

Monitor

User Manual

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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1 Major Safety Precautions

1-1 Before You Start

Icons used in this manual

ICON	NAME	MEANING
	Caution	Indicates cases where the function may not work or the setting may be canceled.
	Note	Indicates a hint or tip to operate a function.

Using this Manual

- Make yourself fully aware of the safety precautions before using this product.
- If a problem occurs, refer to the 'Troubleshooting' section.

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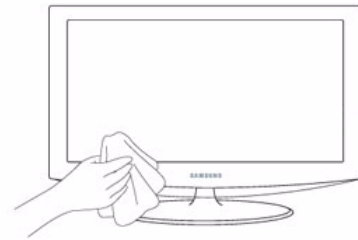
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1-2 Custody and Maintenance

External Surface and Screen Maintenance

Clean the product with a soft dry cloth.

- Do not clean the product with an inflammable substance such as benzene or thinner or with a wet cloth. This may result in a problem with the product.
- Do not scratch the screen with your fingernails or a sharp object.
This may result in scratches or damage to the product.
- Do not clean the product directly by spraying water onto the product.
If water enters the product, it may result in fire, electric shock or a problem with the product.
- A white stain may be generated on the surface of the high-glossy model due to the inherent characteristics of the material, if a supersonic humidifier is used.



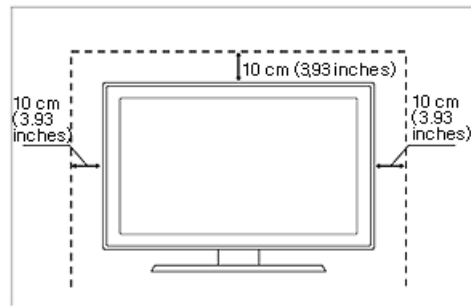
 The appearance and the color may differ depending on the model.

Securing the Installation Space

- Keep the required distances between the product and other objects (e.g. walls) to ensure proper ventilation. Failing to do so may result in fire or a problem with the product due to an increase in the internal temperature. Install the product so the required distances shown in the figure are kept.

 The appearance may differ depending on the product.

When installing the product with a stand



About persistent images

- Displaying a still image for a long time may create a persistent image or stain on the screen. If you do not use the product for a long time, set the power-saving mode or screen saver.
- Due to technological constraints of the panel manufacturer, the images generated by this product may appear either brighter or darker than normal for approximately 1 ppm (parts per million) pixels.

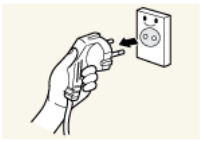
The number of sub-pixels by panel type: The number of Sub-Pixels = Max. Horizontal Resolution x Max. Vertical Resolution x 3

Example) If the maximum resolution is 1920 x 1080, the number of sub-pixels is 1920 x 1080 x 3 = 6,220,800.


1-3 Cleaning the Monitor

Cleaning the Monitor

- The panel and exterior of the cutting-edge monitor scratch easily and require careful attention. Clean the monitor according to the following steps.



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

 To avoid electric shock, be sure you disconnect the cable by gripping the plug and do not touch the cable with wet hands.



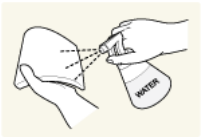
3. Wipe the monitor using a soft, slightly damp cloth that has been squeezed .



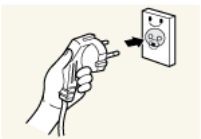
- Do not use a cleaning agent that contains alcohol or solvents, or that is surface active. Otherwise, the exterior may discolor or crack or the panel coating may come off.



- Do not spray water or cleaning agent directly onto the monitor. Otherwise, the liquid may sink into the monitor and cause a fire, electric shock, or failure.



4. Clean the exterior of the monitor using a soft cloth dampened with a small amount of water.



5. Connect the power cable to the monitor after you have finished cleaning.
6. Power on the monitor and PC.

Precautions for Storage

- Using an ultrasonic humidifier may cause white stains on a highly glossy product.

 Be sure you contact the nearest service center (paid service) for cleaning the inside of the monitor.

1-4 Safety Precautions

Icons used for safety precautions

ICON	NAME	MEANING
	Warning	Failing to follow the precautions marked with this sign, may result in a serious injury or even a fatality.
	Caution	Failing to follow the precautions marked with this sign, may result in a personal injury or property damage.

