

User manual

TC222L
TC242L

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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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



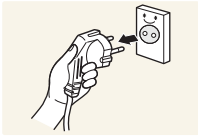
The following images are for reference only. Real-life situations may differ from what is shown in the images.

Before Using the Product

Cleaning

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

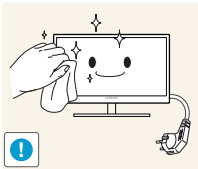
Take the following steps when cleaning.



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.



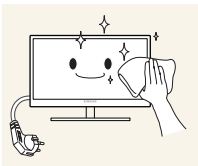
3. Wipe the monitor screen using a clean, soft and dry cloth.



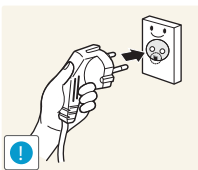
- Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the monitor.



- 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.

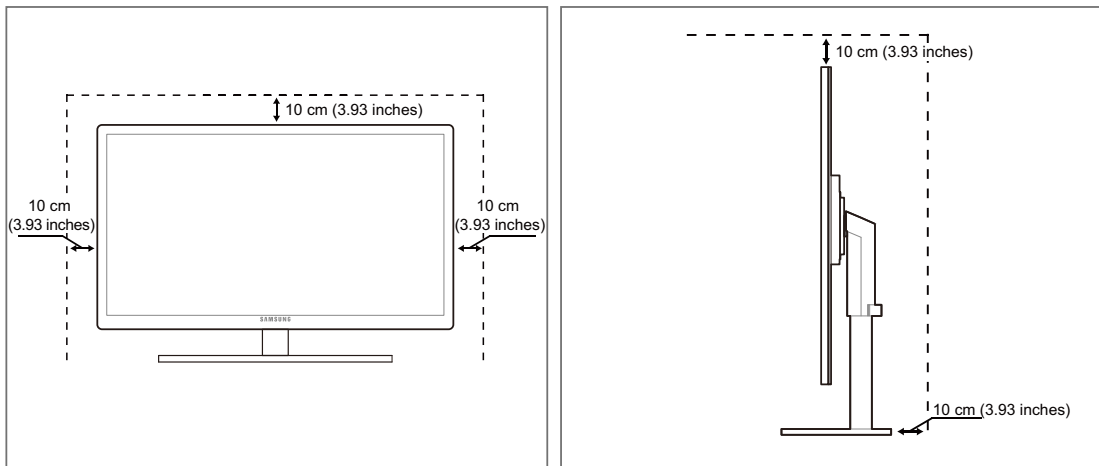
Before Using the Product

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.

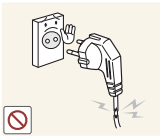
Before Using the Product

Electricity and Safety



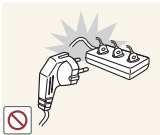
The following images are for reference only. Real-life situations may differ from what is shown in the images.

Warning



Do not use a damaged power cable or plug, or a loose power socket.

- An electric shock or fire may result.



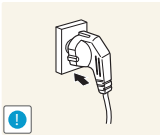
Do not plug many products into the same power socket.

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



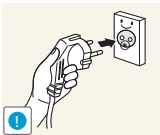
Do not touch the power plug with wet hands.

- Otherwise, an electric shock may result.



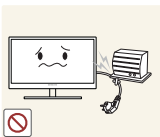
Insert the power plug all the way in so it is not loose.

- 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.



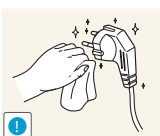
Do not bend or pull the power cable with force. Do not weigh the power cable down with a heavy object.

- 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.

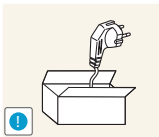
Before Using the Product

Caution



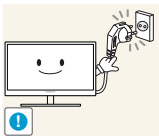
Do not unplug the power cable when the product is in use.

- The product may become damaged by an electric shock.



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

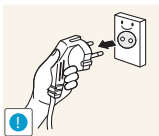
- An electric shock or fire may result.



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.

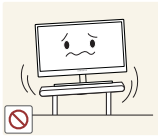
- Otherwise, a fire may result due to an increased internal temperature.



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

- Children may suffocate.

Before Using the Product



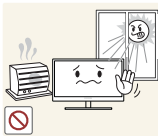
Do not install the product on an unstable or vibrating surface (insecure shelf, sloped surface, etc.).

- 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.



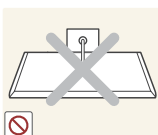
Edible oil, such as soybean oil, can damage or deform the product. Do not install the product in a kitchen or near a kitchen counter.

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.

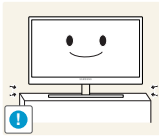
- The screen may become damaged.



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.

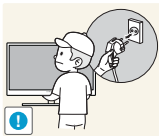
Operation and Safety

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.



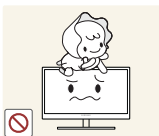
To move the product, first disconnect all the cables from it, including the power cable.

- 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.

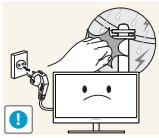
- Otherwise, an electric shock or fire may result.



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



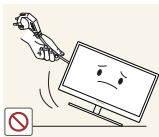
During a lightning or thunderstorm, power off the product and remove the power cable.

- An electric shock or fire may result.



Do not drop objects on the product or apply impact.

- An electric shock or fire may result.



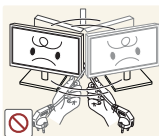
Do not move the product by pulling the power cable or any cable.

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



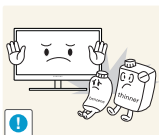
If a gas leakage is found, do not touch the product or power plug. Also, ventilate the area immediately.

- 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.



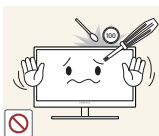
Do not use or keep combustible spray or an inflammable substance near the product.

- 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.

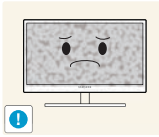


Do not place objects containing liquid (vases, pots, bottles, etc) or metallic objects on top of the product.

- 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.

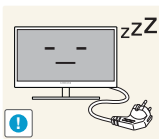
Before Using the Product

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.



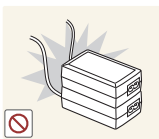
Disconnect the power cable from the power socket if you do not plan on using the product for an extended period of time (vacation, etc.).

- 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.



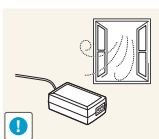
Do not let water enter the AC/DC power device or get the device wet.

- 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.

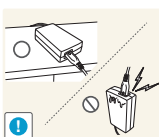


Do not put the AC/DC power adapter near to any heating apparatus.

- Otherwise, a fire may result.



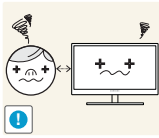
Keep the AC/DC power adapter in a well-ventilated area.



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.



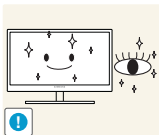
Do not hold the monitor upside-down or move it by holding the stand.

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



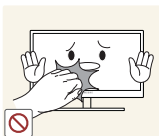
Do not use humidifiers or stoves around the product.

- An electric shock or fire may result.

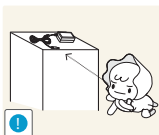


Rest your eyes for more than 5 minutes for every 1 hour of product use.

- 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.



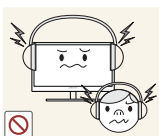
Exercise caution when adjusting the product angle or stand height.

- 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.

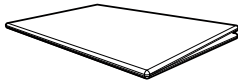
1.1 Checking the Contents

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.

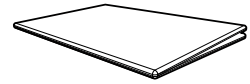
Components



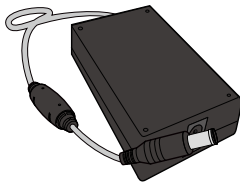
Quick Setup Guide



Warranty card
(Not available in some locations)



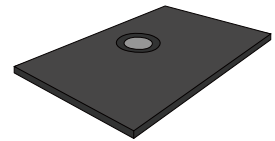
Regulatory guide



AC/DC power adapter
(Detachable)



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



Stand base



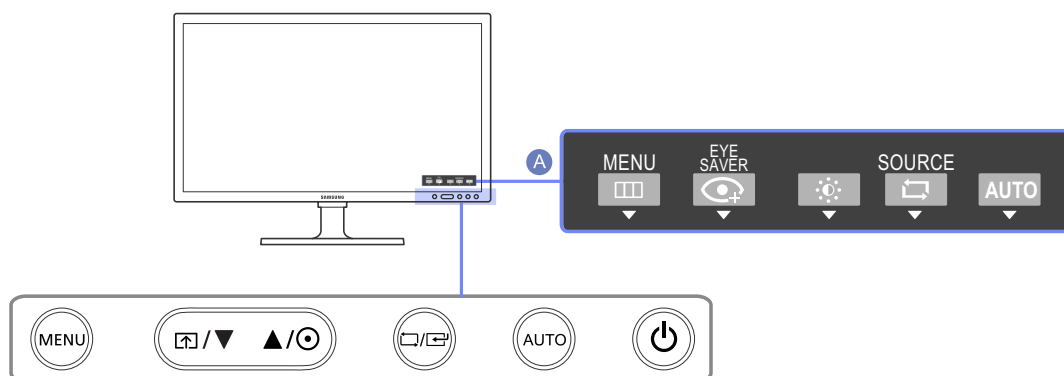
Components may vary depending on the country.

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.



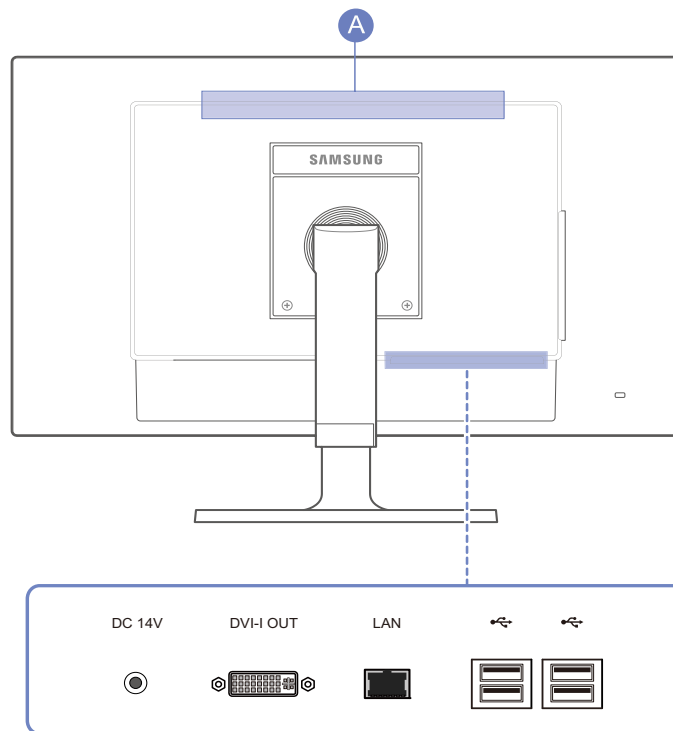
Icons	Description
	<p>Open or close the onscreen display (OSD) menu, or return to the parent menu.</p> <ul style="list-style-type: none"> OSD control lock: Maintain the current settings, or lock the OSD control to prevent unintended changes to settings. Enable: To lock the OSD control, press the [MENU] button for 10 seconds. Disable: To unlock the locked OSD control, press the [MENU] button for more than 10 seconds. <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


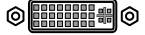




Icons	Description
	<p>Move to the upper or lower menu or adjust the value for an option on the OSD menu.</p>
	<p>Confirm a menu selection.</p> <p>Pressing the [] button when the OSD menu is not displayed will change the input source (Client/Analog). If you power on the product or change the input source 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> <ul style="list-style-type: none">  Available only in Analog mode. 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> <ul style="list-style-type: none">  The power indicator will be lit when the product is operating normally. 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.

