

# User Manual

---

S\*R35\*

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.

The contents of this manual are subject to change without notice to improve quality.

© Samsung Electronics

Samsung Electronics owns the copyright for this manual.

Use or reproduction of this manual in parts or entirety without the authorization of Samsung Electronics is prohibited.

Trademarks other than that of Samsung Electronics are owned by their respective owners.

An administration fee may be charged in the following situations:

(a) An engineer is called out at your request, but it is found that the product has no defect (i.e., where the user manual has not been read).

(b) You bring the unit to a repair centre, but it is found that the product has no defect (i.e., where the user manual has not been read).

You will be informed of the administration fee amount before a technician visits.

---

# Table of contents

## Before Using the Product

Securing the Installation Space	4
<b>Safety Precautions</b>	<b>4</b>
Cleaning	5
Electricity and Safety	5
Installation	6
Operation	7

## Preparations

<b>Parts</b>	<b>10</b>
Control Panel	10
Direct Key guide	11
Function Key Guide	12
Configuring Brightness, Contrast and Sharpness from Direct Key Guide	13
Types of Ports	14
Adjusting the Product Tilt	15
Anti-theft Lock	15
Precautions for moving the product	16
Installing a Wall-mount Kit or Desktop Stand	17
<b>Installation</b>	<b>18</b>
Attaching the Stand	18
Removing the Stand	19

## Connecting and Using a Source Device

Read below before installing the monitor.	20
<b>Connecting and Using a PC</b>	<b>20</b>
Connection Using the D-SUB Cable (Analog Type)	20
Connection Using the HDMI Cable	21
Connection Using the HDMI-DVI Cable	21
Connecting the Power	21
Tidying Up the Connected Cables	22
<b>Correct posture to use the product</b>	<b>23</b>
<b>Driver Installation</b>	<b>23</b>
<b>Setting Optimum Resolution</b>	<b>23</b>

## Screen Setup

<b>SAMSUNG MAGIC Bright</b>	<b>24</b>
<b>Brightness</b>	<b>25</b>
<b>Contrast</b>	<b>25</b>
<b>Sharpness</b>	<b>25</b>
<b>Color</b>	<b>25</b>
<b>HDMI Black Level</b>	<b>26</b>
<b>Eye Saver Mode</b>	<b>26</b>
<b>Game Mode</b>	<b>26</b>
<b>Response Time</b>	<b>26</b>
<b>Picture Size</b>	<b>27</b>

Screen Adjustment	27
-------------------	----

## Adjusting OSD (On Screen Display) settings

<b>Transparency</b>	<b>28</b>
<b>Position</b>	<b>28</b>
H-Position	28
V-Position	28
<b>Language</b>	<b>28</b>
<b>Display Time</b>	<b>28</b>

## Setup and Reset

<b>Self Diagnosis</b>	<b>29</b>
<b>FreeSync</b>	<b>31</b>
<b>Eco Saving Plus</b>	<b>32</b>
<b>Off Timer</b>	<b>32</b>
<b>PC/AV Mode</b>	<b>32</b>
<b>Source Detection</b>	<b>32</b>
<b>Key Repeat Time</b>	<b>32</b>
<b>Power LED On</b>	<b>33</b>
<b>Reset All</b>	<b>33</b>

---

# Table of contents

## Information

---

Information	34
-------------	----

## Installing the Software

---

<b>Easy Setting Box</b>	<b>35</b>
Restrictions and Problems with the Installation	35
System Requirements	35

## Troubleshooting Guide

---

<b>Requirements Before Contacting Samsung Customer Service Center</b>	<b>36</b>
Product diagnosis (Screen issue)	36
Checking the Resolution and Frequency	36
Check the following.	36
<b>Q &amp; A</b>	<b>38</b>

## Specifications

---

<b>General</b>	<b>39</b>
<b>Standard Signal Mode Table</b>	<b>41</b>

## Appendix

---

<b>Responsibility for the Pay Service (Cost to Customers)</b>	<b>44</b>
Not a product defect	44
A Product damage caused by customer's fault	44
Others	44

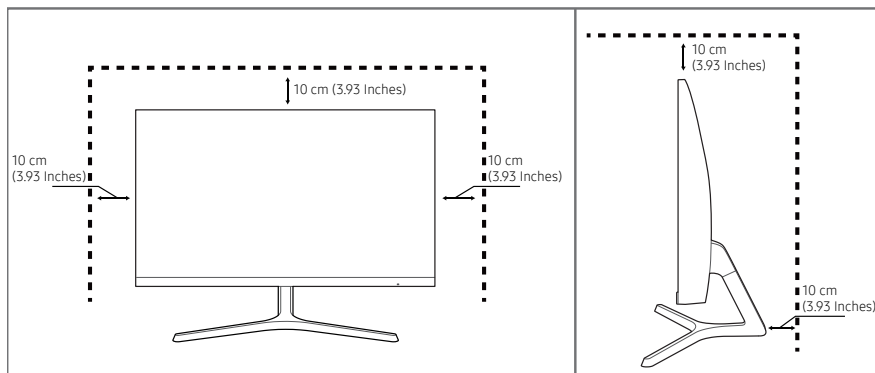
# Chapter 01

## Before Using the Product

### Securing the Installation Space

Make sure to have enough space for ventilation when placing the product. An internal temperature rise may cause fire and damage the product. Maintain enough space around the product as shown in the diagram when installing the product.

— The exterior may differ depending on the product.



### Safety Precautions

#### 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.

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.		AC voltage: Rated voltage marked with this symbol is AC voltage.
	This symbol indicates that this product has included important literature concerning operation and maintenance.		DC voltage: Rated voltage marked with this symbol is DC voltage.
	Class II product: This symbol indicates that a safety connection to electrical earth (ground) is not required. If this symbol is not present on a product with a mains lead, the product MUST have a reliable connection to protective earth (ground).		Caution. Consult instructions for use: This symbol instructs the user to consult the user manual for further safety related information.

---

## Cleaning

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.)

Do not press the product screen with hands or other objects. There is a risk of damaging the screen.

— Exercise care when cleaning as the panel and exterior of advanced LCDs are easily scratched.

— Take the following steps when cleaning.

- 1 Power off the product and PC.
- 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 product with a clean, soft and dry cloth.
  - Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the product.
  - Do not spray water or detergent directly on the product.
- 4 Wet a soft cloth in water, wring it out well, and then use the cloth to wipe the exterior of the product clean.
- 5 Connect the power cord to the product when cleaning is finished.
- 6 Power on the product and PC.

---

## Electricity and Safety

### Warning

- Do not use a damaged power cord or plug, or a loose power socket.
- Do not use multiple products with a single power socket.
- Do not touch the power plug with wet hands.
- Insert the power plug all the way in so it is not loose.
- Connect the power plug to a grounded power socket (type 1 insulated devices only).
- Do not bend or pull the power cord with force. Be careful not to leave the power cord under a heavy object.
- Do not place the power cord or product near heat sources.
- Clean any dust around the pins of the power plug or the power socket with a dry cloth.

### Caution

- Do not disconnect the power cord while the product is being used.
- Only use the power cord provided with your product by Samsung. Do not use the power cord with other products.
- 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.