Meaning of Signs



Do not perform.



Must be followed.



Do not disassemble.



The power plug must be unplugged from the wall outlet.



Do not touch.



Must be grounded to prevent electric shock.

Power Related

The product image used in the following pictures for your reference may look different from the actual product.

Warning



Avoid using a damaged power cord or plug or a loose power outlet.

- Otherwise, it may result in electric shock or fire.



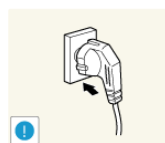
Avoid connecting multiple electric appliances to a single wall outlet.

- Otherwise, it may result in fire due to overheating of the wall outlet.



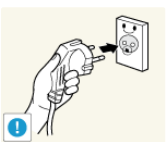
Avoid plugging in or unplugging the power supply with wet hands.

- Otherwise, it may result in electric shock.



Plug the power plug in firmly.

- Otherwise, it may result in fire.



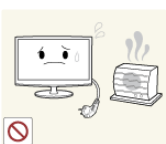
Make sure to connect the power cord to a grounded wall outlet (for insulation class 1 equipment only).

- Otherwise, it may result in electric shock or injury.



Avoid bending or twisting the power cord excessively and avoid placing heavy objects on the cord.

- Otherwise, it may result in electric shock or fire due to a damaged power cord.



Keep the power cord and the product away from a heater.

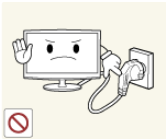
- Otherwise, it may result in electric shock or fire.



If the pins of the power plug or the wall outlet are covered in dust, clean it using a dry cloth.

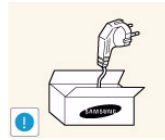
- Otherwise, it may result in fire.

Caution



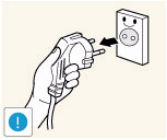
Avoid unplugging the power plug while the product is operating.

- Otherwise, it may damage the product due to electric shock.



Make sure to use only the power cord supplied by our company. In addition, do not use the power cord of another electric appliance.

- Otherwise, it may result in electric shock or fire.



When unplugging the power plug from the wall outlet, make sure to hold it by the plug and not by the cord.

- Otherwise, it may result in electric shock or fire.



Connect the power plug to a wall outlet that can be easily reached.

- When a problem occurs with the product, you must unplug the power plug to cut the power off completely. You cannot cut the power off completely using only the power button on the product.

Installation Related

Warning



Avoid placing burning candles, mosquito-repellent or cigarettes on the product and installing the product near a heater.

- Otherwise, it may result in fire.



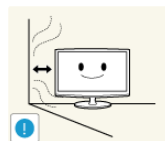
Ask an installation engineer or relevant company to install the product onto the wall.

- Otherwise, it may result in injury.
- Make sure to use the specified wall mount.



Avoid installing the product in a badly-ventilated location such as inside a bookshelf or closet.

- Otherwise, it may result in fire due to internal over-heating.



Keep a distance of at least 10 cm from the wall when installing the product for ventilation.

- Otherwise, it may result in fire due to internal over-heating.



Keep the plastic bags used to pack the product away from children.

- If children place the plastic bags over their heads, they may suffocate.



Avoid installing the product in a location that is unstable or exposed to excessive vibrations such as on an unstable or slanted shelf.

- The product may fall and this may result in damage to the product or injury.
- If you use the product in a location exposed to excessive vibrations, it may result in a problem with the product or fire.



Avoid installing the product in a location exposed to dust, moisture (sauna), oil, smoke or water (rain drops) and installing it within a vehicle.

- This may result in electric shock or fire.



Avoid installing the product in a location exposed to direct sunlight and installing the product near a heat source such as a fire or heater.

- This may shorten the product life cycle or cause fire.



Avoid installing the product at an easily reachable height where children may reach it.

- If a child touches the product, the product may fall and this may result in injury.

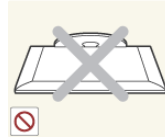
- Since the front part is heavier, install the product on a flat and stable surface.

Caution



Do not let the product drop while moving it.

- This may result in a problem with the product or injury.



Do not place the product face down on the floor.

- This may damage the panel of the product.



When installing the product on a console or shelf, make sure that the front of the product does not protrude out of the console or shelf.

