

User manual

TC222W TC242W

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

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Before Using the Product

Copyright

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Microsoft, Windows are registered trademarks of Microsoft Corporation.

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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 center 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.

Icons used in this manual



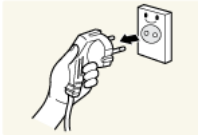
The following images are for reference only. Real-life situations may differ from what is shown in the images.

Before Using the Product

Cleaning

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

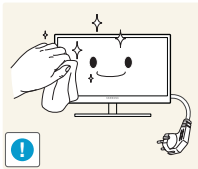
Take the following steps when cleaning.



1. Power off the monitor and computer.
2. Disconnect the power cable from the monitor.



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



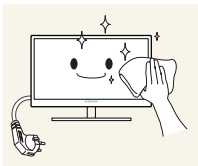
3. Wipe the monitor screen using a clean, soft and dry cloth.



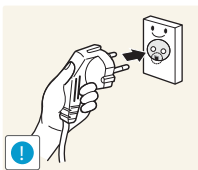
- Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the monitor.



- 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 monitor.



5. Connect the power cable to the product after cleaning the product.
6. Power on the monitor and computer.

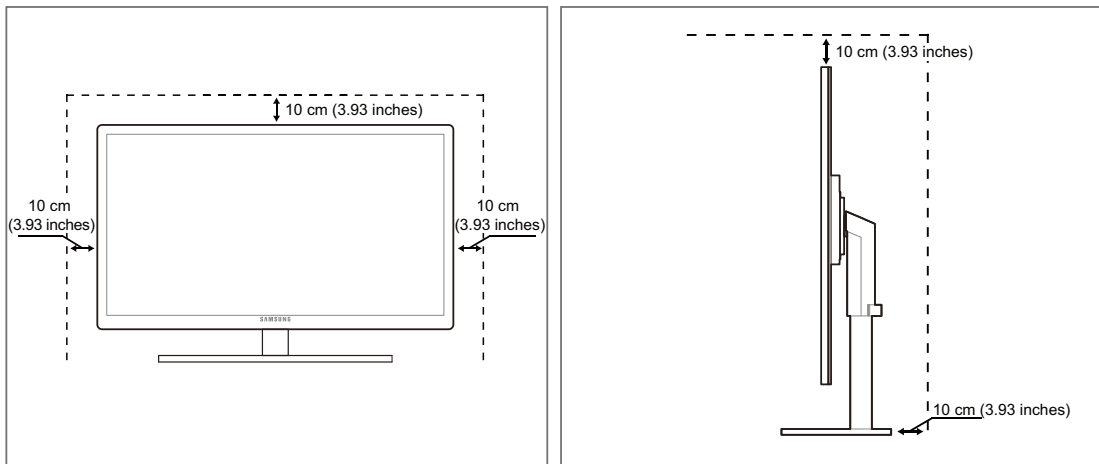
Before Using the Product

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





Be sure to contact Samsung Customer Service Center if the inside of the monitor needs cleaning.
(Service fee will be charged.)





Before Using the Product

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.

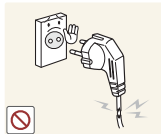
Before Using the Product

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 cable or plug, or a loose power socket.

- An electric shock or fire may result.



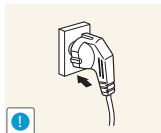
Do not plug many products into the same power socket.

- Otherwise, the socket may overheat and cause a fire.



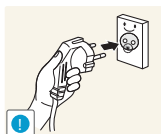
Do not touch the power plug with wet hands.

- Otherwise, an electric shock may result.



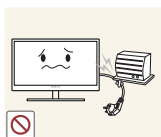
Insert the power plug all the way in so it is not loose.

- An unstable connection may cause a fire.



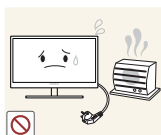
Connect the power plug to a grounded power socket (type 1 insulated devices only).

- An electric shock or injury may result.



Do not bend or pull the power cable with force. Do not weigh the power cable down with a heavy object.

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



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

- An electric shock or fire may result.



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

- Otherwise, a fire may result.

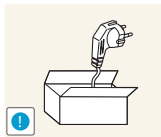
Before Using the Product

Caution



Do not unplug the power cable when the product is in use.

- The product may become damaged by an electric shock.



Do not use the power cable for products other than authorized products supplied by Samsung.

- An electric shock or fire 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.

Power to the product cannot be completely cut off with the power button.

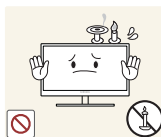


Hold the plug when disconnecting the power cable from the power socket.

- An electric shock or fire may result.

Installation and Safety

Warning



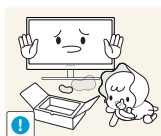
DO NOT PLACE CANDLES, INSECT REPELLANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.

- Otherwise, a fire may result.



Avoid installing the product in a narrow space with bad ventilation, such as a bookshelf or wall closet.

- Otherwise, a fire may result due to an increased internal temperature.



Keep the plastic packaging bag for the product in a place that cannot be reached by children.

- Children may suffocate.

Before Using the Product



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

- The product may fall and break or cause a personal 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.

- An electric shock or fire may result.



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

- Otherwise, 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.



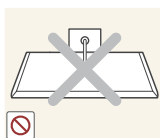
Edible oil, such as soybean oil, can damage or deform the product. Do not install the product in a kitchen or near a kitchen counter.

Caution



Take care not to drop the product when moving it.

- Otherwise, product failure or personal injury may result.



Do not set down the product on its front.

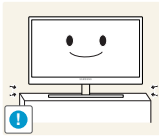
- The screen may become damaged.



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 break or cause a personal injury.
- Install the product only on cabinets or shelves of the right size.

Before Using the Product



Put down the product carefully.

- The product may fall and break or cause a personal injury.



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 before installation if you want to install the product at such a place.

Operation and Safety

Warning



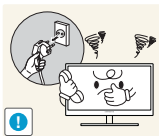
High voltage runs through the product. Do not attempt to disassemble, repair, or modify the product on your own.

- An electric shock or fire may result.
- Contact Samsung Customer Service Center for repair.



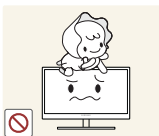
To move the product, first disconnect all the cables from it, including the power cable.

- Otherwise, the power cord may be damaged and a fire or electric shock may result.



If the product generates a strange noise, a burning smell, or smoke, remove the power cable immediately and contact Samsung Customer Service Center.

- An electric shock or fire may result.



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

- The product may fall, and your child 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 the Samsung Customer Service Center.

- Otherwise, an electric shock or fire may result.



Do not put a heavy object, toy, or sweets on top of the product.

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

Before Using the Product



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

- An electric shock or fire may result.



Do not drop objects on the product or apply impact.

- An electric shock or fire may result.



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

- Otherwise, the cable may be damaged and product failure, an electric shock or fire may result.



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 cable or any cable.

- Otherwise, the cable may be damaged and product failure, an electric shock or fire may result.



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.

- Otherwise, a fire may result from an increased internal temperature.



Do not insert a metallic object (a chopstick, coin, hair pin, etc.) or inflammable object (paper, match, etc.) into the vent or ports of the product.

- If water or any foreign substance enters the product, be sure to power off the product, remove the power cable, and contact Samsung Customer Service Center.
- Product failure, an electric shock or fire may result.

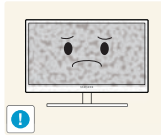


Do not place objects containing liquid (vases, pots, bottles, etc) or metallic objects on top of the product.

- If water or any foreign substance enters the product, be sure to power off the product, remove the power cable, and contact Samsung Customer Service Center.
- Product failure, an electric shock or fire may result.

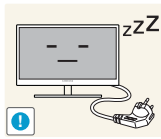
Before Using the Product

Caution



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

- If you are not going to use the product for an extended period of time, activate power-saving mode or a moving-picture screen saver.



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

- Otherwise, a fire may result from accumulated dust, overheating, an electric shock, or electric leakage.



Use the product at the recommended resolution and frequency.

- Your eyesight may deteriorate.



Do not put AC/DC power adapters together.

- Otherwise, a fire may result.



Remove the plastic bag from the AC/DC power adapter before you use it.

- Otherwise, a fire may result.



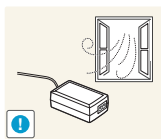
Do not let water enter the AC/DC power device or get the device wet.

- 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 power adapter wet when you wash the floor.

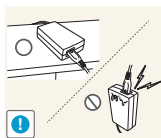


Do not put the AC/DC power adapter near to any heating apparatus.

- Otherwise, a fire may result.



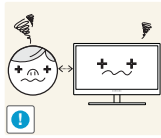
Keep the AC/DC power adapter in a well-ventilated area.



If you place the AC/DC power adapter so that it is 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.

Before Using the Product



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



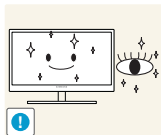
Do not hold the monitor upside-down or move it by holding the stand.

- The product may fall and break or cause a personal injury.



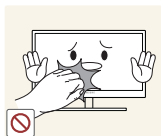
Do not use humidifiers or stoves around the product.

- An electric shock or fire may result.

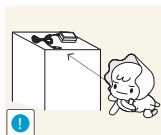


Rest your eyes for more than 5 minutes for every 1 hour of product use.

- 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.

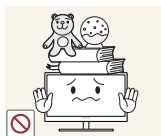


Store the small accessories used with the product out of reach of children.



Exercise caution when adjusting the product angle or stand height.

- Otherwise, children's fingers or hands may become stuck and injured.
- Tilting the product excessively may cause it to fall and result in personal injury.



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.

Before Using the Product

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.

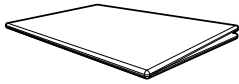
1.1 Checking the Contents

1.1.1 Checking the Components



- Contact the dealer from whom you purchased the product if any item is missing.
- The pictures may look different from the actual components.

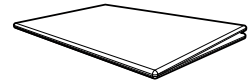
Components



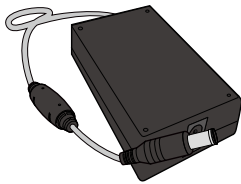
Quick Setup Guide



Warranty card
(Not available in some locations)



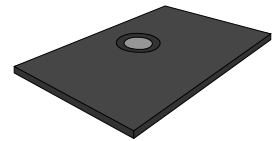
Regulatory guide



AC/DC power adapter
(Detachable)



Power cable
(Only provided with the
detachable AC/DC power
adapter)



Stand base



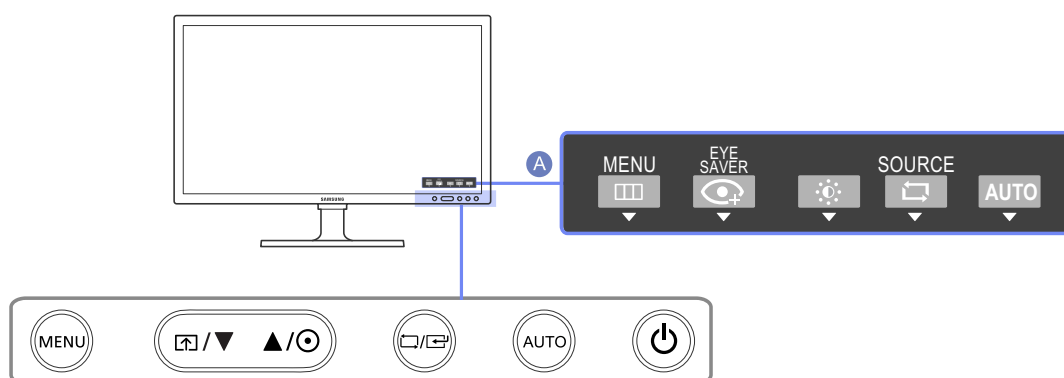
Components may vary depending on the country.