---

## Installation

### Warning

- DO NOT PLACE CANDLES, INSECT REPELLANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.
- 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.
- 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) may damage or distort the product. Keep the product away from oil pollution. And do not install or use the product in the kitchen or near the kitchen stove.

### Caution

- Do not drop the product while moving.
- Do not set down the product on its front.
- 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 Center 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.
  - Contact Samsung Customer Service Center for repairs.
- To move the product, first disconnect all the cables from it, including the power cable.
- If the product generates abnormal sounds, a burning smell or smoke, disconnect the power cord immediately and contact Samsung Customer Service Center.
- 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 Center.
  - 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.
- Do not drop objects on the product or apply impact.
- Do not move the product by pulling the power cord or any cable.
- If a gas leakage is found, do not touch the product or power plug. Also, ventilate the area immediately.
- Do not lift or move the product by pulling the power cord or any cable.
- Do not use or keep combustible spray or an inflammable substance near the product.
- 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 Center.
- 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 Center.

---

## Caution

- Leaving the screen fixed on a stationary image for an extended period of time may cause afterimage burn-in or defective pixels.
  - Set the screen to power-saving mode or moving-picture screen saver when not 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 put AC/DC adapters together.
- Remove the plastic bag from the AC/DC adapter before you use it.
- Do not let water enter the AC/DC adapter device or get the device wet
  - An electric shock or fire may result.
  - Avoid using the product outdoors where it can be exposed to rain or snow.
  - Be careful not to get the AC/DC adapter wet when you wash the floor.
- Do not put the AC/DC adapter near to any heating apparatus.
  - Otherwise, a fire may result.
- Keep the AC/DC adapter in a well-ventilated area.
- If you place the AC/DC power adapter hanging with the cord input facing upwards, water or other foreign substances could enter the Adapter and cause the Adapter to malfunction.  
Make sure to rest the AC/DC power adapter flat on a table or the floor.
- Insert the power plug into the AC/DC adapter until a click sound is heard.
- Do not insert only the power plug into the power outlet.
- Do not use an AC/DC adapter other than the provided one.
  - It may cause electric shock or fire.
- Do not insert the AC/DC adapter into the power outlet on the ceiling.
  - It may cause electric shock or fire.
- Rotate the power plug not to exceed the range (0 to 90°) on the AC/DC adapter.
  - It may cause electric shock or fire.
- Never disassemble the power plug after being assembled. (It cannot be separated after assembly.)
- Never use the provided power plug for other devices.
- When removing the AC/DC adapter from the power outlet, hold the body of AC/DC adapter and pull it up.
  - It may cause electric shock or fire.
- Do not drop any objects or apply shock on the AC/DC adapter.
  - It may cause electric shock or fire.
- Use the AC/DC adapter after removing its plastic cover.
  - Otherwise, this may result fire.



- 
- 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.
  - Rest your eyes for more than 5 minutes or look at distance objects for every 1 hour of product use.
  - 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.
    - 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.

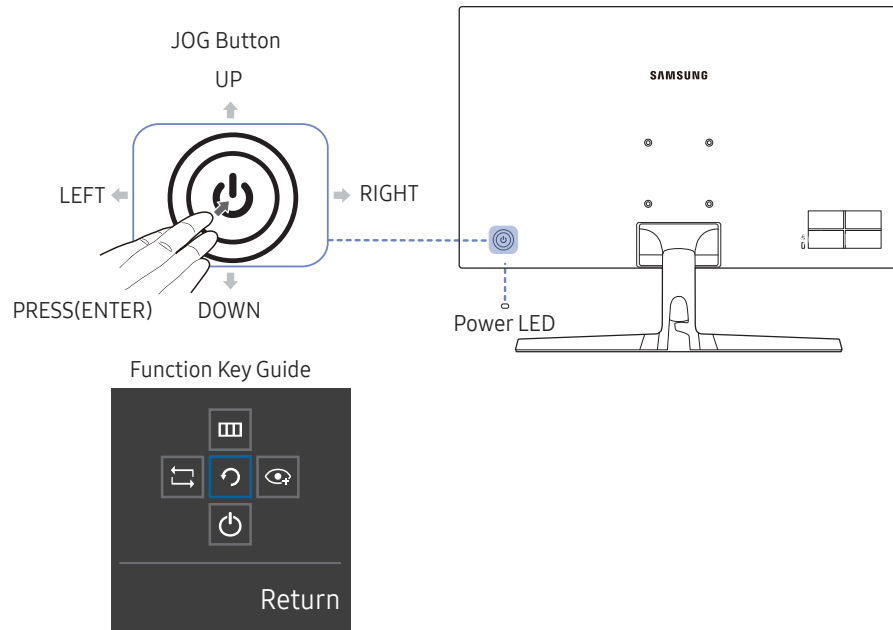
# Chapter 02

## Preparations

### Parts

#### Control Panel

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

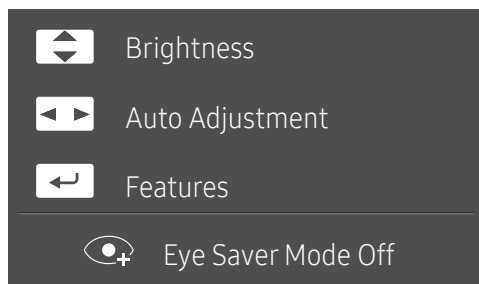


Parts	Description
JOG Button	<p>Multi directional button that helps navigate.</p> <p>The JOG button is located on the rear left side of the product. The button can be used to move up, down, left or right, or as Enter.</p>
Power LED	<p>This LED is power status indicator and works as</p> <ul style="list-style-type: none"> <li>Power On (Power button): Off</li> <li>Power saving mode: Blinking</li> <li>Power Off (Power button): On</li> </ul> <p>The power Indicator operation can be swapped by changing in the menu. (System → Power LED On) Actual models because of functional variation maybe haven't this function.</p> <p>The power button is located on the left of the rear and used to turn on or off the product.</p>
Function Key Guide	<p>Press the JOG button when the screen is turned on. The Function Key Guide will appear. To access the onscreen menu when the guide is displayed, press the corresponding direction button again.</p> <p>Function Key Guide may vary depending on the function or product model. Please refer to the actual product.</p>

---

## Direct Key guide

— On the Direct Key Guide screen, the following menu options appear when the product screen is switched on or the input source is changed.



- UP/DOWN: Adjust **Brightness, Contrast, Sharpness**.

- LEFT/RIGHT: Adjust **Auto Adjustment**.

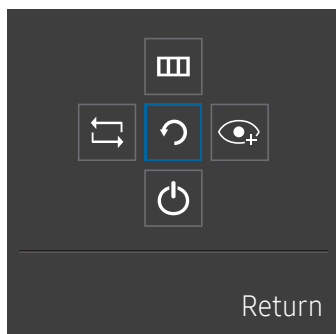
— Changing the resolution in Display Properties will activate the **Auto Adjustment** function.

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

- PRESS(ENTER): Display Function Key Guide.











## Function Key Guide

— To use the Function Key Guide, press the JOG button. Then the following window appears.



UP/DOWN/LEFT/RIGHT: Move to the item you want. The description for each item will appear when the focus changes.

