

# OWNER'S MANUAL MONITOR SIGNAGE

Please read this manual carefully before operating your set and retain it for future reference.

**MONITOR SIGNAGE MODELS**  
M4630C

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### Note

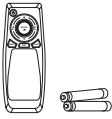
Below three points can be visible on the screen due to the special nature of Super Narrow LCD. This is not a malfunction of the LCD.

1. The Edge area of the screen can look darker than the center area.
2. Light leakage may be visible depending on the view.
3. Sheet guide boss & clips may be visible at the edge of the screen depending on the view.

# Accessories

Thank you for your purchase. Please check the product as well as the accessories shown below

❖ Note that the accessories may look different from those shown here.



Remote Control /  
Batteries



D-Sub Signal Cable



Power Cable



HDMI Cable



HDMI-DVI Cable



CD-ROM / Cards

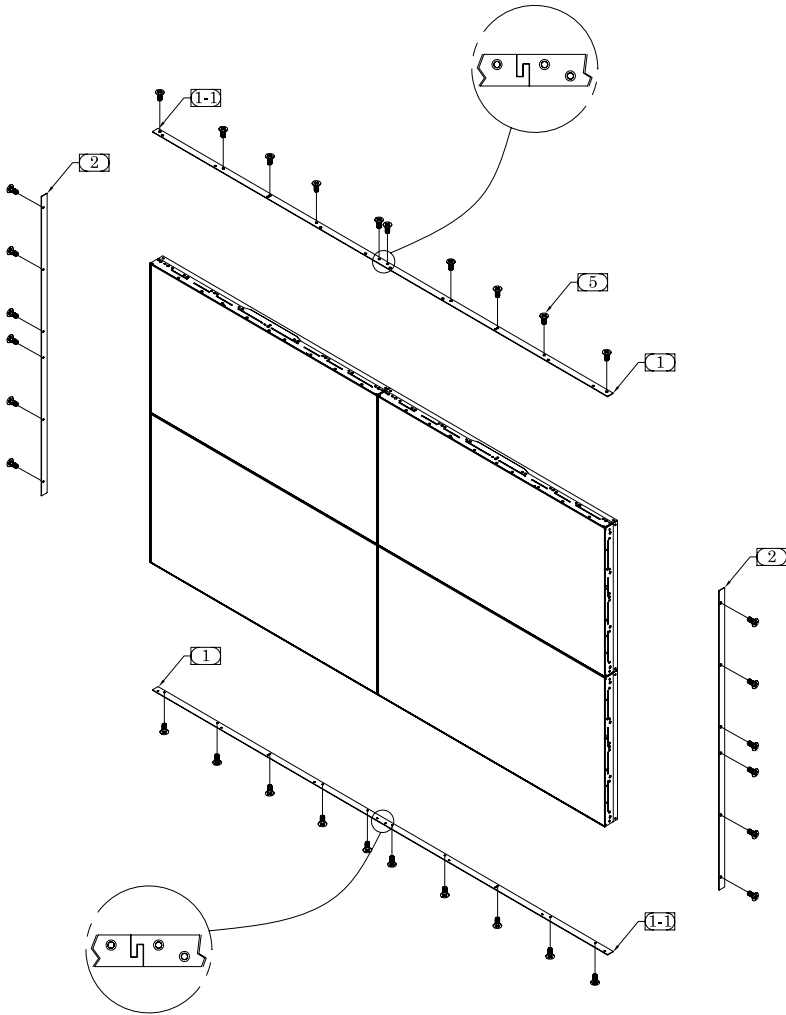








Bolt (16 Unit)



Bracket

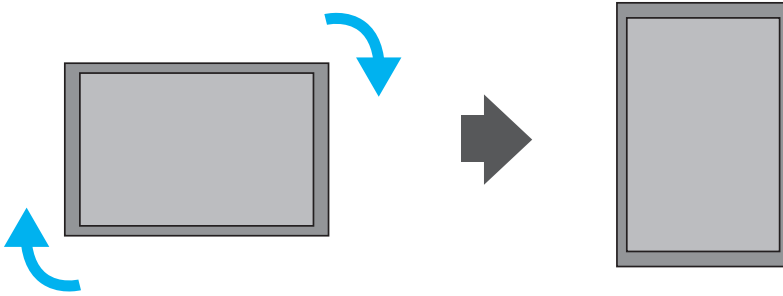
# Installing a Bracket



5	 FLT,MC(+)-4x8[B]
4	
3	
2	
1-1	
1	

# Portrait Mode

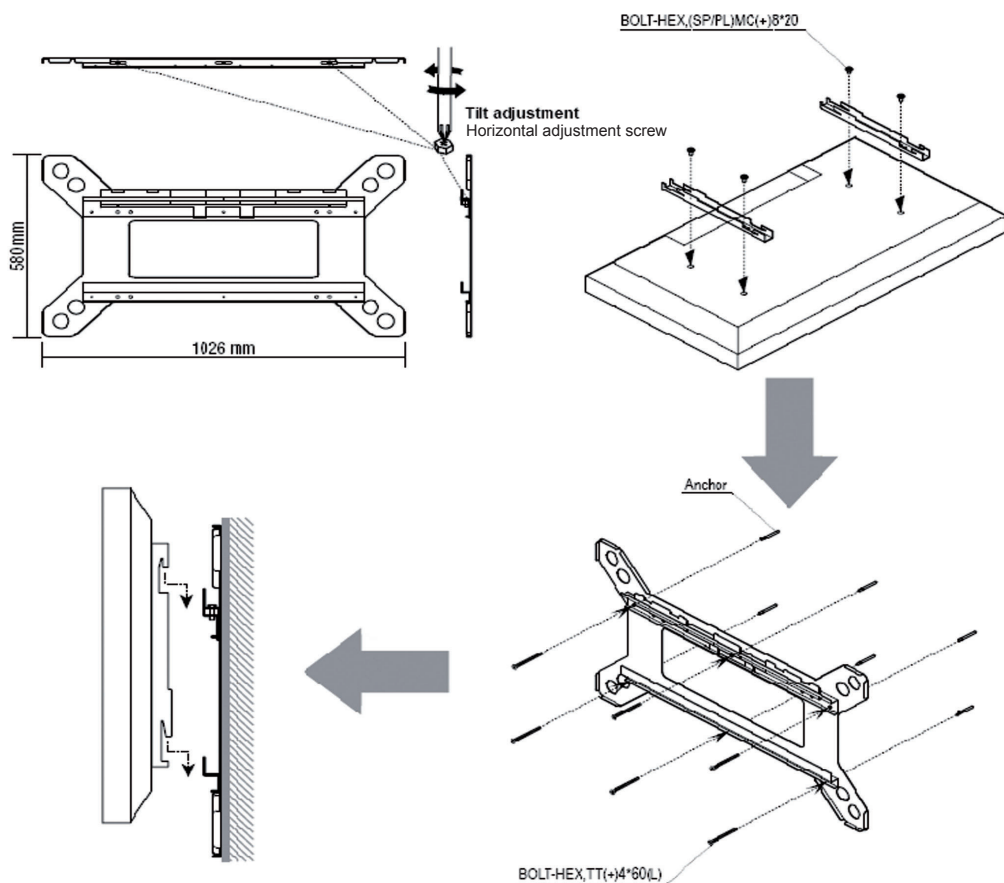
- Only on some models.



"When installing in portrait mode, rotate the monitor clockwise."

# Installing a Wall Mount

※ The wall mount below is optional.

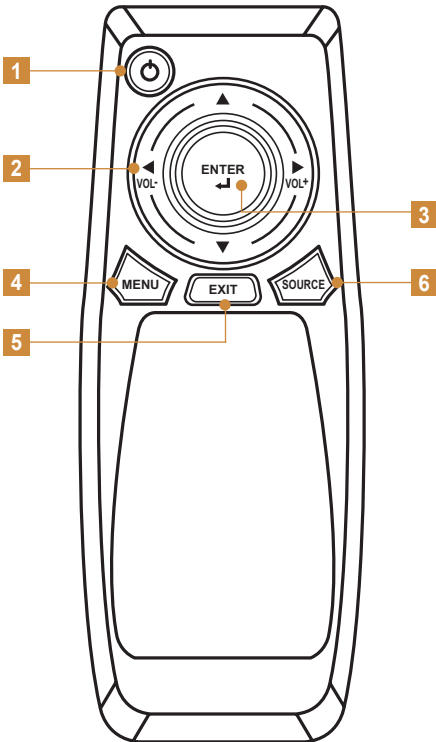


## Note

- Only install the product on a vertical wall.
- To ensure product performance and avoid damage, it is strongly recommended that you avoid the following installation locations:
  - Near the sprinkler sensor
  - Near the heater
  - Where vibration or shock may occur
  - Near high-tension wires
- Use an appropriate installation method for the material of the wall. Check the safety of the wall surface first and reinforce the wall if the wall strength is not enough for installation.
- Do not install the wall mount inside the wall.

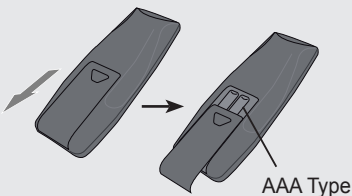
# Using the Remote Control

## Remote Control Buttons



- 1 Power On / Off**
- 2 Volume, Function (◀, ▶)  
Function (▲, ▼)**
- 3 ENTER**  
Completes the setting of the function.
- 4 MENU**  
Sets the function of the product.
- 5 EXIT**  
Exits the menu.
- 6 SOURCE**  
Selects the input signal.