1.2 Parts










1.2.1 Frontal Buttons



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



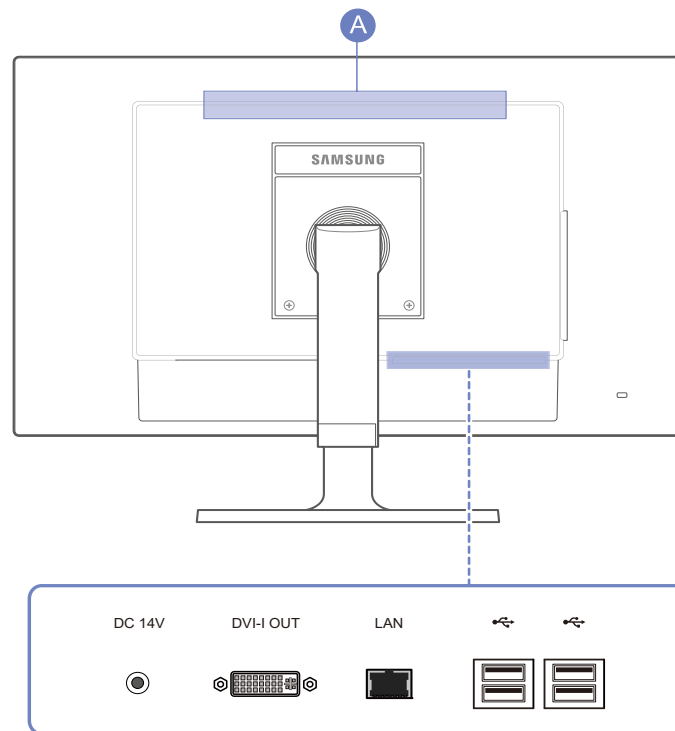
Icons	Description
	<p>Open or close the onscreen display (OSD) menu, or return to the parent menu.</p> <ul style="list-style-type: none"> OSD control lock: Maintain the current settings, or lock the OSD control to prevent unintended changes to settings. <p>Enable: To lock the OSD control, press the [MENU] button for 10 seconds.</p> <p>Disable: To unlock the locked OSD control, press the [MENU] button for more than 10 seconds.</p> <p> If the OSD control is locked,</p> <ul style="list-style-type: none"> Brightness and Contrast can be adjusted. Eye Saver Mode is available. INFORMATION can be viewed. The Eye Saver Mode function can be used by pressing the [] button. (The Eye Saver Mode is available even when the OSD control is locked.)
	<p>Press [] to enable or disable Eye Saver Mode.</p> <p>The items below are not available if the Eye Saver Mode function is enable.</p> <ul style="list-style-type: none"> PICTURE → Brightness, Game Mode, SAMSUNG Bright, SAMSUNG Angle COLOR SETUP&RESET → Smart ECO Saving

Icons	Description
	Move to the upper or lower menu or adjust the value for an option on the OSD menu.
	<p>Confirm a menu selection.</p> <p>Pressing the [] button when the OSD menu is not displayed will change the input source (Client/Analog). 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.</p>
	<p>Press the [AUTO] button to automatically adjust the screen settings.</p> <p> Available only in Analog mode.</p> <ul style="list-style-type: none"> Changing the resolution in Display Properties will activate the Auto Adjustment function.
	<p>Use this button for turning the Display on and off.</p> <p>Pressing the power button for more than 4 seconds forces the product to shut down.</p> <p> The power indicator will be lit when the product is operating normally.</p> <ul style="list-style-type: none"> To reduce power consumption, it is best to remove the power cable when you will not be using the product for an extended period of time.
 Function Key Guide	<p>Press one of the buttons on the monitor, Function Key Guide will appear on the screen. (This does not apply to the power button.)</p> <p>If you press a button on the front of the monitor, an Function Key Guide will display showing the function of the button before the menu for the pressed button appears.</p> <p>To go to the menu, press the button on the front of the monitor again.</p> <p>Function Key Guide may vary according to functions and models. Please refer to actual product.</p>

1.2.2 Rear View



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

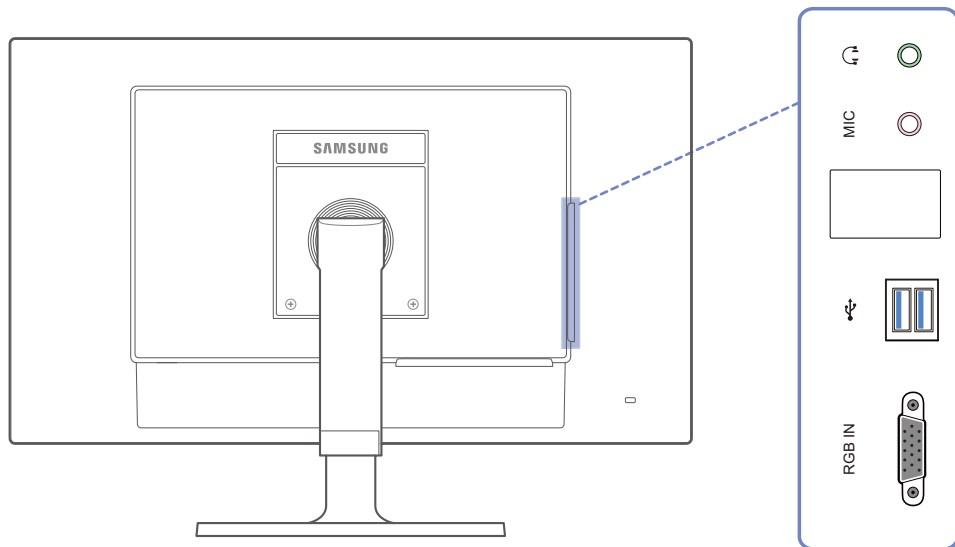




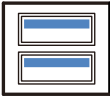

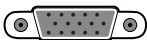
Port	Description
	Connects to the AC/DC power adapter.
	Connects to a Monitor device using the DVI or DVI to RGB cable.
	Connect to a network using the LAN cable.
	Connect to a USB device.
	Speaker

1.2.3 Side View



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

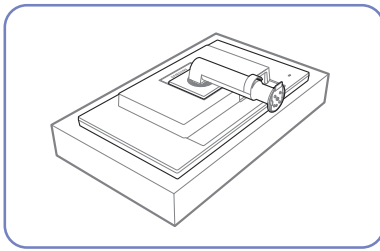


Port	Description
	Connect to an audio output device such as headphones.
 MIC	Connect to a microphone.
	Connect to a USB device. Compatible with a USB cable version 3.0 or lower.  Source devices can be charged using these USB ports.
 RGB IN	Connects to a PC device using the D-SUB cable.

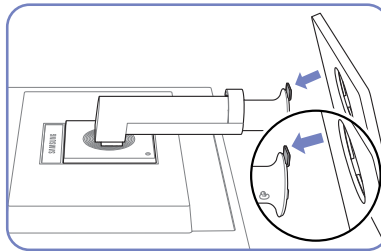
1.3 Installation

1.3.1 Attaching the Stand

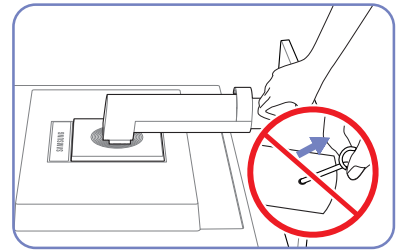
Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.



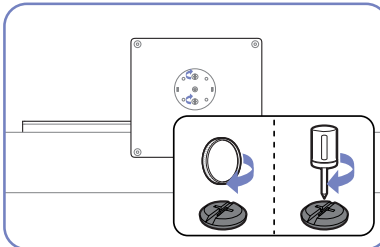
Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.



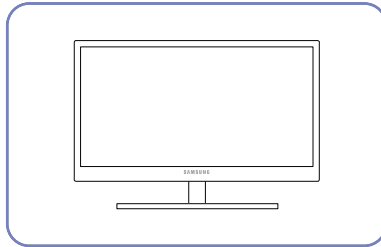
Insert the stand base into the stand in the direction of the arrow.



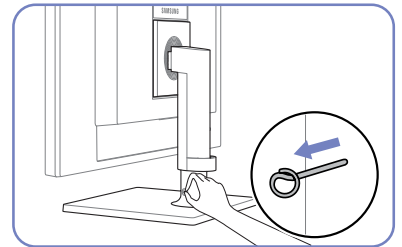
Do not remove the fixing pin until you are finished attaching the stand.



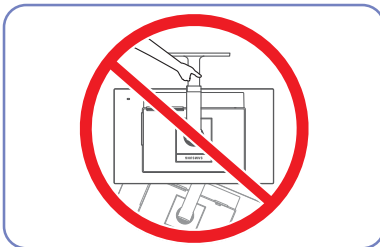
Fasten the screw tightly (using a screwdriver or coin) into the bottom of the stand base.



After installing the stand, place the product upright.



You can remove the fixing pin and adjust the stand now.



- Caution

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

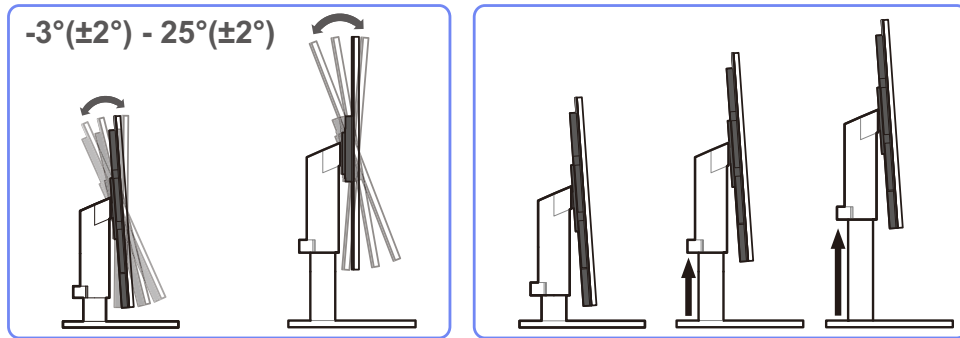


- Disassembly is the reverse order of assembly.
- The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

1.3.2 Adjusting the Product Tilt and Height



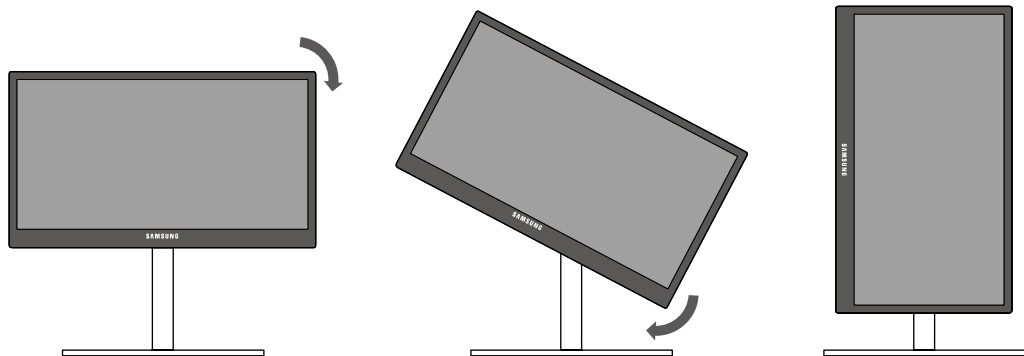
The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



- To adjust the height, remove the fixing pin.
- 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.

1.3.3 Rotating the Monitor

You can rotate your monitor as shown below.



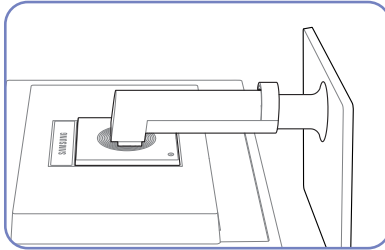
- Be sure to fully extend the stand before rotating the monitor.
- If you rotate the monitor without fully extending the stand, the corner of the monitor may hit the floor and get damaged.
- Do not rotate the monitor counterclockwise. The monitor may get damaged.

1.3.4 Installing a Wall-mount Kit or Desktop Stand

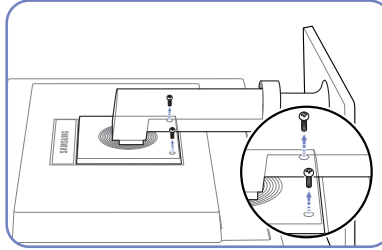
Before Installation



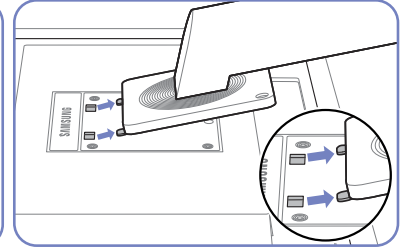
Power the product off and remove the power cable from the power socket.



Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.