- Otherwise, this may cause the product to fall off and result in a malfunction or injury.
- Make sure to use a cabinet or shelf suitable to the size of the product.



When putting the product down, handle it gently.

- Otherwise, it may result in a problem with the product or injury.



If the product is installed in a location where the operating conditions vary considerably, a serious quality problem may occur due to the surrounding environment. In this case, install the product only after consulting one of our service engineers about the matter.

- Places exposed to microscopic dust, chemicals, too high or low temperature, high humidity, such as airports or stations where the product is continuously used for a long time and so on.

Cleaning Related



Since using a surfactant, which contains a large amount of alcohol, solvent or other strong chemicals, may result in the discoloration or cracking of the product exterior or the panel surface coming off, be sure to use the recommended cleansing agent only.

You can purchase the recommended cleansing agent from a service center.



Before cleaning the product, unplug the power cord.

- Otherwise, it may result in electric shock or fire.



When cleaning the product, do not spray water directly over the product parts.

- Make sure that water does not enter the product.
- Otherwise, it may result in fire, electric shock or a problem with the product.

Caution



Avoid spraying cleansing agent directly onto the product.

- This may result in discoloration or cracking of the exterior of the product or the panel coming off.



When cleaning the product, disconnect the power cord and clean the product with a soft dry cloth.

- Avoid using chemicals such as wax, benzene, alcohol, thinner, mosquito-repellent, fragrance, lubrication or cleansing agent when cleaning the product.

This may result in the exterior being deformed or the print being removed.



Use a soft, damp cloth with a "monitor-exclusive cleansing agent" and wipe the product with it.

- If no monitor-exclusive cleansing agent is available, dilute a cleansing agent with water at a ratio of 1:10 before cleaning the product.



Since the exterior of the product is easily scratched, be sure to use a proper cleansing cloth. Use the cleansing cloth with a small amount of water. However, if the cloth is contaminated by alien substances, it may result in scratches to the exterior; therefore shake off any alien substances from the cloth before using it.

Usage Related

Warning



Since a high voltage runs through the product, never disassemble, repair or modify the product yourself.

- Otherwise, it may result in fire or electric shock.
- If the product needs to be fixed, contact a service center.



When cleaning the product, do not spray water directly over the product parts.

- Make sure that water does not enter the product.
- Otherwise, it may result in fire, electric shock or a problem with the product.



If the product generates a strange noise, a burning smell, or smoke, unplug the power plug immediately and contact a service center.

- Otherwise, it may result in electric shock or fire.



Avoid letting children to hang or climb onto the product.

- Otherwise, it may result in the product falling and this may result in injury or death.



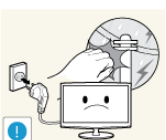
If you drop the product or the case is damaged, turn the power off and unplug the power cord. Contact a service center.

- Otherwise, it may result in fire or electric shock.



Avoid placing objects such as toys and cookies on top of the product.

- If a child hangs over the product to grab an object, the object or the product may fall and this may result in injury or even death.



When thunder or lightning occurs, unplug the power cord and under no circumstance touch the antenna cable as this is dangerous.

- Otherwise, it may result in electric shock or fire.



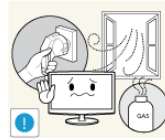
Avoid dropping an object over the product or cause impact to the product.

- Otherwise, it may result in electric shock or fire.



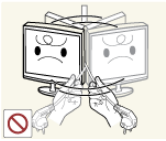
Avoid moving the product by pulling the power cord or antenna cable.

- Otherwise, it may result in electric shock, fire or a problem with the product due to damage to the cable.



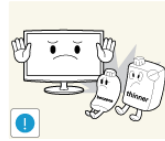
When a gas leak occurs, do not touch the product or the power plug and ventilate immediately.

- A spark may result in an explosion or fire.
- During a thunder or lightning storm, do not touch the power cord or antenna cable.



Avoid lifting up or move the product by holding only the power cord or signal cable.

- Otherwise, it may result in electric shock, fire or a problem with the product due to damage to the cable.



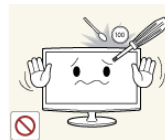
Avoid using or placing inflammable spray or objects near the product.

- This may result in an explosion or fire.