PRESS(ENTER): The selected item will be applied.

	Description
	Selects  to change the input signal by moving the JOG button in the Function Key Guide screen. A message will appear on the top left corner of the screen if the input signal has been changed.
	Selects  by moving the JOG button in the function key guide screen. This product shows the menu as an on-screen display. On screen display menu lock: Lock the on screen display menu to maintain the current settings or prevent other users from changing settings. Enable/Disable: To enable or disable the on screen display menu lock, display the “Menu” screen, move the jog button to the right to go to the next stage, and then press and hold the button to the left for 10 seconds. — If the on screen display menu lock is enabled, <b>Brightness</b> and <b>Contrast</b> can be adjusted. <b>Eye Saver Mode</b> is available. <b>Information</b> can be viewed.
	Selects  by moving the JOG button in the function key guide 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</b>, <b>Brightness</b>, <b>Color</b>, <b>Game Mode</b></li> <li>• <b>System</b> → <b>Eco Saving Plus</b></li> </ul>
	Selects  to turn the product off by moving the JOG button in the function key guide screen.
	Return to the previous menu by using the JOG button to select the  icon when the Function Key Guide screen is displayed.

— Actual models because of functional variation, Function key guide options will be different.

When the product displays nothing (i.e. Power saving mode or Non-signal mode), 2 direct keys for control source and power could be used as below.

JOG Button	Power saving/Non-signal mode
UP	Source Change
Down	
PRESS(ENTER) for 2 seconds	Power Off

When the product displays the menu the JOG Button could be used as below.

JOG Button	Action
UP/DOWN	Move the option
LEFT	Exit the Main menu. Close Sublist without saving value. Value decreases in the slider.
RIGHT	Move to sublist. Value increases in the slider.
PRESS(ENTER)	Save the value and close Sublist.

## Configuring Brightness, Contrast and Sharpness from Direct Key Guide

Adjust the **Brightness**, **Contrast** and **Sharpness** by moving the JOG button.



— 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 **Eco Saving Plus** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.

### Contrast

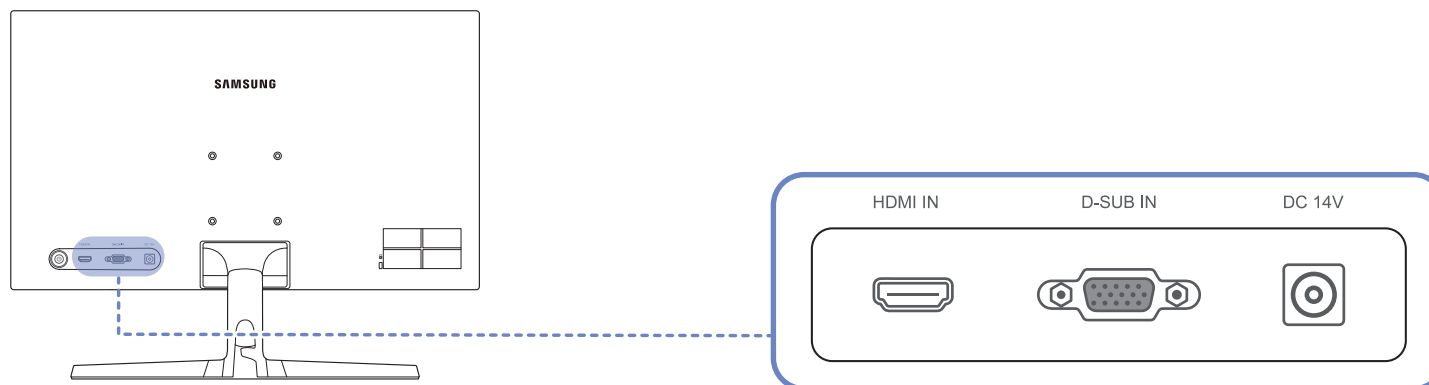
- This menu is not available when **SAMSUNG MAGICBright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.


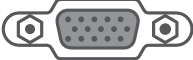

### Sharpness

- 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.

## Types of Ports

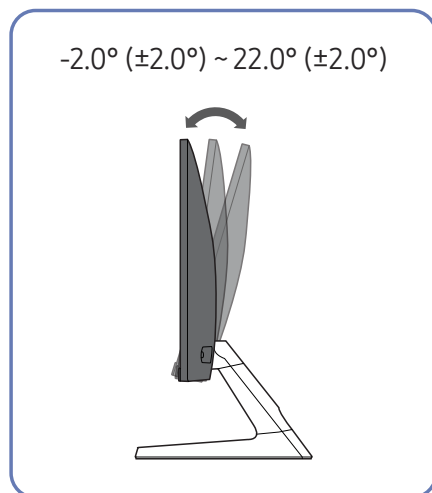
The functions available may vary depending on the product model. The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality. Refer to the actual product.



Port	Description
 HDMI IN	Connects to a source device using an HDMI cable or HDMI-DVI cable.
 D-SUB IN	Connect to a PC using the D-SUB cable.
 DC 14V	Connects to the AC/DC adapter.

## Adjusting the Product Tilt

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



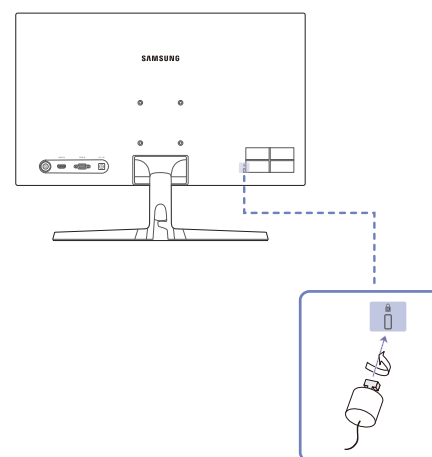
- You can adjust the product tilt.
- Hold the lower part of the product and adjust the tilt carefully.

## 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:

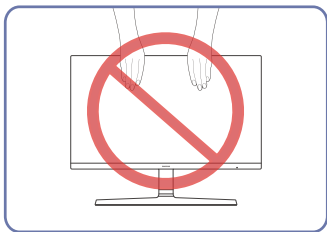


- 1 Fix the cable of your anti-theft locking device to a heavy object such as a desk.
- 2 Put one end of the cable through the loop on the other end.
- 3 Insert the locking device into the anti-theft lock slot at the back of the product.
- 4 Lock the locking device.
  - An anti-theft locking device can 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.

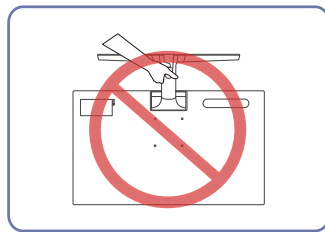
---

## Precautions for moving the product

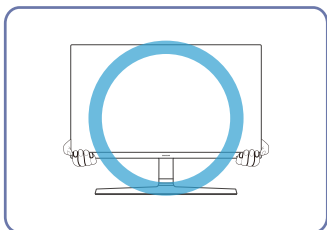
— Power the product off and remove the power cable from the power socket.



- Do not directly apply pressure on the screen.
- Do not hold the screen when moving the monitor.