## Inserting batteries into the remote control.

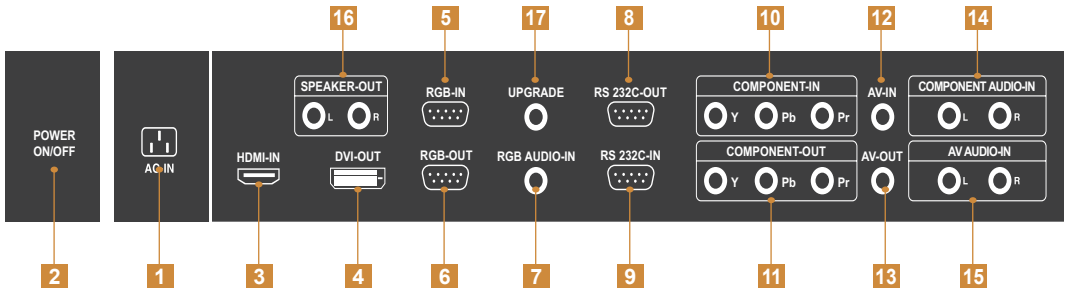


1. Slide off the battery cover.
  2. Insert the batteries with correct polarity ( + / - ).
  3. Close the battery cover.
  4. To remove the batteries, perform the installation actions in reverse.
- Dispose of used batteries in the recycle bin to prevent environmental pollution.

# Connections

\* The product image in the user's guide could be different from the actual image.

## Rear View



- 1 Power Connector: Connect the power cord.
- 2 AC Power Button: Press this button to turn on the power. Press this button again to turn it off.
- 3 HDMI Input Port
- 4 DVI Output Port
- 5 RGB Input Port
- 6 RGB Output Port
- 7 PC AUDIO Input Port
- 8 RS-232C Output Port
- 9 RS-232C Input Port
- 10 COMPONENT Input Port
- 11 COMPONENT Output Port
- 12 AV Input Port
- 13 AV Output Port
- 14 COMPONENT AUDIO-IN Port
- 15 AV AUDIO-IN Port
- 16 Speaker Port
- 17 UPGRADE Port: this port is used for upgrade service and not for general users.

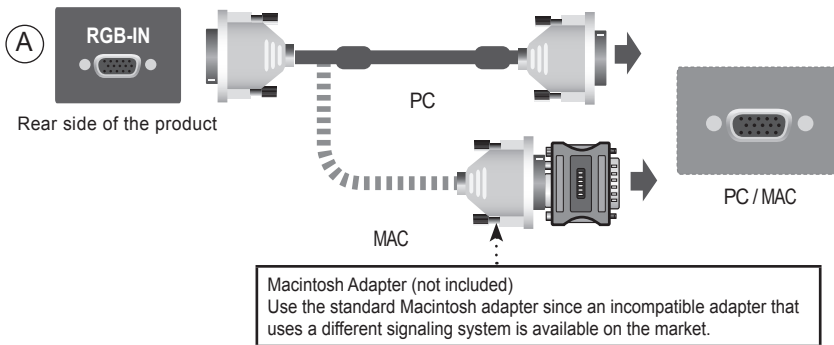


# Connecting to External Devices

## 1 Connecting to a PC

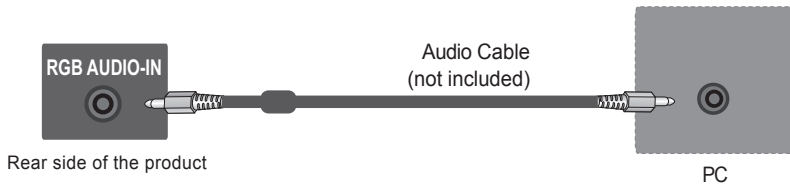
1 Check that the computer, product and the peripherals are turned off. Then, connect the signal input cable.

- (A) When connecting with the D-sub signal input cable.
- (B) When connecting with the HDMI to DVI signal input cable (not included).  
\* When HDMI PC is used, a compatibility problem might occur.

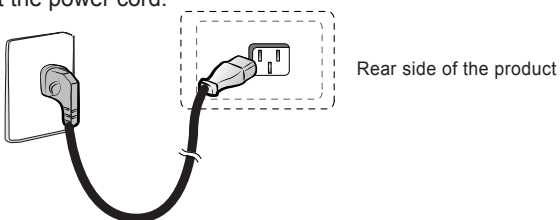


\* Use shielded signal interface cables (D-sub 15 pin cable, DVI cable) with ferrite cores to maintain standard compliance with your monitor.

## 2 Connect the Audio cable.

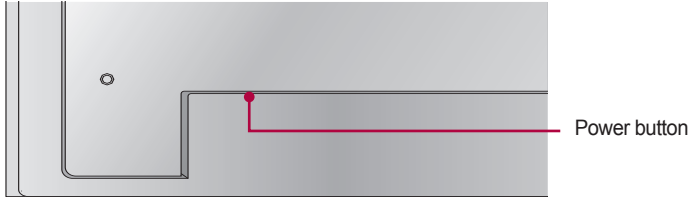


## 3 Connect the power cord.



# Connecting to External Devices

- 4 ① Press the power button on the back of the monitor.



- 5 Select an input signal.  
Press **SOURCE** on the remote control to select the input signal.

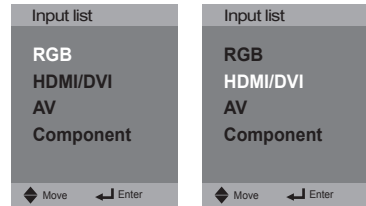
**SOURCE** → ▼ ▲ → **ENTER**

Or, press **SOURCE** on the back of the product.

**SOURCE** → ▼ ▲ → **SELECT**

- Ⓐ When connecting with a D-sub signal input cable.  
• Select **RGB**: 15 - pin D-sub analog signal.

- Ⓑ Connecting with an HDMI to DVI Signal Input Cable  
• Select **HDMI / DVI**: HDMI to DVI Digital signal.

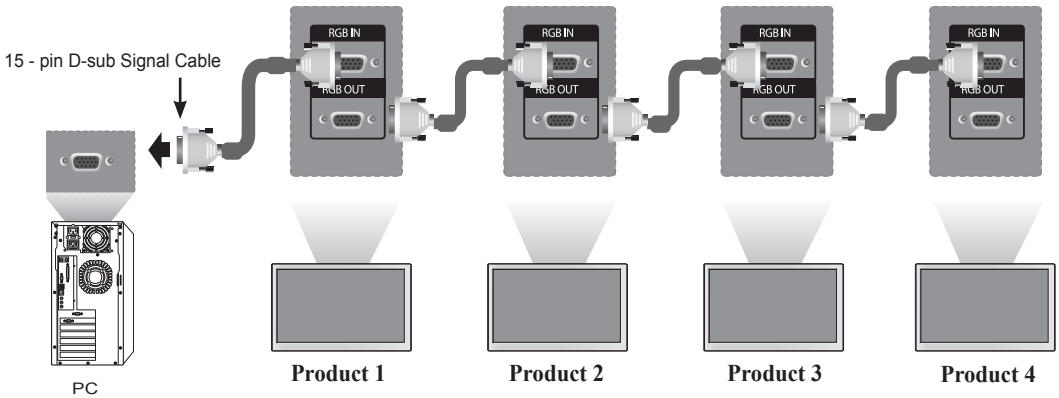


- 6 Turn on the PC.