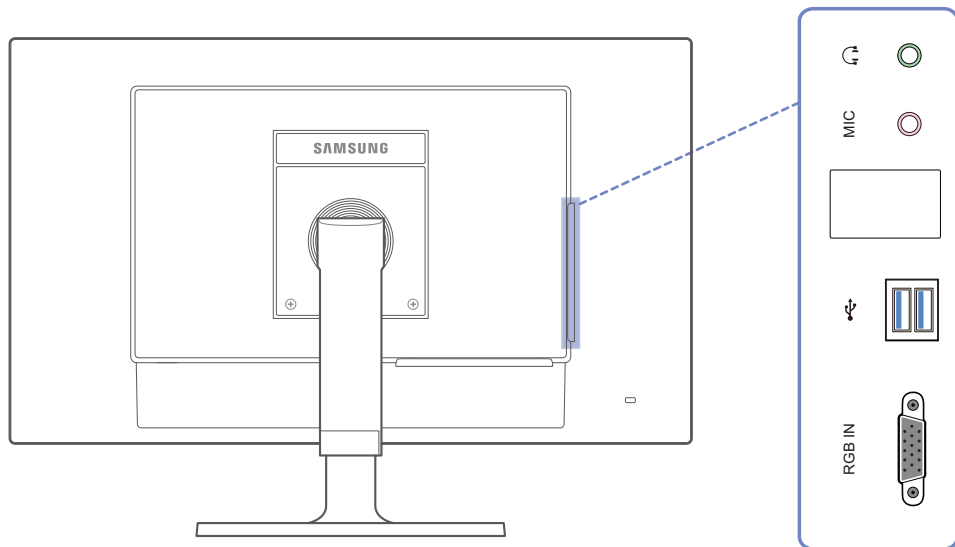






Port	Description
	Connects to the AC/DC power adapter.
	Connects to a Monitor device using the DVI or DVI to RGB cable.
	Connect to a network using the LAN cable.
	Connect to a USB device.  Installation of a USB driver may be needed, depending on the USB device. Contact the USB device manufacturer for more information.
	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.

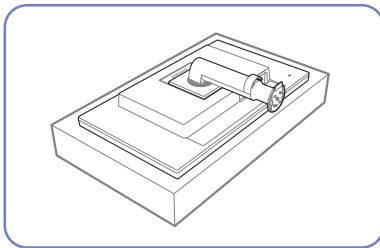


Port	Description
	Connect to an audio output device such as headphones.
	Connect to a microphone.
	<p>Connect to a USB device. Compatible with a USB cable version 3.0 or lower.</p> <ul style="list-style-type: none"> Source devices can be charged using these USB ports. Installation of a USB driver may be needed, depending on the USB device. Contact the USB device manufacturer for more information.
	Connects to a PC device using the D-SUB cable.

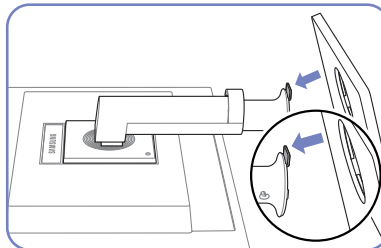
1.3 Installation

1.3.1 Attaching the Stand

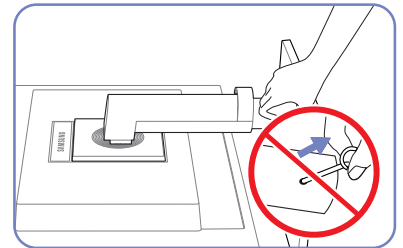
Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.



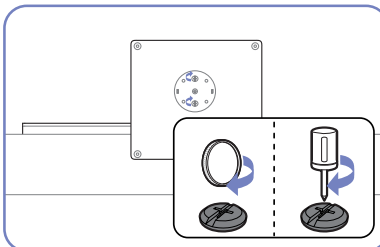
Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.



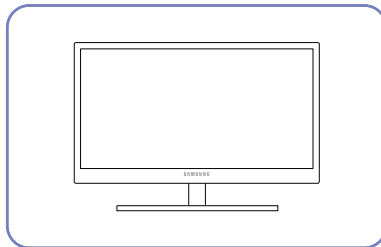
Insert the stand base into the stand in the direction of the arrow.



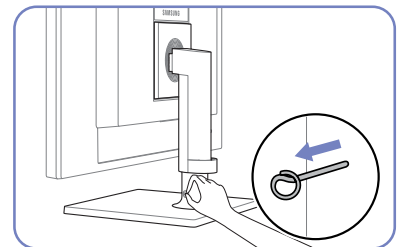
Do not remove the fixing pin until you are finished attaching the stand.



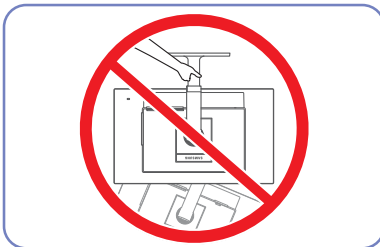
Fasten the screw tightly (using a screwdriver or coin) into the bottom of the stand base.



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.

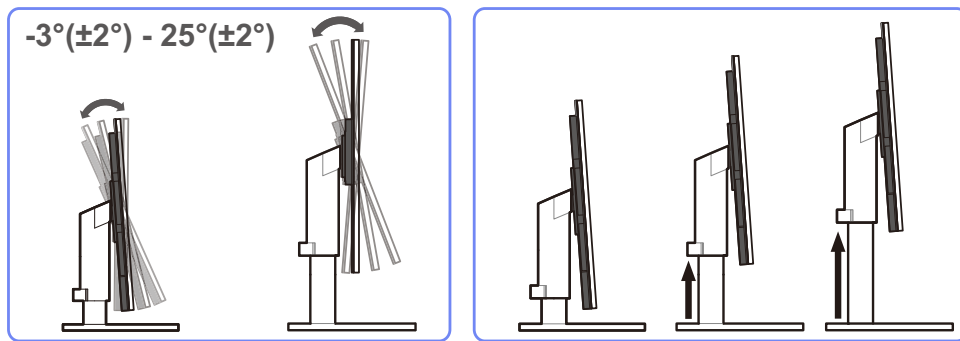


- Disassembly is the reverse order of assembly.
- The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

1.3.2 Adjusting the Product Tilt and Height



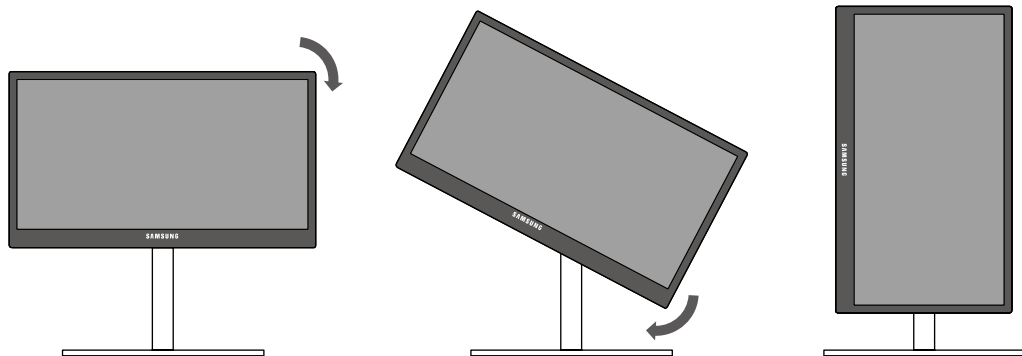
The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



- 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.



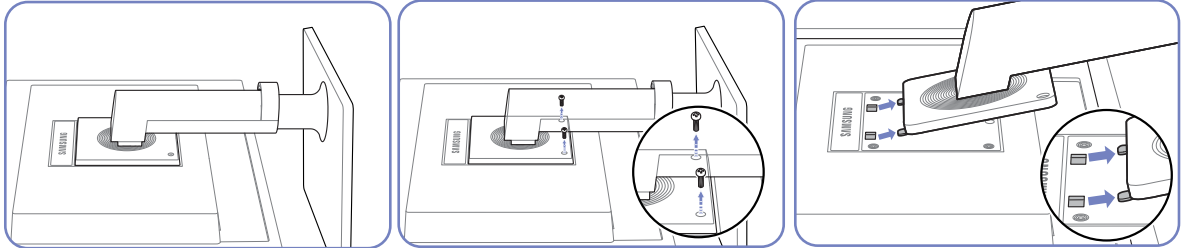
- Be sure to fully extend the stand before rotating the monitor.
- If you rotate the monitor without fully extending the stand, the corner of the monitor may hit the floor and get damaged.
- Do not rotate the monitor counterclockwise. The monitor may get damaged.

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.

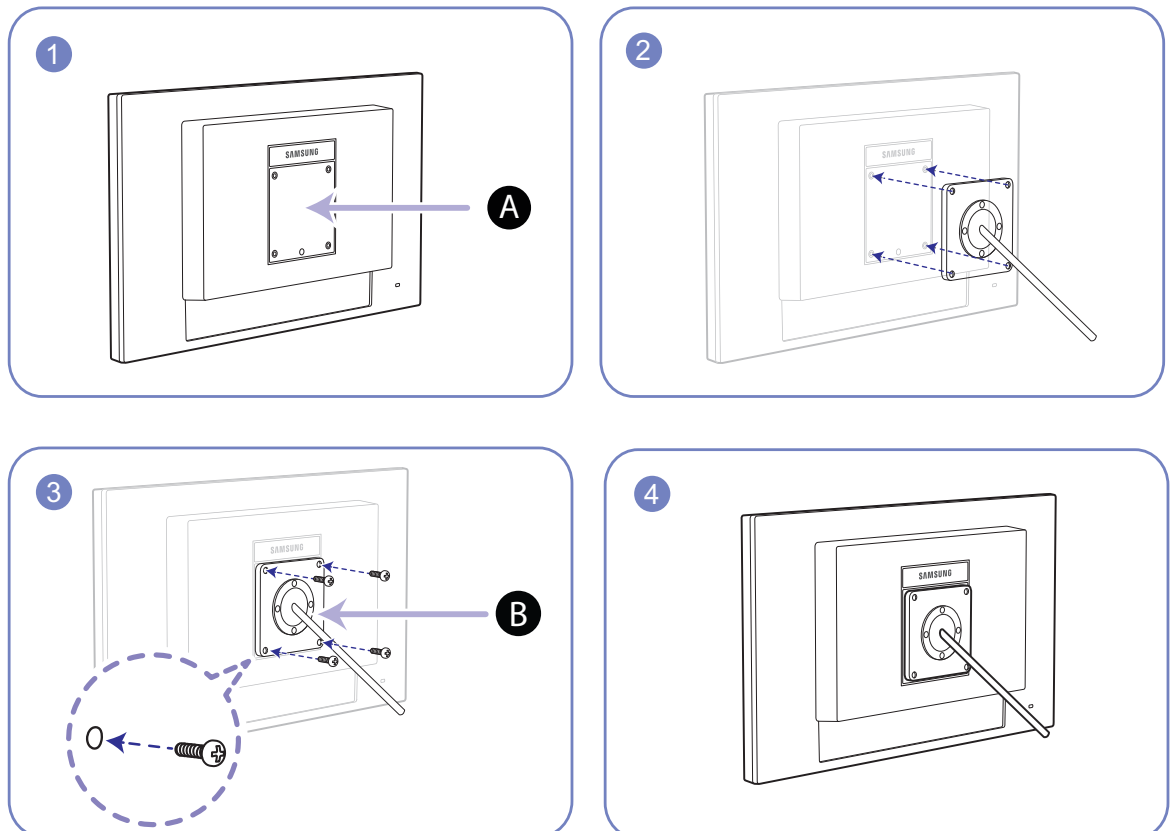


Place a protective cloth or cushion on a flat surface. Next, place the product with the face down on top of the cloth or cushion.