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

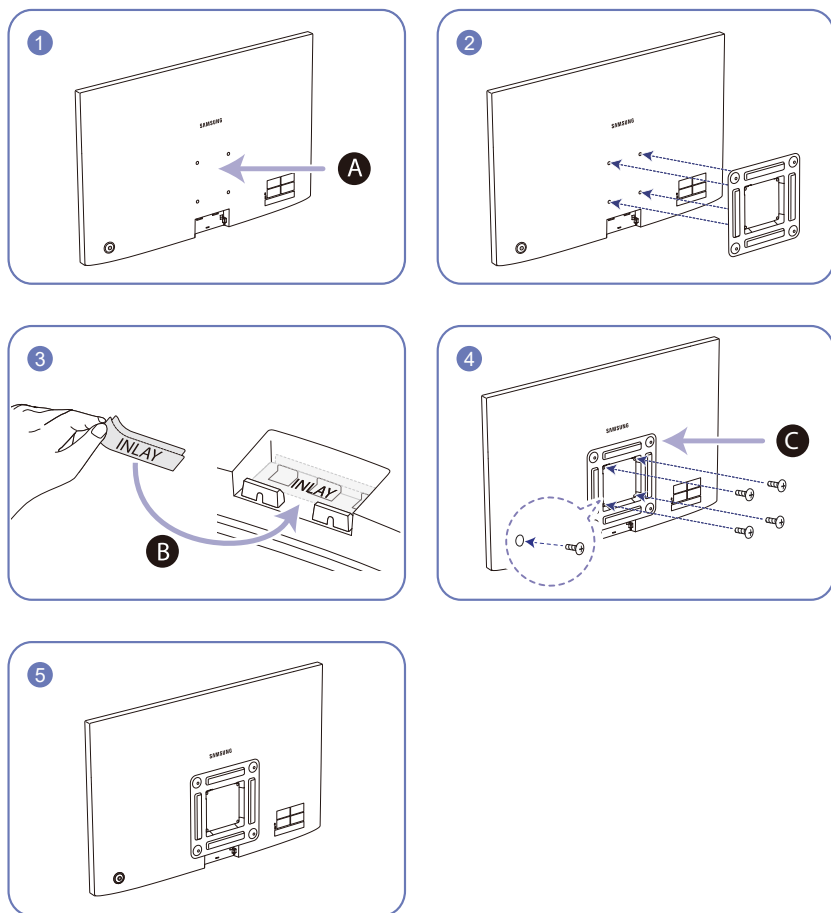


- Hold the lower corners or edges of the monitor when moving it.



## Installing a Wall-mount Kit or Desktop Stand

— Power the product off and remove the power cable from the power socket.



- A** Attach the wall-mount kit or desktop stand here
- B** Attach the INLAY to the position as shown in the figure
- C** Bracket (sold separately)

Align the grooves and tightly fasten the screws on the bracket on the product with the corresponding parts on the wall-mount kit or desktop stand you want to attach.

- Notes
  - Using a screw longer than the standard length can damage the internal components of the product.
  - The length of screws required for a wall mount that does not comply with the VESA standards may vary depending on the specifications.
  - Do not use screws that do not comply with the VESA standards. Do not attach the wall-mount kit or desktop stand using excessive force. The product may get damaged or fall and cause personal injury. Samsung shall not be held liable for any damage or injury caused by using improper screws or attaching the wall-mount kit or desktop stand using excessive force.
  - Samsung shall not be held liable for any product damage or personal injury caused by using a wall-mount kit other than the one specified or from an attempt to install the wall-mount kit on your own.
  - To mount the product on a wall, ensure you purchase a wall-mount kit that can be installed 10 cm or farther away from the wall.
  - Be sure to use a wall-mount kit that complies with the standards.
  - To install the monitor using a wall mount, disconnect the stand base from the monitor.

Unit: mm (inches)

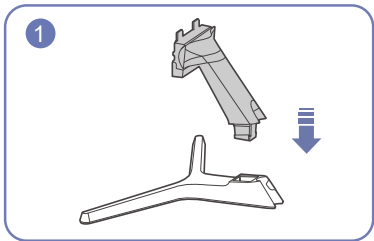
Model name	VESA screw hole specs (A * B) in millimeters	Standard Screw	Quantity
S22R350FH*/S22R352FH*/ S22R354FH*/S22R356FH*/ S22R358FH*	75.0 x 75.0 (3.0 x 3.0)	M4	4
S24R350FH*/S24R352FH*/ S24R354FH*/S24R356FH*/ S24R358FH*			

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

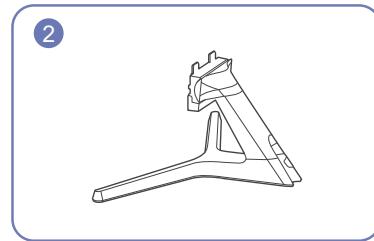
# Installation

## Attaching the Stand

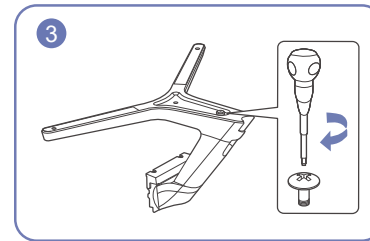
- Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.
- The exterior may differ depending on the product.



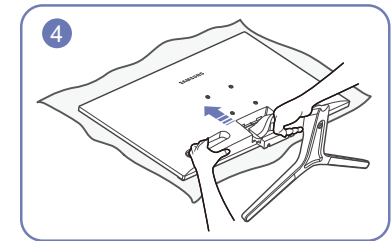
Insert the stand neck into the stand base in the direction shown in the figure.



Check that the stand neck is firmly connected.

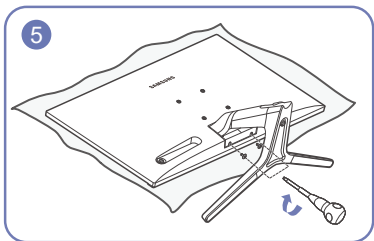


Tightly fasten the connecting screw at the bottom of the stand base.

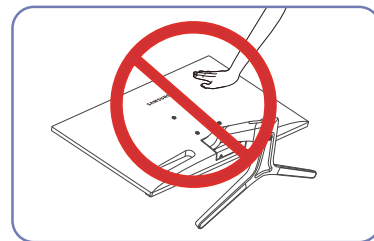


Place a soft cloth over the table to protect the product and place the product onto the cloth so that the front of the product is facing downwards.

Hold the back of the product as shown in the figure. Push the assembled stand into the main body in the direction of the arrow as shown in the figure.



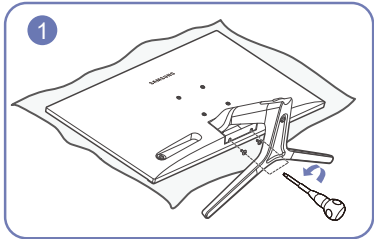
Fasten the screws at the bottom of the stand neck.



- Caution  
Do not press down on the monitor. There is a risk of damaging the monitor.

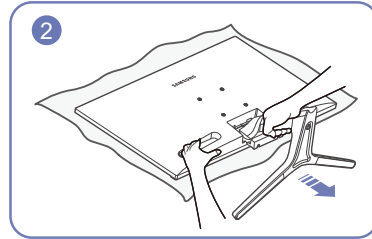
## Removing the Stand

- Before removing the stand from the product, place the product on a flat and stable surface with the screen facing down.
- The exterior may differ depending on the product.