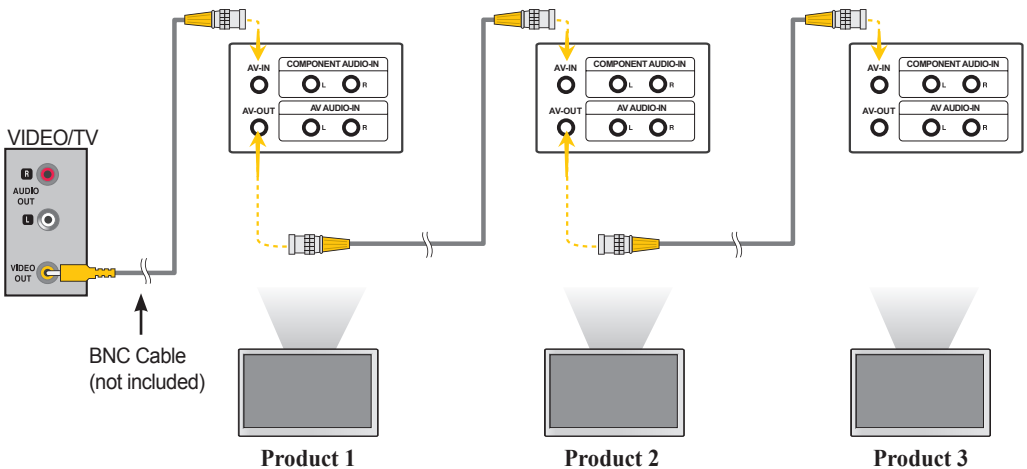
# Connecting to External Devices

## ● Daisy Chaining Monitors

1 To connect multiple monitors to the PC in RGB mode

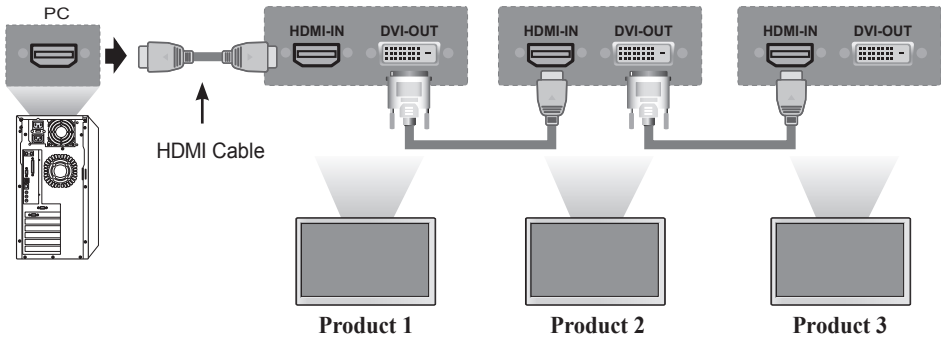


2 To connect multiple monitors to the TV in AV mode

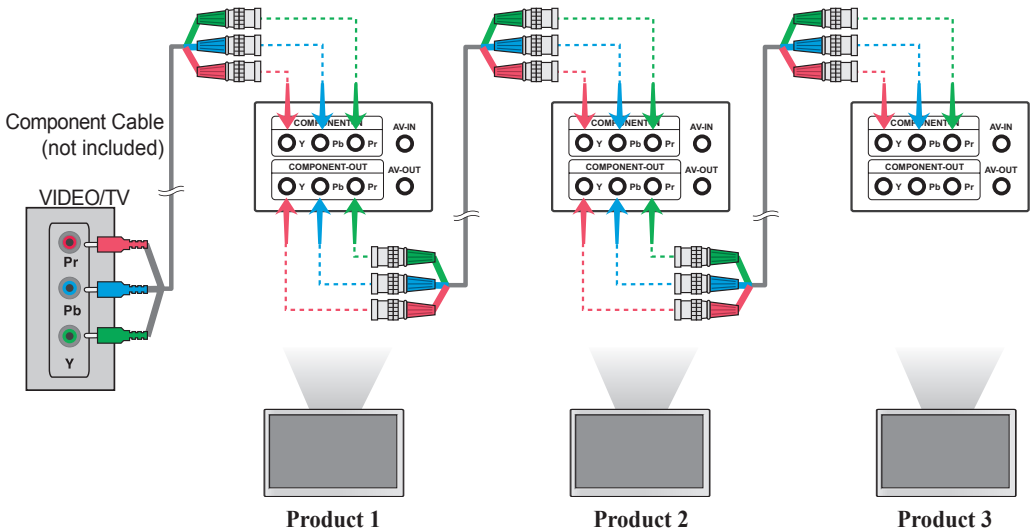


# Connecting to External Devices

3 To connect multiple monitors to the PC in HDMI mode



4 To connect multiple monitors to the PC in Component mode



## Note

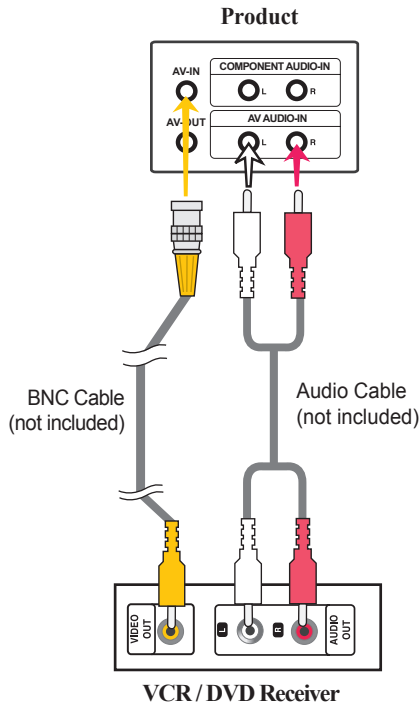
- When multi-connecting in / out cascade format, loss of display quality can happen. We recommend using a cable distributor.
- When connecting multiple products with component inputs, we recommend that you use high performance component cables for brighter and clearer picture quality.

# Connecting to External Devices

## Video Input

1 Connect the video cable as shown in the below figure and then connect the power cord

- A Connecting with a BNC Cable.  
• Connect the input terminal with a proper color match.



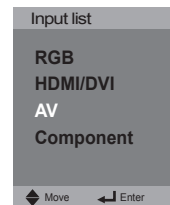
2 Select an input signal.  
Press **SOURCE** on the remote control to select the input signal.

**SOURCE** → ▼▲ → **ENTER**

Or, press **SOURCE** on the back of the product.

**SOURCE** → ▼▲ → **SELECT**

- A When connecting with an BNC cable.  
• Select **AV**.

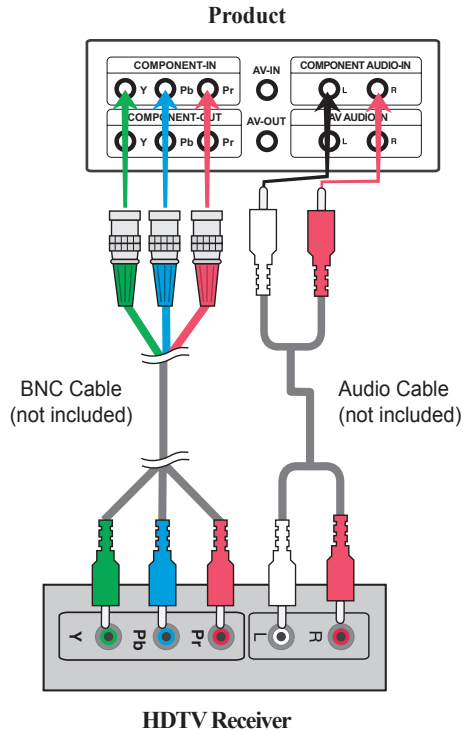


# Connecting to External Devices

## ● Component Input (480i/480p/576i/576p/720p/1080i)

1 Connect the video / audio cable as shown in the below figure and then, connect the power cord.

- Connect the input terminal with a proper color match.



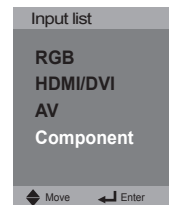
2 Select an input signal.  
Press **SOURCE** on the remote control to select the input signal.

**SOURCE** → ▼▲ → **ENTER**

Or, press **SOURCE** on the back of the product.

**SOURCE** → ▼▲ → **SELECT**

- Select **Component**

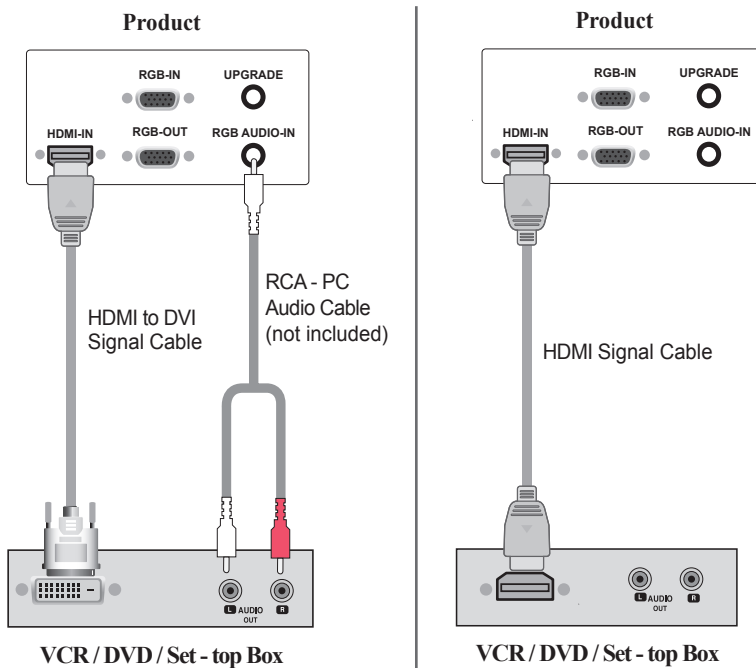


# Connecting to External Devices

## HDMI Input (480p/576p/720p/1080i)

- HDMI Supports High Definition input and HDCP (High-bandwidth Digital Content Protection). Some devices require HDCP in order to display HD signals.

- 1 Connect the video / audio cable as shown in the below figure and then connect the power cord.



Note: Dolby Digital is not supported.

- 2 Select an input signal.  
Press **SOURCE** on the remote control to select the input signal.

**SOURCE** → ▼▲ → **ENTER**

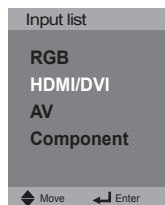
Or, press **SOURCE** on the back of the product.

**SOURCE** → ▼▲ → **SELECT**

When connecting with a HDMI to DVI signal input cable.

When connecting with a HDMI signal input cable.

- Select **HDMI / DVI**

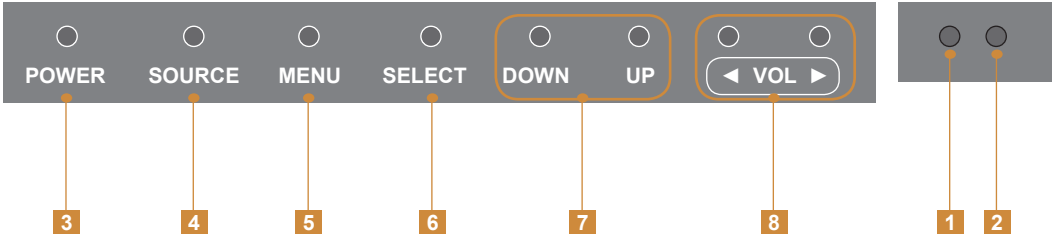


### Note

- HDMI Audio recommend use of PCM format.
- If you select Bit stream format, it can happen audio noise.

# User Menus

## Screen Adjustment Options







- 1 Power LED:** red for standby / green for power on.
- 2 IR Receiver:** this is where the unit receives signals from the remote control.
- 3 Power:** press this button to turn on the power. Press this button again to turn it off.
- 4 SOURCE:** selects other devices connected.
- 5 MENU:** displays or exits the menu.
- 6 SELECT:** selects an item in the OSD menu.
- 7 DOWN, UP:** Moves up or down in the OSD menu.
- 8 ◀ (Left), ▶ (Right):** Selects an icon in the OSD menu and increases or decreases the volume.



# User Menus

## ● OSD Menu

Icon	Function Description
 Picture	Adjusts screen brightness, contrast and color that you prefer.
 Audio	Adjusts the audio options.
 Option	Adjusts the timer options.
 Tile	Adjusts the screen status according to the circumstances.



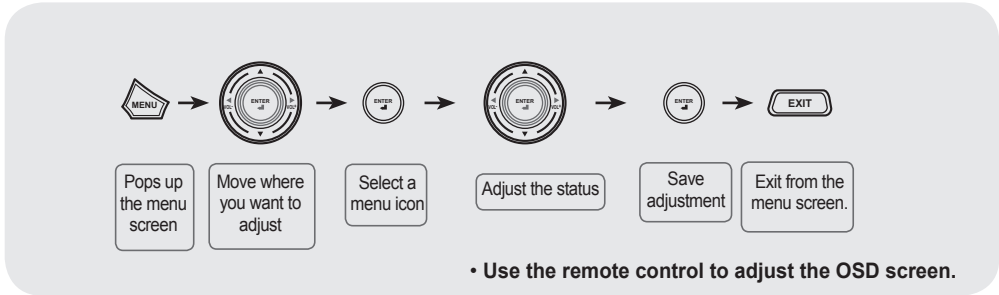
### Note

#### OSD (On-screen Display)

The OSD function enables you to adjust the screen status with a convenient graphic interface.

