



SAMSUNG

# Monitor User Manual

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S24E650C S27E650C

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The colour and the appearance may differ depending on the product, and the specifications are subject to change without prior notice to improve the performance.

BN46-00484A-01

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# Chapter 01

## Before Using the Product

### Copyright

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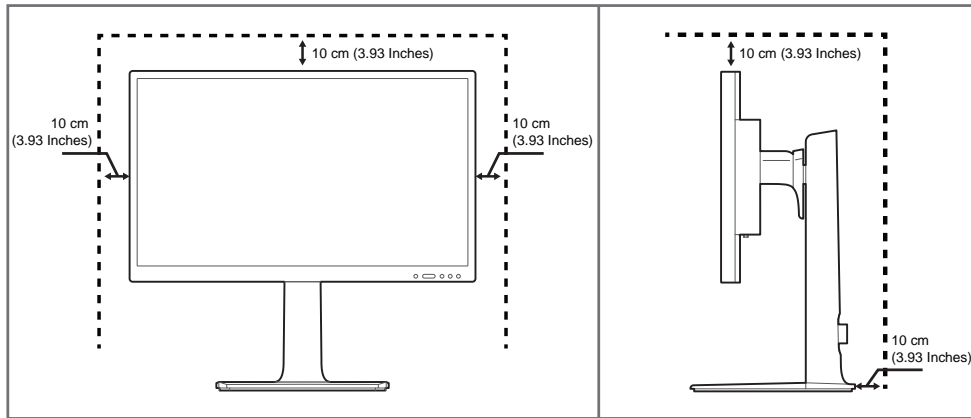
Ownership of all other trademarks is attributed to their due owner.

- An administration fee may be charged if either
  - (a) an engineer is called out at your request and there is no defect in the product (i.e. where you have failed to read this user manual).
  - (b) you bring the unit to a repair centre and there is no defect in the product (i.e. where you have failed to read this user manual).
- The amount of such administration charge will be advised to you before any work or home visit is carried out.

## Securing the Installation Space

Ensure some space around the product for ventilation. An internal temperature rise may cause fire and damage the product. Be sure to allow the amount of space as shown below or greater when installing the product.

— The exterior may differ depending on the product.



## Precautions for storage

High-glossy models can develop white stains on the surface if an ultrasonic wave humidifier is used nearby.

— Contact your nearest Samsung Customer Service Centre if you want to clean the inside of the product (Service fee will be charged.)

## Safety Precautions

### Caution

#### RISK OF ELECTRIC SHOCK DO NOT OPEN

Caution : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. (OR BACK)

THERE ARE NO USER SERVICEABLE PARTS INSIDE.

REFER ALL SERVICING TO QUALIFIED PERSONNEL.



This symbol indicates that high voltage is present inside.

It is dangerous to make any kind of contact with any internal part of this product.



This symbol alerts you that important literature concerning operation and maintenance has been included with this product.

## Symbols

### Warning

A serious or fatal injury may result if instructions are not followed.

### Caution

Personal injury or damage to properties may result if instructions are not followed.



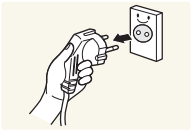
Activities marked by this symbol are prohibited.



Instructions marked by this symbol must be followed.

## Cleaning

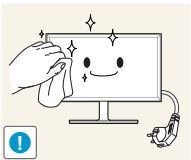
- Exercise care when cleaning as the panel and exterior of advanced LCDs are easily scratched.
- Take the following steps when cleaning.
- The following images are for reference only. Real-life situations may differ from what is shown in the images.



**1** Power off the product and computer.

**2** Disconnect the power cord from the product.

- Hold the power cable by the plug and do not touch the cable with wet hands. Otherwise, an electric shock may result.



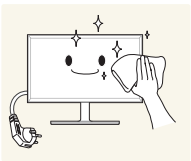
**3** Wipe the monitor with a clean, soft and dry cloth.



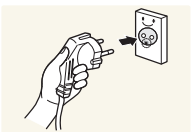
- Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the monitor.



- Do not spray water or detergent directly on the product.



**4** Wet a soft and dry cloth in water and wring thoroughly to clean the exterior of the product.



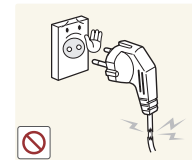
**5** Connect the power cord to the product when cleaning is finished.

**6** Power on the product and computer.

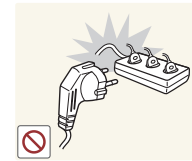
## Electricity and Safety

- The following images are for reference only. Real-life situations may differ from what is shown in the images.

### Warning



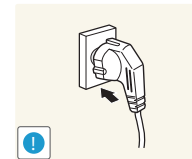
- Do not use a damaged power cord or plug, or a loose power socket.
- An electric shock or fire may result.



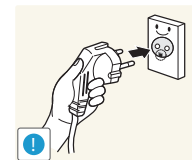
- Do not use multiple products with a single power socket.
- Overheated power sockets may cause a fire.



- Do not touch the power plug with wet hands. Otherwise, an electric shock may result.



- Insert the power plug all the way in so it is not loose.
- An unsecure connection may cause a fire.



- Connect the power plug to a grounded power socket (type 1 insulated devices only).
- An electric shock or injury may result.



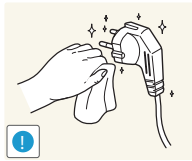
Do not bend or pull the power cord with force. Be careful not to leave the power cord under a heavy object.

- Damage to the cord may result in a fire or electric shock.



Do not place the power cord or product near heat sources.

- A fire or electric shock may result.



Clean any dust around the pins of the power plug or the power socket with a dry cloth.

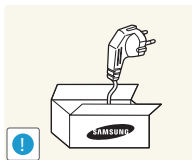
- A fire may result.

### Caution



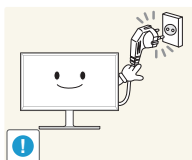
Do not disconnect the power cord while the product is being used.

- The product may become damaged by an electric shock.



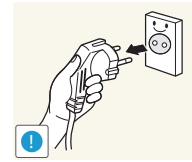
Only use the power cord provided with your product by Samsung. Do not use the power cord with other products.

- A fire or electric shock may result.



Keep the power socket where the power cord is connected unobstructed.

- The power cord must be disconnected to cut off power to the product when an issue occurs.



Hold the plug when disconnecting the power cord from the power socket.

- An electric shock or fire may result.

## Installation

### Warning



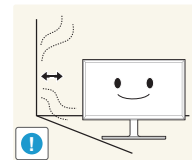
DO NOT PLACE CANDLES, INSECT REPELLANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.

- A fire may result.



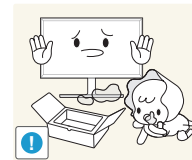
Do not install the product in poorly ventilated spaces such as a bookcase or closet.

- An increased internal temperature may cause a fire.



Install the product at least 10cm away from the wall to allow ventilation.

- An increased internal temperature may cause a fire.



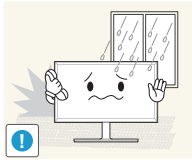
Keep the plastic packaging out of the reach of children.

- Children may suffocate.



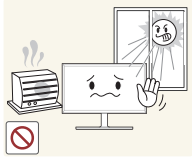
Do not install the product on an unstable or vibrating surface (insecure shelf, sloped surface, etc.)

- The product may fall and become damaged and/or cause an injury.
- Using the product in an area with excess vibration may damage the product or cause a fire.



Do not install the product in a vehicle or a place exposed to dust, moisture (water drips, etc.), oil, or smoke.

- A fire or electric shock may result.



Do not expose the product to direct sunlight, heat, or a hot object such as a stove.

- The product lifespan may be reduced or a fire may result.



Do not install the product within the reach of young children.

- The product may fall and injure children.



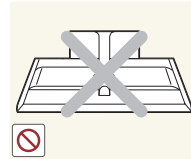
Edible oil, such as soybean oil, can damage or deform the product. Do not install the product in a kitchen or near a kitchen counter.

## Caution



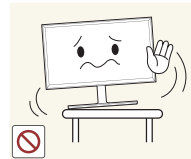
Do not drop the product while moving.

- Product failure or personal injury may result.



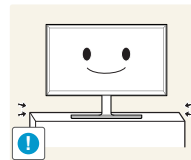
Do not set down the product on its front.

- The screen may become damaged.



When installing the product on a cabinet or shelf, make sure that the bottom edge of the front of the product is not protruding.

- The product may fall and become damaged and/or cause an injury.
- Install the product only on cabinets or shelves of the right size.



Set down the product gently.

- Product failure or personal injury may result.



Installing the product in an unusual place (a place exposed to a lot of fine dust, chemical substances, extreme temperatures or a significant presence of moisture, or a place where the product will operate continuously for an extended period of time) may seriously affect its performance.

- Be sure to consult Samsung Customer Service Centre if you want to install the product at such a place.



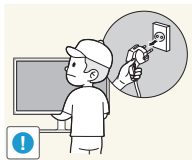
# Operation

## Warning



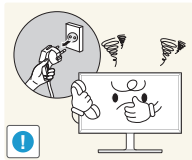
There is a high voltage inside the product. Never disassemble, repair or modify the product yourself.

- A fire or electric shock may result.
- Contact Samsung Customer Service Centre for repairs.



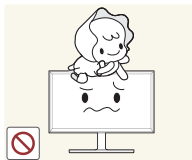
To move the product, first disconnect all the cables from it, including the power cable.

- Damage to the cord may result in a fire or electric shock.



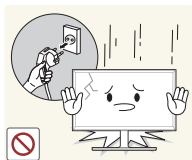
If the product generates abnormal sounds, a burning smell or smoke, disconnect the power cord immediately and contact Samsung Customer Service Centre.

- An electric shock or fire may result.



Do not let children hang from the product or climb on top of it.

- Children may become injured or seriously harmed.



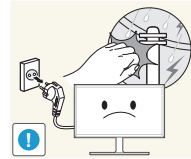
If the product is dropped or the outer case is damaged, turn off the power and disconnect the power cord. Then contact Samsung Customer Service Centre.

- Continued use can result in a fire or electric shock.



Do not leave heavy objects or items that children like (toys, sweets, etc.) on top of the product.

- The product or heavy objects may fall as children try to reach for the toys or sweets resulting in a serious injury.



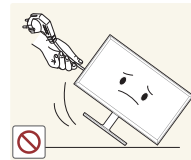
During a lightning or thunderstorm, power off the product and remove the power cable.

- A fire or electric shock may result.



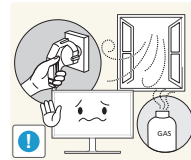
Do not drop objects on the product or apply impact.

- A fire or electric shock may result.



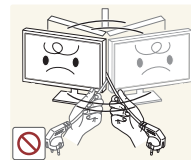
Do not move the product by pulling the power cord or any cable.

- Product failure, an electric shock or fire may result from a damaged cable.



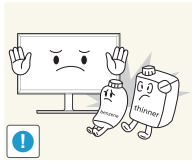
If a gas leakage is found, do not touch the product or power plug. Also, ventilate the area immediately.

- Sparks can cause an explosion or fire.



Do not lift or move the product by pulling the power cord or any cable.

- Product failure, an electric shock or fire may result from a damaged cable.



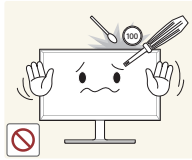
Do not use or keep combustible spray or an inflammable substance near the product.

- An explosion or fire may result.



Ensure the vents are not blocked by tablecloths or curtains.

- An increased internal temperature may cause a fire.



Do not insert metallic objects (chopsticks, coins, hairpins, etc) or objects that burn easily (paper, matches, etc) into the product (via the vent or input/output ports, etc).

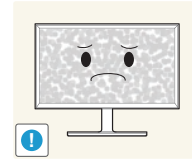
- Be sure to power off the product and disconnect the power cord when water or other foreign substances have entered the product. Then contact Samsung Customer Service Centre.
- Product failure, an electric shock or fire may result.



Do not place objects containing liquid (vases, pots, bottles, etc) or metallic objects on top of the product.

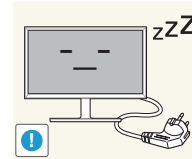
- Be sure to power off the product and disconnect the power cord when water or other foreign substances have entered the product. Then contact Samsung Customer Service Centre.
- Product failure, an electric shock or fire may result.

### Caution



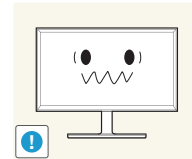
Leaving the screen fixed on a stationary image for an extended period of time may cause afterimage burn-in or defective pixels.

- Activate power-saving mode or a moving-picture screen saver if you will not be using the product for an extended period of time.



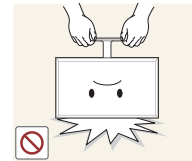
Disconnect the power cord from the power socket if you do not plan on using the product for an extended period of time (vacation, etc).

- Dust accumulation combined with heat can cause a fire, electric shock or electric leakage.



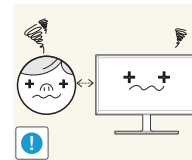
Use the product at the recommended resolution and frequency.

- Your eyesight may deteriorate.



Do not hold the product upside-down or move it by holding the stand.

- The product may fall and become damaged or cause an injury.

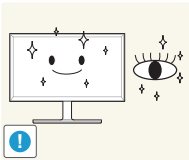


Looking at the screen too close for an extended period of time can deteriorate your eyesight.



Do not use humidifiers or stoves around the product.

- A fire or electric shock may result.

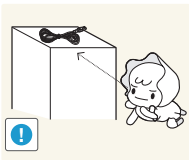


Rest your eyes for more than 5 minutes for every 1 hour of product use.

- Eye fatigue will be relieved.



Do not touch the screen when the product has been turned on for an extended period of time as it will become hot.

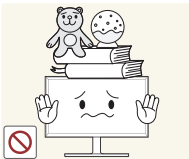


Store small accessories out of the reach of children.



Exercise caution when adjusting the product angle or stand height.

- Your hand or finger may get stuck and injured.
- Tilting the product at an excessive angle may cause the product to fall and an injury may result.



Do not place heavy objects on the product.

- Product failure or personal injury may result.



When using headphones or earphones, do not turn the volume too high.

- Having the sound too loud may damage your hearing.

## Correct posture to use the product



Use the product in the correct posture as follows:

- Straighten your back.
- Allow a distance of 45 to 50 cm between your eye and the screen, and look slightly downward at the screen. Keep your eyes directly in front of the screen.
- Adjust the angle so light does not reflect on the screen.
- Keep your forearms perpendicular to your upper arms and level with the back of your hands.
- Keep your elbows at about a right angle.
- Adjust the height of the product so you can keep your knees bent at 90 degrees or more, your heels attached to the floor, and your arms lower than your heart.

# Chapter 02

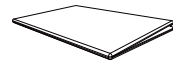
## Preparations

- Contact the vendor where you purchased the product if any components are missing.
- The pictures may look different from the actual components.
- The optimal resolution may not be available when using a non-high speed HDMI or HDMI-DVI cable.

## Checking the Components

### Components

- Components may vary depending on the country.