Take care not to block the vent by a table cloth or curtain.

- Otherwise, it may result in fire due to internal overheating.



Avoid inserting metal objects such as a chopsticks, coins or hairpins, or inflammable objects into the product (the vents, ports, etc).

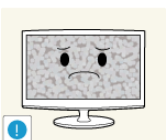
- If water or an alien substance enters the product, turn the power off, unplug the power cord and contact a service center.
- Otherwise, it may result in a problem with the product, electric shock or fire.



Avoid placing a liquid container such as a vase, flowerpot, beverage, cosmetics or drugs, or a metal object over the product.

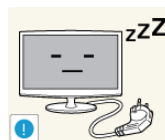
- If water or an alien substance enters the product, turn the power off, unplug the power cord and contact a service center.
- Otherwise, it may result in a problem with the product, electric shock or fire.

Caution



Displaying a still image for a long time may create a persistent image or stain on the screen.

- If you do not use the product for a long time, use the power-saving mode or set the screensaver to the moving picture mode.



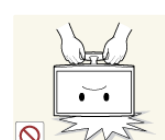
When not using the product for a long time such as leaving your home, unplug the power cord from the wall outlet.

- Otherwise, it may cause dust accumulation and result in fire caused by overheating or short circuit or result in an electric shock.



Set the appropriate resolution and frequency for the product.

- Otherwise, it may result in eye strain.



Avoid turning the product upside down or move the product holding only the stand.

- This may cause the product to fall resulting in damage to the product or injury.



Do not place the adapter on top of another adapter.

- Otherwise, it may result in fire.



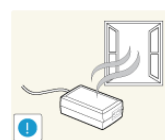
Keep power adaptor away from any other heat source.

- Otherwise, it may result in fire.



Remove the vinyl cover of the adapter before using the adaptor.

- Otherwise, it may result in fire.

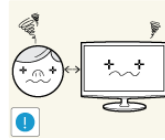


Always keep power adaptor in well-ventilated area.



Be careful that adaptor should not be in contact with water and therefore not be wet.

- This may cause a malfunction, electric shock or fire. Do not use adaptor by the waterside or outside particularly when it rains or snows. Be careful that adaptor should not be wet while cleaning floor with water.

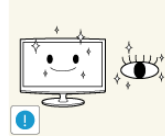


Watching the product from too close a distance continuously may damage your eyesight.



Avoid using a humidifier or cooker near the product.

- Otherwise, it may result in electric shock or fire.



It is important to give your eyes some rest (5 minutes every hour) when viewing the product screen for long periods of time.

- This will alleviate any eye strain.



Since the display panel is hot after using it for a long time, do not touch the product.



Keep small accessories away from the children.



Take care when adjusting the angle of the product or the height of the stand.

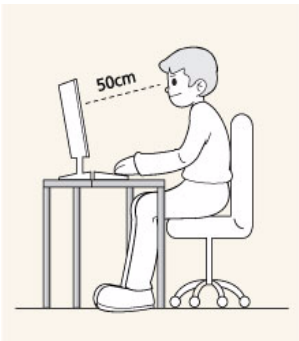
- If your hand or finger is caught, you may be injured.
- If the product is tilted excessively, the product may fall and this may result in injury.



Avoid placing a heavy object over the product.

- Otherwise, it may result in a problem with the product or injury.

Maintaining the Correct Posture when Using this Product



Maintain the correct posture when using this product.

- Straighten your back.
- Keep a distance of 45~50 cm from your eyes to the screen. Look down at the screen and face the screen forwards.
- Adjust the angle of the product so that light is not reflected onto the screen.
- Keep your elbow at a right angle and keep your arm level with the back of your hand.
- Keep your elbow at a right angle.
- Place your heels flat on the ground while keeping your knees at an angle of 90 degrees or higher and maintain the position of your arm so that your arm is below your heart.

2 Installing the Product










2-1 Package Contents

- Unpack the product and check if all of the following contents have been included.
- Store the packaging box in case you need to move the Product at a later stage.






Monitor

Contents

			
Installation Manual	Product Warranty (Not available in all locations)	User Manual	D-Sub Cable
			
Power Cord	DC-Adapter	Stand Base	Stand Body
			
Cover Rear Sub			

OPTIONAL PARTS

			
HDMI Cable	HDMI to DVI Cable	Cleaning Cloth	

- The cleaning cloth is supplied with black high-glossy models only.