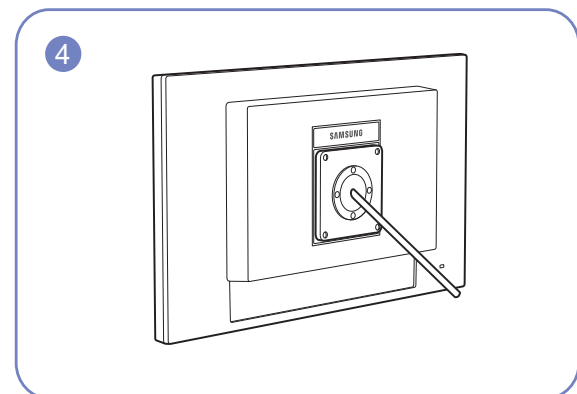
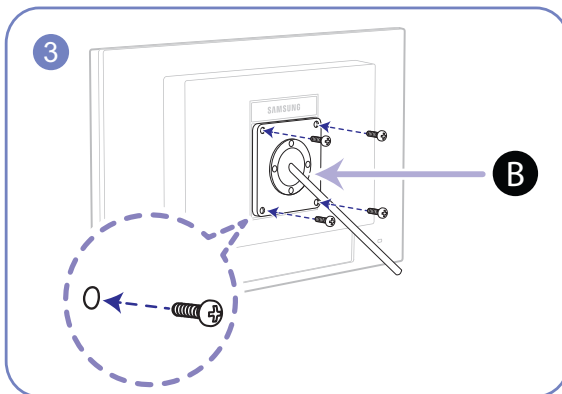
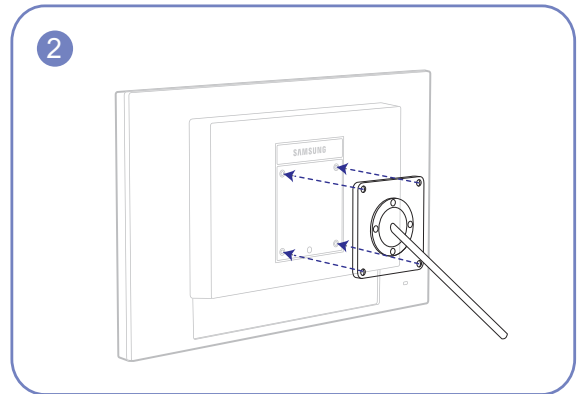
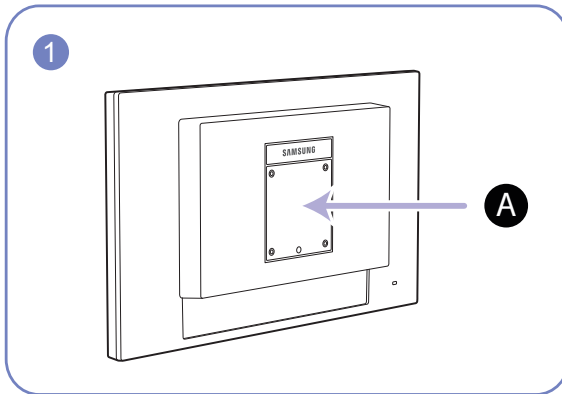


Unfasten the screw from the back of the product.



Lift and detach the stand.

Installing a Wall-mount Kit or Desktop Stand



A Attach the wall-mount kit or desktop stand here

B 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.

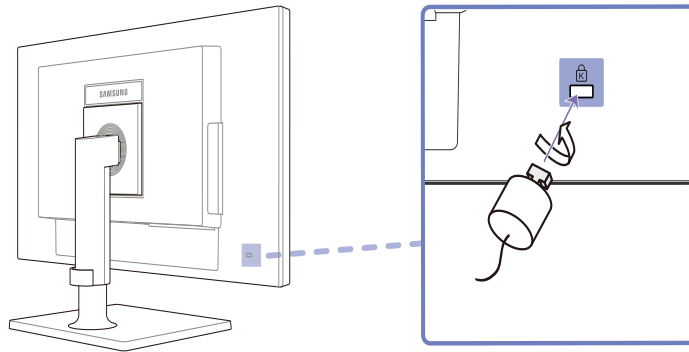


Notes

- 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.

1.3.5 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. The lock device is sold separately.



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.

2.1 What is "Windows Embedded Standard 7" Client?

The **Microsoft Windows Embedded Standard 7 (WES7)** client uses the **Microsoft Windows Embedded Standard 2011 OS**. When the WES client is connected to a server where **Citrix XenDesktop**, **VMware Horizon**, or **Microsoft Remote Desktop Connection** service is available, the keyboard, mouse, audio/video, and display data will be forwarded to the client through the network between the client and server.

Connectable Servers

- A **Citrix XenDesktop** Server
 - **Microsoft Windows Server 2008, 2008R2, 2012, 2012R2** where the **Terminal Service** and **Citrix XenServer** are installed
- A **VMware Horizon** Server
 - **Microsoft Windows Server 2008, 2008R2, 2012, 2012R2** where the **Terminal Service** and **VMWare Server** are installed
- A **Microsoft RDP (Remote Desktop Protocol)** Server
 - **Microsoft Windows Server 2008, 2008R2, 2012, 2012R2** where the **Terminal Service** are installed
 - **Microsoft Windows 7 Professional**



This manual describes the functions provided by the **WES** Client. However, it does not explain general functionalities of **WES**. For more general information on **WES7**, refer to **WES7** Help provided by **Microsoft**.

- **Wake On LAN**

This feature allows you to power on the product by sending a pre-determined command from an external system to the product over a network.

Make sure the network is capable of data communication with the PC that sends the command to the product. Ensure you have a program that can generate **Wake on LAN** signals.



- Make sure a power supply is always connected to ensure the feature works when the product is turned off.
- The feature is intended to power on the product. (It does not support the function to power off the product.)

Configuring the settings

- 1 Press the power button on the product to turn on the power LED. Press **F2** to access the BIOS setup page.
- 2 Go to **AMD** → **Platform** and set **Wake on LAN option** to **Disable** or **Enable**.
(Default setting is **Enable**.)
- 3 Press **F10** to save the change (**Save**) and select **Yes** at the prompt to exit from the current session.

- **Wake on USB**

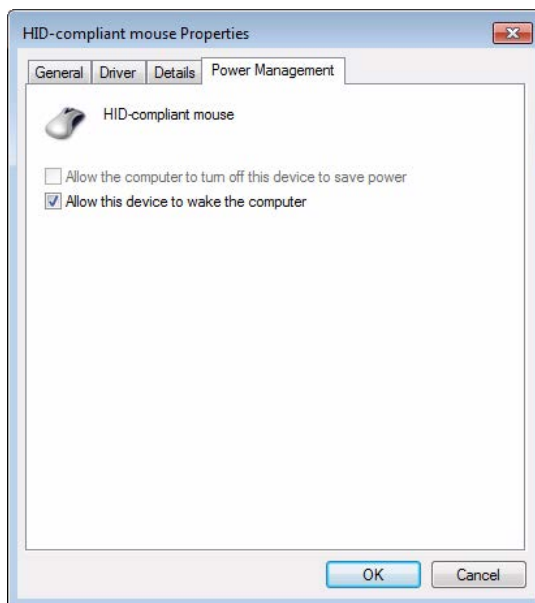
The feature switches the system to normal operation mode if the system is in standby mode after being left idle for a specified period of time. The mode will switch if a change to the keyboard or mouse input is detected.



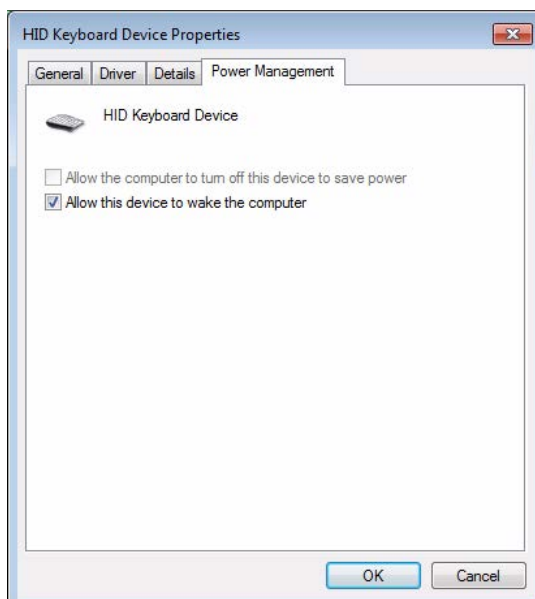
Changes include clicking a mouse button or pressing a key on the keyboard.

Configuring the settings

- 1 Select **Control Panel** → **System** → **Device Manager** → **Mouse** → **Power Management** → **Allow this device to wake the computer**.

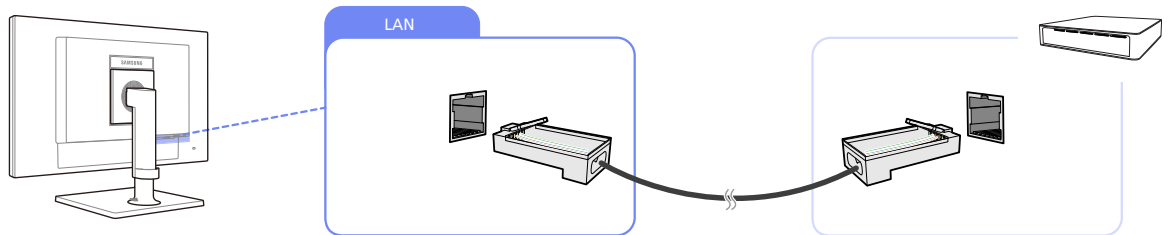


- 2 Select **Control Panel** → **System** → **Device Manager** → **Keyboard** → **Power Management** → **Allow this device to wake the computer**.



2.2 Connection to Use "Windows Embedded Standard 7"

2.2.1 LAN Connection



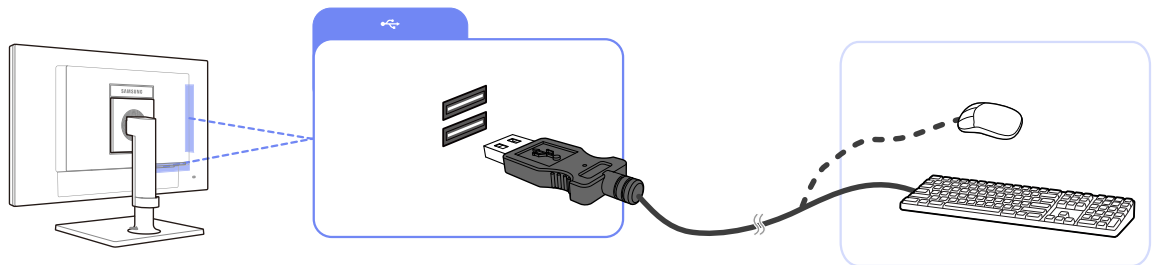
1 Connect the LAN cable to [LAN] on the back of the product.



- It is not supported when the network speed is below or equal to 10Mbps.
- Use Cat5(*STP Type) cable for the connection.

*STP: Shielded Twist Pair

2.2.2 Connecting USB Devices



1 Connect a USB device (keyboard, mouse, etc.) to [USB] on the back of the product.



The [USB] port supports USB 2.0.

2.3 Using "Windows Embedded Standard 7"

2.3.1 Logon

When the client starts, you can logon to the server by entering your username and password. By default, you are automatically logged in with an **Administrator** account and a blank password.

2.3.2 "Windows Embedded Standard 7" Desktop

Standard User

When logged on as a **Standard User**, there are many restrictions that protect the system from incorrect user actions. You cannot access the system drives and there are restrictions on configuring properties for them. To configure the client's advanced and detailed settings, log on as an **administrator**.



It is recommended to create **Standard User** accounts for general users that use the product.

Administrator

The **Administrator** account has privileges to configure the system settings and install/uninstall software. If it is required to restrict access privileges for security or administrator privileges are not needed, it is recommended to create **Standard User** accounts for general users.

The audio volume icon, Enhanced Write Filter status icon, and system time are displayed on the **Administrator** Taskbar. The **Administrator** privilege is required for adding and removing programs.

Log off, Restart, Shut down

- To log off the current session, shut down or restart your client, use the **Start** menu. [**Start** → **Shut down**]. The **Shut Down** Windows dialog box is displayed. To shut down the client immediately, select [**Start** → **Shut down**]. To select **Log off**, **Restart**, etc., move the mouse over the ► icon next to [**Shut down**]. Alternatively, you can perform Log off or **Shut down** using the Windows Security Dialog box by pressing [**Ctrl + Alt + Del**]. If 'Force Auto Log on' is activated, you will be immediately logged on after each log off.
- The Client **Log off**, **Restart** and **Shut down** take effect on the operations of the EWF (Enhanced Write Filter). To keep the changed system configuration, you must save a cache for the current system session into flash memory. Failing to do so will cause the changed configuration to be lost when the client is shut down or restarted. (In the case of logging off, the configuration is remembered when login in again.) For more information on the **Enhanced Write Filter**, refer to the Program Help.

2.3.3 Programs

Remote Desktop Connection

You can control a running terminal server or another computer (**Windows 95** or later) remotely through a remote desktop connection.

- **Remote Desktop**

- **Windows 7 Professional** or **Microsoft Windows Server 2008, 2008R2, 2012, 2012R2** must be installed on the computer to be controlled remotely. This computer is called a host.
- A remote computer running on an operating system later than **Windows 95** is required. This remote computer is called a client. The client software for the remote desktop connection must be installed on the client.
- You must also be connected to the Internet. A broadband Internet connection is good for high performance. However, because the remote desktop transmits a minimum set of data including the display data and keyboard data to control the host remotely, a broadband Internet connection is not required. You can run a remote desktop on a low bandwidth Internet connection.



When running a remote desktop on **Windows 7 Professional**, you cannot use the operating system of your computer.