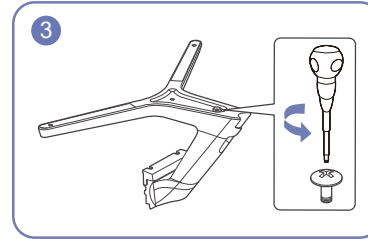


Place a soft cloth over the table to protect the product and place the product onto the cloth so that the front of the product is facing downwards.

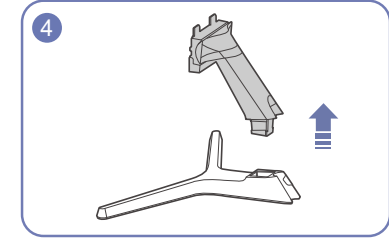
Remove the screws from the bottom of the stand neck.



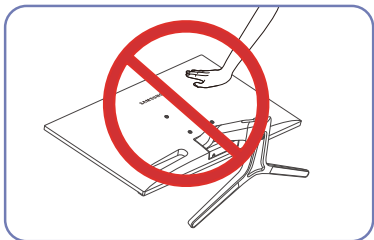
While holding the product with one hand, pull the stand neck with your other hand to detach the stand as shown in the figure.



Turn the connecting screw at the bottom of the stand base to separate it.



Remove the stand neck from the stand base by pulling it in the direction of the arrow as shown in the figure.



- Caution

Do not press down on the monitor. There is a risk of damaging the monitor.

# Chapter 03

## Connecting and Using a Source Device

### Read below before installing the monitor.

- 1 Before installing the product, check the shapes of both ports of the supplied signal cables and the shapes and locations of the ports on the product and external device.
- 2 Before installing the product, make sure you remove the power cables from both the product and the external device to prevent damage to the product due to a short circuit or over current.
- 3 After all signal cables have been properly connected, connect the power cables back to the product and the external device.
- 4 After installation is completed, make sure you read the user guide to acquaint yourself with the product functions, precautions and other information required to use the product properly.

### Connecting and Using a PC

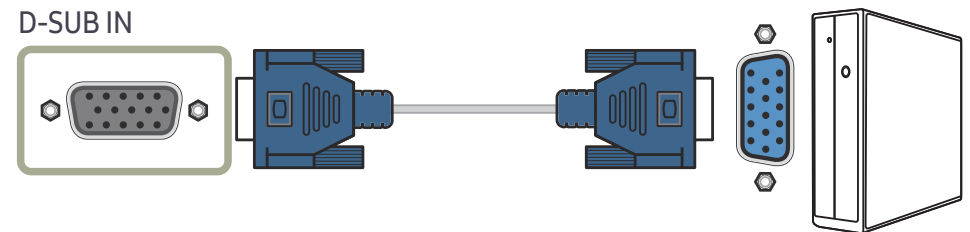
Select a connection method suitable for your PC.

- Connecting parts may differ in different products.
- Provided ports may vary depending on the product.

#### Connection Using the D-SUB Cable (Analog Type)



First make sure that the power cables for product and other devices (e.g. PC, settop box, etc.) are removed.



## Connection Using the HDMI Cable



First make sure that the power cables for product and other devices (e.g. PC, settop box, etc.) are removed.

HDMI IN



## Connection Using the HDMI-DVI Cable



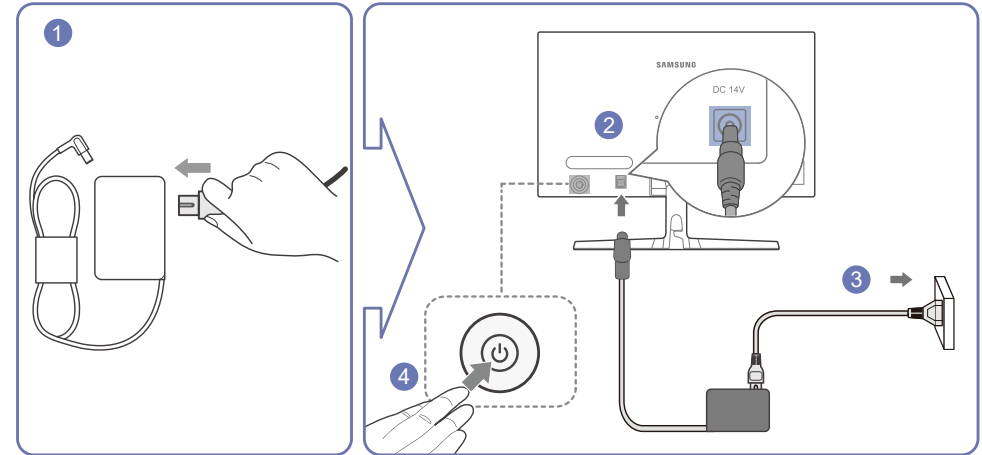
First make sure that the power cables for product and other devices (e.g. PC, settop box, etc.) are removed.

HDMI IN



— The maximum resolution may not be available with an HDMI-DVI cable.

## Connecting the Power

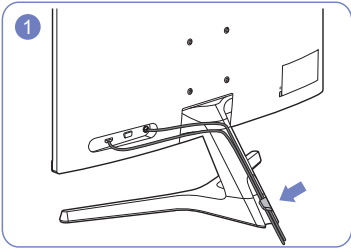


- 1 Connect the power cable to the AC/DC adapter
- 2 Connect the AC/DC adapter to the DC 14V port on the back of the product.
- 3 Plug the AC/DC adapter into the power outlet.
- 4 Press the JOG button on the back of the monitor to turn it on.

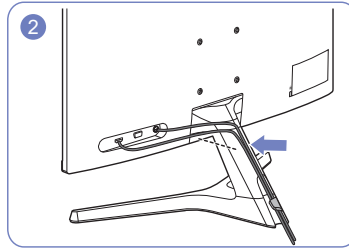
— The input voltage is switched automatically.

---

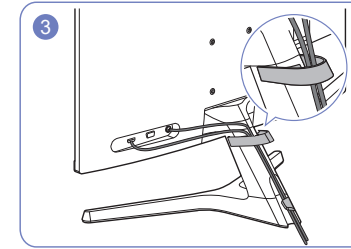
## Tidying Up the Connected Cables



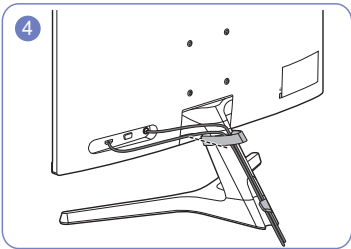
Connect cables to their port and route them through the ring on the back of the stand.



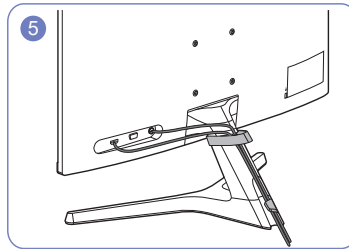
Push the cables further close to the stand.



Route the cables through the HOLDER-CABLE.