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.

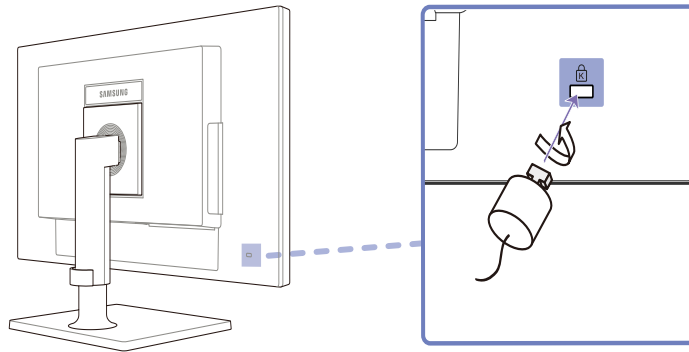


Notes

- 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.

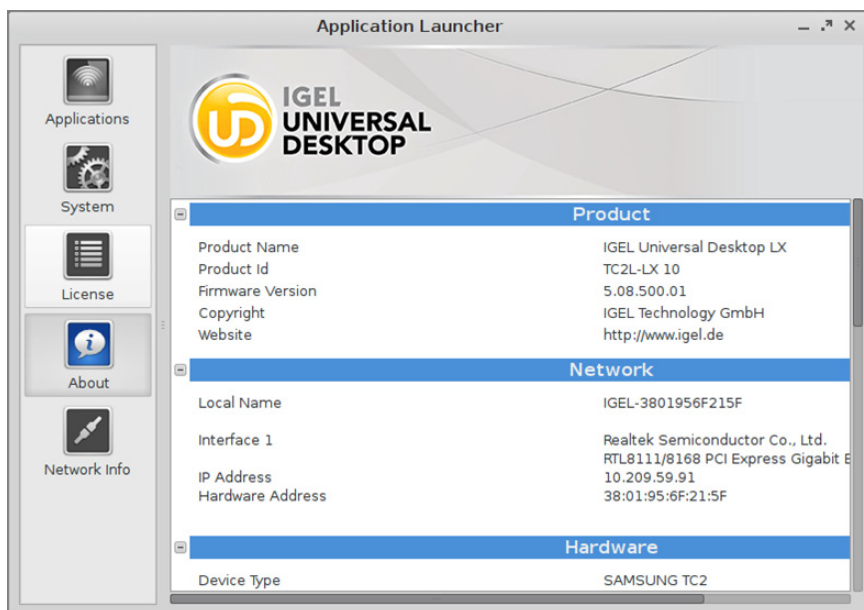


- An anti-theft locking device can be purchased separately.
- Refer to the user guide provided with your anti-theft locking device for details.
- Anti-theft locking devices can be purchased at electronics retailers or online.

2.1 Using IGEL OS - "common"

2.1.1 General System Information

Within the **Application Launcher**, the **Information** page has important system data, such as the firmware version, licensed services and hardware specifications.



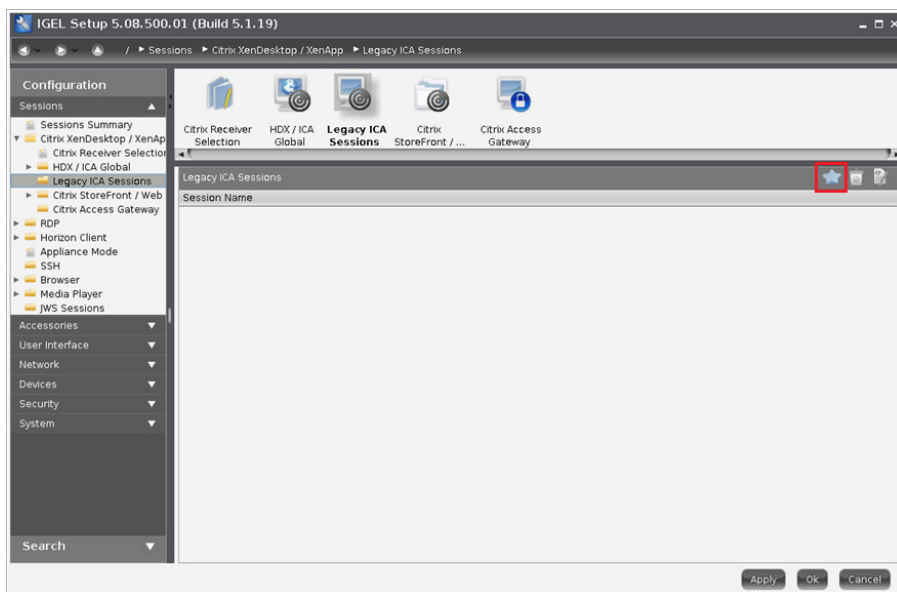
Details of the current network configuration with the IP address and device name are also provided.

2.2 Using IGEL OS - "Sessions"

2.2.1 Citrix ICA Sessions

Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Legacy ICA Sessions**

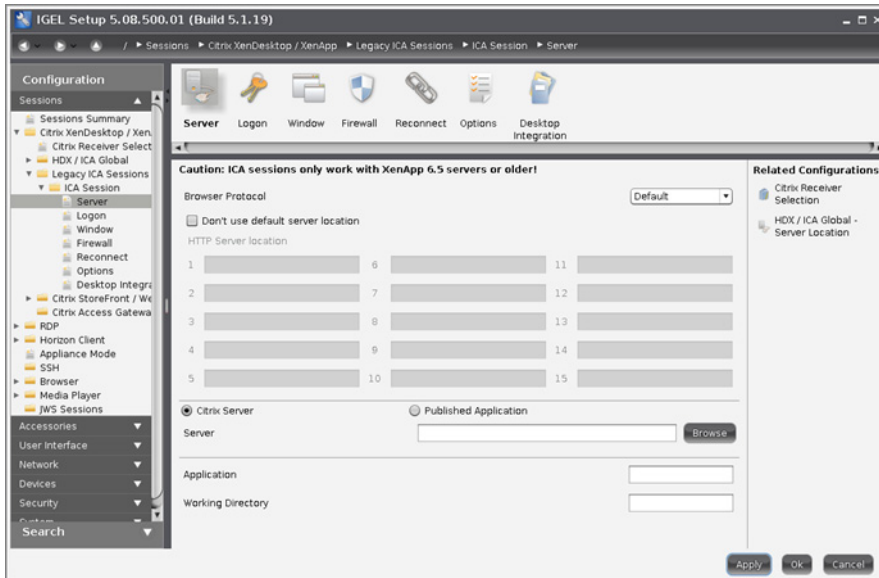
If a session is created or edited, you can change the ICA session settings if they differ from the global settings.



The primary source of further information on Citrix connections should always be the relevant Citrix documentation. This manual provides only general configuration tips.

Server

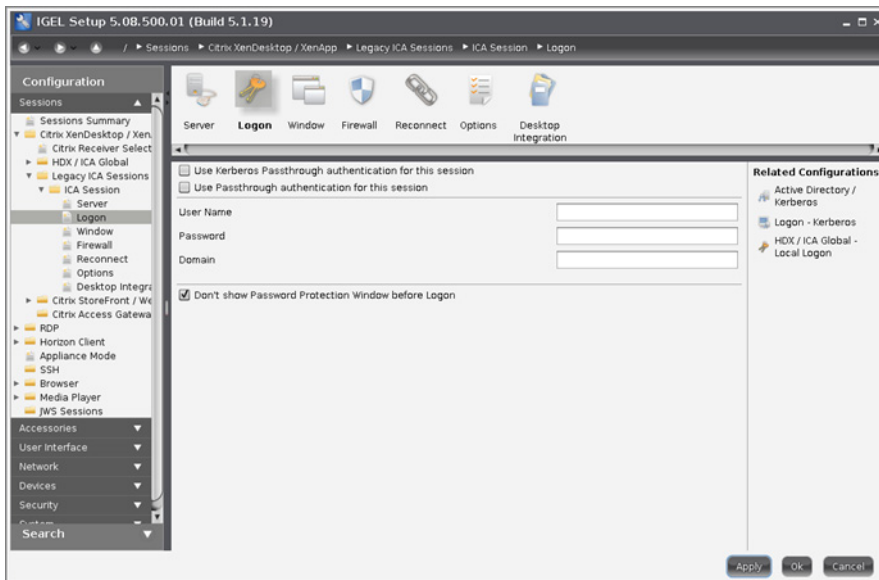
Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Legacy ICA Sessions** → **Session Name** → **Server**



Browser Protocol	Allows you to select the protocol needed for transmission or global standard settings
Don't use default server location	Lists the standard server requirements for each protocol separately
Server	<p>By clicking Browse, you send a transmission signal which queries all available servers and published applications.</p> <ul style="list-style-type: none"> By selecting the server, the user is connected to the entire desktop as if logging on at the server itself. As a result, all applications, rights and settings contained in the user's profile (the local server profile) are available. If one of the published applications is selected, the session is opened in a window which contains just one application. The session is ended if you close this application. You can also manually enter the IP address or the host name of the server in the Server field.
Application	If you have entered the server manually, you can specify a published application here. These fields are automatically filled in if you have selected one of the recognized published applications.
Working Directory	Details of the application's work directory path name.