- **Enabling Your Computer as the Host**

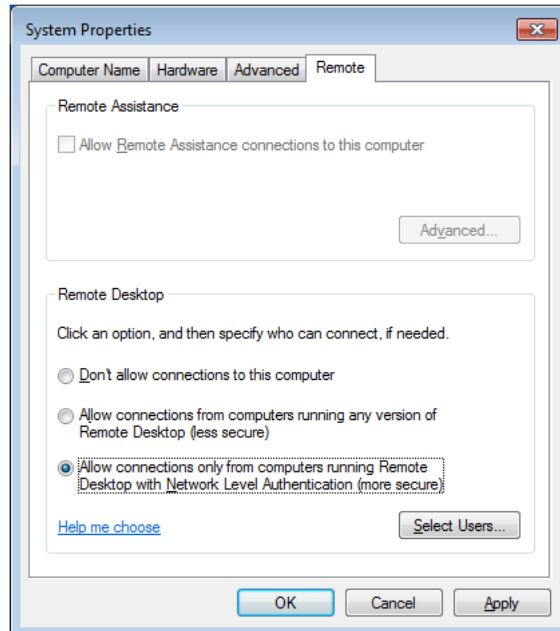
You must enable the **Remote Desktop** feature to control it from another computer. You must be logged on as an **Administrator** or a member of the **Administrators group** to enable **Remote Desktop** on your computer. Follow these steps:

- 1 Open the **System** folder in the **Control Panel**.
- 2 Go to [**Start** → **Control Panel** → **System and Security** → **System**], and click **Remote settings**.
- 3 If you want to block other PCs from accessing your PC using **Remote Desktop** or **RemoteApp**, select "**Don't allow connections to this computer.**"



- To allow a remote PC to access your PC using any version of **Remote Desktop** or **RemoteApp**, select "**Allow connections from computers running any version of Remote Desktop (less secure).**" This option is suitable if you do not know the **Remote Desktop Connection** version being used on other PCs. Note that this option is less secure than the next option (option 3).
- To allow a remote PC to access your PC using a **Remote Desktop** or **RemoteApp** version requiring a network level authentication, select "**Allow connections only from computers**

running **Remote Desktop with Network Level Authentication (more secure)**" to run **Remote Desktop** using network-level authentication.

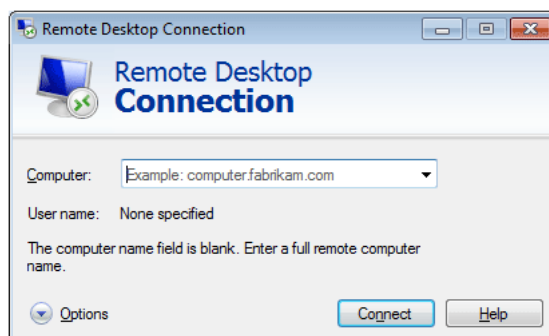


- **Start a Remote Desktop Session on the Client**

Once you have enabled your host computer to allow remote connections and installed the client software on a Windows-based client computer, you are ready to start a **Remote Desktop** session.

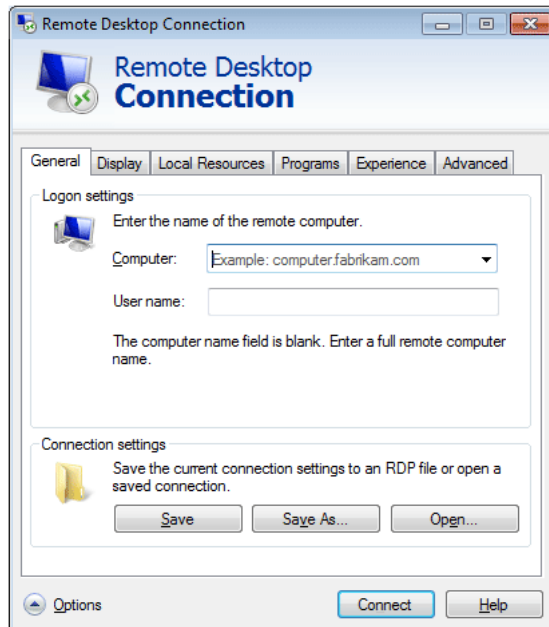
You must first establish a virtual private network connection or remote access service connection from your client computer to your host computer. To connect to another remote desktop, follow the instructions below.

- 1 Go to [**Start** → **All Programs** → **Accessories** → **Remote Desktop Connection**] or double-click the **Remote Desktop Connection** icon to open **Remote Desktop Connection**.
- 2 Enter the host computer name. You can configure detailed settings by clicking the **Options** button.

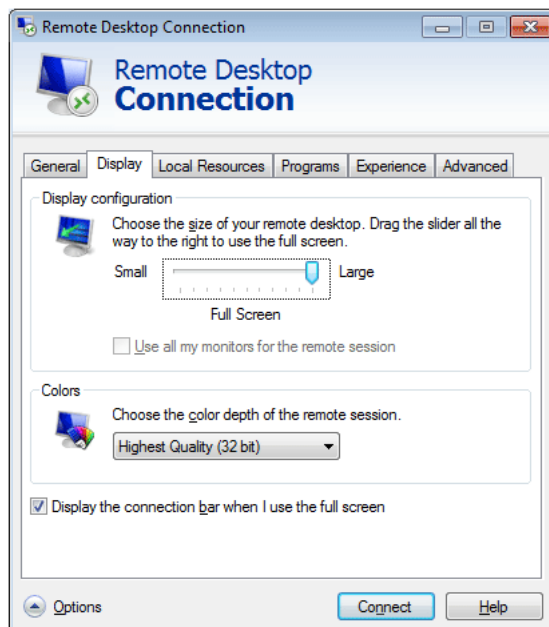


3 Options

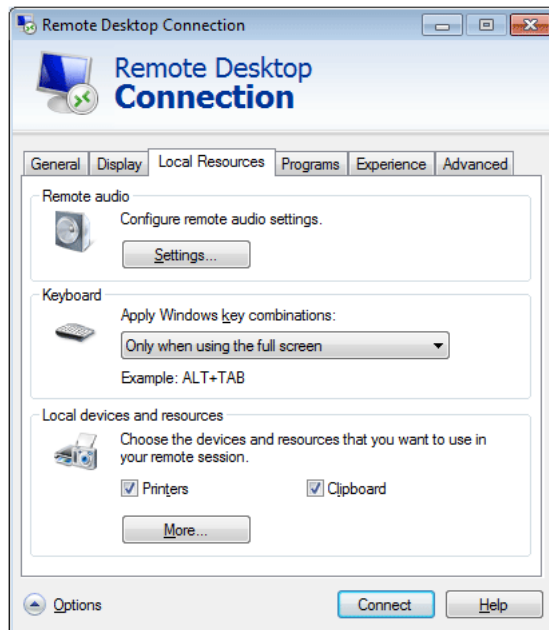
- **General** : Enter in the login information for the host computer. To log in automatically, enter in the user name and password.



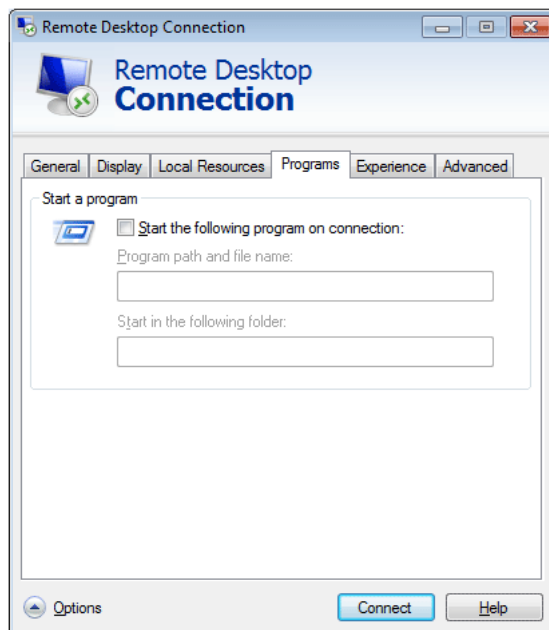
- **Display** : The **Remote Desktop Connection** sends and receives compressed screen data. If you set the resolution and color quality to the high option, the speed may become slow.



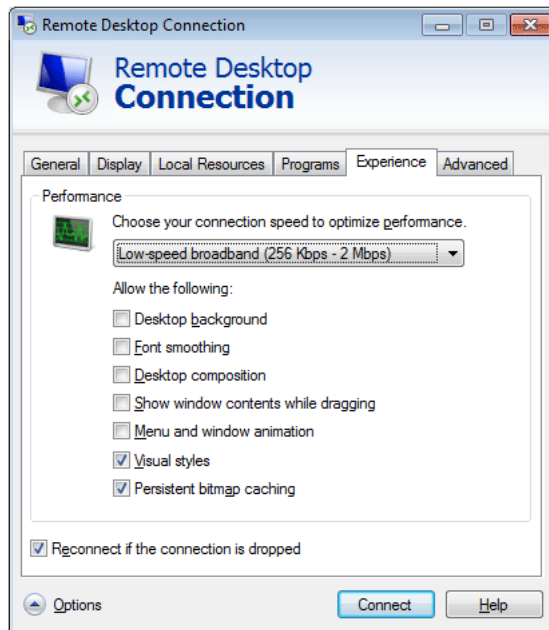
- **Local Resources** : Specify whether to use the hard disks and ports.



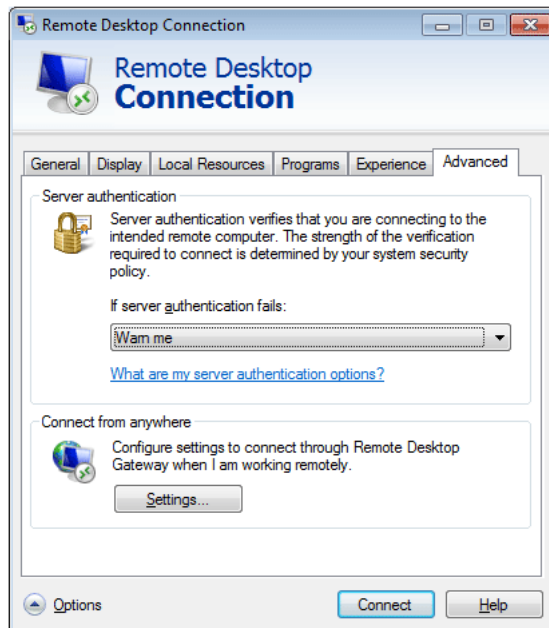
- **Programs** : Select an application and specify the folder where you want to run the application when a connection is established to the host PC.



- **Experience** : Specify the connection speed and the menu items you want to use on the remote PC connected. The settings specified will be shared with the host PC.



- **Advanced** : Protect your personal information when a connection is established.



- 4 Click **Connect**. The Log On to Windows dialog box appears.
- 5 In the "Log On to Windows" dialog box, type your username, password, and domain (if required), and then click **OK**. The **Remote Desktop** window will open and you will see the desktop settings, files, and programs that are on the host computer.



For more information on **Remote Desktop Connections**, visit the **Microsoft** web site.

Internet Explorer

A WES Client includes **Internet Explorer**. This program is permitted for all users. **Microsoft** website.

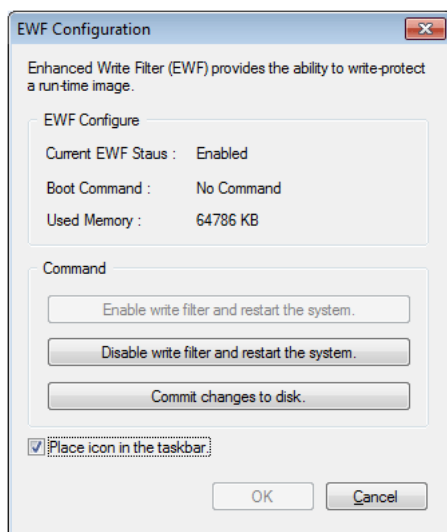


For more information on Internet Explorer, visit the Microsoft website.

Enhanced Write Filter (EWF)

Enhanced Write Filter (EWF) protects a flash volume from write access and consequently, preserves the durability of the flash device. **EWF** provides read and write access through a cache to the client instead of allowing direct access to a flash volume.

If **EWF** is activated, data is not stored to the flash. The data stored in the cache is only effective while the client is operating. The cached data will be lost when restarting or shutting down your client. Therefore, to store the data written to the registry, favorites and cookie folders, etc., the content stored in the cache should be transferred to the flash. An error message is displayed when it is not possible to write to the cache due to a lack of memory. If this message is displayed, you have to deactivate **EWF** to flush the **EWF** cache. The user can double-click the **EWF** icon on the tray at the bottom right of the screen to call the **EWF** Manager. A user can also change the **EWF** configuration by entering **EWF** management commands at the command prompt. This task requires the **Administrator** privilege.



- **Enable write filter and restart the system.**

If the **EWF** is disabled, enable it. If this item is selected, the cache is flushed and the **EWF** is enabled. After restarting your computer, the configurations and file system information for the client are written to a cache. You can also perform this operation by entering "**ewfmgr.exe c: -enable**" at the command prompt and restarting your computer.

- **Disable write filter and restart the systems.**

This item is activated when the **EWF** is running. If this item is selected, the current states of the client (saved in a cache) are saved to a flash volume and the **EWF** is disabled. After restarting your computer, the configurations and file system information for the client are written to a flash volume.

You can also perform this operation by entering "**ewfmgr.exe c: -commitanddisable**" at the command prompt and restarting your computer.

- **Commit changes to disk.**

This item is activated when the **EFW** is running. If this item is selected, the current states of the client (saved in a cache) are saved to a flash volume. However, the state of **EFW** will not be changed. You can also perform this operation by entering "**ewfmgr.exe c: -commit**" at the command prompt.