# User Menus

## ● Adjusting the OSD (On Screen Display)



1 Press **MENU**, then the main menu of the OSD appears.

2 To access a control, use **▼▲**.

3 When the icon you want becomes highlighted, press **ENTER**.

4 Use the **▼▲◀▶** to adjust the item to the desired level.

5 Accept the changes by pressing **ENTER**.

6 Exit the OSD by pressing **EXIT**.

## ● Adjusting the Screen Automatically

Press **SELECT (ENTER)** on a remote control in the PC analog signal. Then optimal screen settings will be selected that fit into the current mode. If adjustment is not satisfactory, you can adjust the screen manually.

**[When 1360 x 768 is selected]**

Auto Config

# User Menus



## Adjusting the Screen Color

### Picture Mode

Picture		
	Picture Mode : User	
	User >>>	Vivid
	Color Temperature >>>	Standard
	Aspect Ratio :	Cinema
	Noise Reduction :	Game
	Film Mode :	
◀ Move	↵ Enter	☰ Menu

Toggles between screen presets.

- **User:** User-defined settings.
- **Vivid:** Displays a sharp image.
- **Standard:** This is the optimum viewing condition for general users.
- **Cinema:** This mode optimizes video for watching movies.
- **Game:** This is the mode for fast response speeds for video games.

Picture		
	Picture Mode : Vivid	
	User >>>	
	Color Temperature >>>	
	Aspect Ratio :	16 : 9
	Noise Reduction :	
	Film Mode :	
◀ Move	↵ Enter	☰ Menu

User		
	Brightness : 70	
	Contrast : 80	
	Color : 50	
	Tint : 50	
	Sharpness : 60	
◀ Move	↔ Adjust	☰ Menu

**Brightness:** Adjusts the brightness of the screen.

**Contrast:** Adjusts the difference between light and dark levels.

**Color:** Adjusts the color (function works in AV and Component modes).

**Tint:** Adjusts the tint (function works in AV mode).

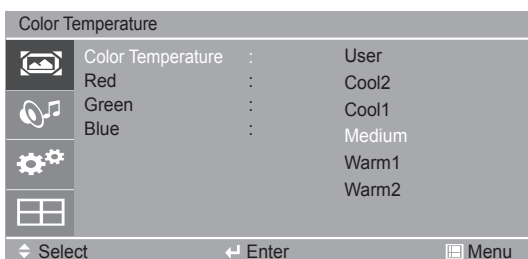
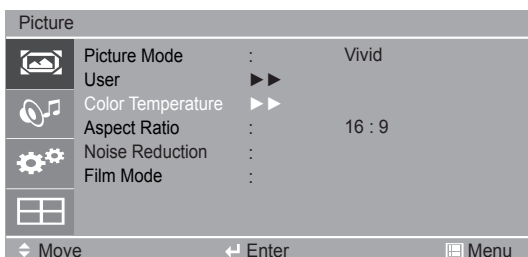
**Sharpness:** Adjusts the clearness of the screen (function works in Component mode).

# User Menus



## Adjusting the Screen Color

### Color Temperature



#### Color Settings

- **User:** User-defined settings.
- **Cool 2,1:** Slightly purple temperature.
- **Medium:** Slightly blue temperature.
- **Warm 1, 2:** Slightly red temperature.

#### Red / Green / Blue

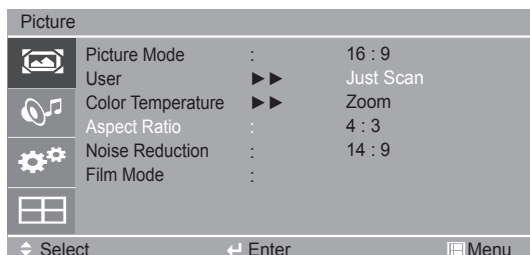
Set your own color levels.

# User Menus



## Adjusting the Screen Color

**Aspect Ratio** Selects the image size of the screen.



**16:9** Widescreen mode.

**Just Scan** Displays the full signal data without cropping any of the image.

**Zoom** Zoom programs are overscanned on the top/bottom and left/right sides.

**4:3** Selects a 4:3 aspect ratio image.

**14:9** 14:9 programs are viewed normally in 14:9 with black bars added to the top and bottom. 4:3 programs are magnified on the top/bottom and left/right sides.

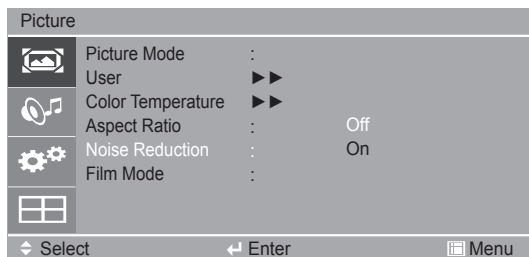
Mode	AV	Component	HDMI		RGB
			DTV	PC	PC
16:9	●	●	●	●	●
Just Scan	●	●	×	×	×
Zoom	●	●	×	×	×
4:3	●	●	●	●	●
14:9	●	●	×	×	×

# User Menus



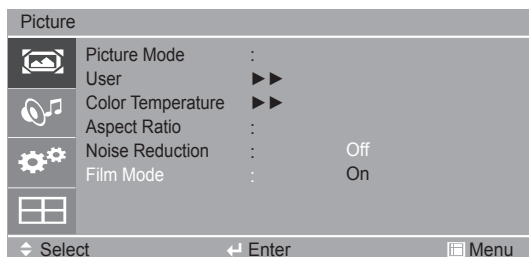
## Adjusting the Screen Color

### Noise Reduction



- **Noise Reduction:** Removes image noise up to the point where it does not damage the original picture (function works in AV and Component modes).

### Film Mode



- **Film Mode:** Provides the optimal picture quality for watching a movie (only available in Component, AV 480i or 576i mode.) \* If the Component or AV input signal is 480i or 576i, this may cause a lag in playback depending on the DVD's output mode. In this case, set "Film Mode" to "On" (function works in AV and Component mode).

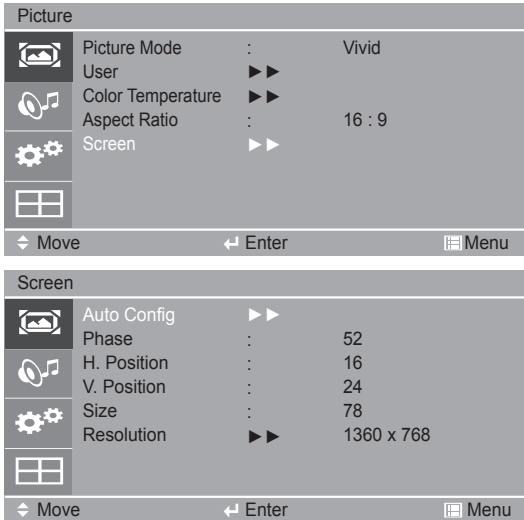
# User Menus



## Adjusting the Screen Color

### Screen

Adjust the screen video (RGB input only).



**Auto Config:** Automatically adjusts the screen position, clock and phase. This function is available for analog signals only.

**Phase:** Adjusts the focus of the display. This allows you to remove any horizontal noise and clear or sharpen the image of characters. This function is available for analog signals only.

**H-Position:** Moves the screen position horizontally.

**V-Position:** Moves the screen position vertically.

**Size:** Minimizes any vertical bars or stripes visible on the screen background. The horizontal screen size will also change. This function is available for analog signals only.

**Resolution:** If the PC resolution is one of the above, select the same resolution for optimal picture quality.

1024 x 768

1280 x 768

1360 x 768

1366 x 768

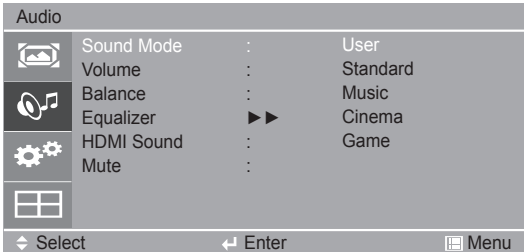
# User Menus



## Adjusting the Audio

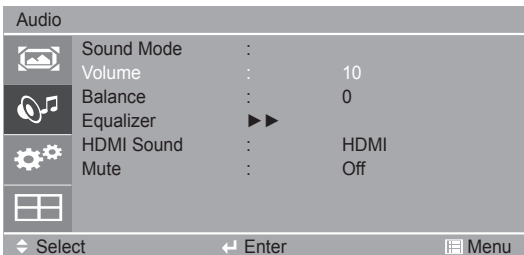
### Sound Mode

The best sound tone quality will be selected automatically depending on the video type that you're currently watching.

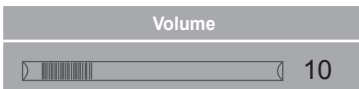


- **User:** User-defined audio settings.
- **Standard:** Offers standard-quality sound.
- **Music:** Optimizes sound for listening to music.
- **Cinema:** Optimizes sound for watching movies.
- **Game:** Optimizes sound for playing video games.

### Volume



To adjust the volume.