Logon

Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Legacy ICA Sessions** → **Session Name** → **Logon**



<p>Use Kerberos Passthrough authentication for the session</p>	<p>Enables single sign-on for this ICA session if Log on to the thin client with AD/Kerberos is configured. The server must also be configured for pass-through authentication. When launching the ICA session, it is no longer necessary to enter a user name and password again.</p>
<p>Use Passthrough authentication for the session</p>	<p>Enables single sign-on for this ICA session if Log on to the thin client with AD/Kerberos is configured. Because the user name and password are temporarily stored when logging on to the thin client, they no longer need to be entered again when launching a session.</p>
<p>User Name, Password, Domain</p>	<p>A user name, password and domain for the ICA session can be entered here. These details are automatically forwarded to the server and no longer need to be entered on the logon screen.</p>
<p>Don't show Password Protection Window before Logon</p>	<p>This option switches the Windows splash screen on and off. This option must be disabled when logging on to Windows using a smartcard!</p>

2.2.2 Citrix StoreFront / Web Interface

Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Citrix StoreFront / Web Interface**

Some of the settings are already configured under Global settings for ICA and in the ICA session setup.

- Select the start options for the Citrix XenApp session. Refer to **Desktop integration** for details.

Server

Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Citrix StoreFront / Web Interface** → **Server**

- Under **Server Location**, specify the master browsers where published applications can be searched.



You can include up to 5 Citrix master browsers per domain. If a browser is unavailable, the next browser will be queried. Please note that multiple farms can be searched. You can specify addresses for multiple server farms.

- Click on **Use Citrix XenApp Service Page** to obtain settings from the server. Configure published applications via the Citrix XenApp service page.

Logging on and off

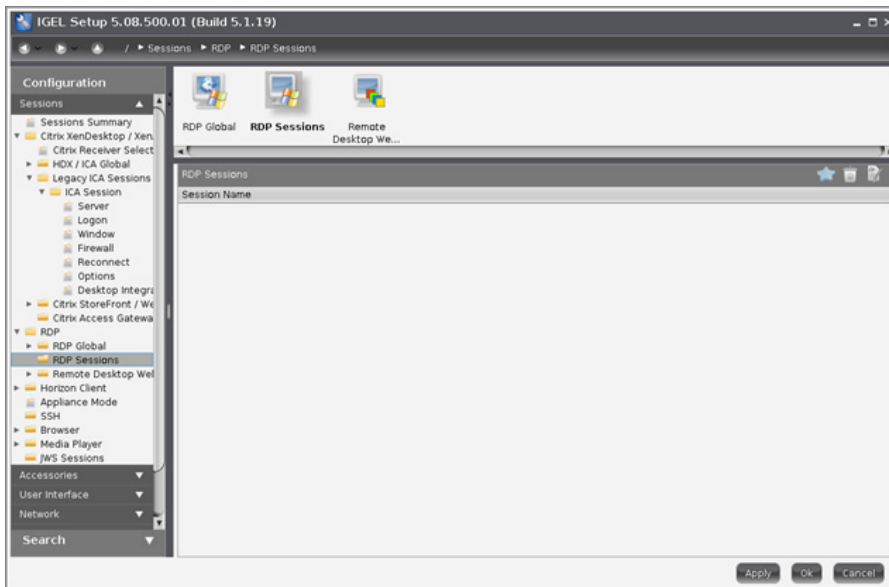
Menu path: **Setup** → **Sessions** → **Citrix XenDesktop / XenApp** → **Citrix StoreFront / Web Interface** → **Logon**

- Enable **Use Kerberos Pass-Through Authentication (Web Interface only)** in order to use local logon data for listing and launching applications. The option enables Single Sign-on for XenApp if logon with AD/Kerberos is configured on the thin client.
- Enable **Use Pass-Through Authentication** in order to use temporarily stored logon data for listing and launching applications.
- You can synchronize your Citrix password with **Screen Lock**.

2.2.3 RDP Sessions

Menu path: **Setup** → **Sessions** → **RDP** → **RDP Sessions**

The following configuration pages offer you detailed setup options for the session:



Server and Logon	Allows you to specify a server and a start application for the terminal server session. The necessary logon information is configured here. Otherwise, the terminal server logon window for entering the user and the password appears.
Gateway	Allows you to enable gateway support. Logon data for RD Gateway may also be specified here.
Window	Allows you to specify the size of the session window and the color mode. The local task bar can be configured so that it remains visible during a full-screen session.
Keyboard	Allows you to specify the keyboard layout, scan codes and the direct connection between keyboard input and the Windows Server.
Mapping	Allows you to specify the audio output device (local/remote) and determine how key strokes and clipboard content are handled. The mapping of serial connections and local drives can be enabled for a session. You can make connected mass storage devices available to the user using the appropriate mapping: Select Enable , choose the drive letter and the device to be mapped.
Performance	Allows you to disable non-essential graphical functions, such as skin styles and window animation. This is useful in the event of performance problems.

Options	Allows you to specify the start application and the work directory for use during the session (how authentication errors are handled during the logon procedure). If, when connecting to the server, a terminal server gateway is to be used, you can configure the relevant settings here (No Gateway is pre-set).
USB Redirection	Allows you to specify native USB redirection
Multimedia	Allows you to specify video redirection.

Server

Menu path: **Setup** → **Sessions** → **RDP** → **RDP Sessions** → **Session Name** → **Server**

In this area, you can overwrite the following server connection details and thus the standard settings:



Choose between **Server** and **Enable RemoteApps Mode**.

Server

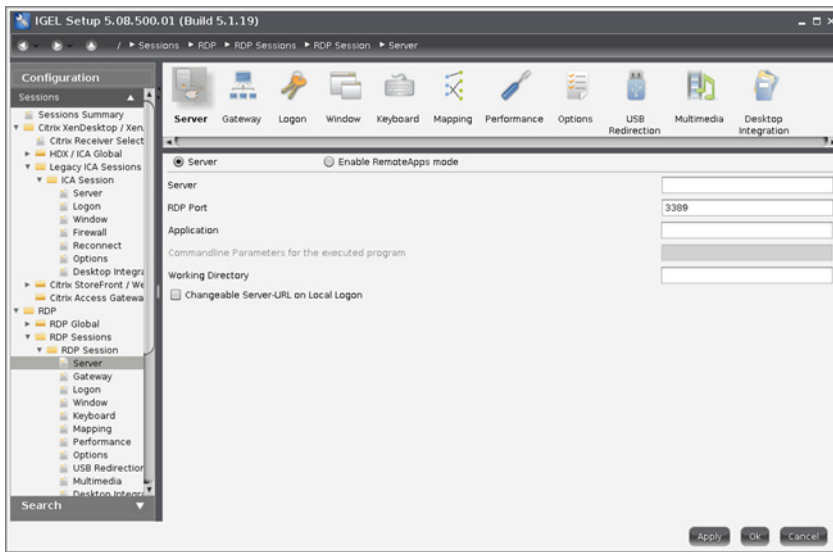
To set up a server, proceed as follows:

- 1 Give the **Server** name or the IP address.
- 2 Define the **RDP Port** which is to be used for the connection.
The default port is 3389.
- 3 Under **Application**, specify a start-up application for the terminal server session.
- 4 Specify the **Working Directory**.
- 5 Enable **Changeable Server-URL on Local Logon** in order to allow the server to be entered freely.
You must have enabled local logon in order to do this.

Otherwise, the terminal server logon window will be displayed so you can enter a user name and password. If the local logon is used (see above), the thin client's logon window will be shown.



If the **Pass-Through Authentication** option is enabled, the session with the local logon data for the terminal user, e.g. from the domain logon, is used. However, this setting will be overridden by the **Local Logon** global parameter. Do not use both options at the same time.



Microsoft RemoteApp

Like the published applications of a Citrix server, MS Windows Server 2008 offers the option of passing on RemoteApps to the thin client. Detailed instructions regarding server configuration can also be found on the Microsoft website: [TS RemoteApp Step-by-Step Guide](#).

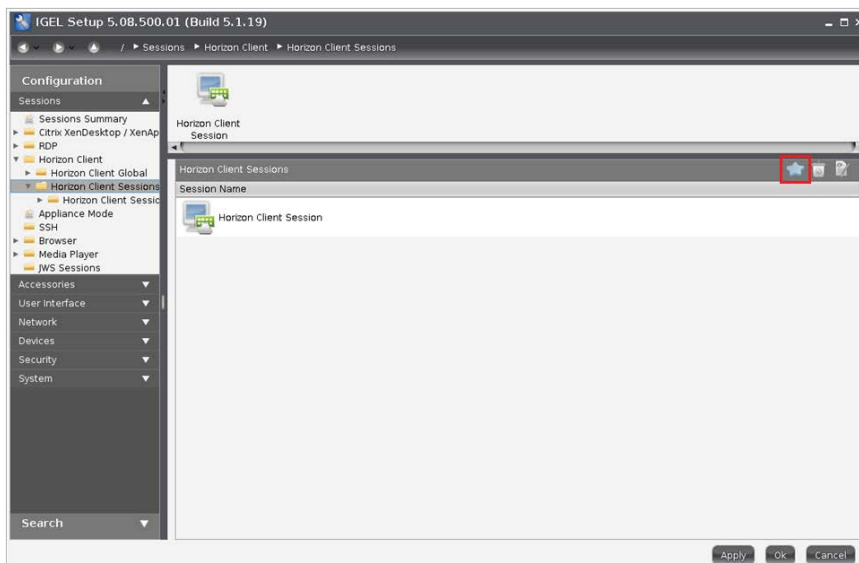
On the client side, only a few parameters need to be configured after enabling the RemoteApp mode.



Please note that the name of the application to be launched must be preceded by two pipe characters (|), e.g. ||Excel.

2.2.4 Horizon Client Sessions

Menu path: **Setup** → **Sessions** → **Horizon Client** → **Horizon Client Sessions**



Connection Settings

Menu path: **Setup** → **Sessions** → **Horizon Client** → **Horizon Client Sessions** → **Session Name** → **Connection Settings**

In this area, you can specify the settings for the connection between the Horizon Client and the server.

- **Server URL:** URL of the VMware Horizon server
- **Use Passthrough authentication for this session:** If this option is enabled, the user name and password will be temporarily saved and used for authentication during this session.
- **Username:** User name when logging on to the VMware Horizon server
- **User password:** Password when logging on to the VMware Horizon server
- **Domain:** Domain when logging on to the VMware Horizon server
- **Session Type:** Specifies whether the session contains a desktop or an individual application.

Possible values:

- **Desktop:** The session contains a desktop.
- **Application:** The session contains an individual application.
- **Desktopname:** Specifies a name for the desktop. This option is available if **Session Type** is set to **Desktop**.
- **Application:** Application that is launched during the session. This option is available if **Session Type** is set to **Application**.
- **Autoconnect:** If this option is enabled, the connection to the desktop or application is established automatically when the session starts. For this to be possible, the name of the desktop or application must be defined. If this option is disabled, the overview will be shown when the session starts.
- **Preferred desktop protocol:** The selected option is preferred by the client when negotiating the connection protocol.
- **Enable kiosk mode:** If this option is enabled, the session will be held in kiosk mode.

2.2.5 Media Player

Menu path: **Setup** → **Sessions** → **Media Player**

Set up the Media Player for your multimedia applications here.