You can view the configurations for the protected volumes by entering "**ewfmgr.exe c:**" at the command prompt.

File-Based Write Filter (FBWF)

The **File-Based Write Filter (FBWF)** protects the memory of the client from being overwritten by any unauthorized user. By restricting excessive writing into the memory, the **FBWF** allows you to use the client for a long time. If you request I/O, the **FBWF** has the client perform its operations using the cache instead of the memory so that the memory can be protected.

The data saved in the cache is preserved while the client operates normally. It is removed when it is restarted or exited. To save the changes, you should write the relevant file onto the disk using the commit command. If you don't know which file is changed, disable the **FBWF**, change it, and enable it again.

You can control the **FBWF** using the various options of the command at a command prompt.

- **FBWF Configuration**

- **Current FBWF status** : Displays the current status of the **FBWF (Enabled or Disabled)**.
- **Boot command** : Displays the **FBWF** command that will be performed at the next boot-up.
- **RAM Used by FBEF** : Displays the size of the RAM the **FBWF** is using. If the current status is set to "**Disabled**", the used memory is displayed as 0 KB.
- **Threshold** : Displays the maximum size of the RAM that the **FBWF** can use.

- **FBWF Command**

- **Enable FBWF and reboot the system** : Enables the disabled **FBWF** and restarts the client. If the client is not restarted, only the boot command is changed to BWF_ENABLE and the current status is not changed.
- **Disable FBWF and reboot the system** : Disables the enabled **FBWF** and restarts the client. If the client is not restarted, only the boot command is changed to FBWF_DISABLE and the current status is not changed.
- **Commit files** : Even if the disks are protected by the **FBWF**, you can add or delete the files you want to save on them. To write the changes onto the disk, click the **[Write the changes to the disk]** button.

- **Session Status**

- **Current session** : Displays the volumes being protected by the **FBWF** and a list of the folders and files on those volumes that are excepted from protection by the **FBWF**.

- **Next session** : Select the volumes that will be protected by the **FBWF** when the client is booted up next time. Also, select the folders and files that you want to except from protection by the **FBWF**.

Windows Media Player

The **WES** Client includes **Windows Media Player 12**. With **Windows Media Player**, you can play audio and video files on a website.

2.3.4 Configuring Utilities

Local Drive

- **C Drive**
The C drive is used for the system. The client OS will not operate if space available on the system drive is not sufficient. Ensure sufficient space is available on the C drive. **EFW** can help maintain available space by preventing the C drive being written to directly.
- **Saving Files**
Your client uses a fixed size of flash memory. Therefore, it is better to save files to the server rather than to your client.

Mapping a Network Drive

The **Administrator** can map a folder to a network drive. To keep the mapping information after restarting the client, take note of these directions carefully.

- Select the **Reconnect** at logon checkbox in the **Map Network Drive** dialog box.
- If the **EFW** or **FBWF** is enabled, the changes are saved on the disk.

2.3.5 Recover the System

Overview

The **WES** client provides a feature that restores the system to the last backup or default factory settings in the occurrence of a critical system issue during operation. You can back up an OS image which is working normally to USB memory or the PXE server. You can revert to a backed up image when your client has one of these problems:

- When a system file is deleted accidentally or is corrupted
- When the client computer is unstable or there is a problem with a device driver
- When problems occur, after installing a new program or device
- When the client computer is infected with a virus
- When **Windows Embedded Standard** fails to start When a system file is deleted accidentally or is corrupted

How to Recover the System

- Recovery Using USB Memory

By following these steps, you can save all necessary files to USB memory, and boot up with the backed up system on the USB memory and recover the system.

- 1 Format the USB memory device to enable the system to boot.
- 2 Save the **Windows Embedded Standard** image and the Backup/Recovery Utility which will be recovered later to your USB memory.
- 3 Boot up with the USB memory.
- 4 Recover the system using the **Windows Embedded Standard** image and the Backup/Recovery Utility in the USB memory.

- Recovery Using Network Booting

This method is provided through the **PXE (Preboot eXecution Environment)** server. The **PXE** sever provides a client/server interface based on **TCP/IP**, **DHCP**, and **TFTP**. It allows an administrator at a remote location to configure and boot the operating system onto a client over a network.

- Implement a **PXE** server.
- Save the **Windows Embedded Standard** image and the Backup/Recovery Utility which will be recovered later onto the **PXE** server.
- Boot the client via the network.
- Recover the system using the **Windows Embedded Standard** image and the Backup/Recovery Utility saved on the **PXE** server via the network.



For more information, refer to the **PXE** Server User Manual.

- Using the Standalone restore solution

Restore the system using a restore image saved on the product.

- 1 After the power is connected, press the **Home** key immediately after the system starts during boot to enter the boot menu.
- 2 Select the **Recovery Mode** menu and press the **P** key to enter "**admin**" which is the password.
- 3 Run the **Recovery Mode** menu by pressing the **Enter** key.
- 4 If the **PROMPT** "**root@xxxx:/#**" appears, enter "**recovery**" to restore the system.
- 5 If **PROMPT** appears after a message informing that the system is successfully restored, run the **reboot** command to restart the system.

Disk is configured as follows. Deleting or changing partitions may disable booting or the **Standalone** restore solution.

BOOT_AGENT	WES7	BACKUP
Drive Letter is not defined	C:	Drive Letter is not defined



Data saved by the user and customized settings are deleted after a system restore.

3.1 Before Connecting

3.1.1 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.

3.2 Connecting and Using a PC

Select a connection method suitable for your PC.



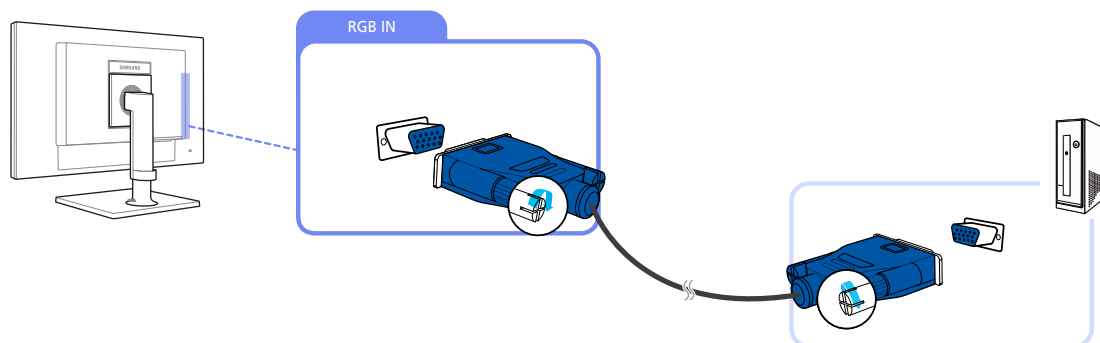
Connecting parts may differ in different products.



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



Do not connect the power cable before connecting all other cables.

Ensure you connect a source device first before connecting the power cable.



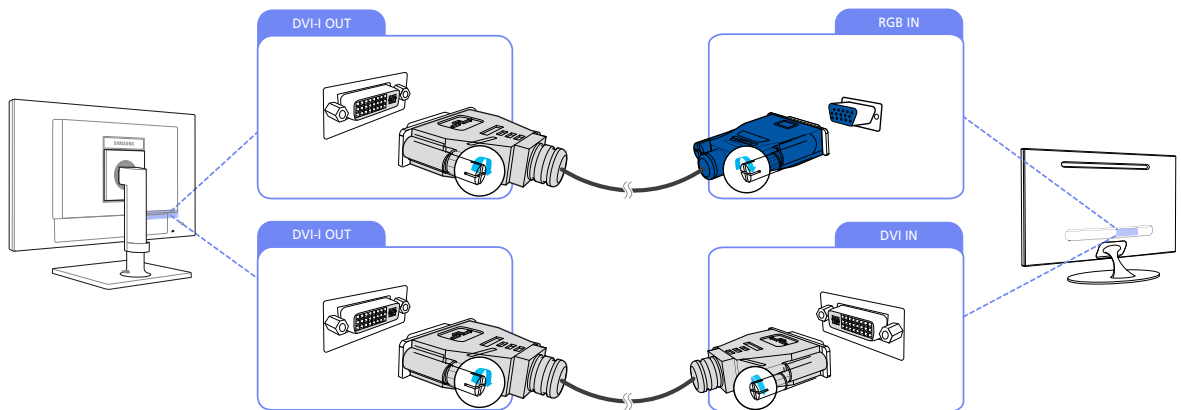
- 1 Connect the D-SUB cable to the [RGB IN] port on the back of the product and the RGB port on the PC.
- 2 Connect the AC/DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "3.2.5 Connecting the Power".)
- 3 Press [ / ] to change the input source to **Analog**.

3.2.2 Connecting to a Dual Monitor



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 [DVI-I OUT] on the product to [DVI IN] or [RGB IN] on another monitor using a DVI or DVI to D-SUB cable.
- 2 Connect the AC/DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "3.2.5 Connecting the Power".)



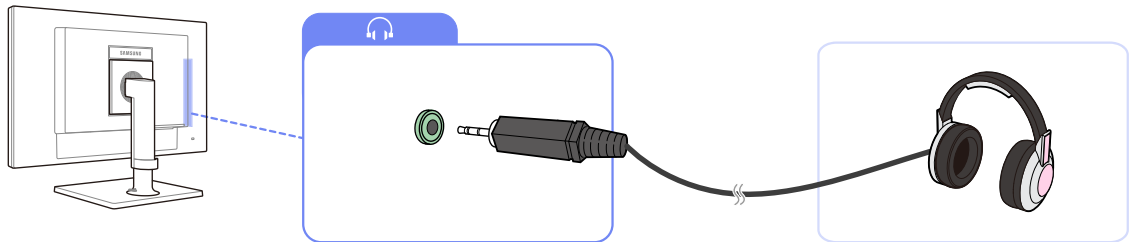
- The [DVI-I OUT] port can be used only to connect to a dual monitor.
- Connect to the [DVI-I OUT] port to display the same picture on another monitor such as the projector.
(For presentation purposes)
- The maximum resolution is 1920 x 1200 when a dual monitor is connected.

3.2.3 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.



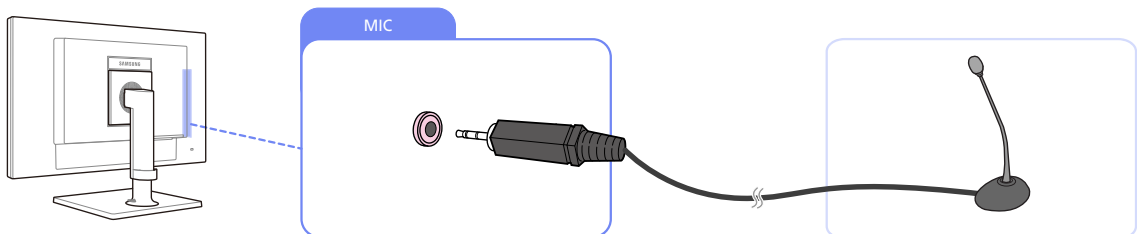
- 1 Connect an audio output device (headphones) to [🎧] on the back of the product.

3.2.4 Connecting a Microphone



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 microphone to [MIC] on the back of the product.

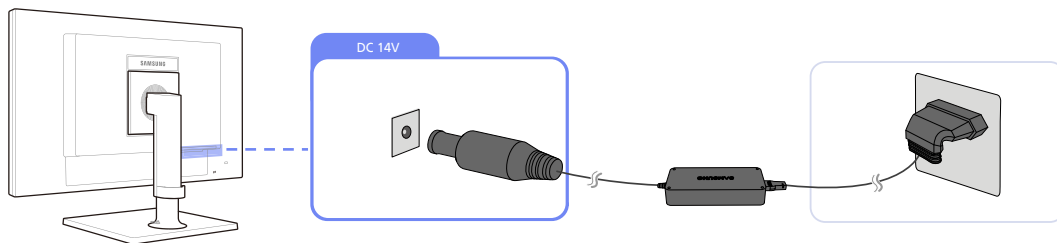
3.2.5 Connecting the Power



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

Power connection using detachable AC/DC power adapter

- Connect the power cable to the AC/DC power adapter.
Then, connect the AC/DC power adapter to the [DC 14V] port on the back of the product.
Next, connect the power cable to the power outlet.

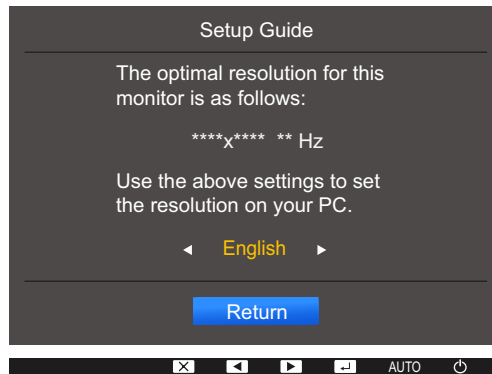


The input voltage is switched automatically.

