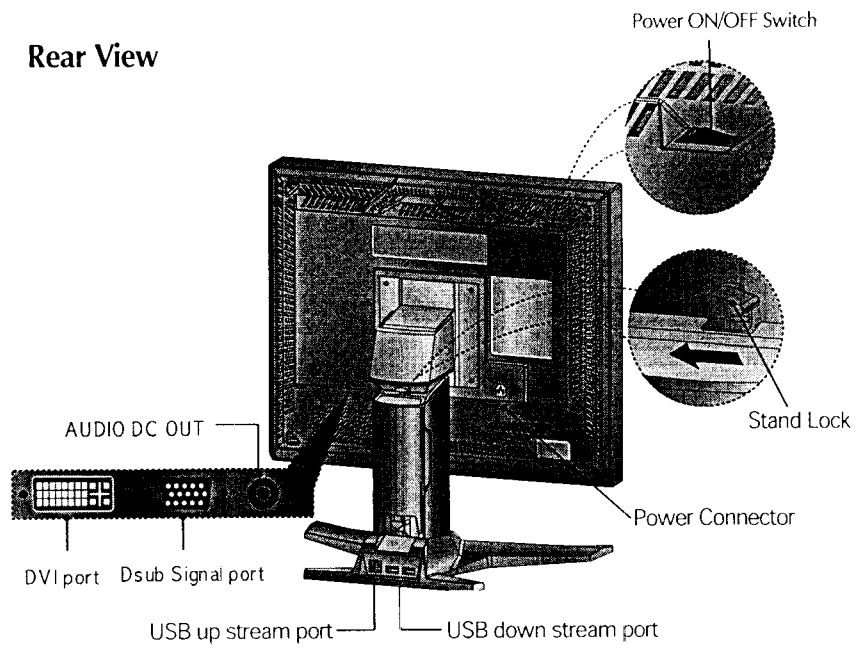
**IMPORTANT:** These USB connectors are not designed for use with high-power USB devices such as a video camera, scanner, etc. LG recommends connecting high-power USB devices directly to the computer.

## Location and Function of Controls

### Front View

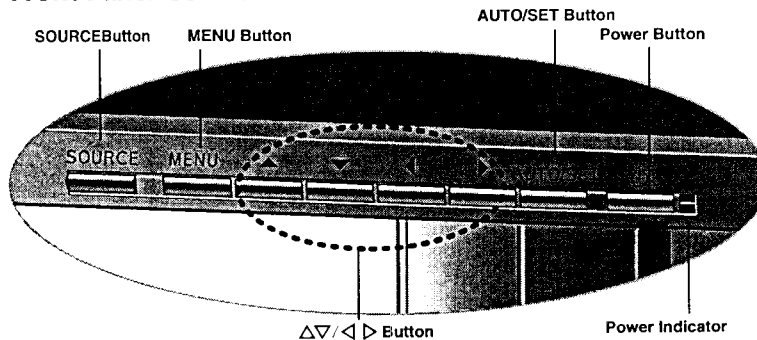








### Rear View



# Control Panel Function

## Front Panel Controls



Control	Function
 <b>SOURCE Button</b>	<ul style="list-style-type: none"> <li>Use this button to make Dsub or DVI connector active. This feature is used when two computers are connected to the monitor. The default setting is Dsub.</li> </ul>
 <b>MENU Button</b>	<ul style="list-style-type: none"> <li>Use this button to enter or exit the on screen display.</li> </ul>
 <b>▲▼/◀▶ Button</b>	<ul style="list-style-type: none"> <li>Use these buttons to choose or adjust items in the on screen display.</li> </ul> <p><b>&lt;Shortcut Keys&gt;</b></p> <ul style="list-style-type: none"> <li>Brightness and Contrast can be adjusted directly without entering the On Screen Display (OSD) system. Touch the ▲/▼/◀/▶ buttons to adjust the settings and then the <b>OSD button</b> to save all changes. The Brightness and Contrast functions are also available in the On Screen Display (OSD) menu.</li> </ul>
 <b>AUTO/SET Button</b>	<ul style="list-style-type: none"> <li>Use this button to enter a selection in the on screen display.</li> </ul> <p><b>* AUTO adjustment function</b></p> <p>TO the <b>AUTO/SET</b> button before using OSD menu. This button is for the automatic adjustment of the screen position, clock and phase.</p> <p><b>Note:</b> Some signal from some graphics boards may not function properly. If the results are unsatisfactory, adjust your monitor's Position, Clock and Phase manually.</p>
 <b>Power Button</b>	<ul style="list-style-type: none"> <li>Use this button to turn the monitor on or off.</li> </ul>
 <b>Power Indicator</b>	<ul style="list-style-type: none"> <li>The power indicator light is shown in the power button. This indicator lights up green when the monitor operates normally. If the monitor is in DPM (Energy Saving) mode (stand-by/ suspend/power off), this indicator color changes to amber.</li> </ul>