IGEL Linux supports the following multimedia formats and codecs out of the box:

- Ogg/Vorbis
- Ogg/Theora
- WAV
- FLAC

The following codecs are licensed via the separately available Multimedia Codec Pack:

	Supported Formats	Supported Codecs
With License	AVI MPEG ASF (restricted under Linux) WMA WMV (restricted under Linux) MP3	MP3 WMA stereo WMV 7/8/9 MPEG 1/2 MPEG4 H.264
Without License	OGG WAV FLAC	Vorbis Theora WAV FLAC

Media Player Sessions

Menu path: **Setup** → **Sessions** → **Media Player** → **Media Player Sessions**

You can set up your own personal Media Player sessions here.

- 1 Click on **Add** to create a new session.
- 2 Specify a **Session Name**.
- 3 Specify which **possible ways of launching the session** you would like. You may choose a number of options.
- 4 You may like to select the option of using **hotkeys** and define them.
- 5 You can also specify whether **autostart** (following a system start) and/or **restart** (after a connection is established) are to be used.
- 6 For the autostart option, you can also specify by how many seconds the session start is to be delayed.

As soon as you have set up a Media Player session of your own, it will appear in the structure tree under the **Media Player Sessions** directory. Your own session in turn contains three folders: **Playback**, **Options** and **Desktop Integration**.

Playback

Menu path: **Setup** → **Sessions** → **Media Player** → **Media Player Sessions** → **Session Name** → **Playback**

Under **Medium / File**, give the path of the file which is to be played back when the session is launched.



Use the following formats:

/directory/filename or http://servername/filename.

For the window settings, you can choose whether you would like to carry over the global settings or use your own settings for this special session.

Options

Menu path: **Setup** → **Sessions** → **Media Player** → **Media Player Sessions** → **Session Name** → **Options**

If necessary, you can change the pre-configured settings for the operating components here.

2.3 Using IGEL OS - "Accessories"

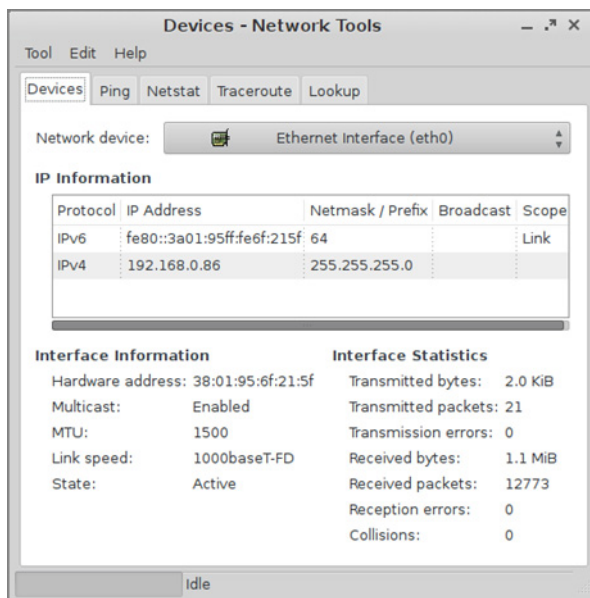
2.3.1 Network Diagnostics

Menu path: **Setup** → **Accessories** → **Network Tools**

The IGEL Universal Desktop Linux firmware features a number of tools for network analysis.

These include:

- **Devices** information
- **Ping**
- **Netstat**
- **Traceroute**
- **Lookup**



Devices Information

This tool provides information regarding the status of the network device used.

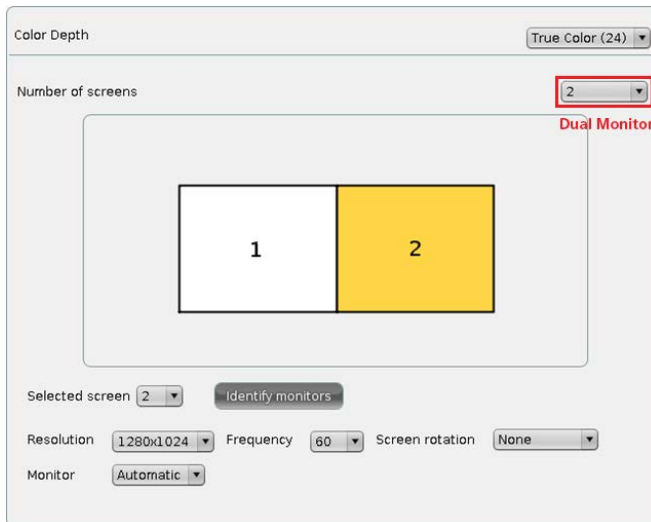
This includes:

- MAC and IP address
- Link speed
- Various interface statistics (bytes transferred, errors etc.)

2.4 Using IGEL OS - "User Interface"

2.4.1 Screen

Menu path: **Setup** → **User Interface** → **Display**



Color Depth

Allows you to select the desktop color depth. The following options are available:

- 16 bits per pixel (**High Color** / 65,000 colors)
- 24 bits per pixel (**True Color** / 16.7 million colors)



Make sure that all screens connected to the thin client support the color setting.

DDC	Allows you to activate the Display Data Channel in order to share information between the system and the screen. If screen problems should occur, enable and disable the DDC setting in the Options by way of a test. DDC is enabled by default and the native resolution supported by the screen is determined automatically.
Screen configuration	Extended screen connected to Samsung Linux thin client TC222L or TC242L can be configured independently. The position of the individual screens can be determined in relation to Screen. 1. Click on Identify monitors to show the screen identifier on each device.



- For details of the display resolution supported by your IGEL thin client, please see its datasheet.
- If you set the resolution higher than 1920x1080, Screen cannot be displayed.
- In this case, you can reset the thin client to the default factory settings **Reset to factory defaults**
- Resolution will be detected automatically.

2.4.2 Screen Saver and Screen Lock

Menu path: **Setup** → **User Interface** → **Screen Lock/Saver**

You can set up the screen saver so that it is activated either automatically or in response to a key combination (**Hotkey**). You can also select a password option. The look of the taskbar can be configured separately for the logon dialog and the locked screen.

Example configuration of a screen lock:

General

The screen can be locked via taskbar or desktop icons or using hotkey **Ctrl-Shift-L**.

The screenshot shows the 'Lock Screen' configuration window. Under 'Starting Methods for Session', 'Desktop' and 'Quick Start Panel' are checked. The 'Use Hotkey' checkbox is also checked, and the hotkey is configured as 'Ctrl|Shift|L'. Other options like 'Start Menu' and 'Application Launcher' are unchecked.

Options

The screen lock starts automatically after 5 minutes without user action at the thin client. The screen lock can be stopped by entering a user password or administrator password.

The screenshot shows the 'Options' section. 'Start automatically' is checked with a timeout of 5 minutes. Under 'Use Password', 'User Password' is selected. 'Allow Administrator password' is also checked.

Taskbar

The locked screen does not display the taskbar until the logon dialog appears. The user can bring up a soft keyboard, e.g. to log on using touchscreen monitor.

The screenshot shows the 'Taskbar settings' section. Under 'Taskbar settings for the login dialog', 'Show taskbar in login screen' is checked. Under 'Taskbar settings when the screenlock is active', 'Show taskbar in screenlock' is unchecked.

2.5 Using IGEL OS - "Network"

2.5.1 LAN Interfaces

Menu path: **Setup** → **Network** → **LAN Interfaces**

Click on **Network** → **LAN Interfaces** in the client setup.

Choose either automatic network setup with the protocols DHCP and BOOTP or manual network configuration in order to set the thin client for each network interface.

<input checked="" type="checkbox"/> Activate default interface (Ethernet)	
<input checked="" type="radio"/> Get IP from DHCP Server <input type="radio"/> Specify an IP Address	
IP Address	192.0.0.1
Network Mask	255.255.255.0
Default Gateway	<input type="checkbox"/> enable
Terminal Name	
<input type="checkbox"/> Enable DNS	
Default Domain	
Nameserver	
Nameserver	
<input type="checkbox"/> Manually overwrite DHCP settings	
<input type="checkbox"/> Dynamic DNS Registration	
Dynamic DNS Registration Method	DHCP
TSIG key file for additional DNS authentication	

2.6 Using IGEL OS - "Devices"

2.6.1 USB Storage Devices

Menu path: **Setup** → **Devices** → **Storage Devices**

USB storage devices can be configured here.

Hotplug storage devices



Menu path: **Setup** → **Devices** → **Storage Devices** → **Storage Hotplug**

In this area, you can set up the connection for hotplug storage devices. These can be, for example, USB mass storage devices or MMC card readers.

You can change the following settings:

- **Default permission:** Default access permissions for hotplug storage devices.

Possible values:

- **Read/Write**
 - **Read only**
 - **Enable dynamic client drive mapping.** If this option is enabled, hotplug storage devices are automatically added and removed during ICA sessions and RDP sessions.
-  • Before you mechanically disconnect the hotplug storage device from the thin client, safely remove it. To do this, click on  in the taskbar.
- If the following warning is shown, "**The device is still in use! Do NOT disconnect the device.**", the hotplug storage device must not be removed.
 - Close either the named program or all open files or directories within a session located on the hotplug storage device.

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.



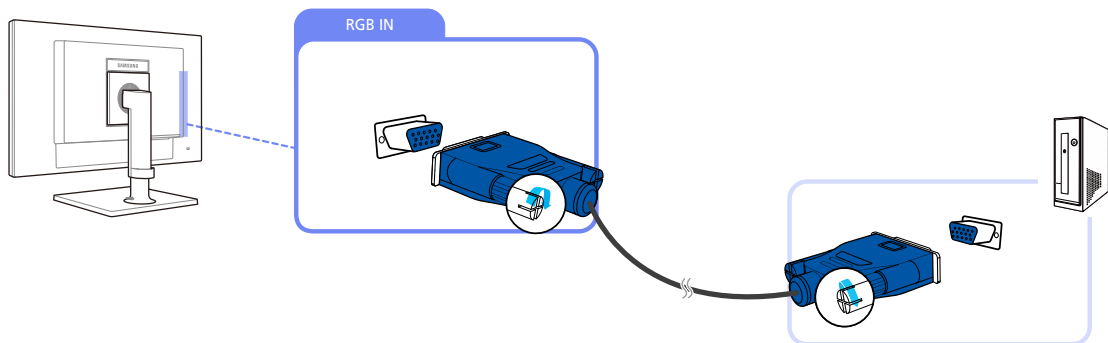
Connecting parts may differ in different products.

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.