3.2.6 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 and change the resolution to the optimum value.



- 1 Press [**▲/▼**] to move to the language you want and press [**□/□**].
- 2 To hide the information message, press [**□/□**].



- 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.

Screen Setup

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

Configure the screen settings such as brightness and color tone.

4.1 Brightness

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

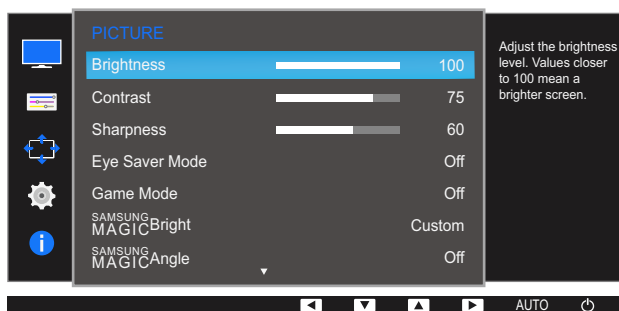
A higher value will make the picture appear brighter.



- This menu is not available when **SAMSUNG MAGICBright** is set to **Dynamic Contrast** mode.
- This menu is not available when **Smart ECO Saving** is set.
- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.1.1 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.
The following screen will appear.



- 4 Adjust the **Brightness** using the [▲/▼] buttons.
- 5 The selected option will be applied.

4.2 Contrast

Adjust the contrast between the objects and background. (Range: 0~100)

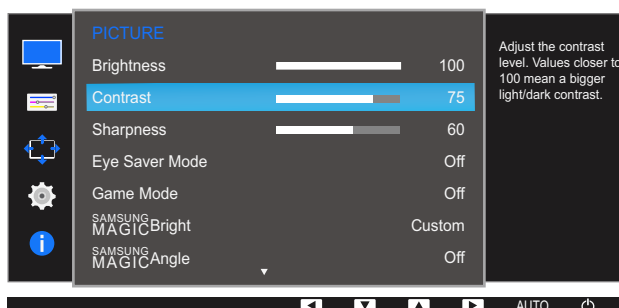
A higher value will increase the contrast to make the object appear clearer.



- This menu is not available when **SAMSUNG MAGICBright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.2.1 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.
The following screen will appear.



- 4 Adjust the **Contrast** using the [▲/▼] buttons.
- 5 The selected option will be applied.

4.3 Sharpness

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

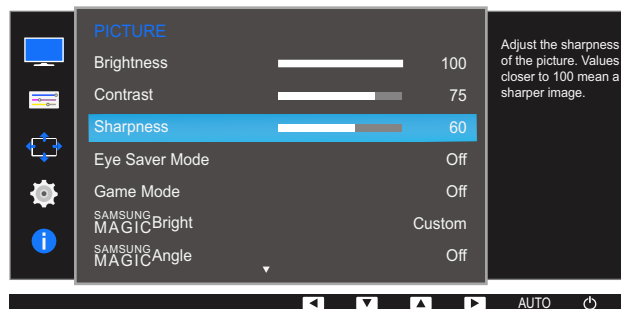
A higher value will make the outline of objects clearer.



- This menu 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**.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.3.1 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.
The following screen will appear.



- 4 Adjust the **Sharpness** using the [▲/▼] buttons.
- 5 The selected option will be applied.

4.4 Eye Saver Mode

Set to an optimum picture quality suitable for eye relaxation.

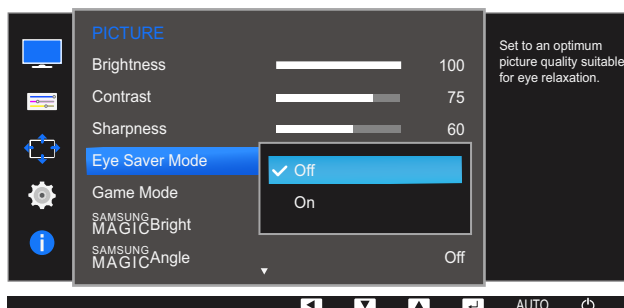
TÜV Rheinland “Low Blue Light Content” is a certification for products which meet requirements for lower blue light levels. When **Eye Saver Mode** is 'On', the blue light that wavelength is around 400nm will decrease, and it will provide an optimum picture quality suitable for eye relaxation. At the 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.



The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.4.1 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.
The following screen will appear.



- 4 Press [▲/▼] to move to the option you want and press [□/⏏].
- 5 The selected option will be applied.

4.5 Game Mode

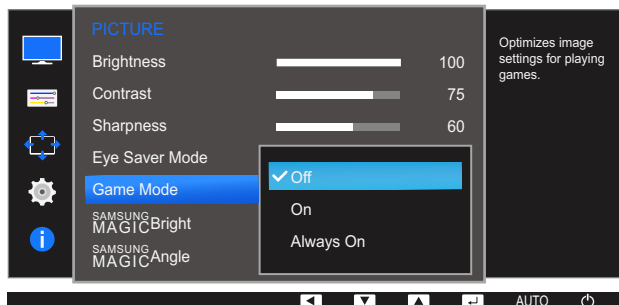
Configure the product screen settings for game mode. Use this feature when playing games on a PC or when a game console such as PlayStation™ or Xbox™ is connected.



- This menu is not available when **Smart ECO Saving** is set.
- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.5.1 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.
The following screen will appear.



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

4.6 SAMSUNG MAGIC Bright

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

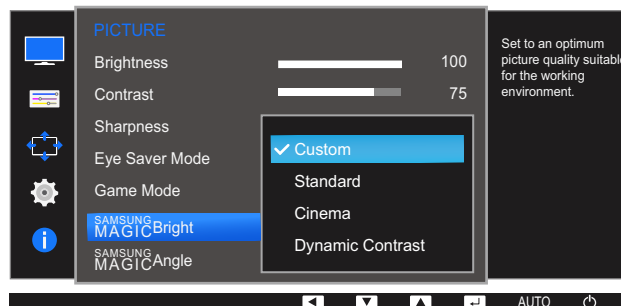


- This menu is not available when **Smart ECO Saving** is set.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.
- This menu is not available when **SAMSUNG MAGICAngle** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

You can customize the brightness to suit your preferences.

4.6.1 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.
The following screen will appear.



- **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.
- 4 Press [▲/▼] to move to the option you want and press [↔].
 - 5 The selected option will be applied.

4.7 SAMSUNG MAGIC Angle

SAMSUNG MAGIC Angle allows you to configure the settings to obtain the optimum picture quality according to your viewing angle.

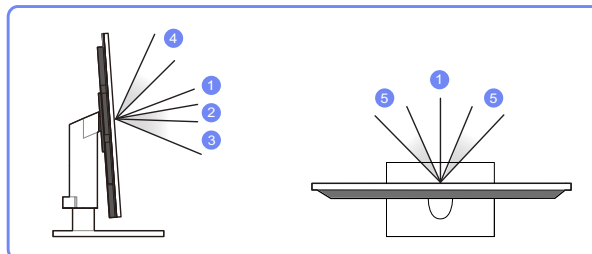
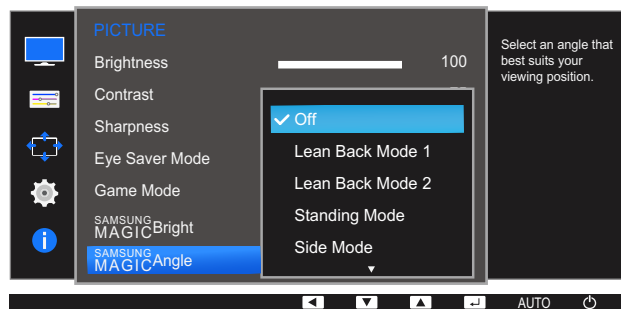


- This menu is not available when **SAMSUNG MAGIC Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** or **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

This feature provides the viewing angle, brightness, and tint to suit your preferences.

4.7.1 Configuring SAMSUNG MAGIC Angle

- 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 Angle** and press [↔/↔] on the product.
The following screen will appear.



- **Off** ①: Select this option to view directly in front of the product.
- **Lean Back Mode 1** ②: Select this option to view from a place slightly lower than the product.
- **Lean Back Mode 2** ③: Select this option to view from a place lower than Lean Back Mode 1.
- **Standing Mode** ④: Select this option to view from a place higher than the product.
- **Side Mode** ⑤: Select this option to view from either side of the product.
- **Group View**: Select this option for more than one viewer to view from places ①, ④, and ⑤.

- **Custom: Lean Back Mode 1** will be applied by default if **Custom** is selected.
- 4 Press [▲/▼] to move to the option you want and press [↩/↪].
 - 5 The selected option will be applied.

4.8 SAMSUNG MAGIC Upscale

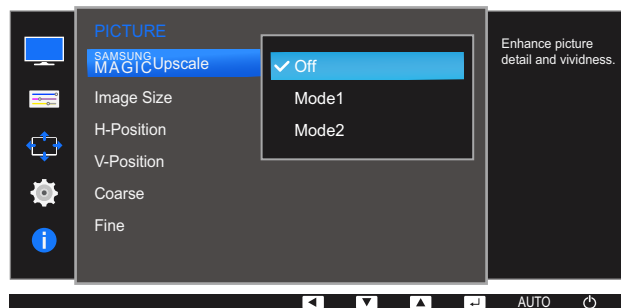
SAMSUNG MAGIC Upscale function can enhance the layers of the picture details and the vividness of the picture.



- The function has more obvious effects on low-resolution pictures.
- This menu is not available when **SAMSUNG MAGIC Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.8.1 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.
The following screen will appear.



Comparing with **Mode1**, **Mode2** has a stronger effect.

- 4 Press [▲/▼] to move to the option you want and press [◀/▶].
- 5 The selected option will be applied.

4.9 Image Size

Change the picture size.

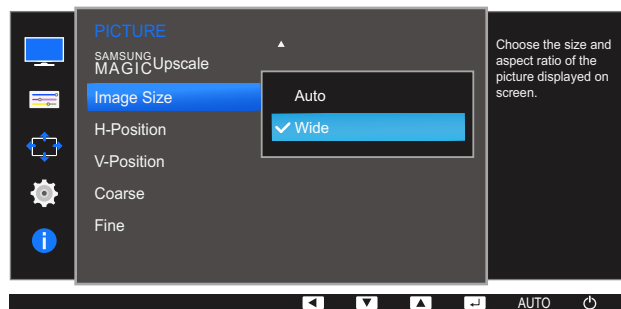


The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.9.1 Changing the Image 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 **Image Size** and press [□/□] on the product.

The following screen will appear.



- **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.
- 4 Press [▲/▼] to move to the option you want and press [□/□].
 - 5 The selected option will be applied.

4.10 H-Position & V-Position

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

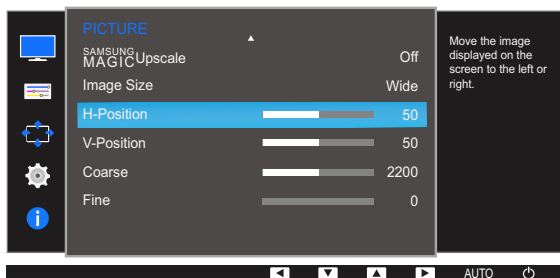
V-Position: Move the screen up or down.



- This menu is available in **Analog** mode.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.10.1 Configuring H-Position & V-Position

- 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 **H-Position** or **V-Position**, and press [↔].
The following screen will appear.



- 4 Press [▲/▼] to configure **H-Position** or **V-Position**.
- 5 The selected option will be applied.

4.11 Coarse

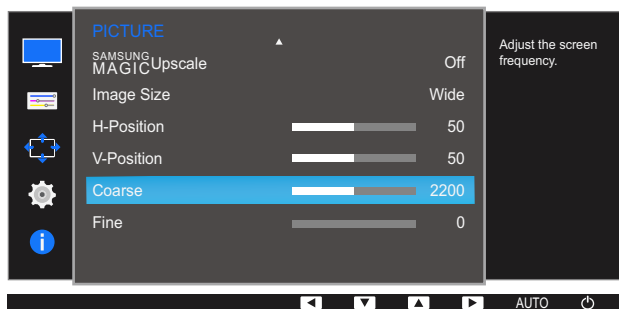
Adjust the screen frequency.



- This menu is available in **Analog** mode only.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

4.11.1 Adjusting Coarse

- 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 **Coarse** and press [↩/⏪] on the product.
The following screen will appear.



- 4 Adjust the **Coarse** using the [▲/▼] buttons.
- 5 The selected option will be applied.

4.12 Fine

Fine-adjust the screen to obtain a vivid picture.

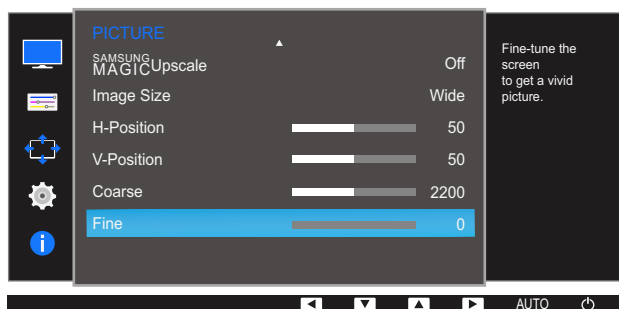


This menu is available in **Analog** mode only.