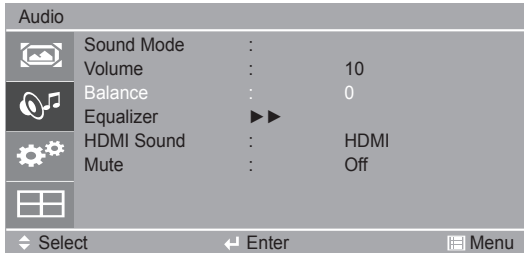


# User Menus



## Adjusting the Audio

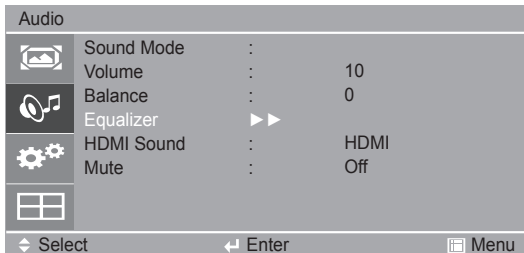
### Balance



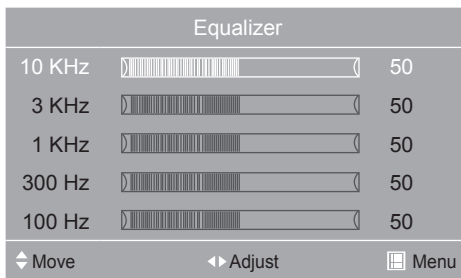
Use this function to balance sound from the left and right speakers.



### Equalizer



This function allows you to customize the volume of each frequency to your preferences.



### HDMI Sound

If the PC's HDMI port doesn't play an audio signal, set "HDMI Sound" in the OSD menu to "DVI" and connect the RGB AUDIO-IN port to enable audio.  
(\* Function works in HDMI mode.)

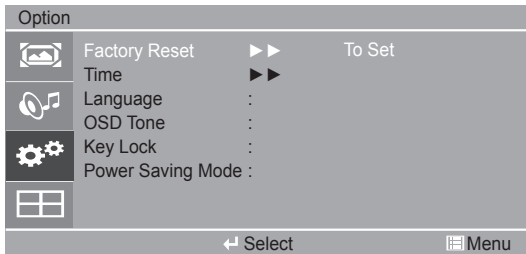
### Mute

This menu is used to mute temporarily.

# User Menus



## Selecting Options



- Factory Reset** Returns monitor to the default factory settings.
- Time** Clock: Sets the current time.  
On Time: Sets the time to automatically turn on.  
Off Time: Sets the time to automatically turn off.  
Input List: Sets the input signal when the monitor is automatically turned on at the specified time.
- Language** Chooses the language in which the control names are displayed.  
(Available languages are English, French, German, Spanish, Italian, Portuguese, Japanese, Korean and Russian.)
- OSD Tone** Shows the desktop when the OSD is open.
- Key Lock** Disables key input.  
It prevents children or other people from entering information.
- Power Saving Mode** For RGB, HDMI/DVI:  
Activates energy-saving mode when there is no input signal.



### Note

Factory Reset on OSD menu reset all OSD menu except resolution (RGB only), Language, Time Clock and Tile Mode.

# User Menus



## Screen Tiling Options

### • To use this function

- Must be displayed with other products.
- Must be in a function that can be connected to RS-232C or RGB Out.

### Tile Mode



Enlarges the screen and is used with several other products to view a larger screen display.

### • Tile Mode

Tile mode and choose Tile alignment and set the ID of the current product to set location.

- Tile mode: column x row ( c = 1, 2, ..., 15 r = 1, 2, ..., 15)
- 15 x 15 available.
- Configuration of an integration screen is also available as well as configuration of One by one Display.

### • 2X1:

Product 2



Tile ID

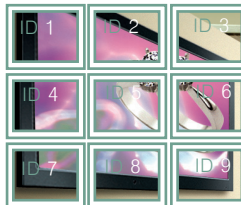
### • 2X2:

Product 4



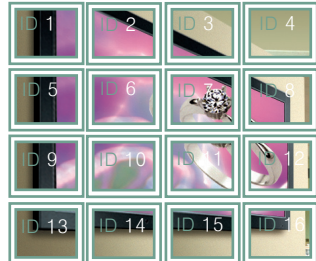
### • 3X3:

Product 9



### • 4X4:

Product 16



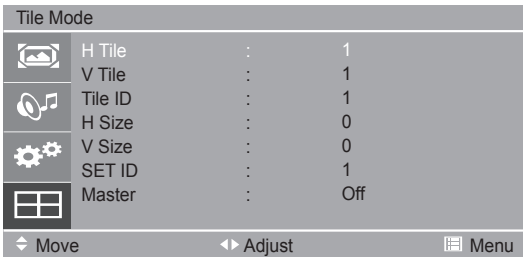
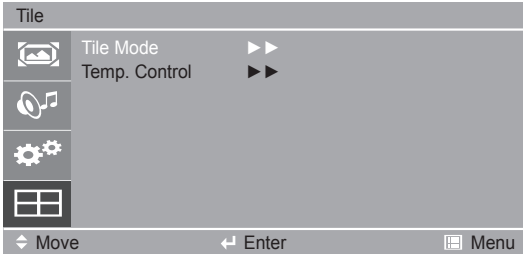
### Note

DVI output port doesn't support HDCP.

# User Menus

## Screen Tiling Options

### Tile Mode



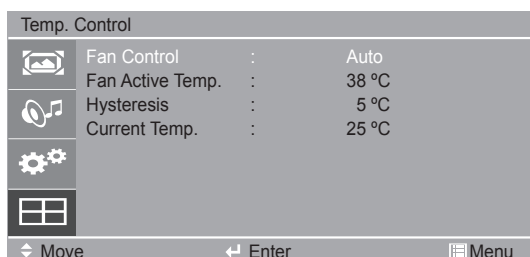
- **H Tile** Adjusts the horizontal size of the screen taking into account the size of the bezel.
- **V Tile** Adjusts the vertical size of the screen taking into account the size of the bezel.
- **Tile ID** Selects the location of the Tile by setting an ID.
- **H Size** Moves the screen horizontally.
- **V Size** Moves the screen vertically.
- **SET ID** You can assign a unique **Set ID NO** (name assignment) to each product when several products are connected for display. Specify the number (0 to 225) using ◀ ▶. Use the assigned **Set ID** to individually control each product using the Product Control Program.
- **Master** The Master function receives the monitor status in RS232C mode.  
(When multiple sets are connected, the Master function must be enabled only for one set.)

# User Menus

## Screen Tiling Options

### Temp. Control

This option indicates the monitor's internal temperature and controls the fan.



- **Fan Control** Enables the fan (Auto) depending on the active temperature, enables the fan (On), or disables the fan (Off).
- **Fan Active Temp.** Sets the operating temperature of the fan inside the monitor.
- **Hysteresis** Sets the temperature difference between when the fan is operating and when it stops.
- **Current Temp.** Indicates the monitor's internal temperature.

# Troubleshooting

## No Image is Displayed

- Is the product power cord connected?
  - Is the power indicator light on?
  - Power is on, power indicator is blue but the screen appears extremely dark.
  - Is The power indicator amber?
  - Does the 'Out of range' message appear?
  - Does the 'Check signal cable' message appear?
- See if the power cord is properly connected to the outlet.
  - See if the power switch is turned on.  
• May need service.
  - Adjust brightness and contrast again.  
• Backlight may need repair.
  - If the product is in power saving mode, move the mouse or press any key.  
• Turn both devices off and then back on.
  - The signal from the PC (video card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the Specifications in this manual.  
\* **Maximum resolution**  
RGB: 1360 x 768 @ 60 Hz  
HDMI / DVI: 1360 x 768 @ 60 Hz
  - The signal cable between PC and product is not connected. Check the signal cable.  
• Press SOURCE on the remote control to check the input signal.

## 'Unknown Product' Message Appears When the Television is Connected

- Did you install the driver?
- Install the television driver provided with the television, or download it from <http://www.LGolutions.com>
  - See if the plug & play function is supported by referring to your video card user manual.

## 'Key Lock On' message appears.

- The 'Key Lock On' message appears when pressing Menu.
- The control locking function prevents unintentional OSD changes due to careless usage. To unlock the controls, simultaneously press MENU and ► for several seconds. (You cannot set this function using the remote control. You can set this function on the monitor only.)



Note

- **Vertical frequency:** To enable the user to watch the monitor, the screen image should be changed tens of times every second like a fluorescent lamp. The vertical frequency or refresh rate is the times per second the image changes. The unit is Hz.
- **Horizontal frequency:** The horizontal interval is the time to display one vertical line. When 1 is divided by the horizontal interval, the number of horizontal lines displayed every second can be tabulated as the horizontal frequency. The unit is kHz.

# Troubleshooting

## The Screen Image Looks Abnormal

- **Is the screen position wrong?**
  - D-sub analog signal - Press ENTER in the remote control to automatically select the optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Position OSD menu.
  - See if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution in the Control Panel "SCREEN" Setting menu.
- **Do thin lines appear on the wbackground screen?**
  - D-sub analog signal - Press ENTER in the remote control to automatically select an optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Clock OSD menu.
- **Horizontal noise appears or the characters look blurred.**
  - D-sub analog signal - Press ENTER in the remote control to automatically select an optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Phase OSD menu.
- **The screen is displayed abnormally.**
  - The proper input signal is not connected to the signal port. Connect the signal cable that matches with the source input signal.

## After-image Appears on the Screen

- **After-image appears when the product is turned off.**
  - If you use a fixed image for a long time, the pixels may be damaged quickly. Use the screen - saver function.

# Troubleshooting

## The Audio Does Not Work

- No sound?
  - See if the audio cable is connected properly.
  - Adjust the volume.
  - See if the sound is set properly.
- Sound is too dull.
  - Select the appropriate equalizer setting.
- Sound is too low.
  - Adjust the volume.

## Screen Color is Abnormal

- Screen has poor color resolution (16 colors).
  - Set the number of colors to more than 24 bits (true color)  
Select Control Panel - Display - Settings - Color Table menu in Windows.
- Screen color is unstable or mono-colored.
  - Check the connection status of the signal cable.  
Or, re - insert the PC video card.
- Do black spots appear on the screen?
  - Several pixels (red, green, white or black color) may appear on the screen, which can be attributable to the unique characteristics of the LCD panel. The it is not a malfunction of the LCD.

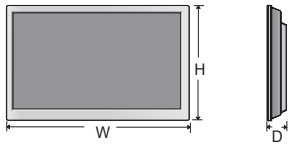
## Abnormal Operation

- The power suddenly turned off.
  - Is the sleep timer set?
  - Check the power control settings.  
Power interrupted.
  - "CAUTION! FAN STOP!"  
If the power is turns off after this message appears, it means that the fan has malfunctioned.  
Contact your local service center.