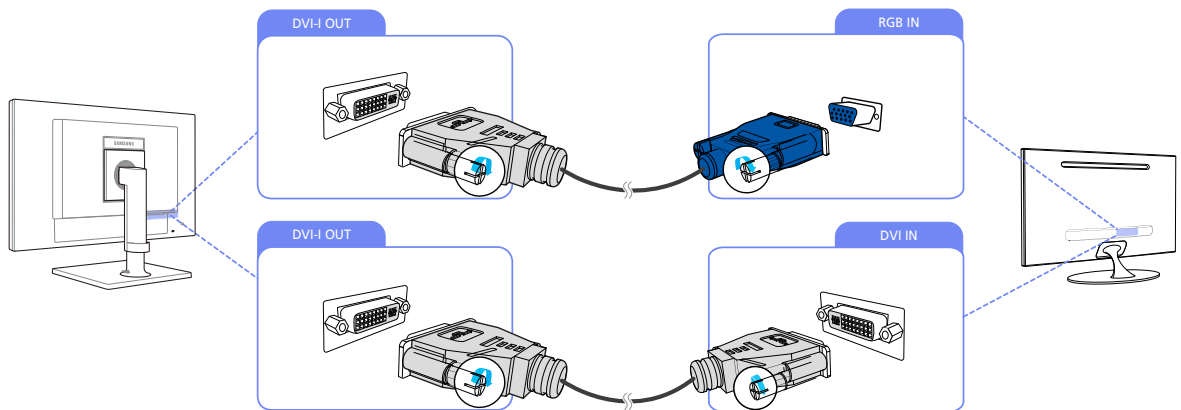
- 1 Connect the D-SUB cable to the [RGB IN] port on the back of the product and the RGB port on the PC.
- 2 Connect the AC/DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "3.2.5 Connecting the Power".)
- 3 Press [⏪/⏩] to change the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



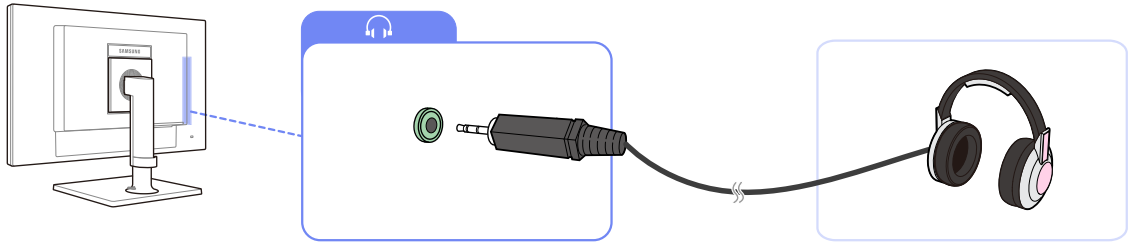
- The [DVI-I OUT] port can be used only to connect to a dual monitor.
- Connect to the [DVI-I OUT] port to display the same picture on another monitor such as the projector.
(For presentation purposes)
- The maximum resolution is 1920 x 1200 when a dual monitor is connected.

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.



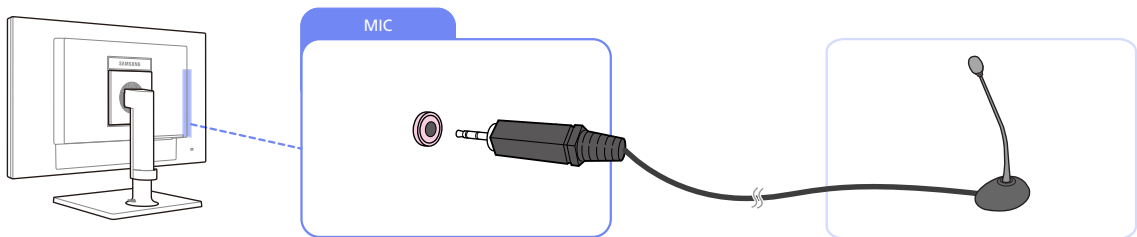
- 1 Connect an audio output device (headphones) to [🎧] on the back of the product.

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.



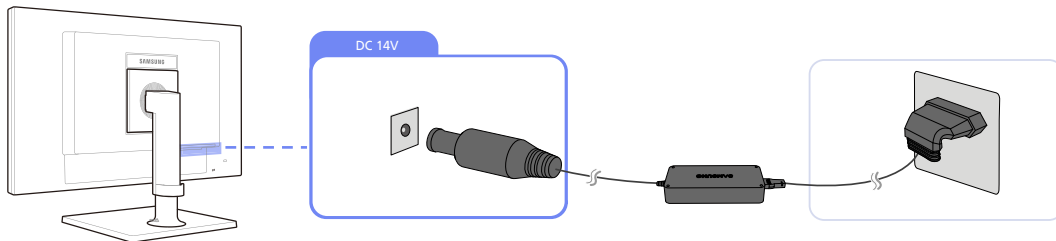
- 1 Connect the microphone to [MIC] on the back of the product.

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.

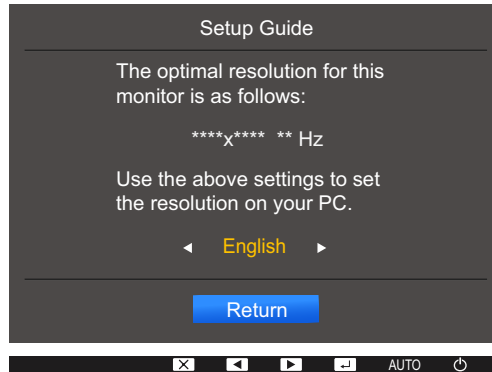


- The input voltage is switched automatically.

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.

4

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)

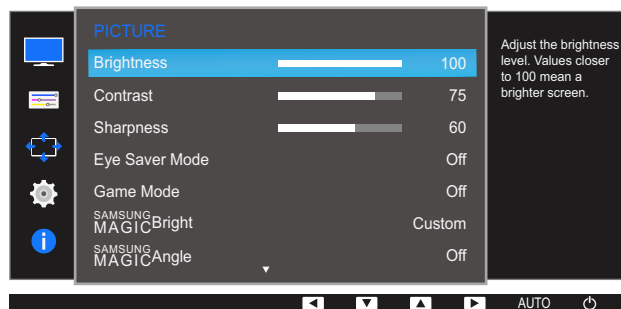
A higher value will make the picture appear brighter.



- 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)

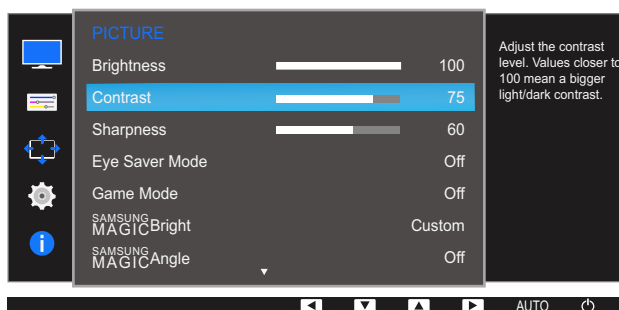
A higher value will increase the contrast to make the object appear clearer.



- 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)

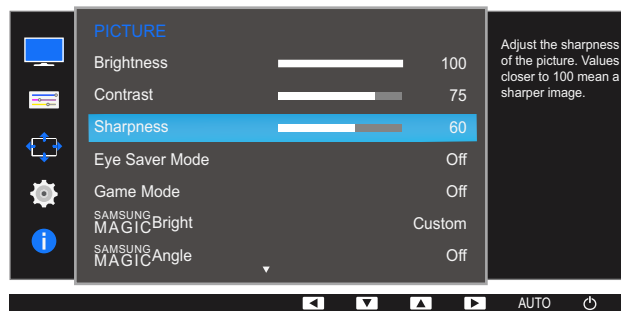
A higher value will make the outline of objects clearer.



- 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.

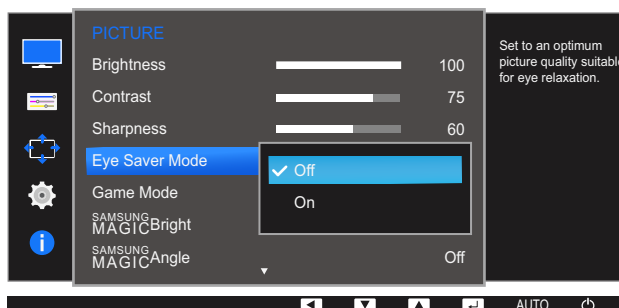


The functions available on the monitor may vary depending on the model. Refer to the actual product.

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.

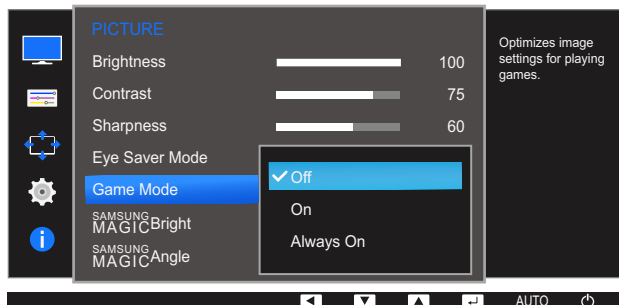
4.5 Game Mode

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.



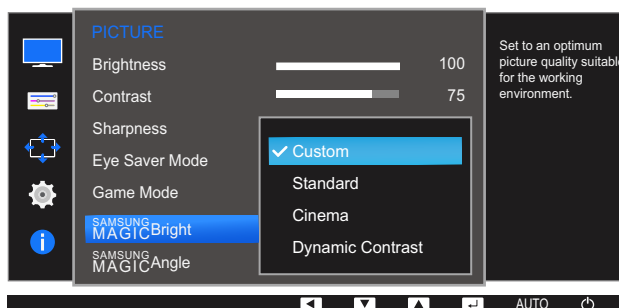
- This menu is not available when **Smart ECO Saving** is set.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.
- This menu is not available when **SAMSUNG MAGIC Angle** is enabled.
- The functions available on the monitor may 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 MAGIC Bright** 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.

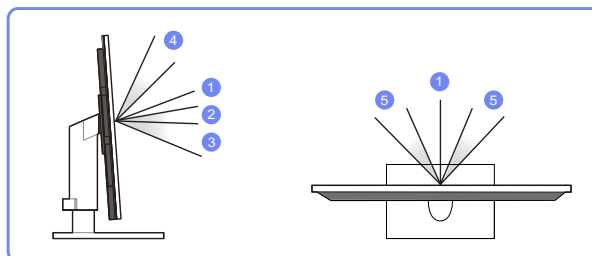
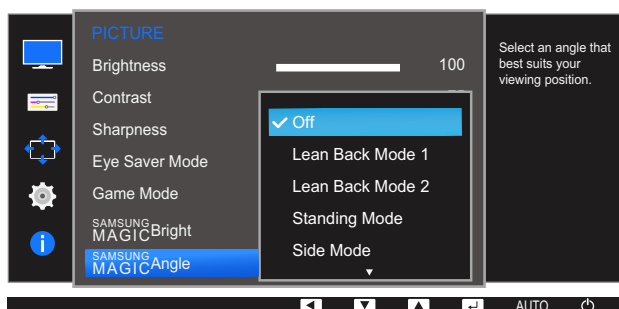


- This menu is not available when **SAMSUNG MAGIC Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** or **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

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

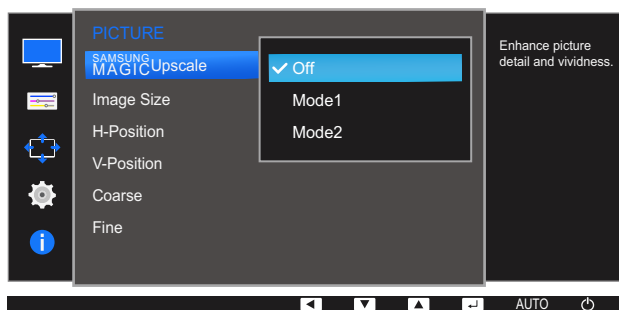
SAMSUNG MAGIC Upscale function can enhance the layers of the picture details and the vividness of the picture.