4.12.1 Adjusting Fine

- 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 **Fine** and press [↶/↷] on the product.

The following screen will appear.



- 4 Adjust the **Fine** using the [▲/▼] buttons.
- 5 The selected option will be applied.

Configuring Tint

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 in **Cinema** or **Dynamic Contrast** mode. This menu is not available when **Game Mode** or **Eye Saver Mode** is enabled.

5.1 Red

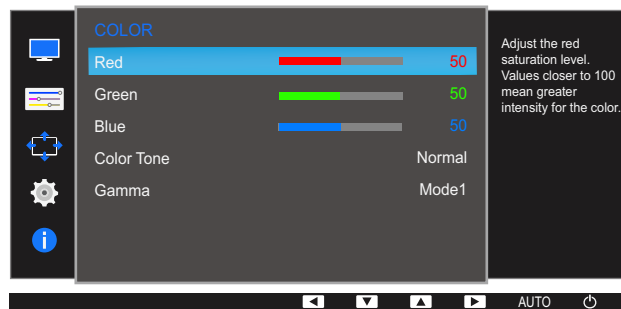
Adjust the value of the color red in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

5.1.1 Configuring Red

- 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 **COLOR** and press [□/◀▶] on the product.
- 3 Press [▲/▼] to move to **Red** and press [□/◀▶] on the product.

The following screen will appear.



- 4 Adjust the **Red** using the [▲/▼] buttons.
- 5 The selected option will be applied.

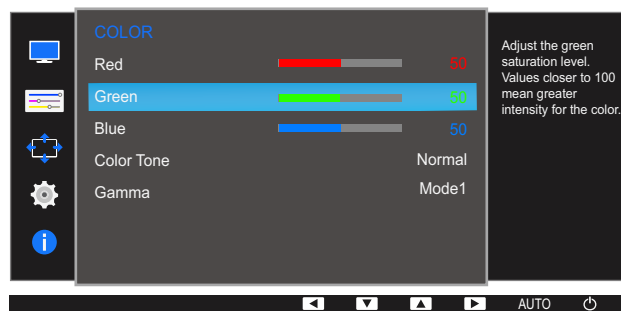
5.2 Green

Adjust the value of the color green in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

5.2.1 Configuring Green

- 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 **COLOR** and press [□/◀▶] on the product.
- 3 Press [▲/▼] to move to **Green** and press [□/◀▶] on the product.
The following screen will appear.



- 4 Adjust the **Green** using the [▲/▼] buttons.
- 5 The selected option will be applied.

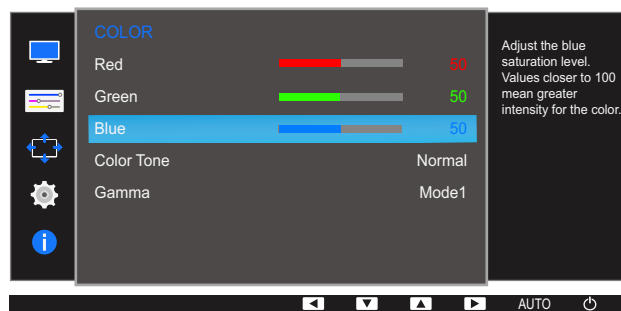
5.3 Blue

Adjust the value of the color blue in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

5.3.1 Configuring Blue

- 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 **COLOR** and press [□/◀▶] on the product.
- 3 Press [▲/▼] to move to **Blue** and press [□/◀▶] on the product.
The following screen will appear.



- 4 Adjust the **Blue** using the [▲/▼] buttons.
- 5 The selected option will be applied.

5.4 Color Tone

Adjust the general color tone of the picture.

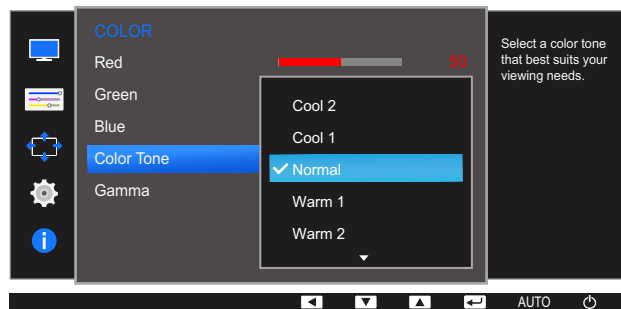


This menu is not available when **SAMSUNG MAGIC Angle** is enabled.

5.4.1 Configuring the Color Tone 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 **COLOR** and press [□/▶] on the product.
- 3 Press [▲/▼] to move to **Color Tone** and press [□/▶] on the product.

The following screen will appear.



- **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 color 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 color tone.
- 4 Press [▲/▼] to move to the option you want and press [□/▶].
 - 5 The selected option will be applied.

5.5 Gamma

Adjust the mid-range brightness (Gamma) of the picture.



This menu is not available when **SAMSUNG MAGIC Angle** is enabled.

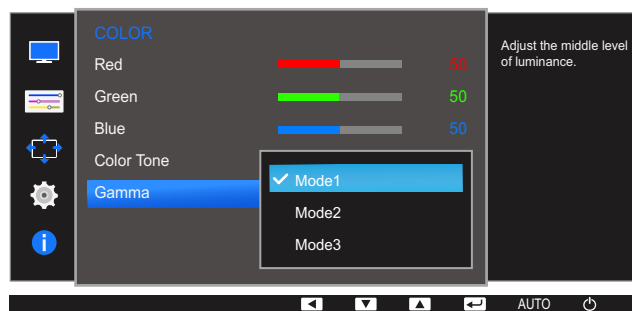
5.5.1 Configuring Gamma

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 **COLOR** and press [□/▶] on the product.

3 Press [▲/▼] to move to **Gamma** and press [□/▶] on the product.

The following screen will appear.



4 Press [▲/▼] to move to the option you want and press [□/▶].

5 The selected option will be applied.

Resizing or Relocating the Screen

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

6.1 Language

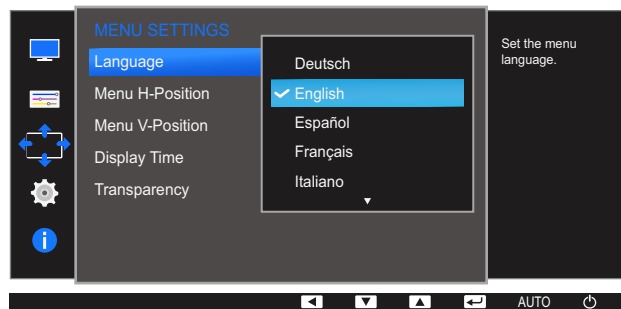
Set the menu language.



- 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.

6.1.1 Changing the 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 **MENU SETTINGS** and press [□/↔] on the product.
- 3 Press [▲/▼] to move to **Language** and press [□/↔] on the product.
The following screen will appear.



- 4 Press [▲/▼] to move to the language you want and press [□/↔].
- 5 The selected option will be applied.

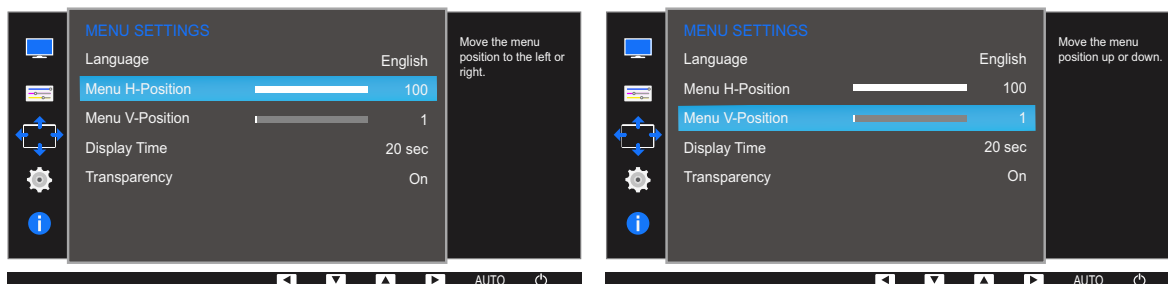
6.2 Menu H-Position & Menu V-Position

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

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

6.2.1 Configuring Menu H-Position & Menu V-Position

- 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 **MENU SETTINGS** and press [□/◀▶] on the product.
- 3 Press [▲/▼] to move to **Menu H-Position** or **Menu V-Position**, and press [□/◀▶].
The following screen will appear.



- 4 Press [▲/▼] to configure **Menu H-Position** or **Menu V-Position**.
- 5 The selected option will be applied.

6.3 Display Time

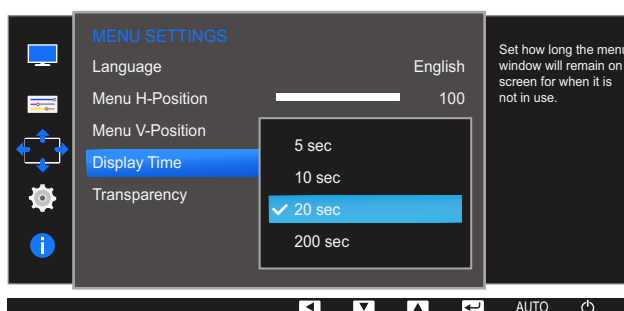
Set the on-screen display (OSD) menu to automatically disappear if the menu is not used for a specified period of time.

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

6.3.1 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 **MENU SETTINGS** and press [□/◀▶] on the product.
- 3 Press [▲/▼] to move to **Display Time** and press [□/◀▶] on the product.

The following screen will appear.



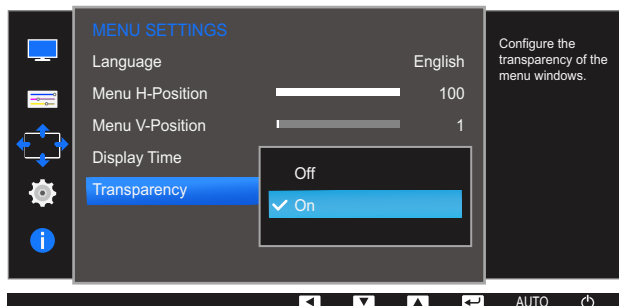
- 4 Press [▲/▼] to move to the option you want and press [□/◀▶].
- 5 The selected option will be applied.

6.4 Transparency

Set the transparency for the menu windows:

6.4.1 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 **MENU SETTINGS** and press [⏏/⏏] on the product.
- 3 Press [▲/▼] to move to **Transparency** and press [⏏/⏏] on the product.
The following screen will appear.



- 4 Press [▲/▼] to move to the option you want and press [⏏/⏏].
- 5 The selected option will be applied.

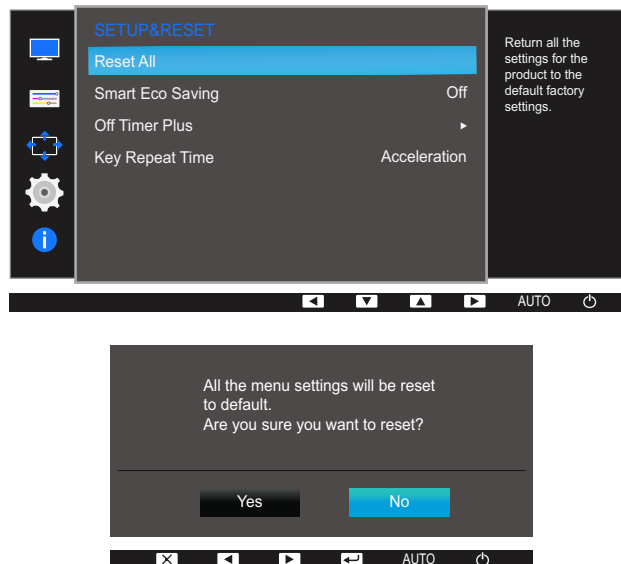
7.1 Reset All

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

7.1.1 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 **SETUP&RESET** and press [↩/↪] on the product.
- 3 Press [▲/▼] to move to **Reset All** and press [↩/↪] on the product.

The following screen will appear.



- 4 Press [▲/▼] to move to the option you want and press [↩/↪].
- 5 The selected option will be applied.

7.2 Smart Eco Saving

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

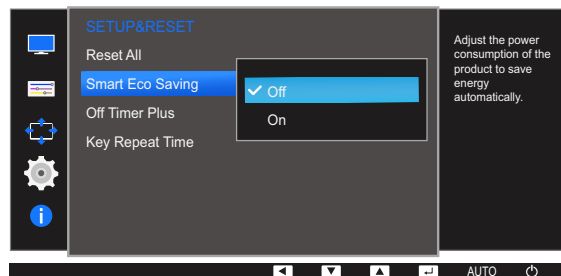


- This menu is not available when **Eye Saver Mode** is enabled.
- **Game Mode** will automatically turn off when **Smart Eco Saving** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

7.2.1 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 **SETUP&RESET** and press [↩/↪] on the product.
- 3 Press [▲/▼] to move to **Smart Eco Saving** and press [↩/↪] on the product.