2-2 Installing the Stand

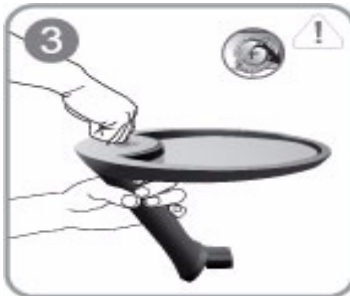
Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.



Insert the Stand Connector into the Stand in the direction shown by the figure.



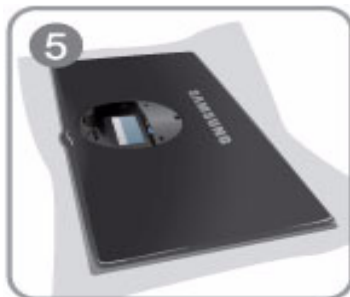
Check if the Stand Connector is firmly connected.



Turn the connecting screw at the bottom of the stand fully so that it is completely fixed.

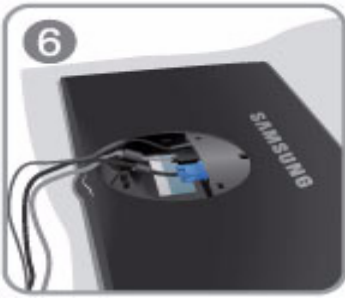


Open the back cover of the stand by pushing it toward the indicated direction (upwards at 45°).



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

Plug the data cable and power cable into corresponding ports in the monitor.



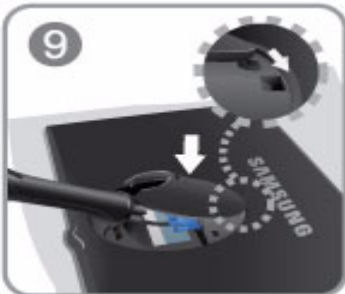
Organize the installed data cable and power cable in the stand. Put each cable into the groove along the stand.



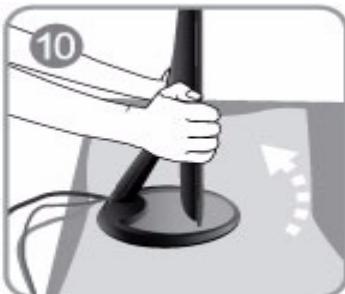
Reinstall the back cover of the stand. Make sure that each cable is inside the stand.



Install cover rear sub and hide all cable connections under it. Installation completed.



Hold the monitor head, and put it vertical.





- Caution

There is sharp edge in the stand, please caution.



- Caution

Avoiding lifting the monitor by the stand when it is lying face down.



- Caution

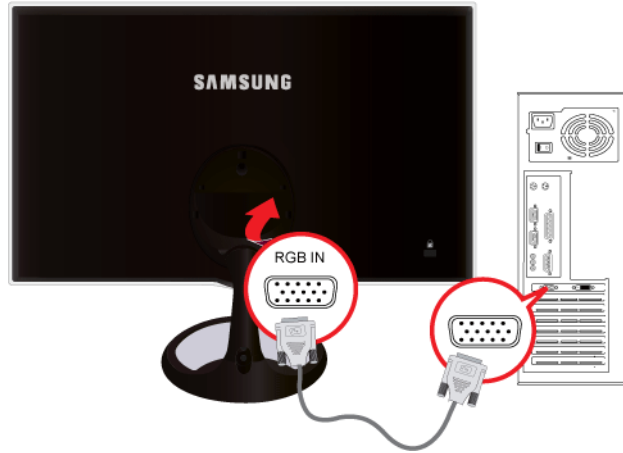
Avoid lifting the product holding only the stand.

- Disassembly is in the reverse order of the assembly.
- Please use the adapter and signal cables we provide in the accessory, other adapters and signal cables may not match.
- When separate purchase is needed, please check the installation state first.