# Specifications

The product specifications can change without prior notice for product improvement.

<b>LCD Panel</b>	116.8 cm (46 inch) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel Visible diagonal size: 116.8 cm 0.7455 mm (Pixel Pitch)	
<b>Power</b>	Rated Voltage	AC 100-240 V~ 50 / 60 Hz 5 A
	Power Consumption	On Mode 260 W Typ. Sleep Mode ≤ 1 W (RGB) / 4 W(HDMI / DVI) Off Mode ≤ 1 W
<b>Dimensions, Weight</b>		
	Width x Height x Depth 1025.6 cm (40.38 inch) x 579.8 cm (22.83 inch) x 108.2 cm (4.26 inch)	
	Net 26.0 kg (57.32 lb)	
<b>Video Signal</b>	Max. Resolution	RGB: 1360 x 768 @ 60 Hz HDMI / DVI: 1360 x 768 @ 60 Hz
	Recommended Resolution	RGB: 1360 x 768 @ 60 Hz HDMI / DVI: 1360 x 768 @ 60 Hz
	Horizontal Frequency	RGB: 31 kHz to 64 kHz HDMI / DVI: 31 kHz to 64 kHz
	Vertical Frequency	RGB: 58 Hz to 60 Hz HDMI / DVI: 58 Hz to 60 Hz
	Synchronization Type	Separate / Digital
<b>Input Connector</b>	15-pin D-sub type, HDMI/DVI (digital), Component, RS-232C, AV(CVBS)	
<b>Environmental Conditions</b>	Operational Condition	Temperature: 0 °C to 40 °C, Humidity: 10 % to 80 %
	Storage Condition	Temperature: -20 °C to 60 °C, Humidity: 5 % to 95 %

## NOTE

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

# Specifications

## ● PC Mode - Preset Mode

Preset mode		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Preset mode		Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	720 x 400	31.468	70.8	*6	1360 x 768	47.72	59.799
*2	640 x 480	31.469	59.94	*7	1280 x 1024	63.981	60.02
*3	800 x 600	37.879	60.317	8	1152 x 864	53.7	60
*4	1024 x 768	48.363	60	9	1280 x 800	49.6	60
*5	1280 x 720	45	60	10	1280 x 960	60	60

1 to 10 : RGB Mode

\* : HDMI/DVI Mode

## ● DTV Mode

	Component	HDMI / DVI(DTV)
480i	o	x
576i	o	x
480p	o	o
576p	o	o
720p	o	o
1080i	o	o

## ● Power Indicator

Mode	Product
On Mode	Green
Sleep Mode	Amber
Off Mode	-

Use this method to connect several products to a single PC. You can control several products at a time by connecting them to a single PC.

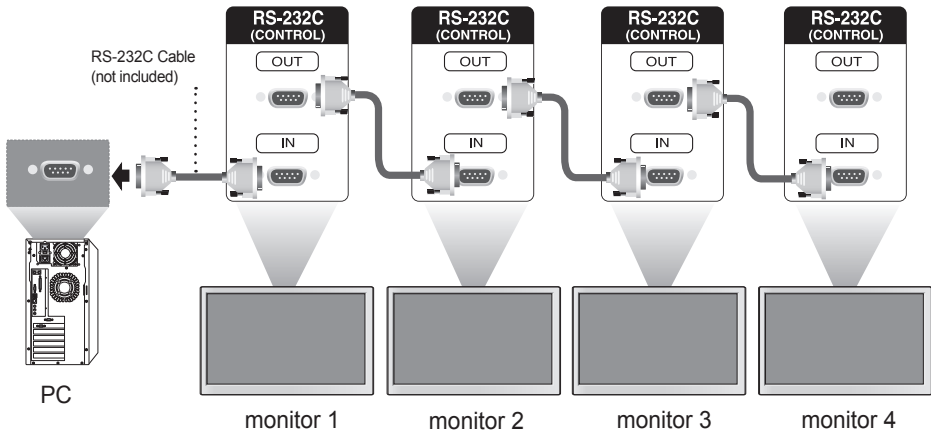
If the [Set ID] menu in [Multi] is set to 1, the monitor ID value should be set between 1 and 225.

## Connecting the Cable

Connect the RS-232C cable as shown in the picture.

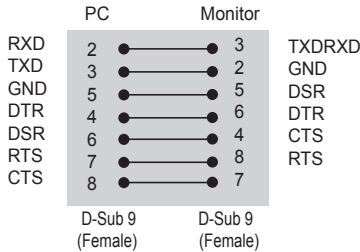
You need to purchase a cable to connect the RS-232C socket because it is not provided with the monitor.

RS-232C protocol is used for communication between the PC and product. You can turn the product on/off, select an input source or adjust the OSD menu from your PC.

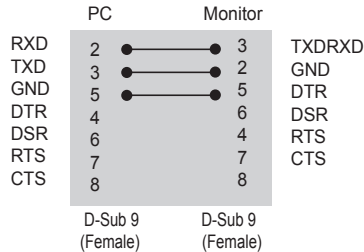


## RS-232C Configurations

### 7-Wire Configurations (Standard RS-232C cable)



### 3-Wire Configurations (Not Standard)



## Communication Parameters

- ▶ Baud Rate: 9600 baud Rate (UART)
- ▶ Data Length: 8 bit
- ▶ Parity Bit: None
- ▶ Stop Bit: 1bit
- ▶ Flow Control: None
- ▶ Communication Code: ASCII code
- ▶ Use a crossed (reverse) cable

 Command Reference List

Content	Command 1	Command 2	Data0 (Hex)	Data1 (Hex)	Data2 (Hex)	Remark
01. Power	k	a	00-01			
02. Input List	x	b	20-A0			
03. Picture Mode	d	x	00-05			Change the input port
04. Brightness	k	h	00-64			RGB, HDMI, AV, Component
05. Contrast	k	g	00-64			RGB, HDMI, AV, Component
06. Color	k	i	00-64			Only AV, Component
07. Tint	k	j	00-64			Only AV
08. Sharpness	k	k	00-64			Only AV, Component
09. Color Temperature	k	u	00-05			
10. Color Temperature User Red	i	r	00-64			
11. Color Temperature User Green	i	g	00-64			
12. Color Temperature User Blue	i	b	00-64			
13. Aspect Ratio	k	c	01-09			Change the input port
14. Auto Config	j	u	01			Only RGB
15. Sound Mode	d	y	00-05			
16. Volume	k	f	00-64			
17. Mute	k	e	00-01			
18. Factory Reset	f	k	00-02			
19. Time	f	a	00	00-17	00-3B	'00'/Hour/ Minute
20. On Time (On / Off Timer)	f	d	00-01	00-17	00-3B	Off, On/Hour/ Minute
21. Off Time (On / Off Timer)	f	e	00-01	00-17	00-3B	Off, On/Hour/ Minute
22. On Timer List	f	u	00-09			
23. Language	f	i	00-09			
24. Key Lock	k	m	00-01			
25. Tile Mode	d	d	00-FF			
26. Tile mode check	i	a	FF			
27. H Size	d	g	00-14			

# Controlling Multiple Products

Content	Command 1	Command 2	Data0 (Hex)	Data1 (Hex)	Data2 (Hex)	Remark
28. V Size	d	h	00-14			
29. Tile ID	d	i	01-E1			
30. Master	g	b	00-01			
31. Fan Control	g	c	00-02			
32. Fan Active Temp.	g	d	14-64			
33. Hysteresis	g	e	00-14			
34. Current Temp	d	n	FF			Read only
35. Key	m	c	Key Code			
36. Power Saving Mode	f	j	00-01			
37. Software Version	f	z		FF		Read only
38. Panel Time	d	l		FF		Day Count
39. Sub Brightness	h	a	3B-BA			
40. Sub Contrast	h	b	40-BF			
41. Red Offset	h	c	3B-BA			
42. Green Offset	h	d	3B-BA			
43. Blue Offset	h	e	3B-BA			
44. Red Gain	h	f	40-BF			
45. Green Gain	h	g	40-BF			
46. Blue Gain	h	h	40-BF			
47. Backlight	h	i	00-FA			00, 19, 32, 4B, 64, 7D, 96, AF, C8, E1, FA
48. Input List	k	b	02-09			

## ● Transmission / Receiving Protocol

### Transmission

```
[Command1][Command2][ ][Set ID][ ][Data][Cr]
```

- \* [Command 1]: First command. (k, j, m, d, f, x)
- \* [Command 2]: Second command.(a to u)
- \* [Set ID]: Set up the Set ID number of product.  
range : 01H to E1H. by setting '0', server can control all products.
- \* In case of operating with more than 2 sets using set ID as '0' at the same time, it should not be checked the ack message. Because all sets will send the ack message, so it's impossible the check the whole ack messages.
- \* [DATA]: To transmit command data.  
Transmit 'FF' data to read status of command.
- \* [Cr]: Carriage Return  
ASCII code '0 x 0 D'
- \* [ ]: ASCII code Space (0 x 20)

### OK Acknowledgement

```
[Command2][ ][Set ID][ ][OK][Data][x]
```

- \* The Product transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the data of the PC computer.

### Error Acknowledgement

```
[Command2][ ][Set ID][ ][NG][Data][x]
```

- \* If there is error, it returns NG

## Transmission / Receiving Protocol

### 01. Power (Command 1: k, Command 2: a)

► To control Power On / Off of the Set.

Transmission

[k][a][ ][Set ID][ ][Data][Cr]

Data 0 : Power Off 1 : Power On FF : Read Status

Acknowledgement

[a][ ][Set ID][ ][OK/NG][Data][x]

### 02. Input List (Command 1: x, Command 2: b)

► To select input list for the Set.

Transmission

[x][b][ ][Set ID][ ][Data][Cr]

Data (Hex)

Data	Input List
60	RGB
A0	HDMI
20	AV
40	Component

Acknowledgement

[b][ ][Set ID][ ][OK/NG][Data][x]

### 03. Picture Mode (Command 1: d, Command 2: x)

► To adjust the picture mode.