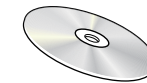
Quick Setup Guide



Warranty card  
(Not available in some locations)



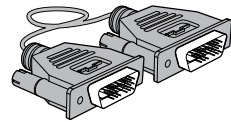
Regulatory guide



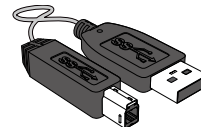
User manual



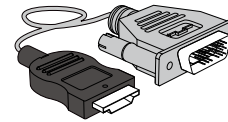
Power cable [\(P.25\)](#)



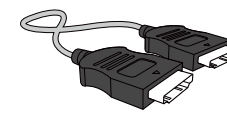
DVI cable (Optional) [\(P.22\)](#)



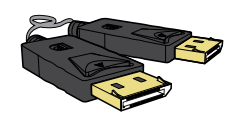
USB 3.0 cable [\(P.27\)](#)



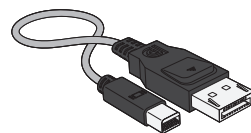
HDMI-DVI cable (Optional) [\(P.23\)](#)



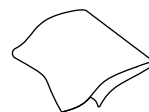
HDMI cable (Optional) [\(P.23\)](#)



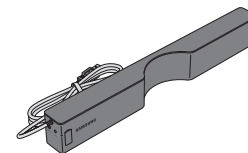
DP cable (Optional) [\(P.24\)](#)



MINI DP cable (Optional)



Cleaning cloth (Optional)

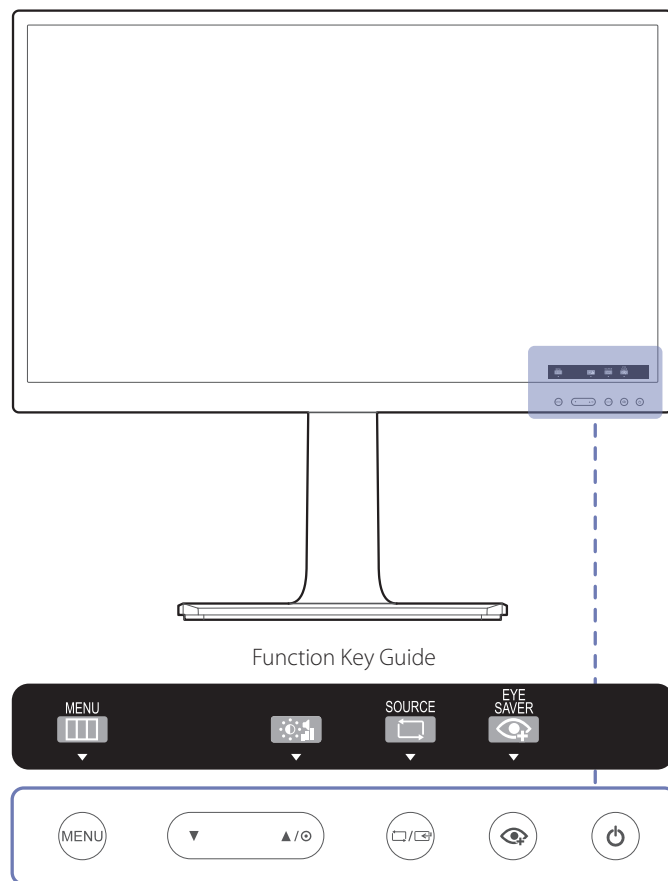


Sound Bar (Optional)

# Parts

## Front Buttons

The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



When the initial screen is displayed, tap any button on the front, except for the ▼ and ⏻ buttons, to display the function button screen.

Icons	Description
MENU	Open or close the onscreen display (OSD) menu, or return to the parent menu. If you tap the <b>MENU</b> button when the function button screen is displayed, the OSD (On Screen Display) menu will be displayed.
▼ / ▲ / ⌚	Move to the upper or lower menu or adjust the value for an option on the OSD menu. When the Function Key Guide is displayed, press ▲ / ⌚ to adjust the <b>Brightness</b> and <b>Contrast, Volume</b> .
🖥️ / 🖥️	Confirm a menu selection. Pressing the 🖥️ / 🖥️ button when the OSD menu is not displayed will change the input source ( <b>DVI, HDMI, DisplayPort</b> ). If you power on the product or change the input source by pressing the 🖥️ / 🖥️ button, a message that shows the changed input source will appear at the top left corner of the screen.
👁️	Press 👁️ to enable or disable <b>Eye Saver Mode</b> . The items below are not available if the <b>Eye Saver Mode</b> function is enable. <ul style="list-style-type: none"> <li><b>Picture</b> → <b>SAMSUNG MAGICBright, Brightness, Color, Game Mode</b></li> <li><b>System</b> → <b>Smart ECO Saving</b></li> </ul>
⏻	Turn the screen on or off. The power indicator will be lit when the product is operating normally. For details on the power-saving function, refer to "PowerSaver(P.70)" in the product specifications. To reduce power consumption, it is best to remove the power cable when not using the product for an extended period of time.

---

**Icons****Description****Function Key Guide**

When a control button on the product is pressed, the Function Key Guide will be displayed before the onscreen menu opens.

(The guide shows the function of the button pressed.)

To access the onscreen menu when the guide is displayed, press the corresponding button again.

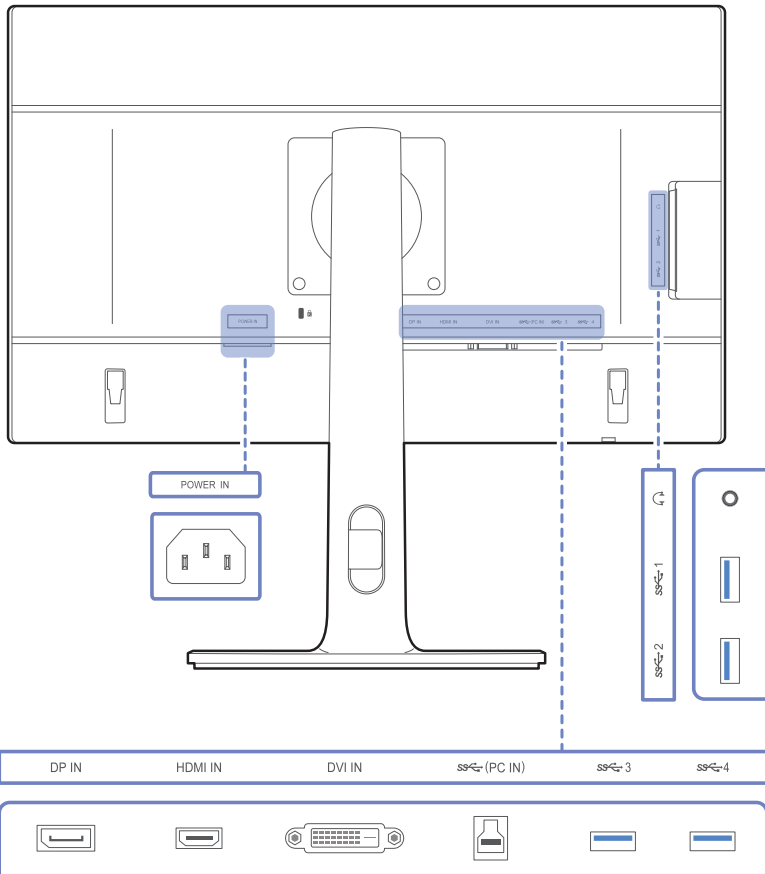
The Function Key Guide may vary depending on the function or product model.

Refer to the actual product.

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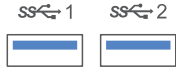



## Reverse Side

— The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



## Port

## Description

 <p>POWER IN</p>	Connect the power cord for your monitor to the <b>POWER IN</b> port on the back of the product.
 <p>DP IN</p>	Connects to a PC using a DP cable.
 <p>HDMI IN</p>	Connects to a source device using an HDMI cable or HDMI-DVI cable.
 <p>DVI IN</p>	Connects to a source device via a DVI cable. — The <b>DVI IN</b> terminal is supplied for the digital (DVI)-dedicated models only.
 <p>SS (PC IN)</p>	Connects to a PC using a USB cable. — This port can only connect to a PC.
 <p>SS 1 SS 2</p>  <p>SS 3 SS 4</p>	Connect to a USB device. Compatible with a USB cable version 3.0 or lower. — Source devices can be charged using these USB ports.
	Connect to an audio output device such as headphones.
	Connect to speakers.

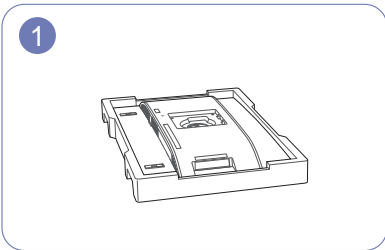
# Installation

## Attaching the Stand

— The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

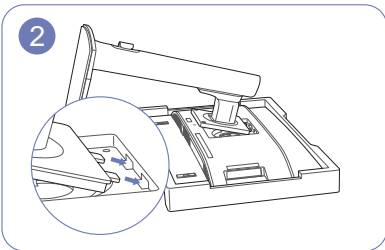
— Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.

**Warning:** The product is curved. Placing pressure on the product when on a flat surface may damage the product. When the product is on the ground facing up or down, do not put pressure on it.

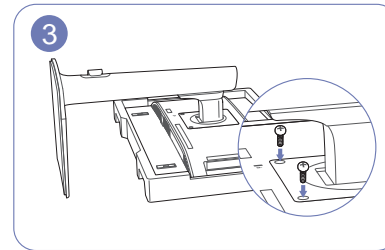


Place the protective Styrofoam (cushion) included in the package on the floor and place the product facing down on the Styrofoam, as shown in the image.

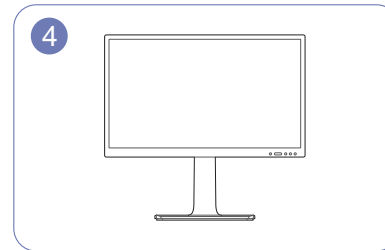
If Styrofoam is unavailable, use a thick sitting mat.



Insert the tabs of the stand into the slots on the back of the product in the direction of the arrows.



Fasten the screws to tightly fix the stand.

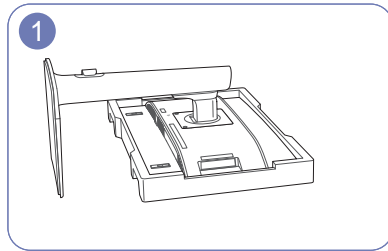


After attaching the stand, place the product in an upright position.



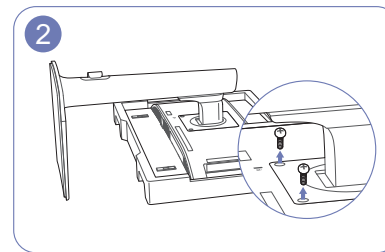
## Removing the Stand

- The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.
- Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.  
**Warning:** The product is curved. Placing pressure on the product when on a flat surface may damage the product. When the product is on the ground facing up or down, do not put pressure on it.
- Power the product off and remove the power cable from the power socket.

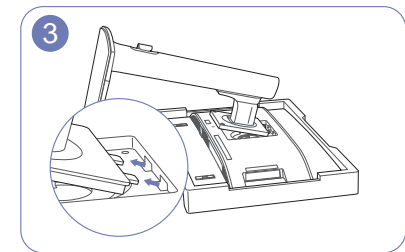


Place the protective Styrofoam (cushion) included in the package on the floor and place the product facing down on the Styrofoam, as shown in the image.

If Styrofoam is unavailable, use a thick sitting mat.



Unfasten the screw from the back of the product.

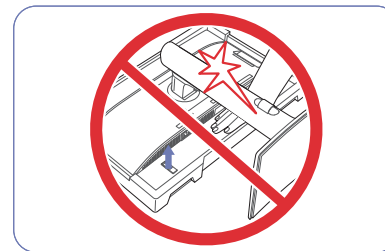


Lift and detach the stand.

### Caution



Do not place your hands in the swiveling area.



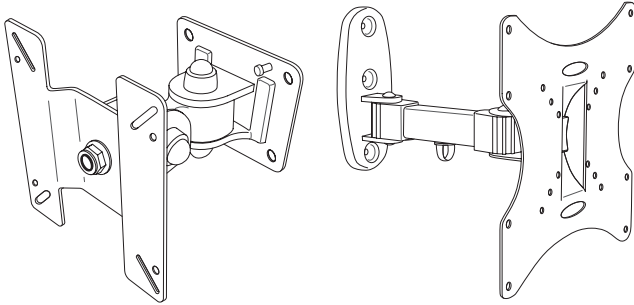
Do not put the hand below the stand body.



Do not hold the product upside down only by the stand.

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## Installing the Wall Mount



### Installing the Wall Mount Kit

The wall mount kit allows you to mount the product on the wall.

Purchase a compatible wall-mount kit to use with the product.

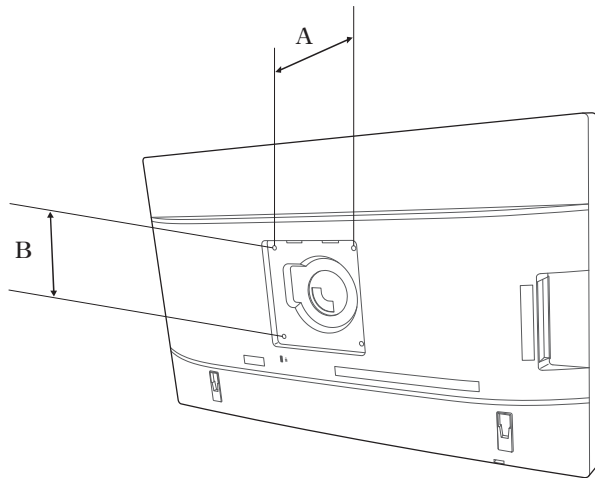
For detailed information on installing the wall mount, see the instructions provided with the wall mount.

We recommend you contact a technician for assistance when installing the wall mount bracket.

Samsung Electronics is not responsible for any damage to the product or injury to yourself or others if you elect to install the wall mount on your own.

## Wall Mount Kit Specifications (VESA)

— Install your wall mount on a solid wall perpendicular to the floor. Before attaching the wall mount to surfaces other than plaster board, please contact your nearest dealer for additional information. If you install the product on a slanted wall, it may fall and result in severe personal injury. Samsung wall mount kits contain a detailed installation manual and all parts necessary for assembly are provided.



- For wall mounts that do not comply with the VESA standard screw specifications, the length of the screws may differ depending on the wall mount specifications.
- Do not fasten the screws too firmly. This may damage the product or cause the product to fall, leading to personal injury.
- Samsung is not liable for these kinds of accidents.
- Samsung is not liable for product damage or personal injury when a non-VESA or non-specified wall mount is used or the consumer fails to follow the product installation instructions.
- Do not mount the product at more than a 15 degree tilt.
- Always have two people mount the product on a wall.
- Standard dimensions for wall mount kits are shown in the table below.

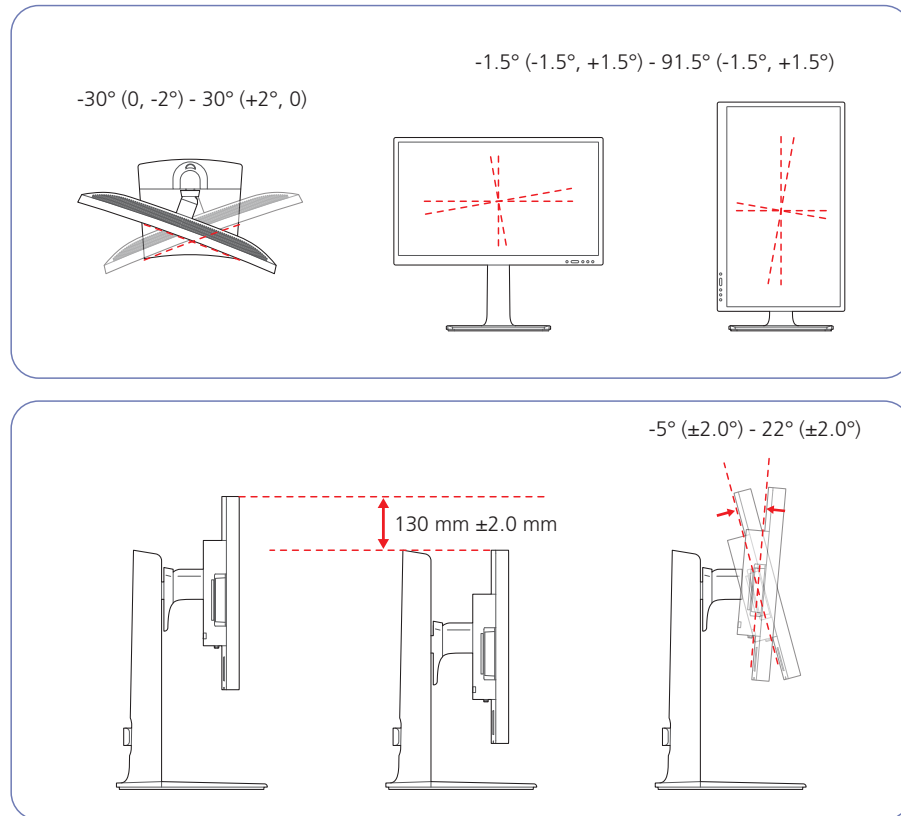
Unit: mm (inches)

Model name	VESA screw hole specs (A * B) in millimeters	Standard Screw	Quantity
S24E650C / S27E650C	100 x 100 (3.9 x 3.9)	M3 x L10 or smaller (MACHINE SCREW)	4

— Do not install your Wall Mount Kit while your product is turned on. It may result in personal injury due to electric shock.