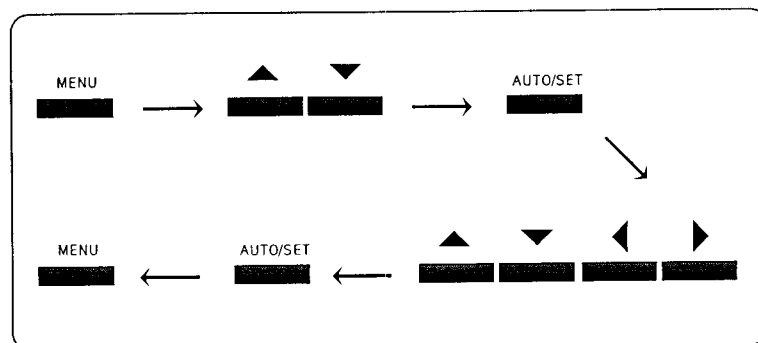
## On Screen Display (OSD) Control Adjustment

Making adjustments to the image size, position and operating parameters of the monitor are quick and easy with the On Screen Display Control system. A quick example is given below to familiarize you with the use of the controls. Following section is an outline of the available adjustments and selections you can make using the OSD.

### NOTE

Allow the monitor to stabilize for at least 30 minutes before making image adjustment.

To make adjustments in the On Screen Display, follow these steps:

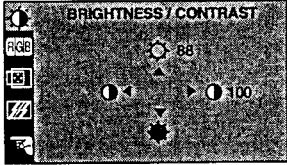




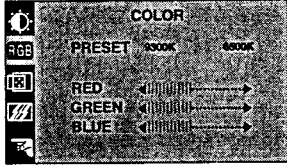
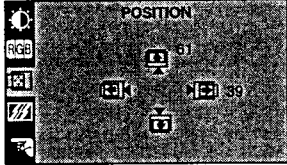






- 1 Press the **MENU** Button, then the main menu of the OSD appears.
- 2 To access a control, use the **▲** or **▼** Buttons. When the icon you want becomes highlighted, press the **AUTO/SET** Button.
- 3 Use the **◀▶** Buttons to adjust the item to the desired level.
- 4 Accept the changes by pressing the **AUTO/SET** Button.
- 5 Exit the OSD by Pressing the **MENU** Button.

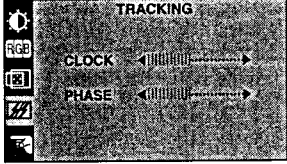
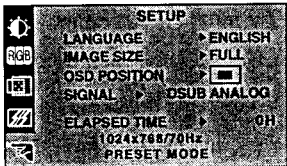
## On Screen Display(OSD) Selection and Adjustment

You were introduced to the procedure of selection and adjusting an item using the OSD system. Listed below are the icons, icon names, and icon descriptions of the items that are shown on the Menu.

Note : When a digital signal is set as an input, only the BRIGHTNESS, CONTRAST, COLOR and SETUP properties can be adjusted, you do not need to adjust the other properties.