Secure the HOLDER-CABLE to the stand. (HOOK type)



Cables arrangement is complete.

---

## Correct posture to use the product



Use the product in the correct posture as follows:

- Straighten your back.
- Allow a distance of 45 to 50cm 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.
- Do the Eye exercises or blink frequently, then eye fatigue will be relieved.

---

## 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>.

## 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 information message and change the resolution on your PC to the optimum setting.

- 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.
- If you want to set the optimum resolution for your computer. Please refer to (Q&A) → [“How can I change the resolution?”](#).

# Chapter 04

## Screen Setup

Function Key Guide →  → **Picture**

Configure the screen settings such as brightness. A detailed description of each function is provided. Refer to your product for details.

— The functions available may vary depending on the product model. The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

### 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 **Eco Saving Plus** 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

- **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

When the external input is connected through HDMI and **PC/AV Mode** is set to **AV**, **SAMSUNG MAGIC Bright** 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.

- **Dynamic:** Select this mode to view a sharper image than in **Standard** mode.
- **Standard:** Select this mode when the surroundings are bright.
- **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.



---

## 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 **Eco Saving Plus** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.

## 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.

## 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 **Game Mode** is enabled.

---

## Color

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.

- **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 color tone that best suits your viewing needs.
  - **Cool 2**: Set the color temperature to be cooler than **Cool 1**.
  - **Cool 1**: Set the color temperature to be cooler than **Normal** mode.
  - **Normal**: Display the standard colour tone.
  - **Warm 1**: Set the color temperature to be warmer than **Normal** mode.
  - **Warm 2**: Set the color temperature to be warmer than **Warm 1**.
  - **Custom**: Customize the colour tone.
- When the external input is connected through HDMI 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**

---

## 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.

- **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.

— **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 @ 60 Hz and 1080P @ 60 Hz.

## 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 'On', the blue light that wavelength is around 400nm will decrease, and it will provide an optimum picture quality suitable for eye relaxation. 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.

---

## 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.

— When the product 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.

— Use **Standard** mode when not playing a video or game.

---

## Picture Size

Change the picture size.

— This option is not available when **FreeSync** is enabled..

### 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

- **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 **Picture Size** is available when the following conditions are satisfied.

- A digital output device is connected using the HDMI cable.
- The input signal is 480p, 576p, 720p, or 1080p and product can display normally (Not every model can support all of these signals.).
- This can only be set when the external input is connected through HDMI and **PC/AV Mode** is set to **AV**.

---

## Screen Adjustment

— This menu is available in **Analog** mode only.

— 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 product can display normally, select **Screen Fit** to adjust horizontal position in 0-6 levels.

### Configuring H-Position & V-Position

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

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

### Configuring Coarse

Adjust the screen frequency.

— This menu is available in **Analog** mode only.

### Configuring Fine

Fine-adjust the screen to obtain a vivid picture.

— This menu is available in **Analog** mode only.

# Chapter 05

## Adjusting OSD (On Screen Display) settings

Function Key Guide →  → [On Screen Display](#)

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

— The functions available may vary depending on the product model. The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

### Transparency

Set the transparency for the menu windows.

### Position

#### H-Position

Move the menu position to the left or right.

#### V-Position

Move the menu position up or down.

### 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.

### Display Time

The OSD menu will automatically disappear if the menu is not used for a specified period of time.

**Display Time** is a function to specify the time which you want the OSD menu to disappear.

# Chapter 06

## Setup and Reset

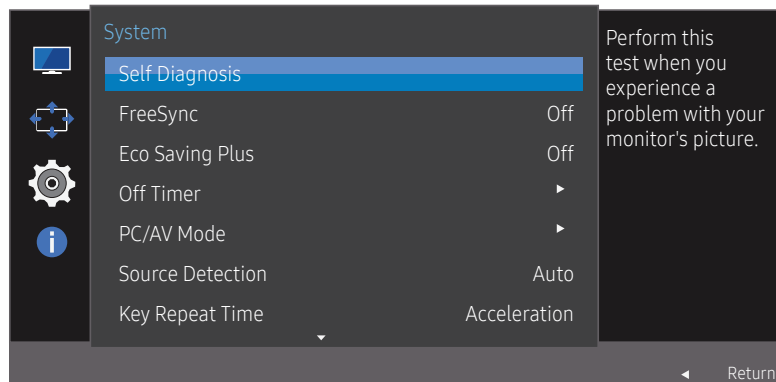
Function Key Guide →  → System

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

— The functions available may vary depending on the product model. The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

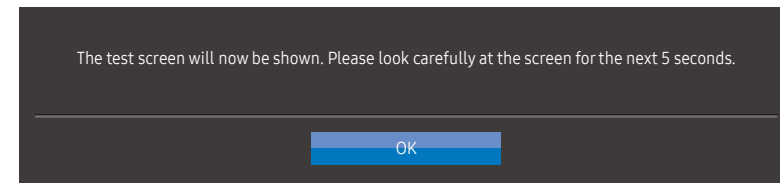
### Self Diagnosis

1 Use the function key and go to  → System → Self Diagnosis.



— The displayed image may differ depending on the model.

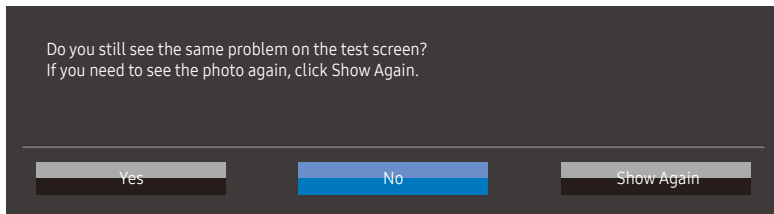
2 Select **OK** when the following screen is prompted.



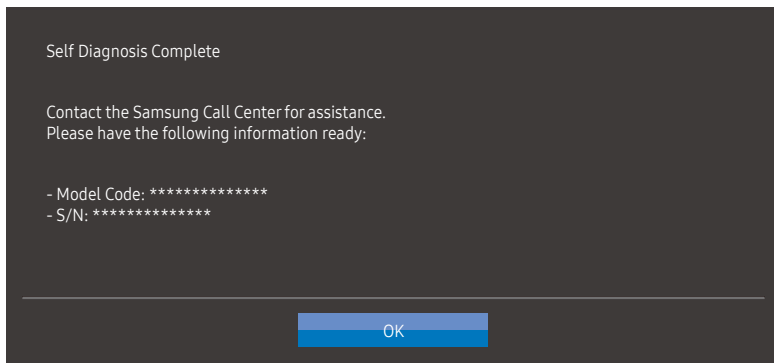
• Review the test screen.