## Adjusting the Product Tilt and Height

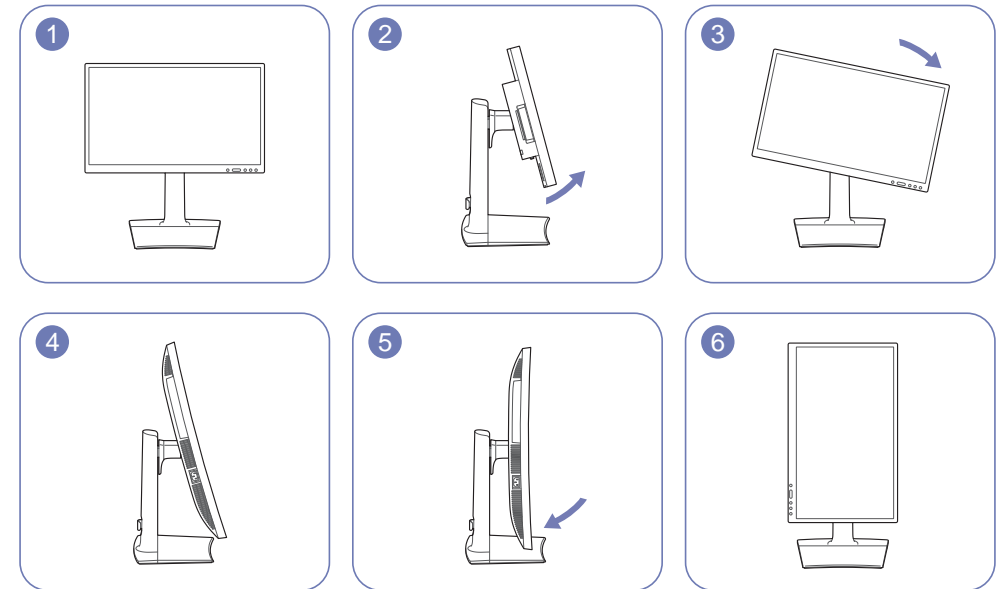
The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



- The monitor tilt and height can be adjusted.
- When adjusting the tilt and height, hold both sides of the product and avoid using excessive force to prevent damage.
- The rotation and height adjustment has a certain tolerance. Stay within the tolerances when rotating or adjusting the height of the product.

## Rotating the Monitor Screen

You can rotate your monitor as shown below.

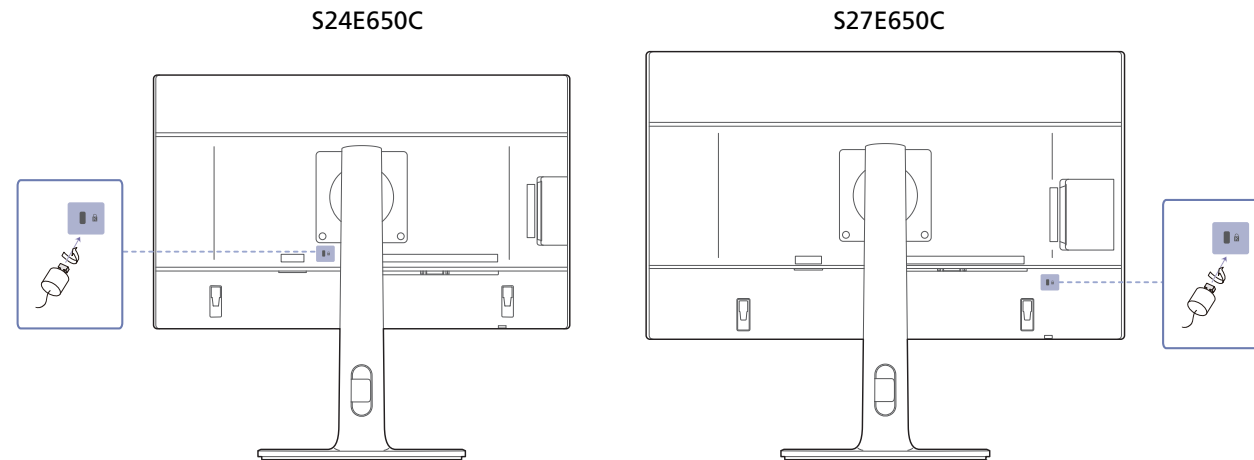


- Adjust the screen following the arrow direction.
- Rotate the screen in clockwise direction till it becomes completely vertical to the desktop.
- Rotating the screen counterclockwise can damage the product. Rotating the screen when the product is upright or when the height is not at the maximum can also damage the product.

## Anti-theft Lock

- An anti-theft lock allows you to use the product securely even in public places.
- The locking device shape and locking method depend on the manufacturer. Refer to the user guide provided with your anti-theft locking device for details.

### To lock an anti-theft locking device:



- 1 Fix the cable of your anti-theft locking device to a heavy object such as a desk.
- 2 Put one end of the cable through the loop on the other end.
- 3 Insert the locking device into the anti-theft lock slot at the back of the product.
- 4 Lock the locking device.
  - An anti-theft locking device can be purchased separately.
  - Refer to the user guide provided with your anti-theft locking device for details.
  - Anti-theft locking devices can be purchased at electronics retailers or online.

# Chapter 03

## Connecting and Using a Source Device

### Before Connecting

Check the following before you connect this product with other devices.

#### Pre-connection Checkpoints

- Before connecting a source device, read the user manual provided with it.  
The number and locations of ports on source devices may differ from device to device.
- Do not connect the power cable until all connections are completed.  
Connecting the power cable during connection may damage the product.
- Check the types of ports at the back of the product you want to connect.

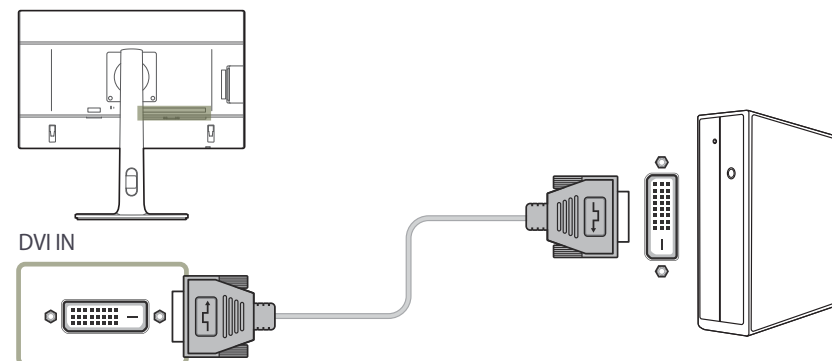
### Connecting and Using a PC



Select a connection method suitable for your PC.

- Connecting parts may differ in different products.

#### Connection using the DVI cable

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.

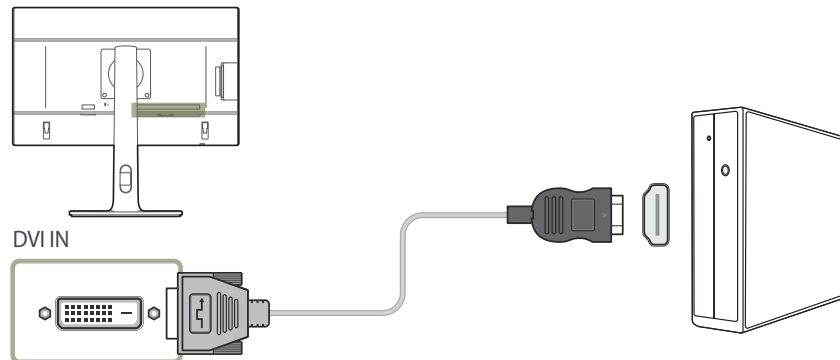


- 1 Connect the DVI cable to the **DVI IN** port on the back of the product and the DVI port on the PC.
- 2 Press  /  to change the input source to **DVI**.

- Audio is not available if the PC and product are connected via the DVI port.
- Provided ports may vary depending on the product.

## Connection Using the DVI-HDMI Cable

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.

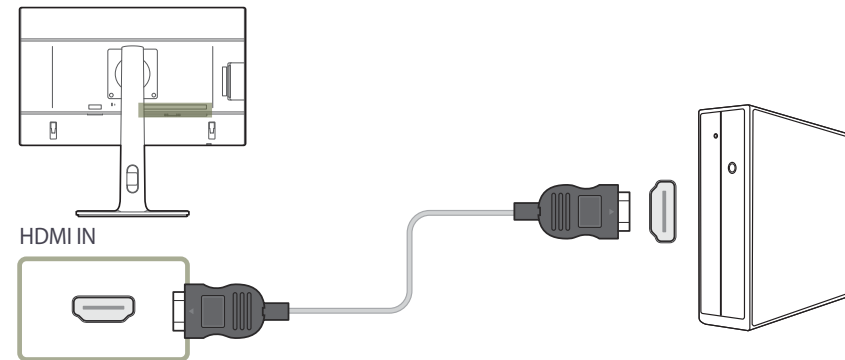


- 1 Connect the HDMI-DVI cable to the **DVI IN** port on the back of the product and the HDMI port on the PC.
- 2 Press  /  to change the input source to **DVI**.



- The audio function is not supported if the source device is connected using the HDMI-DVI cable.
- Provided ports may vary depending on the product.

## Connection Using the HDMI Cable

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.

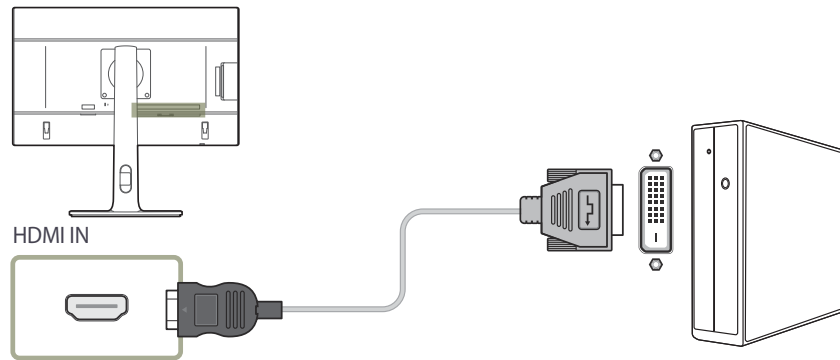


- 1 Connect the HDMI cable to the **HDMI IN** port on the back of the product and the HDMI port on the PC.
- 2 Press  /  to change the input source to **HDMI**.

- If audio is supported, the **Volume** can be adjusted using the  /  buttons on the front of the product.
- The DVI-HDMI cable can be connected to an HDMI port only.
- Use of the maximum resolution may not be possible and the picture quality may degrade, depending on the cable type.
- Provided ports may vary depending on the product.

## Connection Using the HDMI-DVI Cable

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.

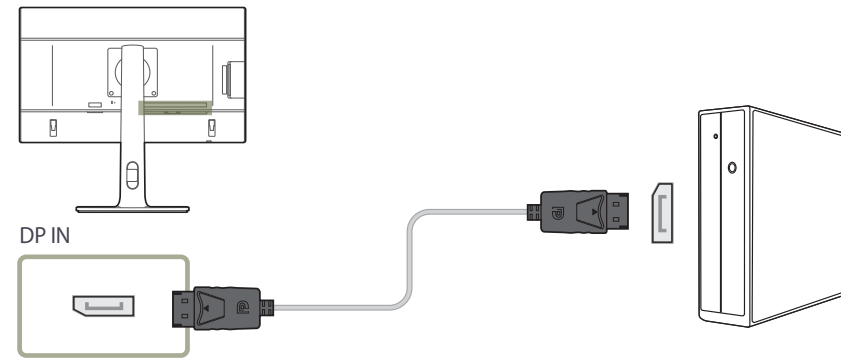




- 1 Connect the HDMI-DVI cable to the **HDMI IN** port on the back of the product and the DVI port on the PC.
- 2 Press  /  to change the input source to **HDMI**.



- The audio function is not supported if the source device is connected using the HDMI-DVI cable.
- Provided ports may vary depending on the product.

## Connection Using the DP Cable

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.



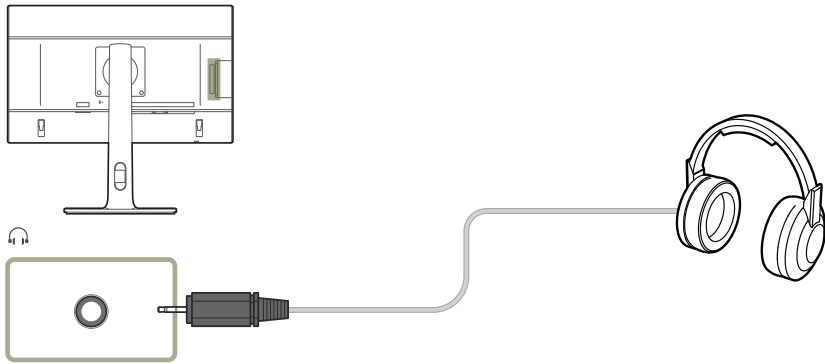
- 1 Connect the DP cable to the **DP IN** port on the back of the product and the DP port on the PC.
- 2 Press  /  to change the input source to **DisplayPort**.

- If audio is supported, the **Volume** can be adjusted using the  /  buttons on the front of the product.
- Connections with an HDMI or DVI cable are not supported.
- Provided ports may vary depending on the product.



## Connecting to Headphones

- Do not connect the power cable before connecting all other cables.  
Ensure you connect a source device first before connecting the power cable.



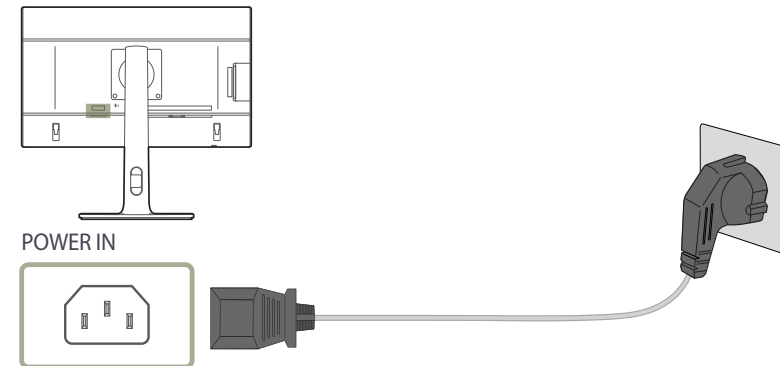
- 1 Connect an audio output device such as headphones to  port on the product.

- The sound could only be heard when using the HDMI to HDMI cable or DP cable.
- If the stereo cable is connected, the **Volume** can be adjusted using the ▲/● buttons on the front of the product.
- Provided ports may vary depending on the product.

## Connecting the Power

- Connecting parts may differ in different products.  
The exterior may differ depending on the product.

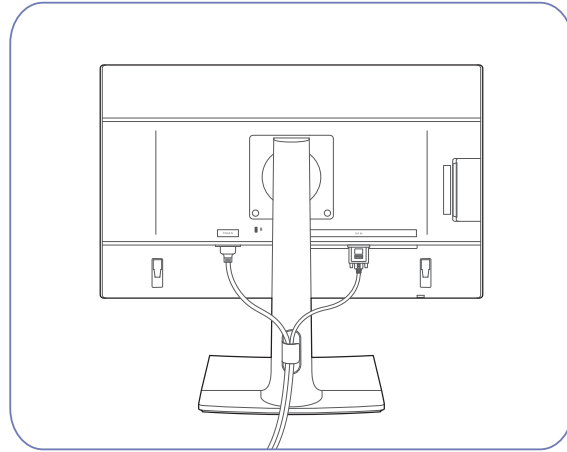
To use the product, connect the power cable to a power outlet and the **POWER IN** port on the product.



- The input voltage is switched automatically.