OSD Adjust	Description
	<p>  <b>Brightness</b> Used to adjust the brightness of the screen.</p> <p>  <b>Contrast</b> Adjust the display to the contrast desired.</p>
	<p><b>PRESET</b> 9300K/ 6500K To appear the displays color temperature.</p> <ul style="list-style-type: none"> <li>• 9300K:Slightly bluish white.</li> <li>• 6500K:Slightly reddish white.</li> </ul> <p><b>RED</b> To set your own color levels.</p> <p><b>GREEN</b> To set your own color levels.</p> <p><b>BLUE</b> To set your own color levels.</p>
	<p>  <b>Vertical Position</b> To move image up and down.</p> <p>  <b>Horizontal Position</b> To move picture image left and right.</p>

## On Screen Display(OSD) Selection and Adjustment

OSD Adjust	Description
	<p><b>CLOCK</b> To minimize any vertical bars or stripes visible on the screen background. The horizontal screen size will also change.</p> <p><b>PHASE</b> To adjust the focus of the display. This item allows you to remove any horizontal noise and clear or sharpen the image of characters.</p>
	<p><b>LANGUAGE</b> To choose the language in which the control names are displayed.</p> <p><b>IMAGE SIZE</b> This function displays the image in its original size or enlarged size so as to fit in the full screen of the LCD panel.</p> <p><b>OSD POSITION</b> To adjust position of the OSD window on the screen.</p> <p><b>SIGNAL</b> To select beep ON or OFF. To select DSUB ANALOG or DVI ANALOG / DIGITAL as the active input. This feature is used when two computers are connected to the display. The display automatically detects the proper input when only one video source is connected.</p> <p><b>ELAPSED TIME</b> To display the use time of monitor</p>

## Video Memory Modes

The monitor has 30 memory locations for display modes, 14 of which are factory preset to popular video modes.

### Display Modes (Resolution)

	Display Modes (Resolution)	Horizontal Freq.(kHz)	Vertical Freq.(Hz)
1	VGA 640 x 350	31.469	70
2	VGA 720 x 400	31.468	70
3	VGA 640 x 480	31.469	60
4	VESA 640 x 480	37.500	75
5	VESA 640 x 480	43.269	85
6	VESA 800 x 600	37.879	60
7	VESA 800 x 600	46.875	75
8	VESA 800 x 600	53.674	85
9	MAC 832 x 624	49.725	75
10	VESA 1024 x 768	48.363	60
11	VESA 1024 x 768	60.123	75
12	VESA 1024 x 768	68.677	85
13	MAC 1152 x 870	68.681	75
14	VESA 1152 x 900	61.805	65
15	VESA 1280 x 1024	63.981	60
16	VESA 1280 x 1024	79.976	75

### User Modes

- Modes 17-26 are empty and can accept new video data. If the monitor detects a new video mode that has not been present before or is not one of the preset modes, it stores the new mode automatically in one of the empty modes starting with mode 17.

If you use up the 10 blank modes and still have more new video modes, the monitor replaces the information in the user modes starting with mode 17.

## Troubleshooting

**Check the following before calling for service.**

**Display Position is incorrect.**

- Push the AUTO/SET Button.
- If the results are unsatisfactory, adjust the image position using the H position and V position icon in the on screen display.

**On the screen background, vertical bars or stripes are visible.**

- Push the AUTO/SET Button.
- If the results are unsatisfactory, decrease the vertical bars or stripes using the CLOCK icon in the on screen display.

**Any horizontal noise appearing in any image or characters are not clearly portraided.**

- Push the AUTO/SET Button.
- If the results are unsatisfactory, decrease the horizontal bars using the PHASE icon in the on screen display.

**NO SIGNAL message.**

- The signal cable is not connected, or is loose. Check and secure the connection.

**OUT OF RANGE message appears.**

**Picture is blank.**

- The frequency of the signal from the video card is outside the operating range of the monitor.

**Horizontal Frequency:** 30kHz - 80kHz

**Vertical Frequency:** 56Hz - 85Hz

\* Use the graphics board's utility software to change the frequency setting (Refer to the manual for graphics board).