Transmission

[d][x][ ][Set ID][ ][Data][Cr]

Data (Hex)

Data / Input List	RGB	HDMI	AV	Component
05	User	User	User	User
00	Vivid	Vivid	Vivid	Vivid
01	Standard	Standard	Standard	Standard
02			Cinema	Cinema
04	Game	Game	Game	Game

Acknowledgement

[x][ ][Set ID][ ][OK/NG][Data][x]

## Transmission / Receiving Protocol

### 04. Brightness (Command 1: k, Command 2: h)

► To adjust screen brightness.

#### Transmission

```
[k][h][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[h][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

Input List : RGB, HDMI, AV, Component

### 05. Contrast (Command 1: k, Command 2: g)

► To adjust screen contrast.

#### Transmission

```
[k][g][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[g][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

Input List : RGB, HDMI, AV, Component

### 06. Color (Command 1: k, Command 2: i)

► To adjust the screen color.

#### Transmission

```
[k][i][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[i][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

Input List : AV, Component

### 07. Tint (Command 1: k, Command 2: j)

► To adjust the screen tint.

#### Transmission

```
[k][j][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[j][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

Input List : AV

ex) 00H : R50

64H : G50

If the screen tint is set to 0 in the menu, it becomes a hexademical code (0 x 32) in the transfer protocol.



## ● Transmission / Receiving Protocol

### 08. Sharpness (Command 1: k, Command 2: k)

▶ To adjust the screen Sharpness.

Transmission

[k][k][ ][Set ID][ ][Data][Cr]

Acknowledgement

[k][ ][Set ID][ ][OK/NG][Data][x]

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

Input List: AV, Component

### 09. Color Temperature (Command 1: k, Command 2: u)

▶ To adjust the screen color temperature.

Transmission

[k][u][ ][Set ID][ ][Data][Cr]

Acknowledgement

[u][ ][Set ID][ ][OK/NG][Data][x]

Data (Hex)

Data	Color Temperature
03	User
04	Cool2
01	Cool1
00	Medium
02	Warm1
05	Warm2

### 10. Color Temperature User Red (Command 1: i, Command 2: r)

▶ To adjust screen color temperature user red.

Transmission

[i][r][ ][Set ID][ ][Data][Cr]

Acknowledgement

[i][ ][Set ID][ ][OK/NG][Data][x]

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

### 11. Color Temperature User Green (Command 1: i, Command 2: g)

▶ To adjust screen color temperature user green.

Transmission

[i][g][ ][Set ID][ ][Data][Cr]

Acknowledgement

[g][ ][Set ID][ ][OK/NG][Data][x]

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

## ● Transmission / Receiving Protocol

### 12. Color Temperature User Blue (Command 1: i, Command 2: b)

► To adjust screen color temperature user blue.

Transmission

[i][b][ ][Set ID][ ][Data][Cr]

Acknowledgement

[b][ ][Set ID][ ][OK/NG][Data][x]

Data      Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

### 13. Aspect Ratio (Command 1: k, Command 2: c)

► To adjust the screen format.

Transmission

[k][c][ ][Set ID][ ][Data][Cr]

Acknowledgement

[c][ ][Set ID][ ][OK/NG][Data][x]

Data (Hex)

Data	RGB	HDMI	Data	AV	Component
01	4:3	4:3	02	16:9	16:9
02	16:9	16:9	09	Just Scan	Just Scan
			04	Zoom	Zoom
			01	4:3	4:3
			07	14:9	14:9

### 14. Auto Config. (Command 1: j, Command 2: u)

► To adjust picture position and minimize image shaking automatically.

It works only in RGB mode.

Transmission

[j][u][ ][Set ID][ ][Data][Cr]

Acknowledgement

[u][ ][Set ID][ ][OK/NG][Data][x]

Data 1: To set

## Transmission / Receiving Protocol

### 15. Sound Mode (Command 1: d, Command 2: y)

► To adjust the Sound mode.

#### Transmission

```
[d][y][ ][Set ID][ ][Data][Cr]
```

Data (Hex)

Data	Sound Mode
00	User
01	Standard
02	Music
03	Cinema
05	Game

#### Acknowledgement

```
[y][ ][Set ID][ ][OK/NG][Data][x]
```

### 16. Volume (Command 1: k, Command 2: f)

► To adjust Volume.

#### Transmission

```
[k][f][ ][Set ID][ ][Data][Cr]
```

Data Min : 0 to Max : 64 (\*transmit by Hexadecimal code)

#### Acknowledgement

```
[f][ ][Set ID][ ][OK/NG][Data][x]
```

### 17. Mute (Command 1: k, Command 2: e)

► To control On/Off of the Volume Mute.

#### Transmission

```
[k][e][ ][Set ID][ ][Data][Cr]
```

Data 0: Volume Mute On (Volume Off)

#### Acknowledgement

```
[e][ ][Set ID][ ][OK/NG][Data][x]
```

1:Volume Mute Off (Volume On)

### 18. Factory Reset (Command 1: f, Command 2: k)

► Execute the Picture, Screen and Factory Reset functions.

#### Transmission

```
[f][k][ ][Set ID][ ][Data][Cr]
```

Data	System Reset
00	User
01	User + Factory
02	User + Factory + Tile Mode

#### Acknowledgement

```
[k][ ][Set ID][ ][OK/NG][Data][x]
```

User: Initializes the customized values (except for the tile mode, resolution (RGB only), language and current time).

Factory: Initializes the resolution (RGB only), language and current time.

Tile Mode: Initializes the tile mode.

## ● Transmission / Receiving Protocol

### 19. Time (Command 1: f, Command 2: a)

- ▶ Set the current time.

#### Transmission

```
[f][a][ ][Set ID][ ][Data1][ ][Data2][ ][Data3][Cr]
```

Data1: ffh (read)  
00h to 06h (write of Time Day) (not use)  
(\*transmit by Hexadecimal code)

Data2: ffh : read Time Hours  
00h to 17h : write of Time Hours  
(\*transmit by Hexadecimal code)

#### Acknowledgement

```
[a][ ][Set ID][ ][OK/NG][Data1][Data2][Data3][x]
```

Data3: ffh : read Time Minutes  
00h to 3bh : write of Time Minutes  
(\*transmit by Hexadecimal code)

\* The day of week cannot be set even if Data 1 is entered.

### 20. On Time (On/Off Timer) (Command 1: f, Command 2: d)

- ▶ Set On Timer.

#### Transmission

```
[f][d][ ][Set ID][ ][Data1][ ][Data2][ ][Data3][Cr]
```

Data1 : f1h : read index of On Time  
e1h : write of On Time off  
80h : write of On Time on  
(\*transmit by Hexadecimal code)

Data 2 : ffh : read of On Time Hours  
00h to 17h : write of On Time Hours  
(\*transmit by Hexadecimal code)

#### Acknowledgement

```
[d][ ][Set ID][ ][OK/NG][Data1][Data2][Data3][x]
```

Data 3 : ffh : read of On Time Minutes  
00h to 3bh : write of On Time Minutes  
(\*transmit by Hexadecimal code)

### 21. Off Time (On/Off Timer) (Command 1: f, Command 2: e)

- ▶ Set Off Timer.

#### Transmission

```
[f][e][ ][Set ID][ ][Data1][ ][Data2][ ][Data3][Cr]
```

Data 1 : f1h : read index of Off Time  
e1h : write of Off Time off  
80h : write of Off Time on  
(\*transmit by Hexadecimal code)

Data 2 : ffh : read of Off Time Hours  
00h to 17h : write of Off Time Hours  
(\*transmit by Hexadecimal code)

#### Acknowledgement

```
[e][ ][Set ID][ ][OK/NG][Data1][Data2][Data3][x]
```

Data 3 : ffh : read of Off Time Minutes  
00h to 3bh : write of Off Time Minutes  
(\*transmit by Hexadecimal code)

## ● Transmission / Receiving Protocol

### 22. On Timer List (Command 1: f, Command 2: u)

▶ Selects the input source depending on the day of the week.

Transmission

[f][u][ ][Set ID][ ][Data1][ ][Data2][Cr]

Acknowledgement

[u][ ][Set ID][ ][OK/NG][Data1][Data2][x]

Data 1 : f1h : write/read index of On Time Input

Data 2 :

Data(Hexa)	Input List
7	RGB
9	HDMI
2	AV
4	Component

\* when you read the current On Time Input, [Data2] needs to be 0xff

ex) fu 01 f1 ff - when you read index of On Time Input

ex) fu 01 f1 07 - when you write index of On Time Input RGB

### 23. Language (Command 1: f, Command 2: i)

▶ Set the OSD language.

Transmission

[f][i][ ][Set ID][ ][Data][Cr]

Acknowledgement

[i][ ][Set ID][ ][OK/NG][Data][x]

Data (Hex)

Data	Language	Data	Language	Data	Language
00	English	04	Italiano	08	한 국 어
01	Français	05	Português	09	Русский
02	Deutsch	06			
03	Español	07	日 本 語		

### 24. Key Lock (Command 1: k, Command 2: m)

▶ Enables/disables the set's lock function.

Transmission

[k][m][ ][Set ID][ ][Data][Cr]

Acknowledgement

[m][ ][Set ID][ ][OK/NG][Data][x]

Data 0: Lock disabled    1: Lock enabled

## ● Transmission / Receiving Protocol

### 25. Tile Mode (Command 1: d, Command 2: d)

- ▶ Change a Tile Mode.

#### Transmission

```
[d][d][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[d][ ][Set ID][ ][OK/NG][Data][x]
```

#### Data (Hex)

Data	IR Remote Key
00, 11	Tile mode is off.
12	1 x 2 mode
13	1 x 3 mode
...	...
FF	15 x 15 mode

- ex) Data 13 : Indicates that the H Tile is 1 and the V Tile is 3.  
Except for 00, a value 0X or X0 cannot be used.

### 26. Tile mode check (Command 1: i, Command 2: a)

- ▶ Check the tile mode.