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## Tidying Up the Connected Cables

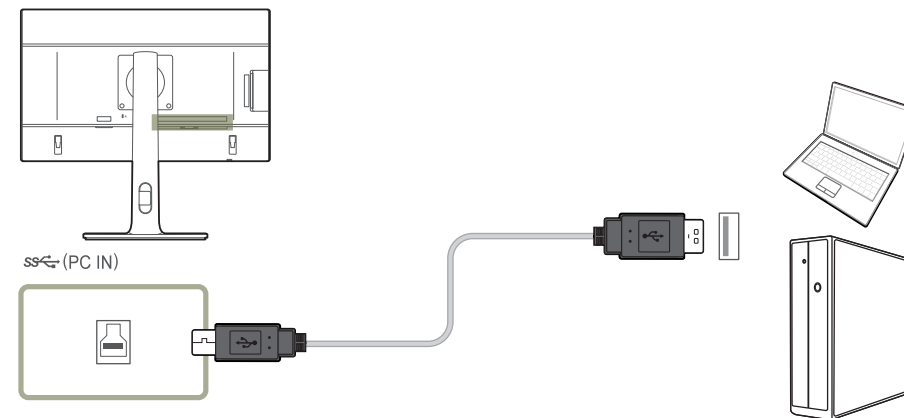



## Connecting the Product to a PC as a USB HUB

### Connecting a PC to the Product

The product can function as a HUB by connecting to a PC via a USB cable. You can connect a source device directly to the product and control the device from the product, without having to connect the device to the PC.

To use the product as a USB hub, connect the product to a PC using a USB cable.



Connect the USB cable to  on the back of the product and USB  on the PC.

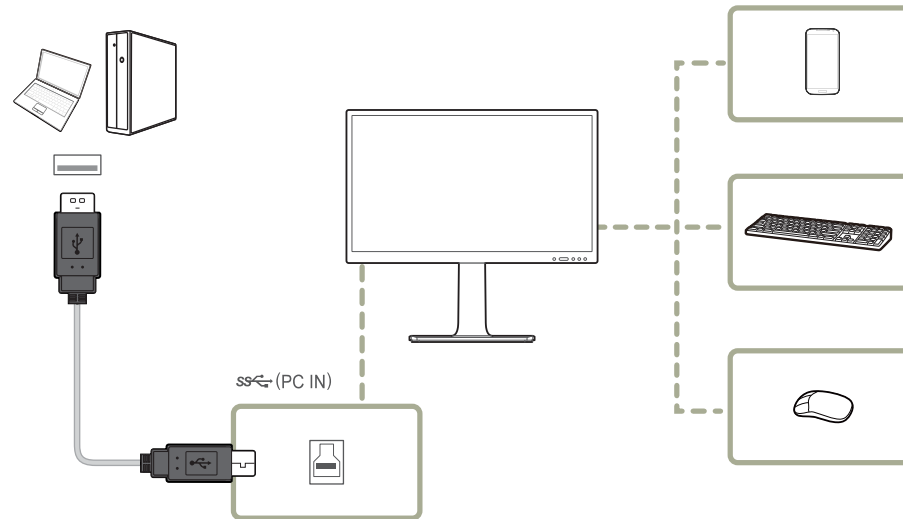
A USB 2.0 cable can be used to connect the product to a PC.

However, to take full advantage of the USB 3.0 function, connect a USB 3.0 cable between the PC and the product. Ensure the PC supports USB 3.0.

## Utilizing the Product as a USB HUB

Using the product as a hub, connect and use various source devices with the product at the same time.

A PC cannot connect to multiple source devices at the same time as it has a limited number of input/output ports available. The HUB feature on the product will improve your work efficiency by allowing you to connect multiple source devices to the USB ports on the product at the same time without connecting them to a PC.



If multiple source devices are connected to the PC, the many cables around the PC may look messy. Connecting the devices directly to the product will resolve such inconvenience.

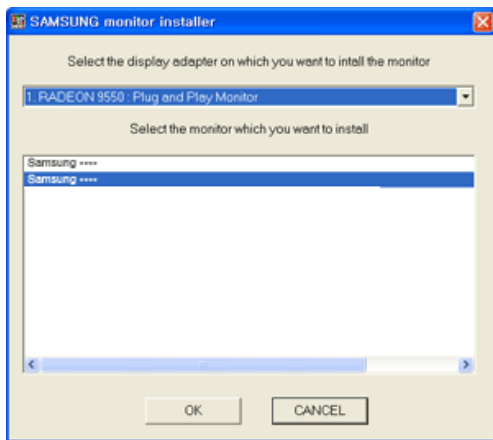
Connect a mobile device such as an MP3 player or smartphone to the product when connected to a PC. This allows you to control the device from the PC or charge the device battery.

- To detect and start a source device faster, connect the device to the USB 3.0 port on the product.
- An external mass-storage HDD requires an external power supply. Be sure to connect it to a power source.
- Battery charging is possible in power-saving mode. However, it is not possible when the product is powered off.
- To charge a battery, make sure that the USB upstream port on the product is connected to a PC via a USB cable.
- Battery charging is not possible if the power cable is disconnected from the power socket.
- Mobile devices should be purchased separately.

## Driver Installation

- You can set the optimum resolution and frequency for this product by installing the corresponding drivers.
- To install the latest version of the product driver, download it from the Samsung Electronics website at <http://www.samsung.com>.

- 1 Click on the "Windows Driver" downloaded from the website.
- 2 Follow the instructions given on the screen to proceed with installation.
- 3 Select your product model from the list of models.

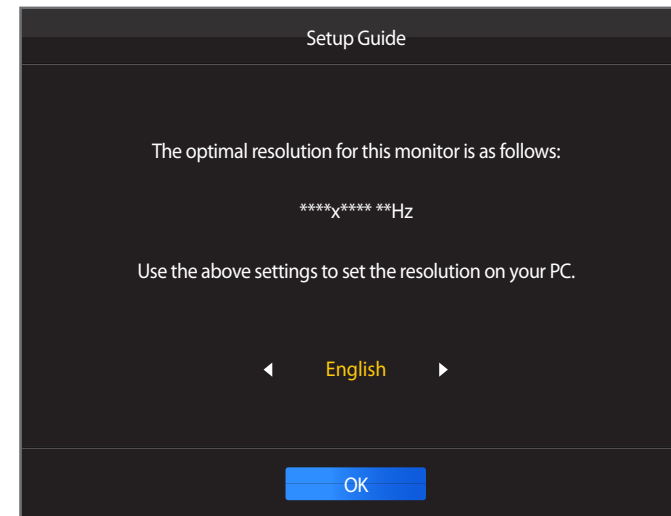


- 4 Go to Display Properties and check that the resolution and refresh rate are appropriate.  
Refer to your Windows OS manual for further details.

## Setting Optimum Resolution

An information message about setting optimum resolution will appear if you power on the product for the first time after purchase.

Select a language on the product and change the resolution on your PC to the optimum setting.

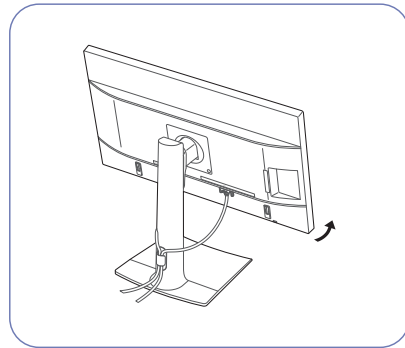
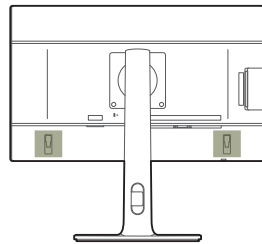


- 1 Press ▲ / ▼ to move to the language you want and press □ / ⏏.
- 2 To hide the information message, press MENU or □ / ⏏.

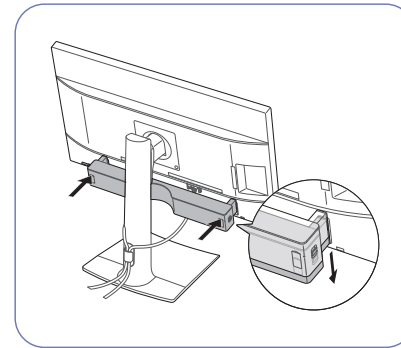
- If the optimum resolution is not selected, the message will appear up to three times for a specified time even when the product is turned off and on again.
- The optimum resolution can also be selected in **Control Panel** on your PC.

## Attaching the sound bar (sold separately)

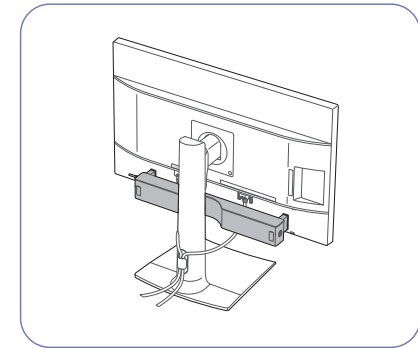
- Refer to the user guide that came with the sound bar for details.
- To remove the sound bar, follow the steps below in reverse.
- Do not use excessive force when adjusting the tilt of the product.



Tilt the product with all the cables connected, as shown in the picture.



Insert the connector bars of the sound bar into the slots on the sides, then push down in the direction of the arrow to secure the sound bar in place.



After attaching the sound bar, adjust the tilt of the product.

---

## Specifications of the sound bar (sold separately)

### General

<b>Model Name</b>	CY-SPU10B*
<b>Product type</b>	Sound Bar-computer multimedia
<b>Product size (W x D x H)</b>	400 x 46.5 x 50 mm
<b>Weight</b>	535 g
<b>Speaker type</b>	Active (with internal amplifier)
<b>RMS output</b>	Total 2.5 W < 10% THD (for USB 3.0, L+R)

### Speaker system

<b>Sound pressure (0.5 m, 1 W)</b>	83dB ± 3dB
<b>Rated pressure for the speaker unit</b>	2WRMS
<b>Impedance</b>	8ohm

### Function and connection

<b>Control device</b>	<ul style="list-style-type: none"><li>• Volume</li><li>• L/R swapping switch</li></ul>
<b>Input/output type</b>	<ul style="list-style-type: none"><li>• USB port (power and audio inputs)</li><li>• Headphone output (mini-phone stereo 3.5 mm)</li><li>• Audio line input (mini-phone stereo 3.5 mm)</li></ul>

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# Chapter 04

## Screen Setup

Configure the screen settings such as brightness.

A detailed description of each function is provided. Refer to your product for details.

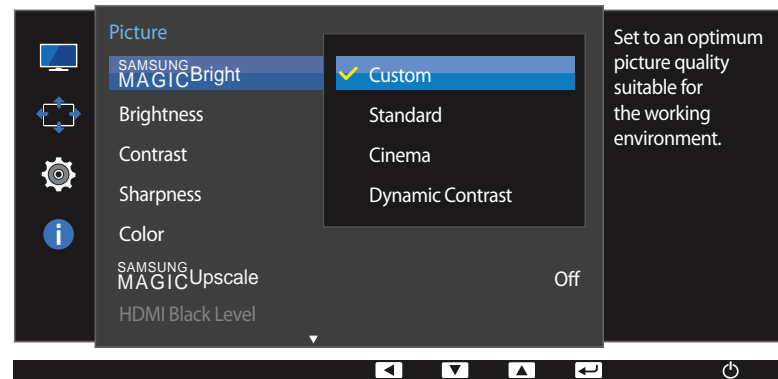
### SAMSUNG MAGIC Bright

This menu provides an optimum picture quality suitable for the environment where the product will be used.

- This menu is not available when **Smart ECO Saving** is enabled.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.

You can customize the brightness to suit your preferences.

#### In PC mode



— The displayed image may differ depending on the model.

### Configuring SAMSUNG MAGIC Bright

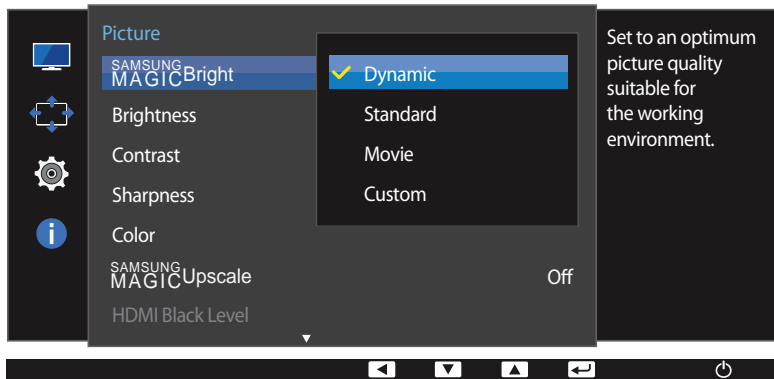
- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **SAMSUNG MAGICBright** and press **□ / ◀▶** on the product.

#### In PC mode

- **Custom:** Customize the contrast and brightness as required.
- **Standard:** Obtain a picture quality suitable for editing documents or using Internet.
- **Cinema:** Obtain the brightness and sharpness of TVs suitable for enjoying video and DVD content.
- **Dynamic Contrast:** Obtain balanced brightness through automatic contrast adjustment.



## In AV mode



– The displayed image may differ depending on the model.

When the external input is connected through DVI/HDMI/DP and **PC/AV Mode** is set to **AV**, **SAMSUNG MAGICBright** has four automatic picture settings (**Dynamic**, **Standard**, **Movie** and **Custom**) that are preset at the factory. You can activate either **Dynamic**, **Standard**, **Movie** or **Custom**. You can select **Custom** which automatically recalls your personalized picture settings.

## In AV mode

- **Dynamic**: Select this mode to view a sharper image than in **Standard** mode.
- **Standard**: Select this mode when the surroundings are bright. This also provides a sharp image.
- **Movie**: Select this mode when the surroundings are dark. This will save power and reduce eye fatigue.
- **Custom**: Select this mode when you want to adjust the image according to your preferences.

4 Press ▲ / ▼ to move to the option you want and press ◀ / ▶ buttons.

5 The selected option will be applied.

# Brightness

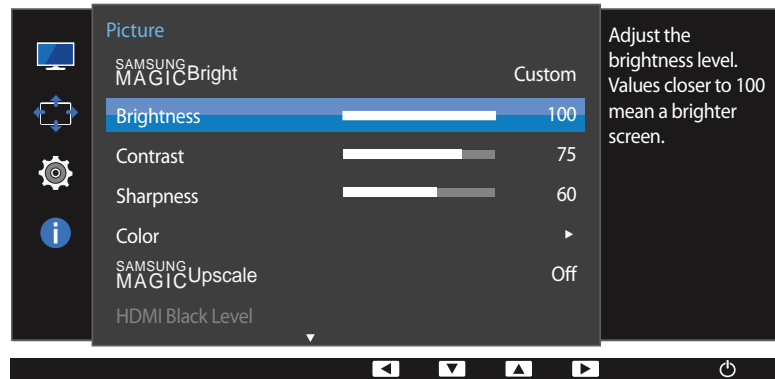
You can adjust the general brightness of the picture. (Range: 0~100)

A higher value will make the picture appear brighter.

— This menu is not available when **SAMSUNG MAGICBright** is set to **Dynamic Contrast** mode.

— This menu is not available when **Smart ECO Saving** is enabled.

— This menu is not available when **Eye Saver Mode** is enabled.



— The displayed image may differ depending on the model.

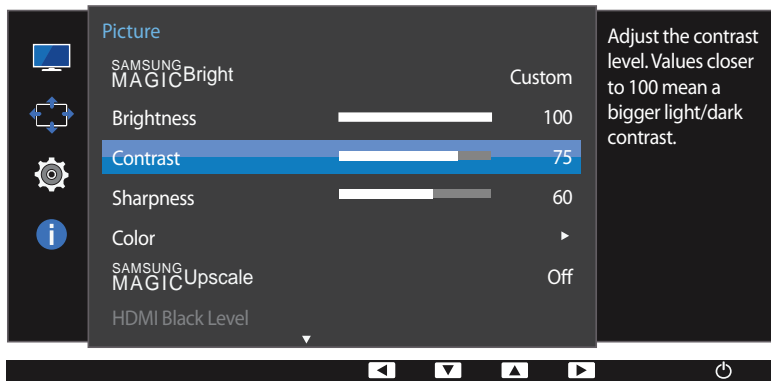
## Configuring Brightness

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Brightness** and press **□ / ◀▶** on the product.
- 4 Adjust the **Brightness** using the **▲ / ▼** buttons.
- 5 The selected option will be applied.

# Contrast

Adjust the contrast between the objects and background. (Range: 0~100)  
A higher value will increase the contrast to make the object appear clearer.

- This option is not available when **SAMSUNG MAGICBright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.



- The displayed image may differ depending on the model.