- 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.

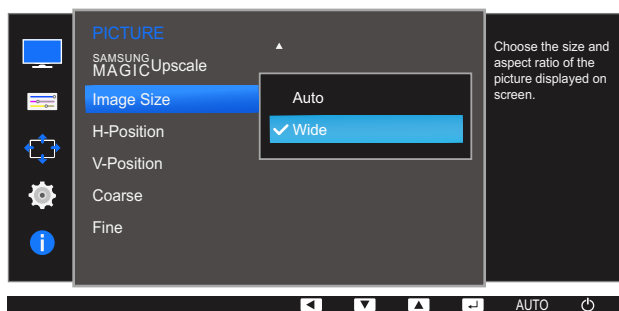


The functions available on the monitor may vary depending on the model. Refer to the actual product.

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.

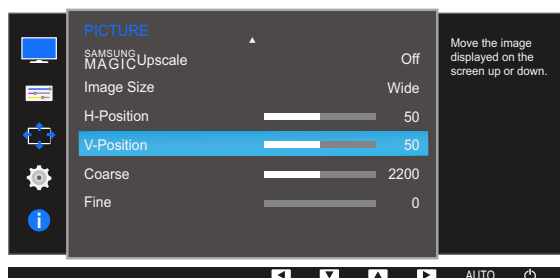
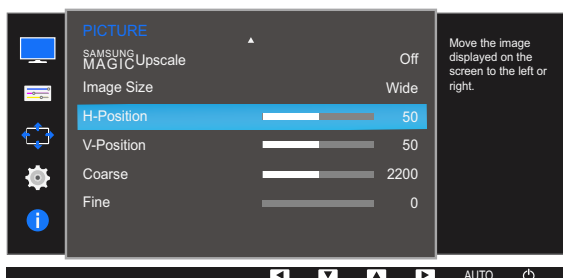
V-Position: Move the screen up or down.



- 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

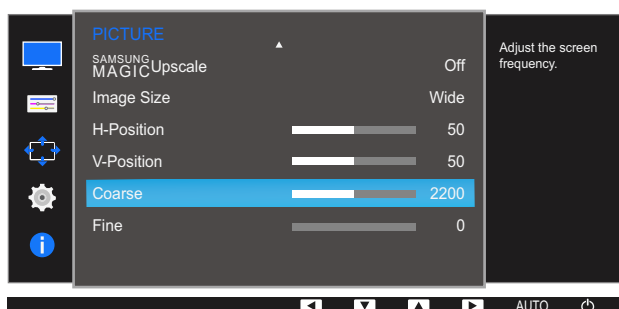
Adjust the screen frequency.



- 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.

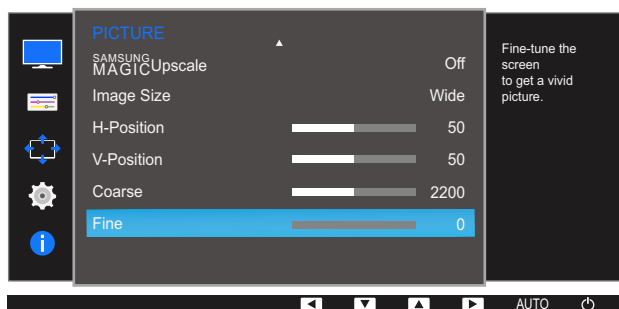


This menu is available in **Analog** mode only.

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.

5

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

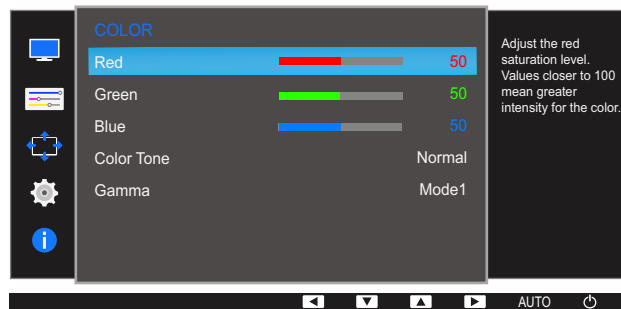
Adjust the value of the color red in the picture. (Range: 0~100)

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

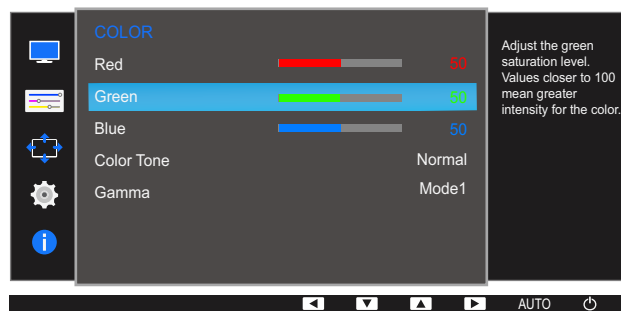
Adjust the value of the color green in the picture. (Range: 0~100)

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

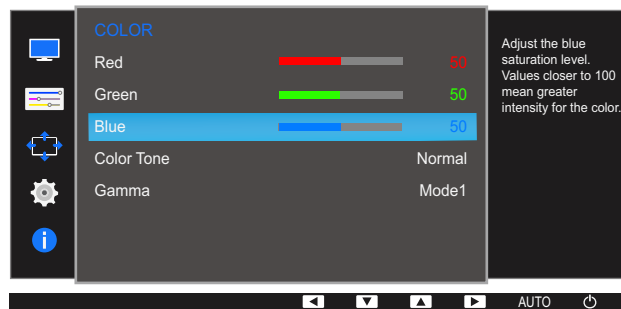
Adjust the value of the color blue in the picture. (Range: 0~100)

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.

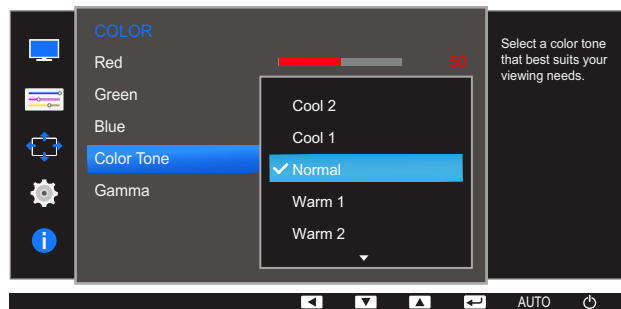


This menu is not available when **SAMSUNG MAGIC Angle** is enabled.

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.

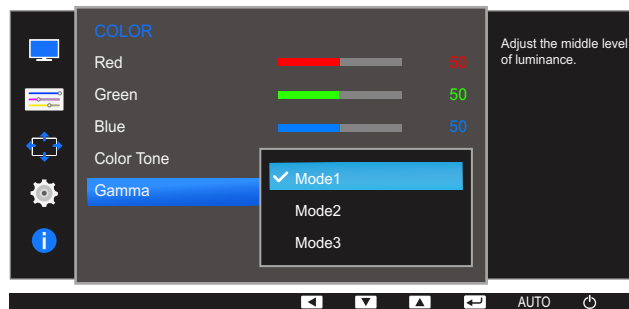


This menu is not available when **SAMSUNG MAGICAngle** is enabled.

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

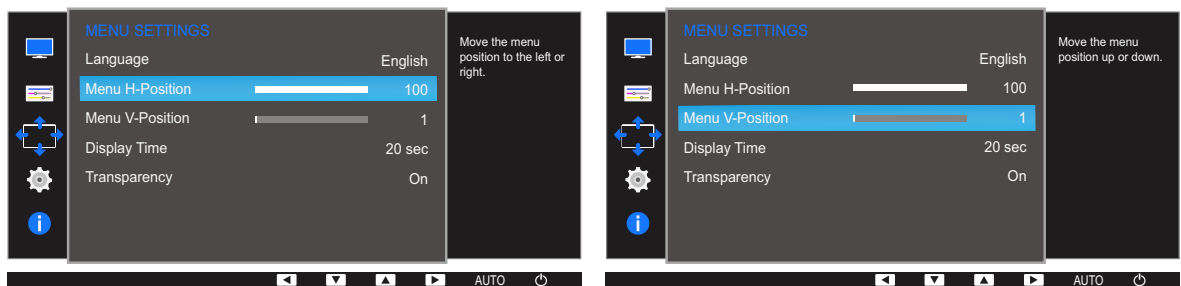
Menu H-Position: Move the menu position to the left or right.

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.

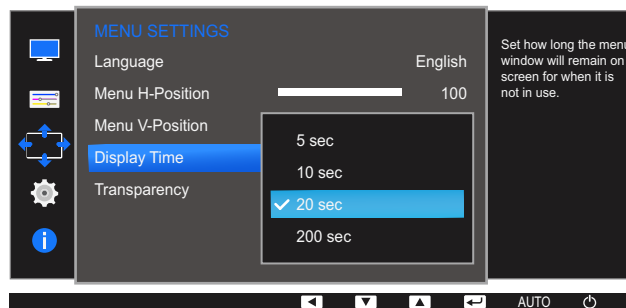
6.3 Display Time

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.



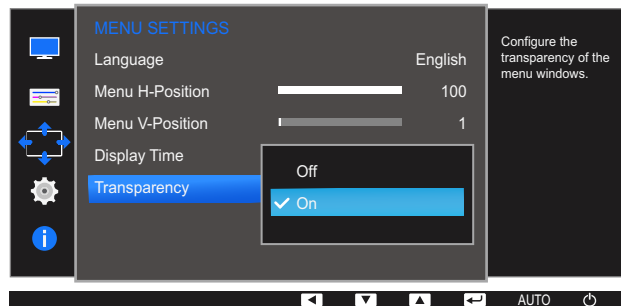
- 4 Press [▲/▼] to move to the option you want and press [□/⇐].
- 5 The selected option will be applied.

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.

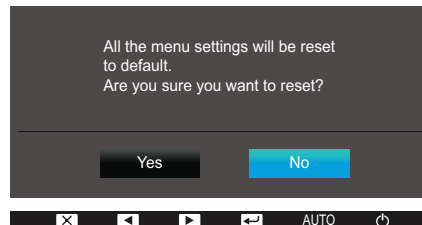
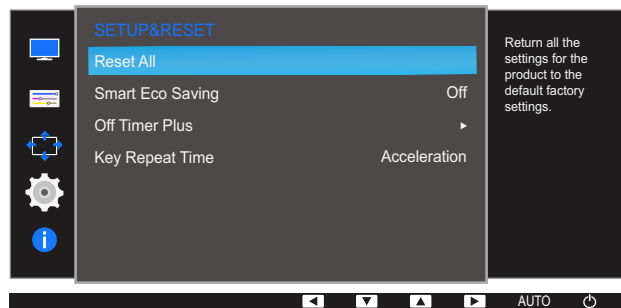
7.1 Reset All

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.