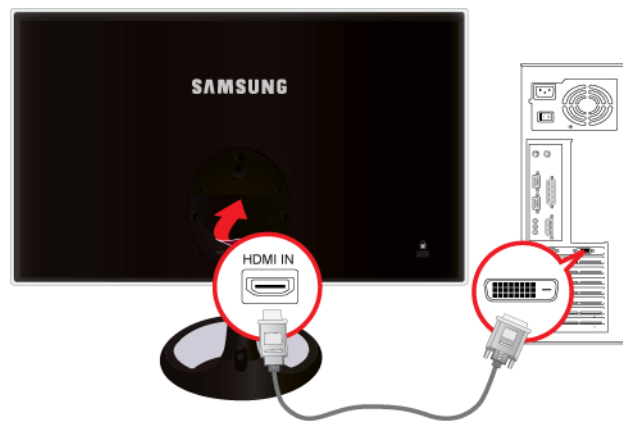
2-3 Connecting with a PC

📌 The connecting part may differ depending on the product model.

1. Connect the product to a PC depending on the video output supported by the PC.
 - When the graphics card provides D-Sub (<Analog>) output
 - Connect the [RGB IN] port of the product to the [D-Sub] port of the PC with the D-Sub cable.



- When the graphics card provides DVI (<Digital>) output
- Connect the [HDMI IN] port of the product to the [DVI] port on your PC using the HDMI to DVI cable.



📌 The [HDMI IN] terminal is supplied for the HDMI-dedicated models only.

2. Connect the power adapter to [DC 12V/14V] on the rear of the product. Connect the power cord to the adapter and wall socket.
(The input voltage is switched automatically.)



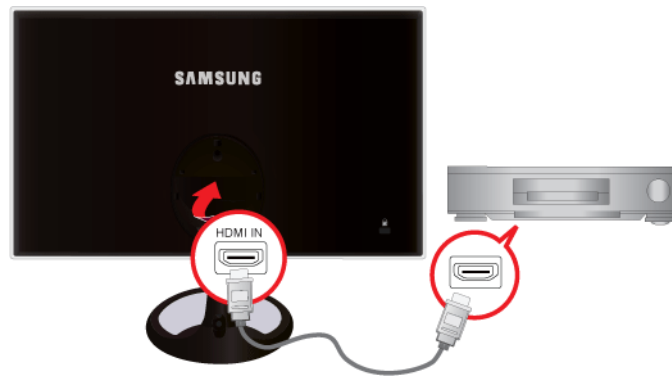
📌 When the product is connected to a PC, you can turn the product on and use it.

3. Cables can be fixed as shown.



2-4 Connecting an HDMI cable

1. Connect the HDMI output port of your digital output device to the [HDMI IN] port of the product using the HDMI cable.



- The [HDMI IN] terminal is supplied for the HDMI-dedicated models only.

2-5 Kensington Lock


A Kensington Lock is an anti-theft device that enables users to lock the product so that they can safely use it in public locations. Since the shape and usage of the locking device may differ depending on the model and the manufacturer, for more information, refer to the User Manual supplied with the locking device for more information.

 You must purchase the Kensington Lock separately.



To lock the product, follow these steps:

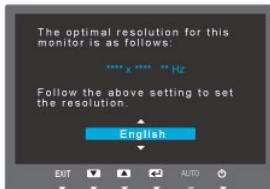
1. Wrap the Kensington lock cable around a large, stationary object such as a desk or chair.
2. Slide the end of the cable with the lock attached through the looped end of the Kensington lock cable.
3. Insert the locking device into the Kensington slot on the Monitor (B).
4. Lock the lock (A).

-  • These are general instructions. For exact instructions, see the User Manual supplied with the locking device.
- You can purchase the locking device from an electronics store, an online shop, or our service center.

3 Using the product

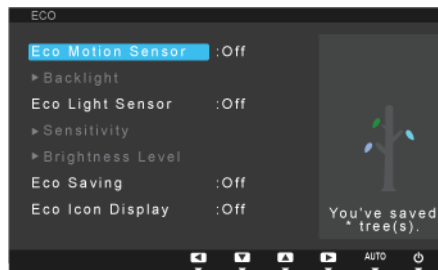
3-1 Setting the Optimal Resolution

If you turn the power on after purchasing the product, a message regarding the optimal resolution setting appears on the screen. Select a language and the optimal resolution.



▲/▼ : You can select a language with these buttons.
MENU : If you press this button, the message disappears.