## Configuring Contrast

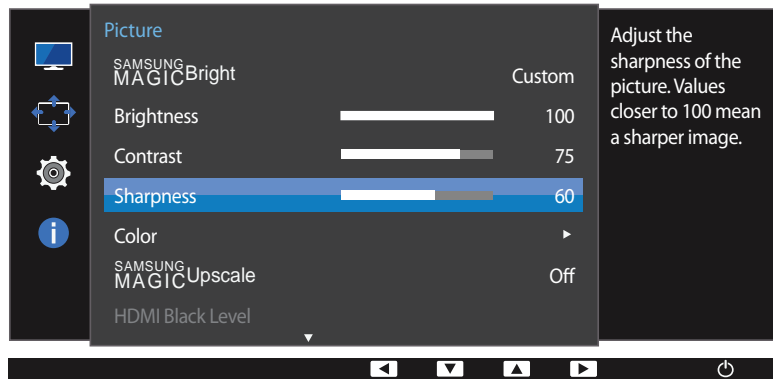
- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◻** on the product.
- 3 Press **▲ / ▼** to move to **Contrast** and press **□ / ◻** on the product.
- 4 Adjust the **Contrast** using the **▲ / ▼** buttons.
- 5 The selected option will be applied.

# Sharpness

Make the outline of objects more clear or blurry. (Range: 0~100)

A higher value will make the outline of objects clearer.

- This option is not available when **SAMSUNG MAGICBright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **SAMSUNG MAGICUpscale** is in **Mode1** or **Mode2** mode.
- This menu is not available when **Game Mode** is enabled.



- The displayed image may differ depending on the model.

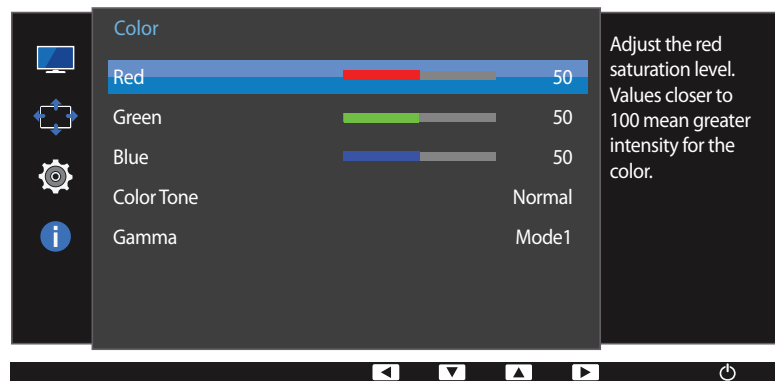
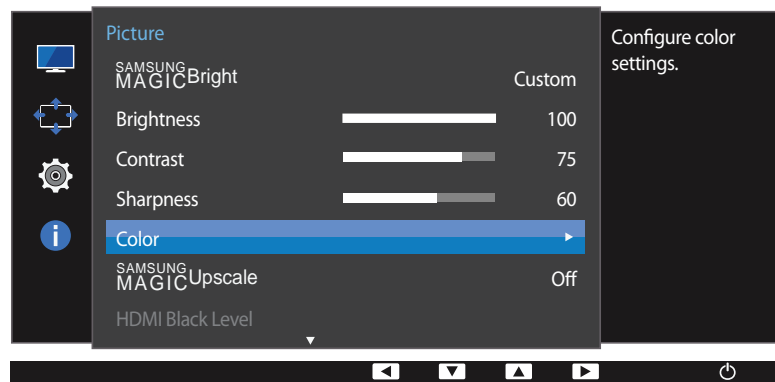
## Configuring Sharpness

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Sharpness** and press **□ / ◀▶** on the product.
- 4 Adjust the **Sharpness** using the **▲ / ▼** buttons.
- 5 The selected option will be applied.

# Color

A detailed description of each function is provided. Refer to your product for details.

- Adjust the tint of the screen. This menu is not available when **SAMSUNG MAGICBright** is set to **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.



- The displayed image may differ depending on the model.

## Configuring Color

1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.

2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.

3 Press **▲ / ▼** to move to **Color** and press **□ / ◀▶** on the product.

- Red**: Adjust the red saturation level. Values closer to 100 mean greater intensity for the colour.
- Green**: Adjust the green saturation level. Values closer to 100 mean greater intensity for the colour.
- Blue**: Adjust the blue saturation level. Values closer to 100 mean greater intensity for the colour.
- Color Tone**: Select a colour tone that best suits your viewing needs.
  - Cool 2**: Set the colour temperature to be cooler than **Cool 1**.
  - Cool 1**: Set the colour temperature to be cooler than **Normal** mode.
  - Normal**: Display the standard colour tone.
  - Warm 1**: Set the colour temperature to be warmer than **Normal** mode.
  - Warm 2**: Set the colour temperature to be warmer than **Warm 1**.
  - Custom**: Customize the colour tone.

- When the external input is connected through DVI/HDMI/DP and **PC/AV Mode** is set to **AV**, **Color Tone** has four colour temperature settings (**Cool**, **Normal**, **Warm** and **Custom**).

• **Gamma**: Adjust the middle level of luminance.

- Mode1 / Mode2 / Mode3**

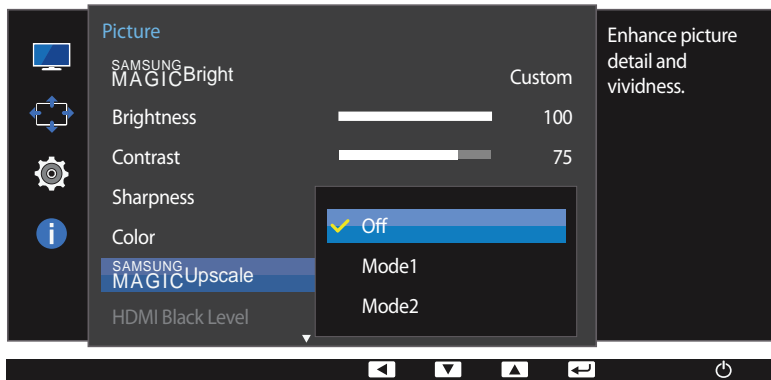
4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.

5 The selected option will be applied.

# SAMSUNG MAGIC Upscale

**SAMSUNG MAGIC Upscale** function can enhance the layers of the picture details and the vividness of the picture.

- Adjust the tint of the screen.
- This menu is not available when **SAMSUNG MAGIC Bright** is set to **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.



— The displayed image may differ depending on the model.

## Configuring SAMSUNG MAGIC Upscale

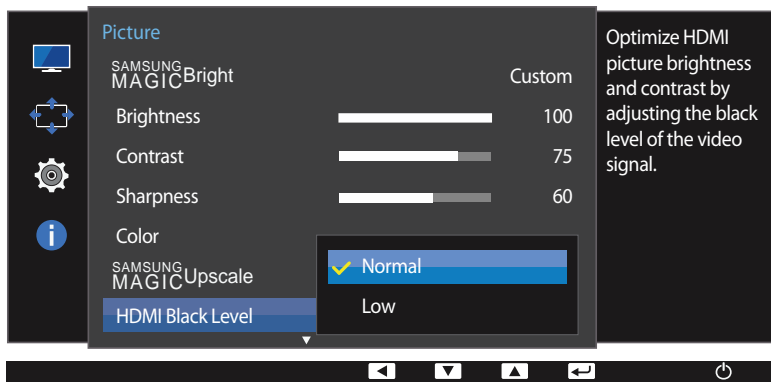
- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **SAMSUNG MAGIC Upscale** and press **□ / ◀▶** on the product.
  - **Off / Mode1 / Mode2**
    - Comparing with **Mode1**, **Mode2** has a stronger effect.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.

## HDMI Black Level

If a DVD player or set-top box is connected to the product via HDMI, image quality degradation (contrast/colour degradation, black level, etc.) may occur, depending on the connected source device. In such case, **HDMI Black Level** can be used to adjust the image quality.

If this is the case, correct the degraded picture quality using **HDMI Black Level**.

— This function is only available in **HDMI** mode.



— The displayed image may differ depending on the model.

## Configuring the HDMI Black Level Settings

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **HDMI Black Level** and press **□ / ◀▶** on the product.
  - **Normal**: Select this mode when there is no contrast ratio degradation.
  - **Low**: Select this mode to reduce the black level and increase the white level when there is a contrast ratio degradation.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.

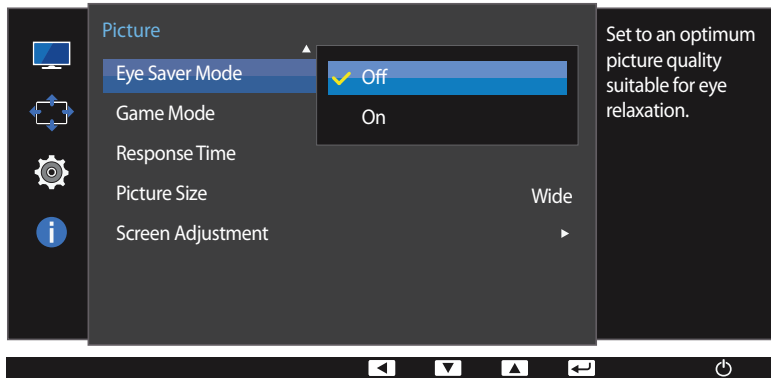
— **HDMI Black Level** may not be compatible with some source devices.

— The **HDMI Black Level** feature is only activated at a certain **AV** resolution, such as 720P and 1080P.

## Eye Saver Mode

Set to an optimum picture quality suitable for eye relaxation.

TÜV Rheinland "Low Blue Light Content" is a certification for products which meet requirements for lower blue light levels. When **Eye Saver Mode** is set to 'On', the blue light level, at a wavelength of about 400nm, decreases. This provides optimum picture quality and reduces eyestrain. At the same time, the blue light level is lower than in the default settings, and it was tested by TÜV Rheinland and certified as it met the requirements of TÜV Rheinland "Low Blue Light Content" standards.



– The displayed image may differ depending on the model.

## Configuring Eye Saver Mode

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Eye Saver Mode** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.



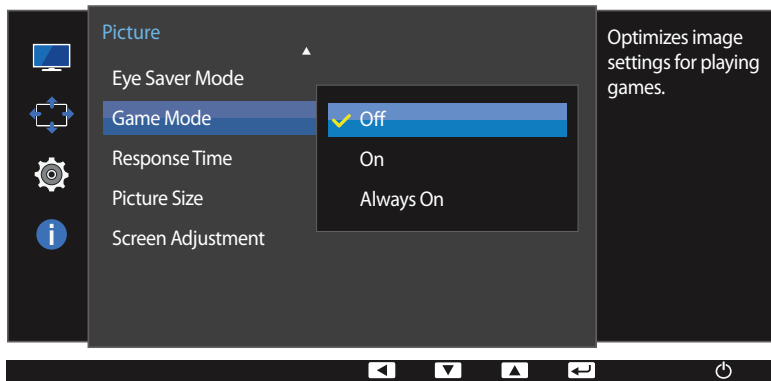
# Game Mode

Configure the product screen settings for game mode.

Use this feature when playing games on a PC or when a game console such as PlayStation™ or Xbox™ is connected.

— This menu is not available when **Eye Saver Mode** is enabled.

— This menu is not available when **Smart ECO Saving** is enabled.



— The displayed image may differ depending on the model.

## Configuring Game Mode

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Game Mode** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.

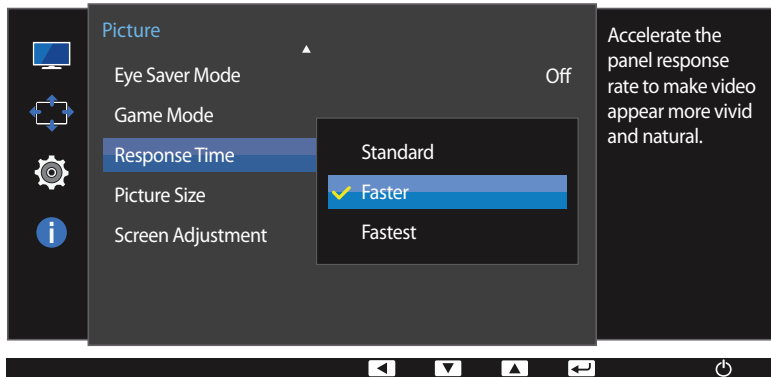
— When the monitor turns off, enters power-saving mode or changes input sources, **Game Mode** turns **Off** even if it is set to **On**.

— If you want to keep **Game Mode** enabled all the time, select **Always On**.

## Response Time

Accelerate the panel response rate to make video appear more vivid and natural.

— It is best to set **Response Time** to **Standard** or **Faster** when you are not viewing a movie.



— The displayed image may differ depending on the model.

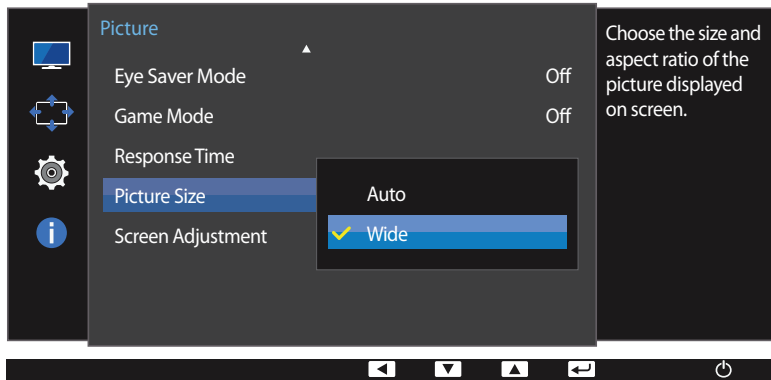
## Configuring the Response Time

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Response Time** and press **□ / ◀▶** on the product.
  - **Standard / Faster / Fastest**
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.

## Picture Size

Change the picture size.

### In PC mode



– The displayed image may differ depending on the model.

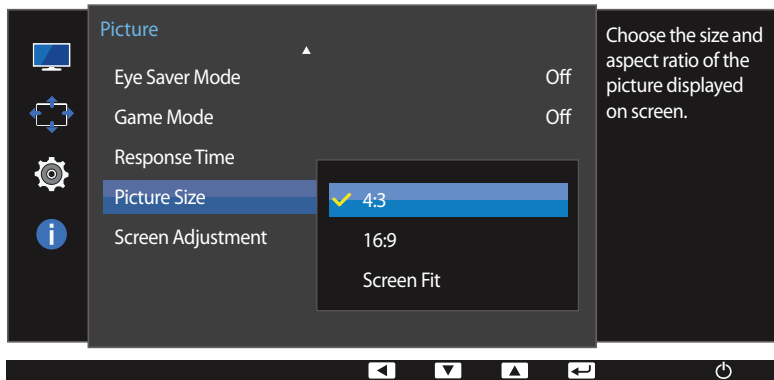
## Changing the Picture Size

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Picture Size** and press **□ / ◀▶** on the product.

### In PC mode

- **Auto**: Display the picture according to the aspect ratio of the input source.
- **Wide**: Display the picture in full screen regardless of the aspect ratio of the input source.

## In AV mode



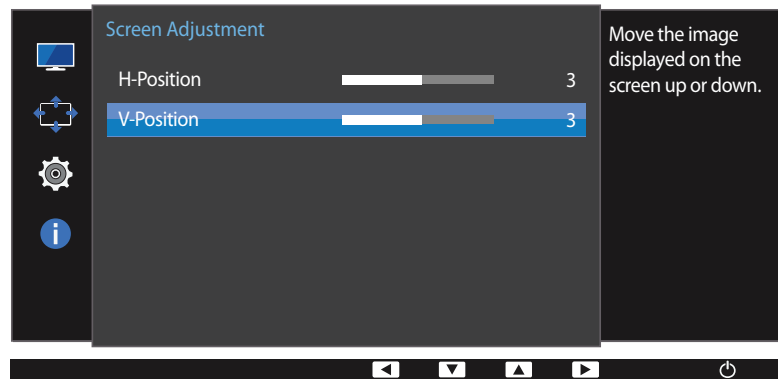
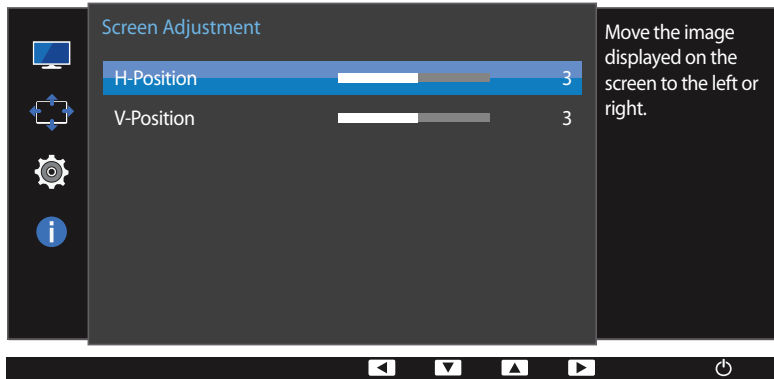
- The displayed image may differ depending on the model.