#### Transmission

```
[i][a][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[a][ ][Set ID][ ][OK/NG][Data][x]
```

The data is always FF (in Hexa)

### 27. H Size (Command 1: d, Command 2: g)

- ▶ To set the Horizontal position.

#### Transmission

```
[d][g][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[g][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 00H to Max : 14H (\*transmit by Hexadecimal code)  
If the H tile is set to 1, it does not work.

### 28. V Size (Command 1: d, Command 2: h)

- ▶ To set the Vertical position.

#### Transmission

```
[d][h][ ][Set ID][ ][Data][Cr]
```

#### Acknowledgement

```
[h][ ][Set ID][ ][OK/NG][Data][x]
```

Data Min : 00H to Max : 14H (\*transmit by Hexadecimal code)  
If the V tile is set to 1, it does not work.

## ● Transmission / Receiving Protocol

### 29. Tile ID (Command 1: d, Command 2: i)

▶ Assigns the tile ID.

Transmission

[d][i][ ][Set ID][ ][Data][Cr]

Data Min : 1H to Max : E1 (\*transmit by Hexadecimal code)

Acknowledgement

[i][ ][Set ID][ ][OK/NG][Data][x]

### 30. Master (Command 1: g, Command 2: b)

▶ Assigns the master for the multi function.

Transmission

[g][b][ ][Set ID][ ][Data][Cr]

Data 0 : Master Off, 1 : Master On

\* The Master function receives the monitor status in RS232C mode.

When multiple sets are connected, the Master function must be enabled only for one set.

Acknowledgement

[b][ ][Set ID][ ][OK/NG][Data][x]

### 31. Fan Control (Command 1: g, Command 2: c)

▶ Controls the fan.

Transmission

[g][c][ ][Set ID][ ][Data][Cr]

Data 0 : Natural Off

Data	Fan Control Mode
00	Off
01	On
02	Auto

Acknowledgement

[c][ ][Set ID][ ][OK/NG][Data][x]

### 32. Fan Active Temp (Command 1: g, Command 2: d)

▶ Sets the operation temperature of the fan.

Transmission

[g][d][ ][Set ID][ ][Data][Cr]

Data Min : 14H to Max : 64H (\*transmit by Hexadecimal code)

Acknowledgement

[d][ ][Set ID][ ][OK/NG][Data][x]

## Transmission / Receiving Protocol

### 33. Hysteresis (Command 1: g, Command 2: e)

► Sets the temperature difference between when the fan is operating and it stops.

#### Transmission

```
[g][e][ ][Set ID][ ][Data][Cr]
```

Data Min : 00H to Max : 14H (\*transmit by Hexadecimal code)

#### Acknowledgement

```
[e][ ][Set ID][ ][OK/NG][Data][x]
```

### 34. Current Temp (Command 1: d, Command 2: n)

► Checks the internal temperature.

#### Transmission

```
[d][n][ ][Set ID][ ][Data][Cr]
```

The data is always FF (in Hex)

#### Acknowledgement

```
[n][ ][Set ID][ ][OK/NG][Data][x]
```

To read the temperature value

### 35. Key (Command 1: m, Command 2: c)

► To send IR remote key code.

#### Transmission

```
[m][c][ ][Set ID][ ][Data][Cr]
```

Data (Hex)

Data	IR Remote Key	Data	IR Remote Key
08	Power	00	Up
43	Menu	01	Down
5B	Exit	02	Left
0B	Source (Input list)	03	Right
44	Enter		

#### Acknowledgement

```
[c][ ][Set ID][ ][OK/NG][Data][x]
```

### 36. Power Saving Mode (Command 1: f, Command 2: j)

► Set the DPM (Display Power Management) function.

#### Transmission

```
[f][j][ ][Set ID][ ][Data][Cr]
```

Data 0 : Off, 1 : On

#### Acknowledgement

```
[j][ ][Set ID][ ][OK/NG][Data][x]
```



## ● Transmission / Receiving Protocol

### 37. Software Version (Command 1: f, Command 2: z)

► Checks the software version.

#### Transmission

```
[f][z][ ][Set ID][ ][Data][Cr]
```

The data is always FF (in Hex)

Data1	6 : 06
Data2	0 : 00
Data3	0 : 00

ex) DID IN HD EU V6.00 100416

#### Acknowledgement

```
[z][ ][Set ID][ ][OK/NG][Data1][Data2][Data3][x]
```

To read the software version.

### 38. Panel Time (Command 1: d, Command 2: l)

► Checks how long the panel of the monitor is used.

#### Transmission

```
[d][l][ ][Set ID][ ][Data][Cr]
```

The data is always FF (in Hex)

#### Acknowledgement

```
[l][ ][Set ID][ ][OK/NG][Data1][Data2][x]
```

Data1,2:Day (Data are 2byte long in Hex ASCII format)

### 39. Sub Brightness (Command 1: h, Command 2: a)

► Sets the brightness of the factory menu.

#### Transmission

```
[h][a][ ][Set ID][ ][Data][Cr]
```

Data Min : 3B to Max : BA (\*transmit by Hexadecimal code)

#### Acknowledgement

```
[a][ ][Set ID][ ][OK/NG][Data][x]
```

### 40. Sub Contrast (Command 1: h, Command 2: b)

► Sets the contrast of the factory menu.

#### Transmission

```
[h][b][ ][Set ID][ ][Data][Cr]
```

Data Min : 40 to Max : BF (\*transmit by Hexadecimal code)

#### Acknowledgement

```
[b][ ][Set ID][ ][OK/NG][Data][x]
```

## Transmission / Receiving Protocol

### 41. Red Offset (Command 1: h, Command 2: c)

► Sets the red offset of the factory menu.

Transmission

```
[h][c][ ][Set ID][ ][Data][Cr]
```

Data Min : 3B to Max : BA (\*transmit by Hexadecimal code)

Acknowledgement

```
[c][ ][Set ID][ ][OK/NG][Data][x]
```

### 42. Green Offset (Command 1: h, Command 2: d)

► Sets the green offset of the factory menu.

Transmission

```
[h][d][ ][Set ID][ ][Data][Cr]
```

Data Min : 3B to Max : BA (\*transmit by Hexadecimal code)

Acknowledgement

```
[d][ ][Set ID][ ][OK/NG][Data][x]
```

### 43. Blue Offset (Command 1: h, Command 2: e)

► Sets the blue offset of the factory menu.

Transmission

```
[h][e][ ][Set ID][ ][Data][Cr]
```

Data Min : 3B to Max : BA (\*transmit by Hexadecimal code)

Acknowledgement

```
[e][ ][Set ID][ ][OK/NG][Data][x]
```

### 44. Red Gain (Command 1: h, Command 2: f)

► Sets the red gain of the factory menu.

Transmission

```
[h][f][ ][Set ID][ ][Data][Cr]
```

Data Min : 40 to Max : BF (\*transmit by Hexadecimal code)

Acknowledgement

```
[f][ ][Set ID][ ][OK/NG][Data][x]
```

## Transmission / Receiving Protocol

### 45. Green Gain (Command 1: h, Command 2: g)

► Sets the green offset of the factory menu.

Transmission

[h][g][ ][Set ID][ ][Data][Cr]

Data Min : 40 to Max : BF (\*transmit by Hexadecimal code)

Acknowledgement

[g][ ][Set ID][ ][OK/NG][Data][x]

### 46. Blue Gain (Command 1: h, Command 2: h)

► Sets the blue offset of the factory menu.

Transmission

[h][h][ ][Set ID][ ][Data][Cr]

Data Min : 40 to Max : BF (\*transmit by Hexadecimal code)

Acknowledgement

[h][ ][Set ID][ ][OK/NG][Data][x]

### 47. Backlight (Command 1: h, Command 2: i)

► Sets the backlight of the factory menu.

Transmission

[h][i][ ][Set ID][ ][Data][Cr]

Data Min 0, 19, 32, 4B, 64, 7D, 96, AF, C8, E1, FA (\*transmit by Hexadecimal code)

Acknowledgement

[i][ ][Set ID][ ][OK/NG][Data][x]

### 48. Input List (Command 1: k, Command 2: b)

► To select input source for the Set.

Transmission

[k][b][ ][Set ID][ ][Data][Cr]

Acknowledgement

[b][ ][Set ID][ ][OK/NG][Data][x]

Data(Hexa)	Input List
7	RGB
9	HDMI/DVI
2	AV
4	Component

Remote Control IR Code

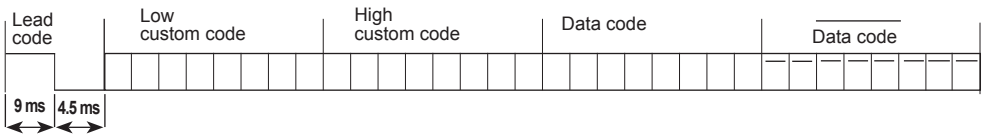
► Remote Control System Infrared Rays System

$f_{osc} = 455 \text{ KHz}$

$f_c = f_{osc} / 12 = 37.917 \text{ KHz}$

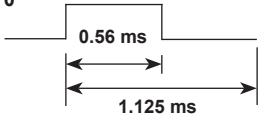
► Signal Code

- Transmission

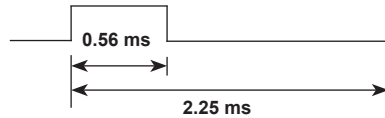


Bit Description

• Bit "0"



• Bit "1"



• Flame Interval



Code (Hexa)	Funtion
80	POWER (Button)
8D	Up (▲)
8E	Down (▼)
8F	Left (◀)
90	Right (▶)
8C	ENTER (Button)
95	MENU (Button)
96	EXIT (Button)
AC	SOURCE





Make sure to read the Safety Precautions before using the product. Keep the Owner's Manual(CD) in an accessible place for future reference. The model and serial number of the SET is located on the back and one side of the SET. Record it below should you ever need service.

MODEL \_\_\_\_\_

SERIAL \_\_\_\_\_

**Important**

WARRANTY VOID  
IF REMOVED

385154Z200F

Warranty void if removed.

**WARNING** -This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Temporary noise is normal when powering ON or OFF this device.