- The message appears up to 3 times if the resolution has not been set to the optimal resolution.
- To set the resolution to the optimal resolution
 - When the PC is turned off, connect the product and the PC and turn the power on.
 - Right-click over the Desktop and select 'Properties' from the pop-up menu.
 - In the 'Settings' tab, set the resolution to the optimal resolution.
- After the resolution setting message appears, the whole ECO menu appears where the user can configure the settings.
- This menu appears three times after you install the monitor. It appears for approximately 10 seconds each time.



3-2 Standard Signal Mode Table

 This product delivers the best picture quality when viewed under the optimal resolution setting. The optimal resolution is dependent on the screen size.

Therefore, the visual quality will be degraded if the optimal resolution is not set for the panel size. It is recommended setting the resolution to the optimal resolution of the product.

If the signal from the PC is one of the following standard signal modes, the screen is set automatically. However, if the signal from the PC is not one of the following signal modes, a blank screen may be displayed or only the Power LED may be turned on. Therefore, configure it as follows referring to the User Manual of the graphics card.

S20A550H

DISPLAY MODE	HORIZONTAL FREQUENCY (KHZ)	VERTICAL FREQUENCY (HZ)	PIXEL CLOCK (MHZ)	SYNC POLARITY (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
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	+/+
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 800	62.795	74.934	106.500	-/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1440 x 900	70.635	74.984	136.750	-/+
VESA, 1600 x 900	60.000	60.000	108.000	+/+

Horizontal Frequency

The time taken to scan one line from the left-most position to the right-most position on the screen is called the horizontal cycle and the reciprocal of the horizontal cycle is called the horizontal frequency. The horizontal frequency is represented in kHz.

Vertical Frequency

A panel must display the same picture on the screen tens of times every second so that humans can see the picture. This frequency is called the vertical frequency. The vertical frequency is represented in Hz.

3-3 Standard Signal Mode Table

 This product delivers the best picture quality when viewed under the optimal resolution setting. The optimal resolution is dependent on the screen size.

Therefore, the visual quality will be degraded if the optimal resolution is not set for the panel size. It is recommended setting the resolution to the optimal resolution of the product.

If the signal from the PC is one of the following standard signal modes, the screen is set automatically. However, if the signal from the PC is not one of the following signal modes, a blank screen may be displayed or only the Power LED may be turned on. Therefore, configure it as follows referring to the User Manual of the graphics card.

S23A550H

DISPLAY MODE	HORIZONTAL FREQUENCY (KHZ)	VERTICAL FREQUENCY (HZ)	PIXEL CLOCK (MHZ)	SYNC POLARITY (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 800	62.795	74.934	106.500	-/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
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, 1440 x 900	70.635	74.984	136.750	-/+
VESA, 1600 x 1200	75.000	60.000	162.000	+/+
VESA, 1680 x 1050	65.290	59.954	146.250	-/+
VESA, 1920 x 1080	67.500	60.000	148.500	+/+


Horizontal Frequency

The time taken to scan one line from the left-most position to the right-most position on the screen is called the horizontal cycle and the reciprocal of the horizontal cycle is called the horizontal frequency. The horizontal frequency is represented in kHz.

Vertical Frequency

A panel must display the same picture on the screen tens of times every second so that humans can see the picture. This frequency is called the vertical frequency. The vertical frequency is represented in Hz.

3-4 Standard Signal Mode Table

 This product delivers the best picture quality when viewed under the optimal resolution setting. The optimal resolution is dependent on the screen size.

Therefore, the visual quality will be degraded if the optimal resolution is not set for the panel size. It is recommended setting the resolution to the optimal resolution of the product.

If the signal from the PC is one of the following standard signal modes, the screen is set automatically. However, if the signal from the PC is not one of the following signal modes, a blank screen may be displayed or only the Power LED may be turned on. Therefore, configure it as follows referring to the User Manual of the graphics card.

S27A550H

DISPLAY MODE	HORIZONTAL FREQUENCY (KHZ)	VERTICAL FREQUENCY (HZ)	PIXEL CLOCK (MHZ)	SYNC POLARITY (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
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VESA, 1280 x 800	62.795	74.934	106.500	-/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
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, 1440 x 900	70.635	74.984	136.750	-/+
VESA, 1600 x 1200	75.000	60.000	162.000	+/+
VESA, 1600 x 1050	65.290	59.954	146.250	-/+
VESA, 1920 x 1080	67.500	60.000	148.500	+/+

Horizontal Frequency

The time taken to scan one line from the left-most position to the right-most position on the screen is called the horizontal cycle and the reciprocal of the horizontal cycle is called the horizontal frequency. The horizontal frequency is represented in kHz.