## In AV mode

- **4:3**: Display the picture with an aspect ratio of 4:3. Suitable for videos and standard broadcasts.
  - **16:9**: Display the picture with an aspect ratio of 16:9.
  - **Screen Fit**: Display the picture with the original aspect ratio without cutting off.
- The function may not be supported depending on the ports provided with the product.
  - Changing the screen size is available when the following conditions are satisfied.
    - A digital output device is connected using the DVI/HDMI/DP cable.
    - The input signal is 480p, 576p, 720p, or 1080p and monitor can display normally (Not every model can support all of these signals.).
    - This can only be set when the external input is connected through DVI/HDMI/DP and **PC/AV Mode** is set to **AV**.
- 4 Press ▲ / ▼ to move to the option you want and press ◀ / ▶ buttons.
  - 5 The selected option will be applied.

# Screen Adjustment

— This menu is only available when **Picture Size** is set to **Screen Fit** in **AV** Mode. When a 480P or 576P or 720P or 1080P signal is input in **AV** mode and the monitor can display normally, select **Screen Fit** to adjust horizontal position in 0-6 levels.



— The displayed image may differ depending on the model.

## Configuring H-Position & V-Position

**H-Position:** Move the screen to the left or right.

**V-Position:** Move the screen up or down.

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **Picture** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Screen Adjustment** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to **H-Position** or **V-Position** and press **□ / ◀▶** on the product.
- 5 Press **▲ / ▼** to configure **H-Position** or **V-Position**.
- 6 The selected option will be applied.

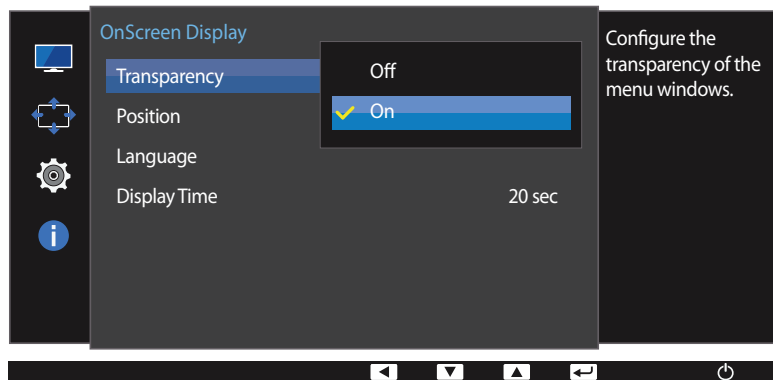
# Chapter 05

## Coordinating OSD

A detailed description of each function is provided. Refer to your product for details.

### Transparency

Set the transparency for the menu windows.

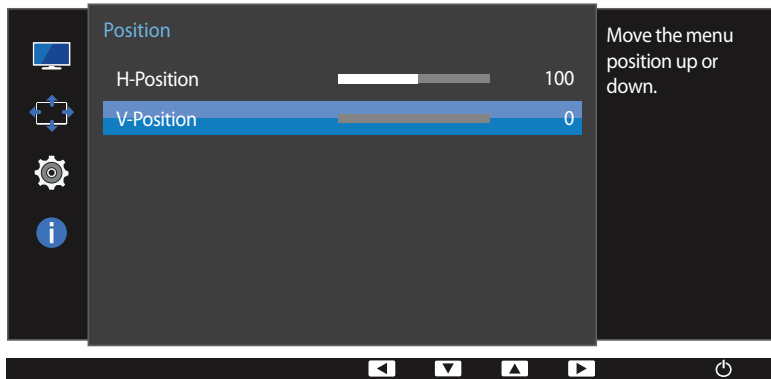
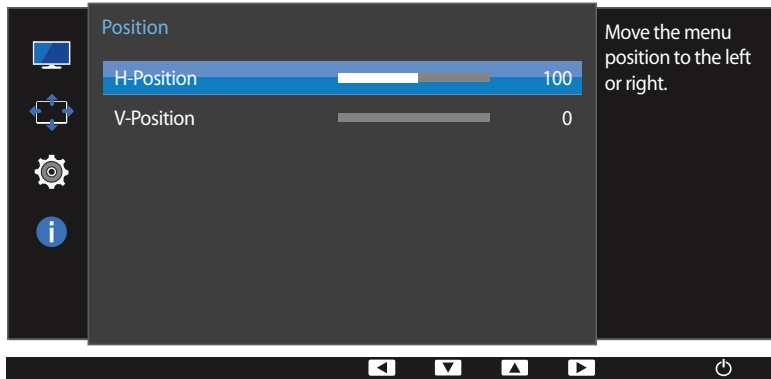


– The displayed image may differ depending on the model.

### Changing Transparency

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **OnScreen Display** and press **□ / ⊞** on the product.
- 3 Press **▲ / ▼** to move to **Transparency** and press **□ / ⊞** on the product.
  - **Off / On**
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ⊞** buttons.
- 5 The selected option will be applied.

## Position



– The displayed image may differ depending on the model.

## Configuring H-Position & V-Position

**H-Position:** Move the menu position to the left or right.

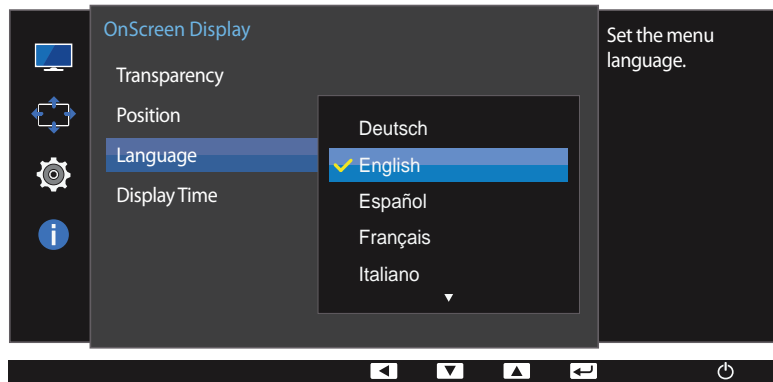
**V-Position:** Move the menu position up or down.

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press ▲ / ▼ to move to **OnScreen Display** and press ⏏ / ⏏ on the product.
- 3 Press ▲ / ▼ to move to **Position** and press ⏏ / ⏏ on the product.
- 4 Press ▲ / ▼ to move to **H-Position** or **V-Position** and press ⏏ / ⏏ on the product.
- 5 Press ▲ / ▼ to configure **H-Position** or **V-Position**.
- 6 The selected option will be applied.

# Language

Set the menu language.

- A change to the language setting will only be applied to the onscreen menu display.
- It will not be applied to other functions on your PC.



- The displayed image may differ depending on the model.

## Configuring Language

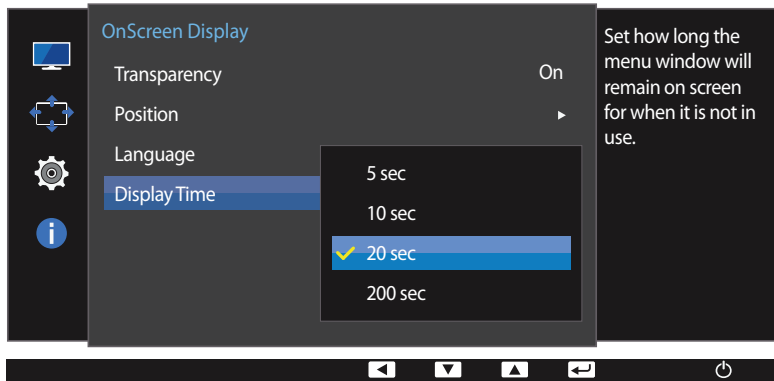
- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **OnScreen Display** and press **□ / ⊞** on the product.
- 3 Press **▲ / ▼** to move to **Language** and press **□ / ⊞** on the product.
- 4 Press **▲ / ▼** to move to the language you want and press **□ / ⊞** buttons.
- 5 The selected option will be applied.



# Display Time

Set the on-screen display (OSD) menu to automatically disappear if the menu is not used for a specified period of time.

**Display Time** can be used to specify the time after which you want the OSD menu to disappear.



- The displayed image may differ depending on the model.

## Configuring Display Time

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **OnScreen Display** and press **↶ / ↷** on the product.
- 3 Press **▲ / ▼** to move to **Display Time** and press **↶ / ↷** on the product.
  - **5 sec / 10 sec / 20 sec / 200 sec**
- 4 Press **▲ / ▼** to move to the option you want and press **↶ / ↷** buttons.
- 5 The selected option will be applied.

# Chapter 06

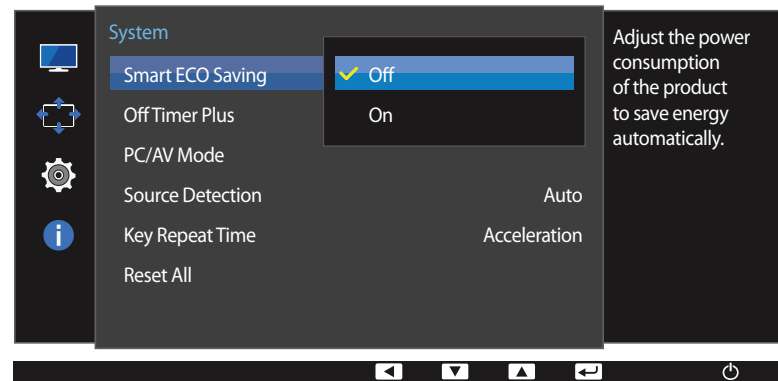
## Setup and Reset

A detailed description of each function is provided. Refer to your product for details.

### Smart ECO Saving

The **Smart ECO Saving** function reduces power consumption by controlling the electric current used by the monitor panel.

- This option is not available when **SAMSUNG MAGICBright** is in **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.



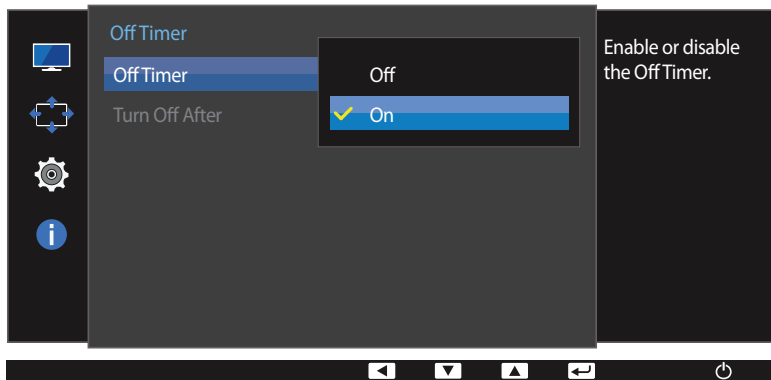
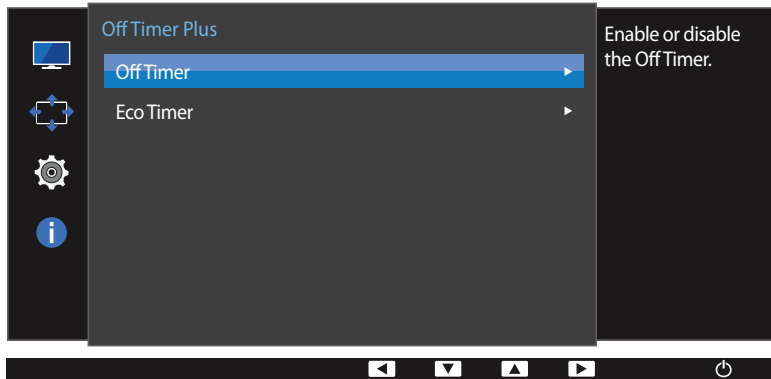
— The displayed image may differ depending on the model.

### Configuring Smart ECO Saving

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Smart ECO Saving** and press **□ / ◀▶** on the product.
  - **Off**: Deactivate the **Smart ECO Saving** function.
  - **On**: The power consumption will automatically be reduced by about 10% over the current setting. (The reduction of power consumption depends on the customer screen brightness condition.)
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.

## Off Timer Plus

You can set the product to automatically turn off.

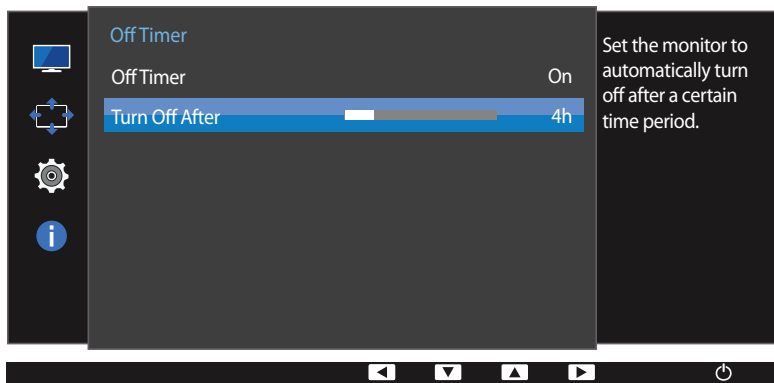


– The displayed image may differ depending on the model.

## Configuring Off Timer

### Off Timer

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Off Timer Plus** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to **Off Timer** and press **□ / ◀▶** on the product.
- 5 Press **▲ / ▼** to move to **Off Timer** and press **□ / ◀▶** on the product.
  - **Off**: Deactivate the off timer so that the product does not power off automatically.
  - **On**: Activate the off timer so that the product powers off automatically.
- 6 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 7 The selected option will be applied.



– The displayed image may differ depending on the model.

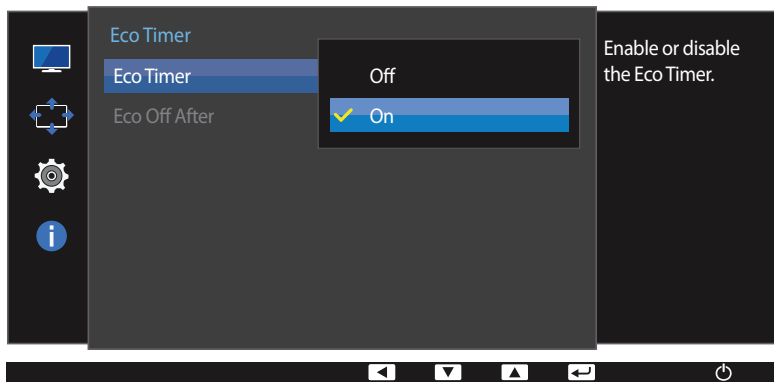
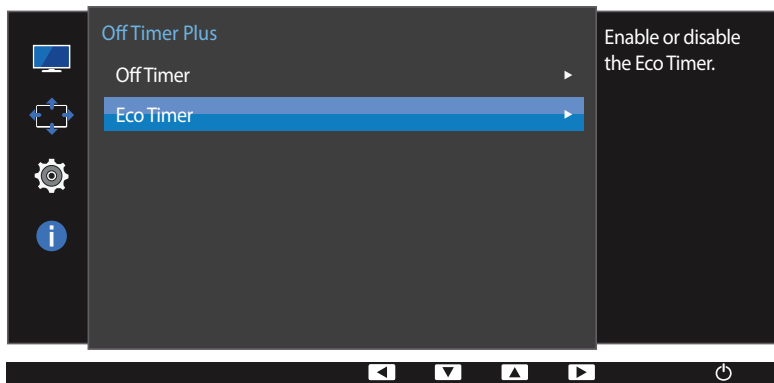
– This option is only available when **Off Timer** is set to **On**.

## Turn Off After

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲** / **▼** to move to **System** and press **□** / **⏏** on the product.
- 3 Press **▲** / **▼** to move to **Off Timer Plus** and press **□** / **⏏** on the product.
- 4 Press **▲** / **▼** to move to **Off Timer** and press **□** / **⏏** on the product.
- 5 Press **▲** / **▼** to move to **Turn Off After** and press **□** / **⏏** on the product.
- 6 Press **▲** / **▼** to configure **Turn Off After**.
- 7 The selected option will be applied.

– The off timer can be set within a range of 1 to 23 hours. The product will automatically power off after the specified number of hours.