\* You can change the setup to the supported resolution using the **Safe Mode** (Press the F8 key during booting the system).

**The power LED is illuminated amber.**

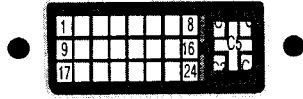
- The monitor is in its display power management mode.
- There is no active signal coming from the PC.
- The signal cable is not fastened securely.
- Check the computer power and graphics adapter configuration.

**The monitor doesn't enter the power saving off mode (Amber).**

- Computer video signal is not VESA DPMS standard. Either the PC or the video controller card is not using the VESA DPMS power management function.

## Specifications

### Signal Connector Pin Assignment



#### ■ DVI-D Connector (Digital)

Pin	Signal(DVI)	Pin	Signal(DVI)
1	T. M. D. S. Data2-	16	Hot Plug Detect
2	T. M. D. S. Data2+	17	T. M. D. S. Data0-
3	T. M. D. S. Data2/4 Shield	18	T. M. D. S. Data0+
4	T. M. D. S. Data4-	19	T. M. D. S. Data0/5 Shield
5	T. M. D. S. Data4+	20	T. M. D. S. Data5-
6	DDC Clock	21	T. M. D. S. Data5+
7	DDC Data	22	T. M. D. S. Clock Shield
8	Analog Vertical Sync.	23	T. M. D. S. Clock+
9	T. M. D. S. Data1-	24	T. M. D. S. Clock-
10	T. M. D. S. Data1+	C1	Analog Red
11	T. M. D. S. Data1/3 Shield	C2	Analog Green
12	T. M. D. S. Data3-	C3	Analog Blue
13	T. M. D. S. Data3+	C4	Analog H. Sync.
14	+5V Power	C5	Analog Ground
15	Ground (return for +5V, H. Sync. and V. Sync.)		

T. M. D. S. (Transition Minimized Differential Signaling)

## Specifications

<b>Display</b>	Type	18.1inch (45.97cm) Flat Panel Active matrix-TFT LCD Anti-Glare coating
	Viewable Size	18.1inch (45.97cm)
	Pixel pitch	0.28 x 0.28mm
	True color	16.7 million color
<b>Sync Input</b>	Horizontal Freq.	30kHz - 80kHz (Automatic)
	Vertical Freq.	56Hz - 85Hz (Automatic)
	Input form	Separate, TTL, Positive/Negative Composite, TTL, Positive/Negative SOG (Sync On Green) Digital
<b>Video Input</b>	Signal input	15 pin D-Sub connector / DVI - I connector (Digital/Analog)
	Input Form	Separate, RGB Analog, 0.7Vpp/75ohm, Positive, Digital
	Resolution	Max VESA 1280 x 1024 @75Hz (Analog) VESA 1280 x 1024 @60Hz (Digital)
		Recommend VESA 1280 x 1024 @60Hz
<b>USB specifications</b>	USB standard	Rev. 1.0 complied BUS-powered hub
	Downstream power supply	500mA for each (MAX)
	Communication speed	12 Mbps (full), 1.5 Mbps (low)
	USB port	1 Upstream port 2 Downstream ports
<b>Power Consumption</b>	Normal(Max.)	≤ 55W
	Stand-by/Suspend	≤ 3W
	Power Off	≤ 3W
<b>Dimensions</b>	Width	39.7cm / 15.6inches
	Height	42.8cm / 16.85inches (Min) 50.8cm / 20.0 inches (Max)
	Depth	23.7cm / 9.3inches
<b>Power Input</b>		AC 100-240V 50/60Hz 1.0A
<b>Weight</b>	Net	8.5kg / 18.73lbs
<b>Tilt Range</b>	Tilt	5° (Down) / 30° (Up)
	Swivel	45° (Left) / 45° (Right)
<b>Environment Conditions</b>	Operating condition	
	Temperature	10°C to 35°C
	Humidity	10% to 80% non-condensing
	Storage condition	
Temperature	-20°C to 60°C	
Humidity	5% to 95% non-condensing	

### NOTE

- Information in this document is subject to change without notice.