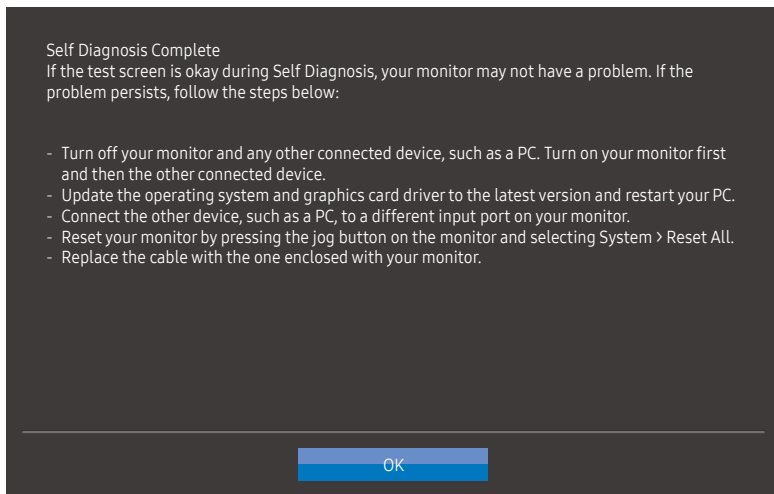
3 Base on the test result, select **Yes** / **No** / **Show Again**.



- You will see the following screen when you select **Yes**.



- You will see the following screen when you select **No**.



---

# FreeSync

**FreeSync** technology is a solution that eliminates screen tearing without all the usual lag and latency. This feature will eliminate screen tearing and lag during game play. Improve your gaming experience. The displayed **FreeSync** menu items on the product may vary, depending on the product model and compatibility with the AMD graphics card.

- **Off**: Disable **FreeSync**.
- **Standard Engine**: Enable the basic **FreeSync** functions of the AMD graphics card.
- **Ultimate Engine**: Enable the **FreeSync** feature with a higher screen frame rate. Screen tearing (abnormal sync between the screen and content) is reduced in this mode. Note, however, that intermittent screen flickering may occur during gameplay.

If you use the **FreeSync** function while playing a game, the following symptoms may occur:

- The screen may flicker depending on the type of graphics card, the game option settings, or the video being played. Try the following actions: decrease the game setting values, change the current **FreeSync** mode to **Standard Engine**, or visit the AMD website to check your graphics driver's version and update it with the latest one. When enable **FreeSync** function, please use maximum screen refresh rate for optimal freesync effect.
- When using the **FreeSync** function, the screen may flicker due to the fluctuation of output frequency from the graphics card.
- The response rate during the game may fluctuate depending on the resolution. A higher resolution generally decreases the response rate.
- The sound quality of the product may be degraded.

- If you encounter any issues when using the function, contact the Samsung Service Centre.
- When the resolution is changed while setting **FreeSync** to **Standard Engine** or **Ultimate Engine**, the screen tearing can happen intermittently. Set **FreeSync** to **Off** and change the resolution.
- The function is unavailable in the devices (e.g. AV devices) that have no AMD graphics card. If the function is applied, the screen may have malfunction.
- Apply the optimum resolution (1920 x 1080) when using **FreeSync**.
- Use the HDMI cable provided by the manufacturer when using **FreeSync**.

---

## The models in the Graphic Cards list supports FreeSync

**FreeSync** can only be used with specific AMD graphics card models. Refer to the following list for supported graphics cards:

Make sure to install the latest official graphics drivers from AMD that support **FreeSync**.

- For additional AMD graphics card models that support the **FreeSync** feature, visit the official AMD website.
- Select **FreeSync Off** if you are using a graphics card from a different manufacturer.
- When applying the **FreeSync** function via the HDMI cable, it may fail to work due to the bandwidth limitation of certain AMD graphics card.

- Radeon™ RX Vega series
- Radeon™ RX 500 series
- Radeon™ RX 400 series
- Radeon™ R9/R7 300 series (excluding R9 370/X, R7 370/X, R7 265)
- Radeon™ Pro Duo (2016 edition)
- Radeon™ R9 Nano series
- Radeon™ R9 Fury series
- Radeon™ R9/R7 200 series (excluding R9 270/X, R9 280/X)

---

## Eco Saving Plus

The **Eco Saving Plus** function reduces power consumption by controlling the electric current used by the product 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.

- **Off**: Deactivate the **Eco Saving Plus** function.
- **Auto**: 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.)
- **Low**: The power consumption will be reduced by 25% over the default setting.
- **High**: The power consumption will be reduced by 50% over the default setting.

## Off Timer

**Off Timer**: Turn on **Off Timer** mode.

**Turn Off After**: 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.

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

— 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 **[[[** → **System** and set **Off Timer** to **Off**.

---

## PC/AV Mode

Set **PC/AV Mode** to **AV**. The picture size will be enlarged.

This option is useful when you view a movie.

- Set to **PC** when connected to a PC.
- Set to **AV** when connected to an AV device.

— Products with a display area of 16:9 or 16:10 are only supported.

— If the product is in **HDMI** mode and the screen says **Check Signal Cable**, press the JOG button to display the function-button screen and then select **[[[** → **System** → **PC/AV Mode** → **HDMI** → **PC** or **AV**.

## Source Detection

Select either **Auto** or **Manual** as the method to recognize input signal.

## Key Repeat Time

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

**Acceleration**, **1 sec**, or **2 sec** can be selected. If **No Repeat** is selected, a command responds only once when a button is pressed.



---

## Power LED On

Configure the settings to enable or disable the power LED located at the lower part of the product.


- **Working:** The power LED is on when the product is turned on.
- **Stand-by:** The power LED is on when the product is turned off.

## Reset All

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

# Chapter 07

## Information

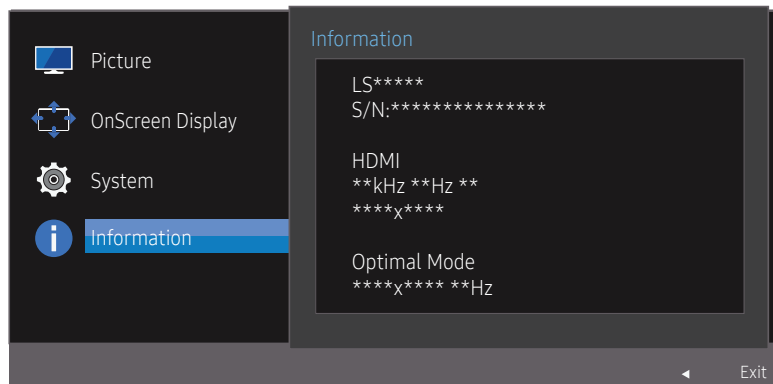
Function Key Guide →  → Information

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

— The functions available may vary depending on the product model. The colour and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

## Information

View the current input source mode, frequency and resolution that are in use and the current product version.



— The displayed image may differ depending on the model.

# Chapter 08

## Installing the Software

### Easy Setting Box



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

To install the latest version of **Easy Setting Box**, download it from the Samsung Electronics website at <http://www.samsung.com>.

- 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 PC system and the product specifications.
- If the shortcut icon does not appear, press the F5 key.

### Restrictions and Problems with the Installation

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

### System Requirements

OS	Hardware
• Windows 7 32Bit/64Bit	• At least 32MB of memory
• Windows 8 32Bit/64Bit	• At least 60MB of free space on the hard disk drive
• Windows 8.1 32Bit/64Bit	
• Windows 10 32Bit/64Bit	

# Chapter 09

## Troubleshooting Guide

### Requirements Before Contacting Samsung Customer Service Center

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

#### Product diagnosis (Screen issue)

If a problem occurs with the product screen, run [Self Diagnosis](#) to check that the product is working properly.