– For products for the market in some regions, the **Off Timer** is set to automatically activate 4 hours after the product powers on. This is done in accordance with power supply regulations. If you do not want the timer to activate, go to **MENU** → **System** → **Off Timer Plus** and set **Off Timer** to **Off**.

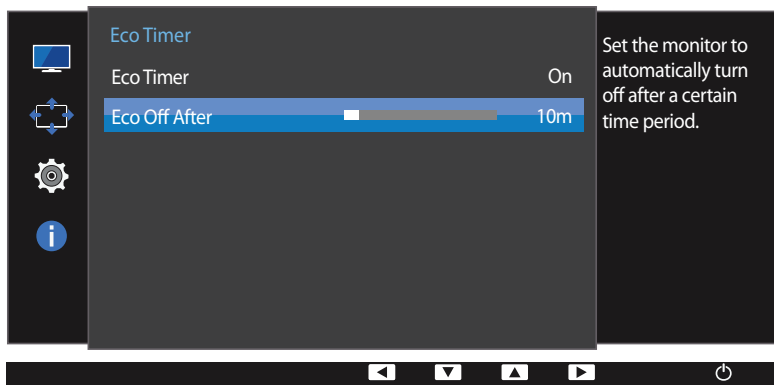


## Configuring Eco Timer

### Eco Timer

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Off Timer Plus** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to **Eco Timer** and press **□ / ◀▶** on the product.
- 5 Press **▲ / ▼** to move to **Eco Timer** and press **□ / ◀▶** on the product.
  - **Off**: Deactivate the eco timer to disable the automatic power off feature. The product will not power off while in power-saving mode if this feature is deactivated.
  - **On**: Activate the eco timer so that the product powers off automatically when it has been in power-saving mode for a specified period of time.
- 6 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 7 The selected option will be applied.

- The displayed image may differ depending on the model.



– The displayed image may differ depending on the model.

– This option is only available when **Eco Timer** is set to **On**.

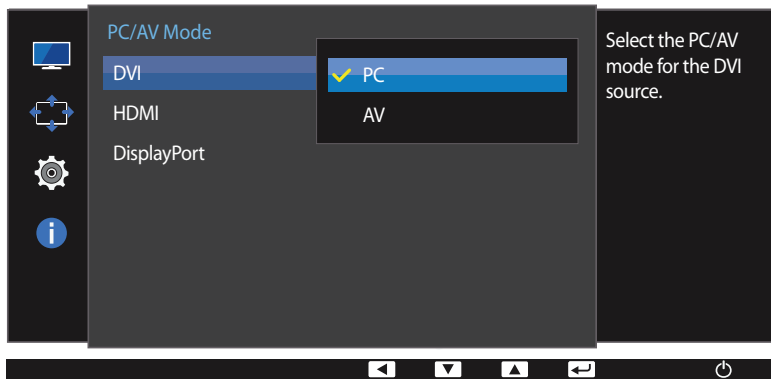
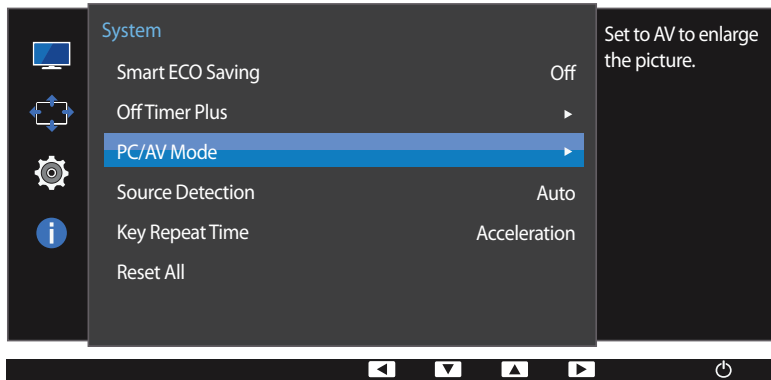
## Eco Off After

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲** / **▼** to move to **System** and press **□** / **⏏** on the product.
- 3 Press **▲** / **▼** to move to **Off Timer Plus** and press **□** / **⏏** on the product.
- 4 Press **▲** / **▼** to move to **Eco Timer** and press **□** / **⏏** on the product.
- 5 Press **▲** / **▼** to move to **Eco Off After** and press **□** / **⏏** on the product.
- 6 Press **▲** / **▼** to configure **Eco Off After**.
- 7 The selected option will be applied.

– The **Eco Timer** can be set between 10 and 180 minutes. The product will automatically power off after the specified time has elapsed.

## PC/AV Mode

Set **PC/AV Mode** to **AV**. The picture size will be enlarged.  
This option is useful when you view a movie.



- The displayed image may differ depending on the model.

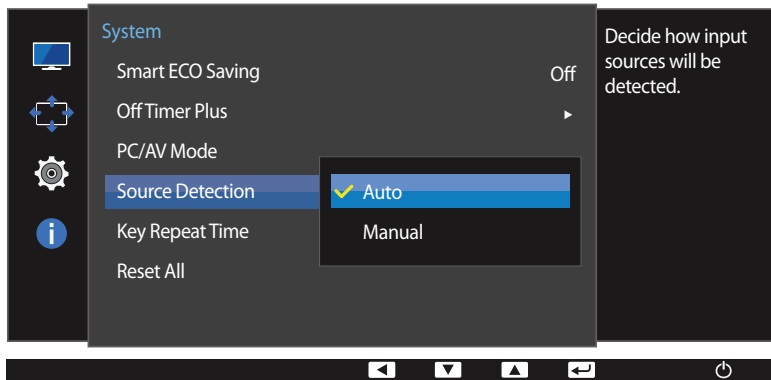
- Supplied for the wide models only such as 16:9 or 16:10.
- If the monitor (when set to **DVI**, **HDMI** or **DisplayPort**) is in power saving mode or is displaying the message **Check Signal Cable**, press the **MENU** button to display the On Screen Display(OSD). You can select **PC** or **AV**.

## Configuring PC/AV Mode

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ⏏** on the product.
- 3 Press **▲ / ▼** to move to **PC/AV Mode** and press **□ / ⏏** on the product.
- 4 Press **▲ / ▼** to move to **DVI**, **HDMI** or **DisplayPort** and press **□ / ⏏** on the product.
  - Set to **PC** when connected to a PC.
  - Set to **AV** when connected to an AV device.
- 5 Press **▲ / ▼** to move to the option you want and press **□ / ⏏** buttons.
- 6 The selected option will be applied.

# Source Detection

You can activate **Source Detection**.



- The displayed image may differ depending on the model.

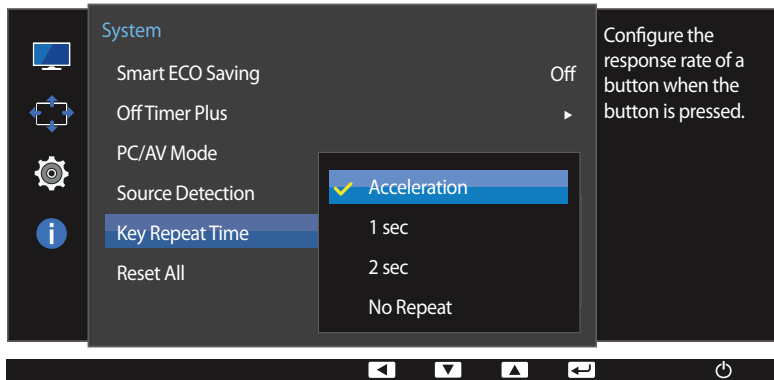
## Configuring Source Detection

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press ▲ / ▼ to move to **System** and press □ / ⏏ on the product.
- 3 Press ▲ / ▼ to move to **Source Detection** and press □ / ⏏ on the product.
  - **Auto**: The input source is automatically recognized.
  - **Manual**: Manually select an input source.
- 4 Press ▲ / ▼ to move to the option you want and press □ / ⏏ buttons.
- 5 The selected option will be applied.



# Key Repeat Time

Control the response rate of a button when the button is pressed.



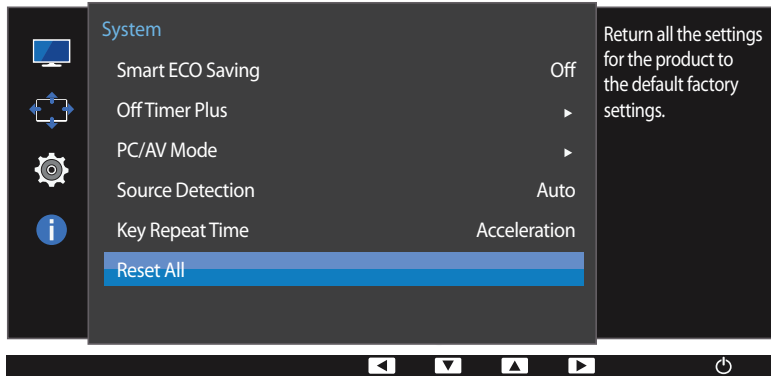
- The displayed image may differ depending on the model.

## Configuring Key Repeat Time

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ⏏** on the product.
- 3 Press **▲ / ▼** to move to **Key Repeat Time** and press **□ / ⏏** on the product.
  - **Acceleration, 1 sec, or 2 sec** can be selected. If **No Repeat** is selected, a command responds only once when a button is pressed.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ⏏** buttons.
- 5 The selected option will be applied.

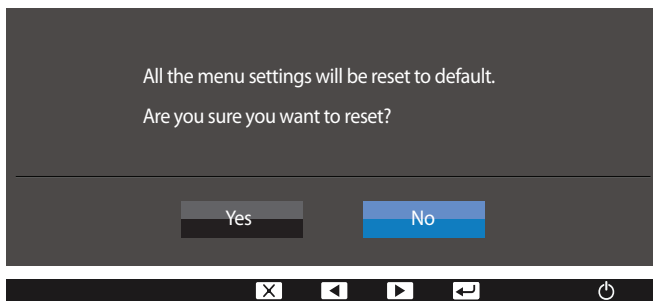
## Reset All

Return all the settings for the product to the default factory settings.



## Initializing Settings (Reset All)

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲ / ▼** to move to **System** and press **□ / ◀▶** on the product.
- 3 Press **▲ / ▼** to move to **Reset All** and press **□ / ◀▶** on the product.
- 4 Press **▲ / ▼** to move to the option you want and press **□ / ◀▶** buttons.
- 5 The selected option will be applied.



– The displayed image may differ depending on the model.

# Chapter 07

## Information Menu and Others

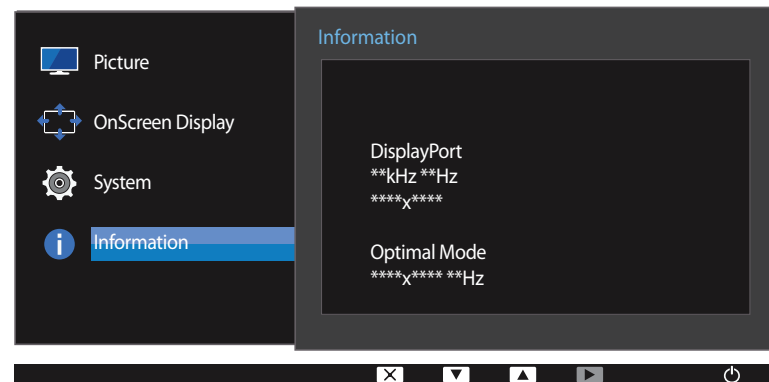
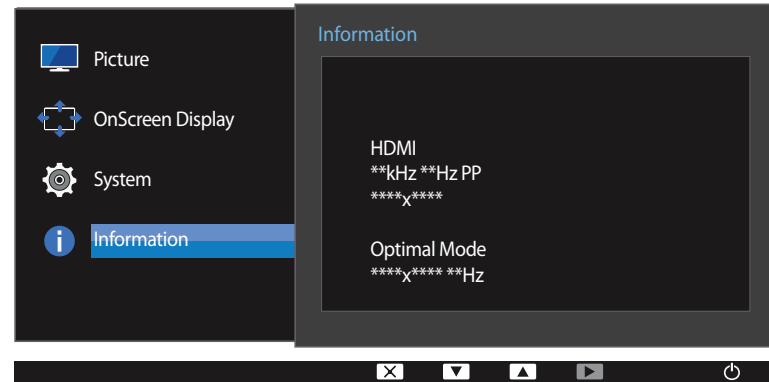
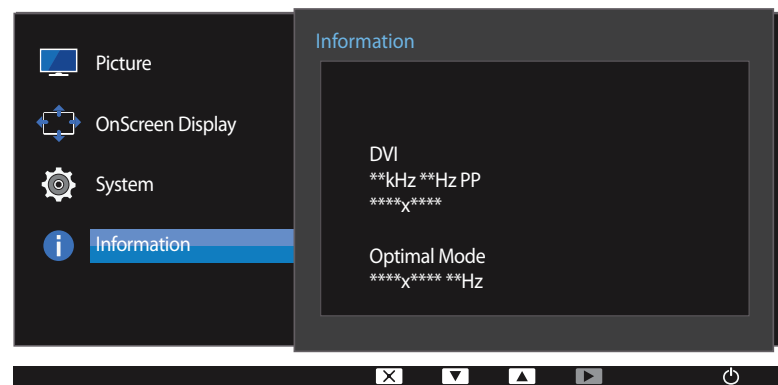
A detailed description of each function is provided. Refer to your product for details.

### Information

#### Displaying Information

View the current input source, frequency and resolution.

- 1 Press any button on the front of the product to display the Function Key Guide. Next, press **MENU** to display the corresponding menu screen.
- 2 Press **▲** / **▼** to move to **Information**. The current input source, frequency and resolution will appear.



– The displayed image may differ depending on the model.

# Configuring Brightness, Contrast and Volume from the Initial Screen

Adjust the **Brightness**, **Contrast** or **Volume** using the ▲ / Ⓞ buttons when the initial screen (that displays no menu screen) is displayed.



– The displayed image may differ depending on the model.

## Brightness

- This menu is not available when **SAMSUNG MAGICBright** is set to **Dynamic Contrast** mode.
- This menu is not available when **Smart ECO Saving** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.

## Contrast

- This menu is not available when **SAMSUNG MAGICBright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.

- 1 Press any button on the front of the product (when no menu screen is displayed) to display the Function Key Guide. Next, press ▲ / Ⓞ.
- 2 Press the □ / Ⓞ button to alternate between the **Brightness**, **Contrast** or **Volume**.
- 3 Adjust the **Brightness**, **Contrast**, **Volume** using the ▲ / ▼ buttons.

# Chapter 08

## Installing the Software

### Easy Setting Box



**Easy Setting Box** enables users to use the monitor by partitioning multiple sections.

### Installing the Software

- 1 To install the latest version of **Easy Setting Box**, download it from the Samsung Electronics website at <http://www.samsung.com>.
- 2 Select the **Easy Setting Box** setup programme.
- 3 When the Installation Wizard appears, click **Next**.
- 4 Follow the instructions given on the screen to proceed with installation.
  - The software may not work properly if you do not restart the computer after the installation.
  - The **Easy Setting Box** icon may not appear depending on the computer system and the product specifications.
  - If the shortcut icon does not appear, press the F5 key.

### Restrictions and Problems with the Installation (Easy Setting Box)

The **Easy Setting Box** installation may be affected by the Graphics Card, Motherboard and the Networking Environment.

### System Requirements

#### OS

- Windows Vista 32Bit/64Bit
- Windows 7 32Bit/64Bit
- Windows 8 32Bit/64Bit
- Windows 8.1 32Bit/64Bit

#### Hardware

- At least 32MB of memory
- At least 60MB of free space on the hard disk drive

### Removing the Software

Click **Start**, select **Settings/Control Panel**, and then double-click **Add or Remove Programs**.

Select **Easy Setting Box** from the programme list and click the **Add/Delete** button.

# Chapter 09

## Troubleshooting Guide

### Requirements Before Contacting Samsung Customer Service Centre

---

Before calling Samsung Customer Service Centre, test your product as follows. If the problem persists, contact Samsung Customer Service Centre.

#### Testing the Product

Check if your product is operating normally by using the product test function.

If the screen is turned off and the power indicator blinks even though the product is properly connected to a PC, perform a self-diagnosis test.

- 1 Power off both the PC and product.
- 2 Disconnect the cables from the product.
- 3 Power on the product.
- 4 If the message **Check Signal Cable** appears, the product is working normally.

---

If the screen remains blank, check the PC system, video controller and cable.