The following screen will appear.



- **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 [↩/↪].
- 5 The selected option will be applied.

7.3 Off Timer Plus

You can set the product to automatically turn off.



The functions available on the monitor may vary depending on the model. Refer to the actual product.

7.3.1 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 **SETUP&RESET** 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.

The following screen will appear.

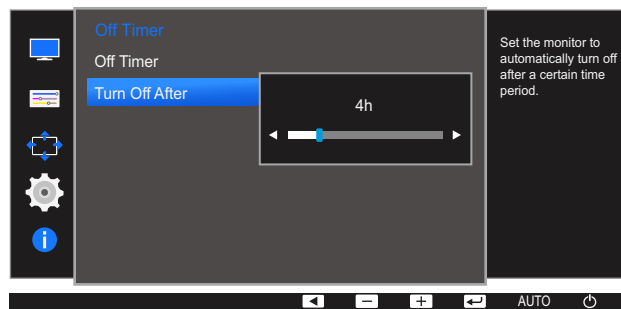


- **Off:** Deactivate the off timer so that the product does not power off automatically.

- **On:** Activate the off timer so that the product powers off automatically.
- 6 Press [**▲/▼**] to move to the option you want and press [**□/□**].
 - 7 The selected option will be applied.

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 **SETUP&RESET** 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.
The following screen will appear.



- 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.
- 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 **MENU** → **SETUP&RESET** → **Off Timer Plus** and set **Off Timer** to **Off**.

7.3.2 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 **SETUP&RESET** 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.

The following screen will appear.

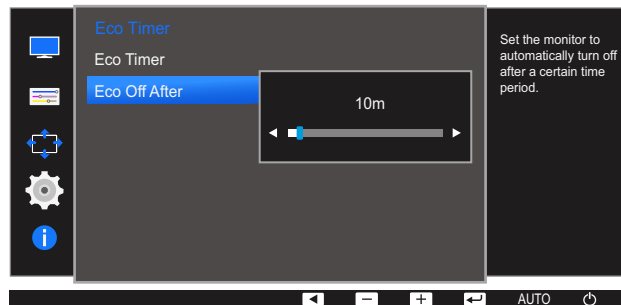


- **Off:** Deactivate the eco timer to disable the automatic power off feature. The product will not power off while in power-saving mode if this feature is deactivated.
 - **On:** Activate the eco timer so that the product powers off automatically when it has been in power-saving mode for a specified period of time.
- 6 Press [▲/▼] to move to the option you want and press [↩/↪].
 - 7 The selected option will be applied.

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 **SETUP&RESET** 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.

The following screen will appear.



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

7.4 Key Repeat Time

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

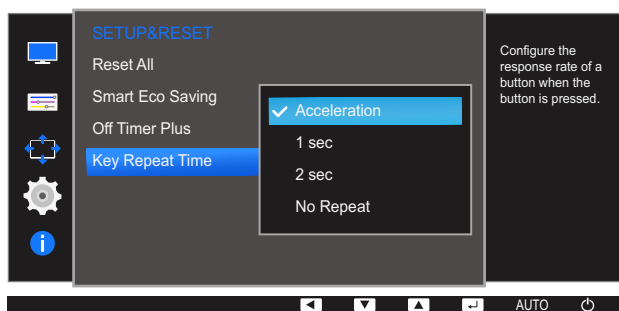


The functions available on the monitor may vary depending on the model. Refer to the actual product.

7.4.1 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 **SETUP&RESET** and press [□/□] on the product.
- 3 Press [▲/▼] to move to **Key Repeat Time** and press [□/□] on the product.

The following screen will appear.



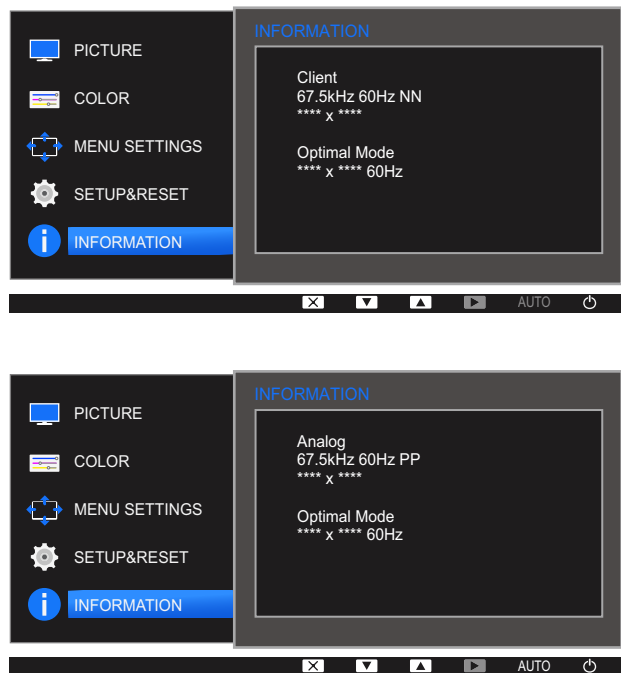
- **Acceleration**, **1 sec**, or **2 sec** can be selected. If **No Repeat** is selected, a command responds only once when a button is pressed.
- 4 Press [▲/▼] to move to the option you want and press [□/□].
 - 5 The selected option will be applied.

8.1 INFORMATION

View the current input source, frequency and resolution.

8.1.1 Displaying INFORMATION

- 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.

8.2 Configuring Brightness, Contrast and Sharpness from the Initial Screen

Adjust the **Brightness**, **Contrast** and **Sharpness** setting using the [⊙] buttons in the initial screen (where no OSD menu is displayed).



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.



Sharpness :

- This menu 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**.
- 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 the [⊙] button. The following screen will appear.



- 2 Press the [□/⊞] button to alternate between the **Brightness**, **Contrast** and **Sharpness** settings.
- 3 Adjust the **Brightness**, **Contrast** and **Sharpness** settings using the [▲/▼] buttons.

9.1 MagicRMS Pro

9.1.1 About MagicRMS Pro

The **MagicRMS Pro** program can be used to remotely control a Samsung thin client. The design of the user-oriented interface makes it easy and convenient to use.

Using **MagicRMS Pro**, you can schedule a task to be performed at a specified time on a thin client.

Also, you can manage multiple thin clients efficiently by grouping or filtering them according to specific conditions.

To use the **MagicRMS Pro Solution** or **MagicRMS Pro Agent** and to view the user guide, visit <http://www.samsung.com/displaysolutions>. Go to **Support>Download Center**, and search for **MagicRMS** to download.

Open source license notice

In the case of using open source software, Open Source licenses are available on the **MagicRMS Pro Agent**.

Open Source License Notice is written only English.

9.1.2 Components

MagicRMS Pro consists of **MagicRMS Pro Server**, **MagicRMS Pro Database**, **MagicRMS Pro Console**, and **PXE**. **MagicRMS Pro** manages thin clients by interacting with the **MagicRMS Pro Agent**.



MagicRMS Pro Server, **Database**, and **Console** refer to **Server**, **Database**, and **Console** respectively. **MagicRMS Pro Agent** refers to **Agent**.



9.1.3 MagicRMS Pro Server

MagicRMS Pro Server is a core component of **MagicRMS Pro**. The **Server** connects to **Database** and **Console** and sends a command to perform a task requested by the user to thin clients where the **Agent** is installed.

A task requested from the **Console** is saved in the **Database**. The saved task is forwarded to the **Agent** over the **Server** and performed on the thin clients.

9.1.4 MagicRMS Pro Database

MagicRMS Pro Database keeps information needed to manage thin clients.

9.1.5 MagicRMS Pro Console

Manage thin clients and organize task requests using the **Console**.

9.1.6 PXE

PXE is a standard protocol that allows the **Server** and Client to communicate to enable the Client to boot over a network using **DHCP** and **TFTP**.

Booting the system over a network enables a **Diskless** booting where the system can be operated regardless of the operating system. It also allows the system operating system to be restored or backed up over the network.

9.1.7 MagicRMS Pro Agent

MagicRMS Pro Agent is installed on a thin client to perform tasks requested from the server and send the thin client information to the server periodically.



For further details on how to use the **MagicRMS Pro Agent**, see help for **MagicRMS Pro Agent**.

10.1 Requirements Before Contacting Samsung Customer Service Center

10.1.1 Testing the Product



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

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.

10.1.2 Checking the Resolution and Frequency

For a mode that exceeds the supported resolution (refer to "11.2 Standard Signal Mode Table"), the message **Not Optimum Mode** will appear for a short time.

10.1.3 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. (Refer to "3.2 Connecting and Using a PC")



Troubleshooting Guide

Screen issue

Issues	Solutions
The power LED is off. The screen will not switch on.	Check that the power cable is connected properly. (Refer to "3.2 Connecting and Using a PC")
The message Check Signal Cable appears.	Check that the cable is properly connected to the product. (Refer to "3.2 Connecting and Using a PC")
	Check that the device connected to the product is powered on.
Not Optimum Mode is displayed.	This message appears if 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 (page 87).
The images on the screen look distorted.	Check the cable connection to the product (Refer to "3.2 Connecting and Using a PC")
The screen is not clear. The screen is blurry.	Adjust Coarse (page 59) and Fine (page 60).
	Remove any accessories (video extension cable, etc.) and try again.
	Set the resolution and frequency to the recommended level. (Refer to "11.2 Standard Signal Mode Table")
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 (page 87) 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 (page 48) and Contrast (page 49).
Screen color is inconsistent.	Change the COLOR settings. (Refer to "Configuring Tint")
The colors on the screen have a shadow and are distorted.	Change the COLOR settings. (Refer to "Configuring Tint")
White does not really look white.	Change the COLOR settings. (Refer to "Configuring Tint")



Troubleshooting Guide

Issues	Solutions
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.

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 program.

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.



10.2 Q & A

Question	Answer
How can I change the frequency?	<p>Set the frequency on your graphics card.</p> <ul style="list-style-type: none">• 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: Go to Settings → Control Panel → Appearance and Personalization → Display → Screen Resolution → Advanced settings → Monitor, and adjust Refresh rate under Monitor settings.

Question	Answer
How can I change the resolution?	<ul style="list-style-type: none"> • 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: Go to Settings → Control Panel → Appearance and Personalization → Display → Adjust Resolution, and adjust the resolution.
How do I set power-saving mode?	<ul style="list-style-type: none"> • 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: Set power-saving mode in Settings → Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings or BIOS SETUP on the PC.



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

11.1 General

Model Name		TC222W	TC242W
Panel	Size	22 CLASS (21.5 inches / 54.6 cm)	24 CLASS (23.5 inches / 59.8 cm)
	Display area	479.8 mm (H) x 271.3 mm (V) 18.9 inches (H) x 10.7 inches (V)	525.22 mm (H) x 297.22 mm (V) 20.7 inches (H) x 11.7 inches (V)
Power Supply		This product supports 100 – 240 V. Since the standard voltage may differ from country to country, please check the label on the back of the product.	
Environmental considerations	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 (1ppm) may appear brighter or darker on the panel. This does not affect product performance.



The above specifications are subject to change without notice to improve quality.



This device is a Class A 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 or call, (877) 278 - 0799

CALIFORNIA USA ONLY (Applicable for networking models only.)

This Perchlorate warning applies only to primary CR(Manganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA

"Perchlorate Material - special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate."

11.2 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. Therefore, 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 the screen size of your product.
- Check the frequency when you exchange a CDT monitor (connected to a PC) for an LCD monitor. If the LCD monitor does not support 85 Hz, change the vertical frequency to 60 Hz using the CDT monitor before you exchange it with the LCD monitor.

Model Name		TC222W	TC242W
Synchronization	Horizontal Frequency	31 - 80 KHz	
	Vertical Frequency	56 - 75 Hz	
Resolution	Optimum Resolution	1920 x 1080 @ 60 Hz	
	Maximum Resolution	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.

Display Mode	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	-/-
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	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
MAC, 832 x 624	49.726	74.551	57.284	-/-
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	+/+

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
MAC, 1152 x 870	68.681	75.062	100.000	-/-
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	+/+



- 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.

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-authorised 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.

Terminology

OSD(On Screen Display)

On screen display (OSD) allows you to configure on-screen settings to optimize the picture quality as required. It allows you to change the screen brightness, tint, size and many other settings using menus displayed on the screen.

Coarse

Coarse refers to the frequency of radio wave vibrations per second. A higher frequency transmits a larger amount of data and is reflected easier. A lower frequency traverses obstacles more easily and can travel farther, but it transmits a smaller amount of data. The Coarse menu allows you to manually adjust the frequency to obtain the optimum picture quality. Adjust Coarse referring to Standard Signal Mode Table (page 87) according to the performance of your product and enjoy improved picture quality.

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 color intensity that show variations of color 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.

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 85 000 times per second, and 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 frequency) 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.

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