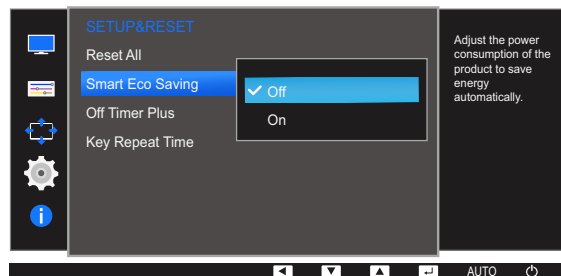


- This menu is not available when **Eye Saver Mode** is enabled.
- **Game Mode** will automatically turn off when **Smart Eco Saving** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

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.



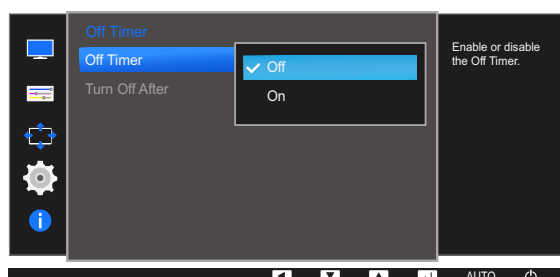
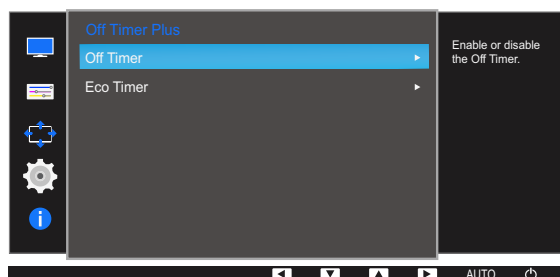
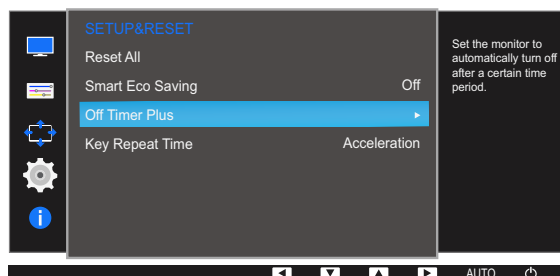
The functions available on the monitor may vary depending on the model. Refer to the actual product.

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.

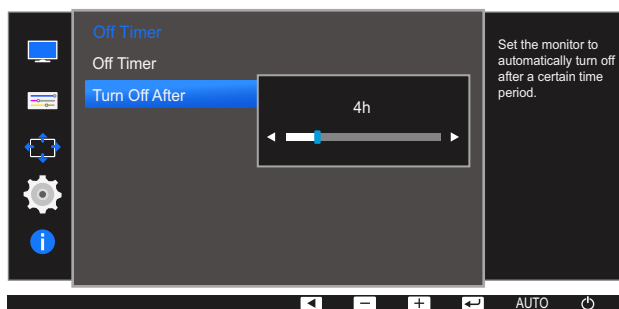


- **Off:** Deactivate the off timer so that the product does not power off automatically.

- **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.

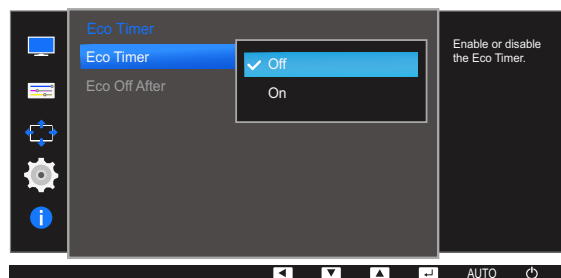
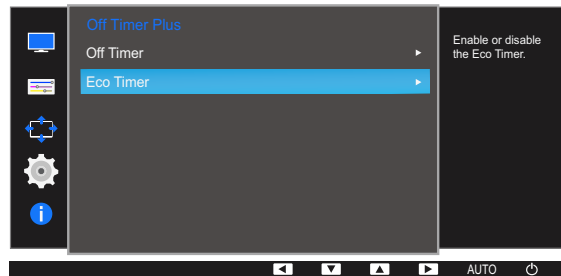
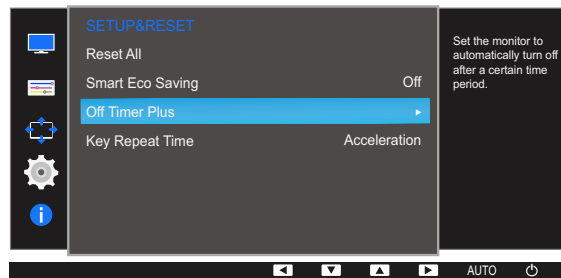
- The off timer can be set within a range of 1 to 23 hours. The product will automatically power off after the specified number of hours.
- This option is only available when **Off Timer** is set to **On**.
- For products for the market in some regions, the **Off Timer** is set to automatically activate 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.

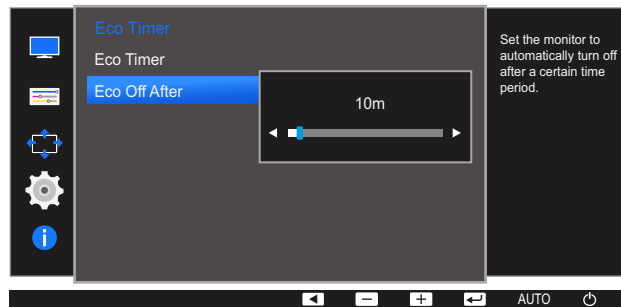


- **Off**: Deactivate the eco timer to disable the automatic power off feature. The product will not power off while in power-saving mode if this feature is deactivated.
 - **On**: Activate the eco timer so that the product powers off automatically when it has been in power-saving mode for a specified 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.

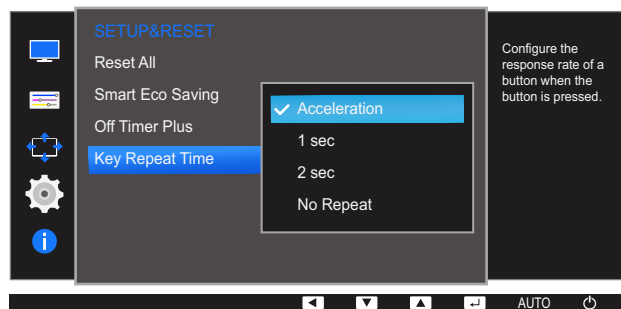


The functions available on the monitor may vary depending on the model. Refer to the actual product.

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.



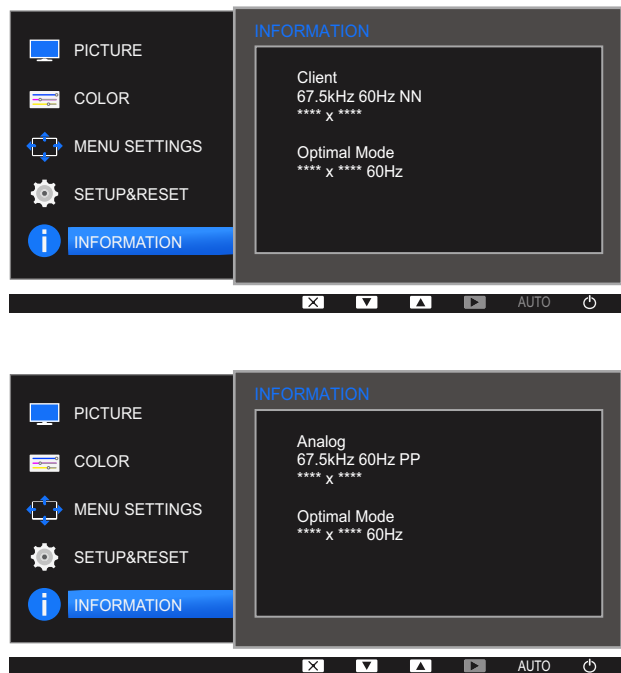
- **Acceleration**, **1 sec**, or **2 sec** can be selected. If **No Repeat** is selected, a command responds only once when a button is pressed.
- 4 Press [▲/▼] to move to the option you want and press [□/□].
 - 5 The selected option will be applied.


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 Requirements Before Contacting Samsung Customer Service Center

9.1.1 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.

9.1.2 Checking the Resolution and Frequency

For a mode that exceeds the supported resolution (refer to "10.2 Standard Signal Mode Table"), the message **Not Optimum Mode** will appear for a short time.

9.1.3 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")

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 88).
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 62) and Fine (page 63).
	Remove any accessories (video extension cable, etc.) and try again.
	Set the resolution and frequency to the recommended level. (Refer to "10.2 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 88) in this manual and the INFORMATION menu on the product.
There are shadows or ghost images left on the screen.	Check that the resolution and frequency for the PC are within the range of resolution and frequency compatible with the product. Next, if required, change the settings, referring to Standard Signal Mode Table (page 88) in this manual and the INFORMATION menu on the product.
The screen is too bright. The screen is too dark.	Adjust Brightness (page 51) and Contrast (page 52).
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")

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.

9.2 Q & A

Question	Answer
How can I change the frequency?	<p data-bbox="678 528 1150 562">Set the frequency on your graphics card.</p> <ul data-bbox="678 589 1469 1335" style="list-style-type: none"><li data-bbox="678 589 1469 696">• Windows XP: Go to Control Panel → Appearance and Themes → Display → Settings → Advanced → Monitor, and adjust Refresh rate under Monitor settings.<li data-bbox="678 719 1469 826">• Windows ME/2000: Go to Control Panel → Display → Settings → Advanced → Monitor, and adjust Refresh rate under Monitor settings.<li data-bbox="678 848 1469 1001">• Windows Vista: Go to Control Panel → Appearance and Personalization → Personalization → Display Settings → Advanced Settings → Monitor, and adjust Refresh rate under Monitor settings.<li data-bbox="678 1023 1469 1176">• Windows 7: Go to Control Panel → Appearance and Personalization → Display → Screen Resolution → Advanced settings → Monitor, and adjust Refresh rate under Monitor settings.<li data-bbox="678 1198 1469 1346">• 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
<p>How can I change the resolution?</p>	<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.
<p>How do I set power-saving mode?</p>	<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.



Specifications

10.1 General

Model Name		TC222L	TC242L
Panel	Size	22 CLASS (21.5 inches / 54.6 cm)	24 CLASS (23.5 inches / 59.8 cm)
	Display area	476.64 mm (H) x 268.11 mm (V) 18.8 inches (H) x 10.6 inches (V)	521.28 mm (H) x 293.22 mm (V) 20.5 inches (H) x 11.5 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."

10.2 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		TC222L	TC242L
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-authorized electrical connections.
- not following the "cautions" in User Manual.

Others

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



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

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 88) 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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