#### Checking the Resolution and Frequency

If a resolution that is not supported (see the [Standard Signal Mode Table](#)) is selected, the **Not Optimum Mode** message may appear for a short time or the screen may not be displayed properly.

— The displayed resolution may vary, depending on the PC system settings and cables.

Check the following.

#### Installation issue (PC mode)

---

**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

---

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

Check that the power cable is connected properly.

If a problem occurs with the product screen, run [Self Diagnosis](#) to check that the product is working 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.41).

---

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

Check the cable connection to the product.

---

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

Adjust **Coarse** and **Fine**.

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

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.41) in this manual and the **Information** menu on the product.

---

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

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

---

**Screen color is inconsistent.**

Change the **Color** settings.

---

**The colors 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, Windows 8.1 or Windows 10): 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.

---

## Source device issue

---

**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.

---

### How can I change the frequency?

Set the frequency on your graphics card.

- 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**.
- Windows 10: Go to **Settings** → **System** → **Display** → **Advanced display settings** → **Display adapter properties** → **Monitor**, and adjust **Screen refresh rate** under **Monitor settings**.

---

### How can I change 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.
- Windows 10: Go to **Settings** → **System** → **Display** → **Advanced display settings**, and adjust the resolution.

---

### How do I set power-saving mode?

- Windows 7: Set power-saving mode in **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** → **Power options** 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** → **Power options** or BIOS SETUP on the PC.
  - Windows 10: Set power-saving mode in **Settings** → **Personalization** → **Lock screen** → **Screen timeout settings** → **Power & sleep** or BIOS SETUP on the PC.
-

# Chapter 10

## Specifications

### General

Model Name	S22R350FH*/S22R352FH*/S22R354FH*/S22R356FH*/S22R358FH*	S24R350FH*/S24R352FH*/S24R354FH*/S24R356FH*/S24R358FH*
Size	22 Class (21.5 Inches / 54.6 cm)	24 Class (23.8 Inches / 60.4 cm)
Display area	476.064 mm (H) x 267.786 mm (V) 18.7 Inches (H) x 10.5 Inches (V)	527.04 mm (H) x 296.46 mm (V) 20.7 Inches (H) x 11.7 Inches (V)
Pixel Pitch	0.24795 mm (H) x 0.24795 mm (V) 0.009762 Inches (H) x 0.009762 Inches (V)	0.2745 mm (H) x 0.2745 mm (V) 0.010807 Inches (H) x 0.010807 Inches (V)
Maximum Pixel Clock	148.5 MHz (D-SUB) 174.5 MHz (HDMI)	
Power Supply	AC 100 - 240 V~, 50/60 Hz Based on the AC voltage of the adapter. For the DC voltage of the product, refer to the product label.	
Signal connectors	D-SUB, HDMI	
Environmental conditions	<b>Operating</b> Temperature: 50 °F – 104 °F (10 °C – 40 °C) Humidity: 10% – 80%, non-condensing <b>Storage</b> 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 (1ppm) 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.

— For detailed device specifications, visit the Samsung Electronics website.

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

[www.samsung.com/recyclingdirect](http://www.samsung.com/recyclingdirect) or call, 1-800-SAMSUNG



## Standard Signal Mode Table

Model Name		S22R350FH*/S22R352FH*/S22R354FH*/S22R356FH*/S22R358FH*/S24R350FH*/S24R352FH*/S24R354FH*/S24R356FH*/S24R358FH*
Synchronization	Horizontal Frequency	30 – 81 kHz
	Vertical Frequency	56 – 75 Hz (VGA) 50 – 75 Hz (HDMI Freesync off)
Resolution	Optimum Resolution	1920 x 1080 @ 60 Hz
	Maximum Resolution	1920 x 1080 @ 60 Hz (D-SUB)
		1920 x 1080 @ 75 Hz (HDMI)

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.

### D-SUB

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 720 x 400	31.469	70.087	28.322	-/+
VESA, 640 x 480	31.469	59.940	25.175	-/-
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 DMT, 640 x 480	31.469	59.940	25.175	-/-
VESA DMT, 640 x 480	37.861	72.809	31.500	-/-
VESA DMT, 640 x 480	37.500	75.000	31.500	-/-
VESA DMT, 800 x 600	35.156	56.250	36.000	+/+
VESA DMT, 800 x 600	37.879	60.317	40.000	+/+
VESA DMT, 800 x 600	48.077	72.188	50.000	+/+
VESA DMT, 800 x 600	46.875	75.000	49.500	+/+
VESA DMT, 1024 x 768	48.363	60.004	65.000	-/-
VESA DMT, 1024 x 768	56.476	70.069	75.000	-/-
VESA DMT, 1024 x 768	60.023	75.029	78.750	+/+

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA DMT, 1152 x 864	67.500	75.000	108.000	+/+
VESA DMT, 1280 x 720	45.000	60.000	74.250	+/+
VESA DMT, 1280 x 800	49.702	59.810	83.500	-/+
VESA DMT, 1280 x 1024	63.981	60.020	108.000	+/+
VESA DMT, 1280 x 1024	79.976	75.025	135.000	+/+
VESA DMT, 1440 x 900	55.935	59.887	106.500	-/+
VESA DMT, 1600 x 900 RB	60.000	60.000	108.000	+/+
VESA DMT, 1680 x 1050	65.290	59.954	146.250	-/+
VESA DMT, 1920 x 1080	67.500	60.000	148.500	+/+

#### HDMI

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 720 x 400	31.469	70.087	28.322	-/+
VESA, 640 x 480	31.469	59.940	25.175	-/-
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 DMT, 640 x 480	31.469	59.940	25.175	-/-
VESA DMT, 640 x 480	37.861	72.809	31.500	-/-
VESA DMT, 640 x 480	37.500	75.000	31.500	-/-
VESA DMT, 800 x 600	35.156	56.250	36.000	+/+
VESA DMT, 800 x 600	37.879	60.317	40.000	+/+
VESA DMT, 800 x 600	48.077	72.188	50.000	+/+
VESA DMT, 800 x 600	46.875	75.000	49.500	+/+
VESA DMT, 1024 x 768	48.363	60.004	65.000	-/-
VESA DMT, 1024 x 768	56.476	70.069	75.000	-/-
VESA DMT, 1024 x 768	60.023	75.029	78.750	+/+
VESA DMT, 1152 x 864	67.500	75.000	108.000	+/+
VESA DMT, 1280 x 720	45.000	60.000	74.250	+/+
VESA DMT, 1280 x 800	49.702	59.810	83.500	-/+
VESA DMT, 1280 x 1024	63.981	60.020	108.000	+/+

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA DMT, 1280 x 1024	79.976	75.025	135.000	+/+
VESA DMT, 1440 x 900	55.935	59.887	106.500	-/+
VESA DMT, 1600 x 900 RB	60.000	60.000	108.000	+/+
VESA DMT, 1680 x 1050	65.290	59.954	146.250	-/+
VESA DMT, 1920 x 1080	67.500	60.000	148.500	+/+
VESA DMT, 1920 x 1080	83.894	74.973	174.500	+/-

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.

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.

Some resolutions listed in the table above may not be available depending on graphics card specifications.

# 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 Program.
- 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.