#### Checking the Resolution and Frequency

For a mode that exceeds the supported resolution(refer to [Standard Signal Mode Table](#)), the message **Not Optimum Mode** will appear for a short time.

— The displayed resolution may vary depending on the product or PC system settings.

---

## Check the following.

### Installation issue (PC mode)

#### Issues

#### Solutions

---

**The screen keeps switching on and off.**

Check the cable connection between the product and PC, and ensure the connectors are locked.

---

**Blank spaces are found on all four sides of the screen when an HDMI or HDMI-DVI cable is connected to the product and PC.**

The blank spaces found on the screen have nothing to do with the product.

Blank spaces on the screen are caused by the PC or graphics card. To resolve the problem, adjust the screen size in the HDMI or DVI settings for the graphics card.

If the graphics card settings menu does not have an option to adjust the screen size, update the graphics card driver to the latest version.

(Please contact the graphics card or computer manufacturer for further details about how to adjust the screen settings.)

---

### Screen issue

#### Issues

#### Solutions

---

**The power LED is off. The screen will not switch on.**

Check that the power cable is connected properly.

---

**The message **Check Signal Cable** appears.**

Check that the cable is properly connected to the product.

---

Check that the device connected to the product is powered on.

---

**Not Optimum Mode is displayed.**

This message appears when the signal from the graphics card exceeds the maximum resolution or frequency for the product.

---

Change the maximum resolution and frequency to suit the product performance, referring to Standard Signal Mode Table ([P.71](#)).

---

**The images on the screen look distorted.**

Check the cable connection to the product.

---

---

## Issues

## Solutions

---

**The screen is not clear. The screen is blurry.**

Remove any accessories (video extension cable, etc.) and try again.

---

Set the resolution and frequency to the recommended level.

---

**The screen appears unstable and shaky.**

Check that the resolution and frequency for the PC are within the range of resolution and frequency compatible with the product. Next, if required, change the settings, referring to Standard Signal Mode Table (P.71) in this manual and the **Information** menu on the product.

---

**There are shadows or ghost images left on the screen.**

---

**The screen is too bright. The screen is too dark.**

Adjust **Brightness** and **Contrast**.

---

**Screen colour is inconsistent.**

Change the **Color** settings.

---

**The colours on the screen have a shadow and are distorted.**

Change the **Color** settings.

---

**White does not really look white.**

Change the **Color** settings.

---

**There is no image on the screen and the power LED blinks every 0.5 to 1 second.**

The product is operating in power-saving mode.

---

Press any key on the keyboard or move the mouse to return to normal operating mode.

---

**Text is blurry.**

If using a Windows OS (e.g. Windows 7, Windows 8 or Windows 8.1): Go to **Control Panel** → **Fonts** → **Adjust ClearType text** and change **Turn on ClearType**.

---

**Video playback is choppy.**

Playback of high-definition large video files can be choppy. This may be because the video player is not optimized for the computer resource.

---

Try playing the file on another video player.

---



---

## Sound issue

### Issues

### Solutions

---

**There is no sound.**

Check the connection of the audio cable or adjust the volume.

---

Check the volume.

---

**The volume is too low.**

Adjust the volume.

---

If the volume is still low after turning it up to the maximum level, adjust the volume on your PC sound card or software programme.

---

**Video is available but there is no sound.**

Sound cannot be heard if a HDMI-DVI cable is used to connect the input device.

---

Connect the device using an HDMI cable.

---

## Source device issue

### Issues

### Solutions

---

**A beeping sound is heard when my PC is booting.**

If a beeping sound is heard when your PC is booting, have your PC serviced.

---

---

## Q & A

---

Refer to the user manual for your PC or graphics card for further instructions on adjustment.

### Question

**How can I change the frequency?**

### Answer

Set the frequency on your graphics card.

- Windows XP: Go to **Control Panel** → **Appearance and Themes** → **Display** → **Settings** → **Advanced** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.
- Windows ME/2000: Go to **Control Panel** → **Display** → **Settings** → **Advanced** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.
- Windows Vista: Go to **Control Panel** → **Appearance and Personalization** → **Personalization** → **Display Settings** → **Advanced Settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.
- Windows 7: Go to **Control Panel** → **Appearance and Personalization** → **Display** → **Screen Resolution** → **Advanced settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.
- Windows 8(Windows 8.1): Go to **Settings** → **Control Panel** → **Appearance and Personalization** → **Display** → **Screen Resolution** → **Advanced settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.

---

**How can I change the resolution?**

- Windows XP: Go to **Control Panel** → **Appearance and Themes** → **Display** → **Settings**, and adjust the resolution.
  - Windows ME/2000: Go to **Control Panel** → **Display** → **Settings**, and adjust the resolution.
  - Windows Vista: Go to **Control Panel** → **Appearance and Personalization** → **Personalize** → **Display Settings**, and adjust the resolution.
  - Windows 7: Go to **Control Panel** → **Appearance and Personalization** → **Display** → **Adjust Resolution**, and adjust the resolution.
  - Windows 8(Windows 8.1): Go to **Settings** → **Control Panel** → **Appearance and Personalization** → **Display** → **Adjust Resolution**, and adjust the resolution.
-

---

## Question

How do I set power-saving mode?

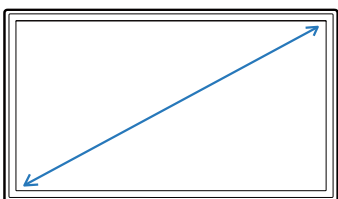
## Answer

- Windows XP: Set power-saving mode in **Control Panel** → **Appearance and Themes** → **Display** → **Screen Saver Settings** or BIOS SETUP on the PC.
  - Windows ME/2000: Set power-saving mode in **Control Panel** → **Display** → **Screen Saver Settings** or BIOS SETUP on the PC.
  - Windows Vista: Set power-saving mode in **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC.
  - Windows 7: Set power-saving mode in **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC.
  - Windows 8(Windows 8.1): Set power-saving mode in **Settings** → **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC.
-

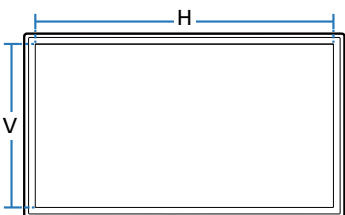
# Chapter 10

## Specifications

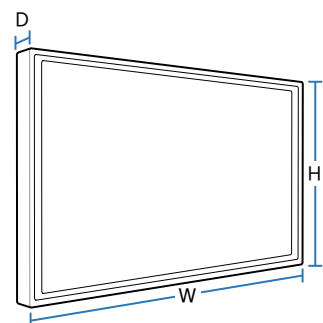
Size



Display area



Dimensions (W x H x D)



### General

Model Name

**S24E650C**

**S27E650C**

Panel	Size	24 CLASS (23.5 Inches / 59.8 cm)	27 CLASS (27.0 Inches / 68.5 cm)
<b>Display area</b>		521.39 mm (H) x 293.28 mm (V)	597.88 mm (H) x 336.31 mm (V)
		20.53 Inches (H) x 11.55 Inches (V)	23.54 Inches (H) x 13.24 Inches (V)
<b>Pixel Pitch</b>		0.27156 mm (H) x 0.27156 mm (V)	0.3114 mm (H) x 0.3114 mm (V)
		0.0107 Inches (H) x 0.0107 Inches (V)	0.0123 Inches (H) x 0.0123 Inches (V)
<b>Dimensions (W x H x D) / Weight</b>	<b>Without Stand</b>		547.8 x 333.4 x 61.4 mm / 3.8 kg
			21.57 x 13.13 x 2.42 Inches / 8.38 lbs
	<b>With Stand</b>		MIN: 547.8 x 392.4 x 257.4 mm / 6.2 kg
			21.57 x 15.45 x 10.13 Inches / 13.67 lbs
<b>Maximum Pixel Clock</b>		148.5 MHz	
<b>Power Supply</b>		AC 100 - 240 V - (+/- 10%), 50/60 Hz ± 3 Hz	
		Refer to the label at the back of the product as the standard voltage can vary in different countries.	

---

**Model Name****S24E650C****S27E650C**

---

**Signal connectors**HDMI, DisplayPort, DVI

---

**Environmental conditions****Operating**

Temperature: 50 °F – 104 °F (10 °C – 40 °C)

Humidity: 10% – 80%, non-condensing

---

**Storage**

Temperature: -4 °F – 113 °F (-20 °C – 45 °C)

Humidity: 5% – 95%, non-condensing

---

**Plug-and-Play**

This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.

**Panel Dots (Pixels)**

Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1 ppm) may be brighter or darker on the LCD panel. This does not affect product performance.

**The above specifications are subject to change without notice to improve quality.****This device is a Class B digital apparatus.**

---

## PowerSaver

The power-saving function of this product reduces power consumption by switching off the screen and changing the colour of the power LED if the product is not used for a specified period of time. The power is not turned off in power-saving mode. To switch the screen back on, press any key on the keyboard or move the mouse. Power-saving mode only functions when the product is connected to a PC with a power-saving function.

<b>PowerSaver</b>	<b>Energy Star Power Consumption (Energy Star Test Condition)</b>	<b>Power off (Power button)</b>
<b>Power Indicator</b>	On	Off
<b>Power Consumption</b>	<b>S24E650C</b>	21.6 W
	<b>S27E650C</b>	20.6 W

— The displayed power consumption level can vary in different operating conditions or when settings are changed.

— ENERGY STAR® is a US registered mark of the United States Environmental Protection Agency.  
Energy Star power is measured with the test method in the current Energy Star® Standard.

— SOG(Sync On Green) is not supported.

— To reduce the power consumption to 0, disconnect the power cord. Disconnect the power cable if you will not be using the product for an extended period of time (during vacation, etc.)

## Standard Signal Mode Table

- This product can be set to only one resolution for each screen size to obtain the optimum picture quality due to the nature of the panel. Using a resolution other than the specified resolution may degrade the picture quality. To avoid this, it is recommended that you select the optimum resolution specified for your product.

Model Name		S24E650C / S27E650C
<b>Synchronization</b>	<b>Horizontal Frequency</b>	30 - 81 kHz
	<b>Vertical Frequency</b>	56 - 72 Hz
<b>Resolution</b>	<b>Optimum resolution</b>	1920 x 1080 @ 60 Hz
	<b>Maximum resolution</b>	1920 x 1080 @ 60 Hz

If a signal that belongs to the following standard signal modes is transmitted from your PC, the screen will automatically be adjusted. If the signal transmitted from the PC does not belong to the standard signal modes, the screen may be blank even though the power LED turns on. In such a case, change the settings according to the following table by referring to the graphics card user manual.

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+

– Horizontal Frequency

The time required to scan a single line from the left to the right side of the screen is called a horizontal cycle. The reciprocal number of a horizontal cycle is called horizontal frequency. Horizontal frequency is measured in kHz.

– Vertical Frequency

Repeating the same picture dozens of times per second allows you to view natural pictures. The repeat frequency is called "vertical frequency" or "refresh rate" and is indicated in Hz.

<b>Resolution</b>	<b>Horizontal Frequency (kHz)</b>	<b>Vertical Frequency (Hz)</b>	<b>Pixel Clock (MHz)</b>	<b>Sync Polarity (H/V)</b>
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 720	45.000	60.000	74.250	+/+
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA, 1280 x 1024	79.976	75.025	135.000	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1600 x 900 (RB)	60.000	60.000	108.000	+/+
VESA, 1680 x 1050	65.290	59.954	146.250	-/+
VESA, 1920 x 1080	67.500	60.000	148.500	+/+



# Chapter 11

## Appendix

### Responsibility for the Pay Service (Cost to Customers)

— When the service is requested, in spite of in warranty, we may charge you for a visit from a service technician in the following cases.

#### Not a product defect

Cleaning of the product, Adjustment, Explanation, Re-installation and etc.

- If a service technician gives instructions on how to use product or simply adjusts options without disassembling product.
- If a defect is caused by external environmental factors (Internet, Antenna, Wired Signal, etc.)
- If a product is reinstalled or devices are connected additionally after installing the purchased product for the first time.
- If a product is reinstalled to move to a different spot or to move to a different house.
- If customer requests instructions on how to use because of another company's product.
- If customer requests instructions on how to use the network or another company's programme.
- If customer requests software installation and setup for the product.
- If a service technician removes/cleans dusts or foreign materials inside of the product.
- If customer requests an installation additionally after purchasing a product through home-shopping or online.

### A Product damage caused by customer's fault

Product damage caused by customer's mishandling or wrong repair

If a product damage is caused by;

- External impact or drop.
- Use of supplies or separately sold product unspecified by Samsung.
- Repair from a person besides an engineer of outsourcing service company or partner of Samsung Electronics Co., Ltd.
- Remodeling or repairing the product by customer.
- Using it with incorrect voltage or non-authorized electrical connections.
- Not following the "cautions" in User Manual.

#### Others

- If product fails by natural disaster. (lightning, fire, earthquake, flood damage, etc)
- If consumable components are all used up. (Battery, Toner, Fluorescent lights, Head, Vibrator, Lamp, Filter, Ribbon, etc.)

— If customer requests a service in case the product has no defect, service fee may be charged. So please read User Manual first.

---

## Correct Disposal

### Correct Disposal of This Product (Waste Electrical & Electronic Equipment)



(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

## Extended warranty

You can buy an extended warranty within 90 days of purchasing the product.

The extended warranty will cover an additional period of 3 years, beyond the standard 3 year warranty.

Samsung guarantee that replacement parts will be available for 5 years after the end of production.

After 5 years, in the event that the Samsung's service centre has run out of replacement parts and cannot repair the product, Samsung will replace your product at no additional charge. If the model you purchased is no longer available, Samsung replace it with the current equivalent model.

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## Terminology

**OSD (On Screen Display)**\_\_\_\_ On screen display (OSD) allows you to customize on-screen settings to optimize the picture quality as required. You can change the screen brightness, tint, size and many other settings using menus displayed on the screen.

**Gamma**\_\_\_\_ The Gamma menu adjusts the grey scale that represents middle tones on the screen. Adjusting the brightness brightens the whole screen, but adjusting Gamma only brightens the medium brightness.

**Grey scale**\_\_\_\_ Scale refers to levels of colour intensity that show variations of colour change from darker areas to brighter areas on the screen. Changes to the screen brightness are expressed with black and white variation, and grey scale refers to the medium area between black and white. Changing the grey scale through Gamma adjustment will change the medium brightness on the screen.

**Scanning rate**\_\_\_\_ Scanning rate, or refresh rate, refers to the frequency of screen refreshes. Screen data is transmitted as it refreshes to display an image, although the refreshing is invisible to the naked eye. The number of screen refreshes is called scanning rate and is measured in Hz. A scanning rate of 60Hz means that the screen refreshes 60 times per second. The screen scanning rate depends on the performance of the graphics cards in your PC and monitor.

**Dot Pitch**\_\_\_\_ The product and screen consist of red, green and blue dots. A shorter distance between the dots produces a higher resolution. Dot pitch refers to the distance between the shortest distance between dots of the same colour. Dot pitch is measured in millimeters.

**Horizontal Frequency**\_\_\_\_ Characters or images displayed on the monitor screen consist of numerous dots (pixels). Pixels are transmitted in horizontal lines, which are then arranged vertically to create an image. The horizontal frequency is measured in kHz and represents how many times horizontal lines per second are transmitted and displayed on the monitor screen. A horizontal frequency of 85 means that the horizontal lines that make up an image are transmitted 85000 times per second. The horizontal frequency is indicated in 85kHz.

**Vertical Frequency**\_\_\_\_ One image is made of numerous horizontal lines. The vertical frequency is measured in Hz and represents how many images can be created per second by those horizontal lines. A vertical frequency of 60 means that an image is transmitted 60 times per second. The vertical frequency is also called "refresh rate" and affects screen flicker.

**Resolution**\_\_\_\_ Resolution is the number of horizontal pixels and vertical pixels that form a screen. It represents the level of display detail. A higher resolution displays a greater amount of information on the screen and is suitable for performing multiple tasks at the same time.  
E.g. A resolution of 1920 x 1080 consists of 1920 horizontal pixels (horizontal resolution) and 1080 vertical lines (vertical resolution).

**Plug & Play**\_\_\_\_ The Plug & Play feature allows the automatic exchange of information between a monitor and PC to produce an optimum display environment.  
The monitor uses VESA DDC (international standard) to execute Plug & Play.