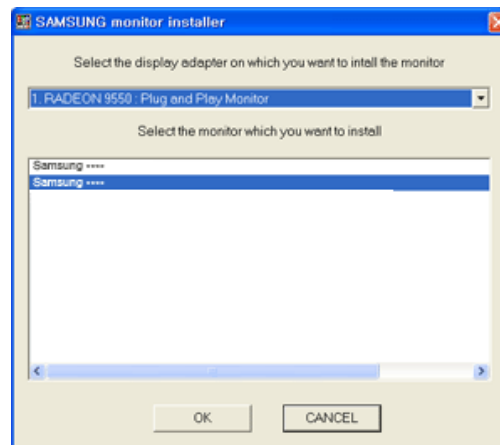
Vertical Frequency

A panel must display the same picture on the screen tens of times every second so that humans can see the picture. This frequency is called the vertical frequency. The vertical frequency is represented in Hz.

3-5 Installing the Device Driver

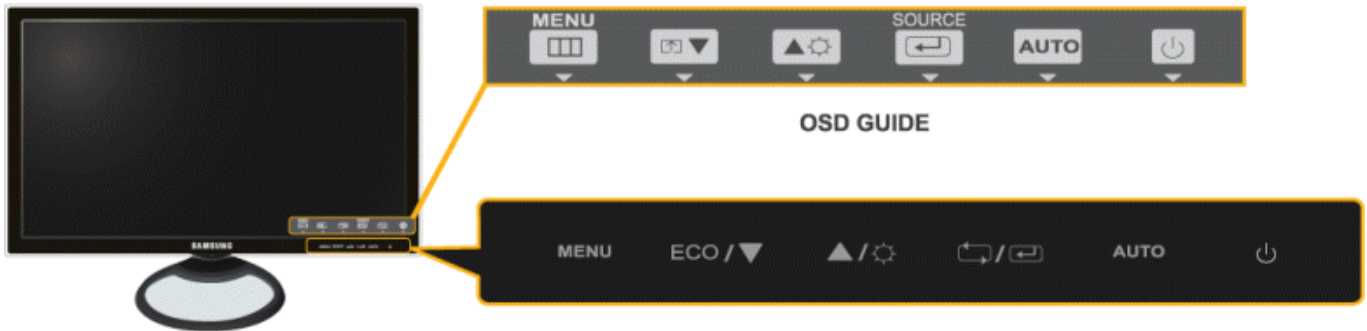
❏ If you install the device driver, you can set up the appropriate resolution and frequency for the product. The device driver is included on the CD-ROM supplied with the product. If the supplied drive file is corrupted, please visit a service center or Samsung Electronics website(<http://www.samsung.com/>), and download the driver.

1. Insert the driver installation CD-ROM into the CD-ROM drive.
2. Click on "Windows Driver".
3. Complete the remaining installation steps according to the instructions displayed on the screen.
4. Select the model of your product from the model list.














5. Check if the appropriate resolution and screen refresh rate are displayed in the Control Panel settings. For more information, refer to the document about the Windows operating system.

Product Operating Buttons








- Press one of the buttons on the monitor. OSD Guide will appear on the screen.
- If you press a button on the front of the monitor, an OSD Guide will display showing the function of the button before the menu for the pressed button appears.
- To go to the menu, press the button on the front of the monitor again.

ICON	DESCRIPTION
<p>MENU</p>	<p>Press this button to view the On Screen Display (OSD). This button is also used to exit the OSD or to return to a higher-level OSD menu</p> <p>* OSD Adjustment Lock This function locks the OSD in order to maintain the current settings or to prevent the settings from being changed by another person</p> <p>On: If you press and hold the MENU button down for 5 seconds, the OSD Adjustment Lock function is activated. Off: If you press and hold the MENU button down for 5 seconds again, the OSD Adjustment Lock function is disabled.</p> <p> Even if the OSD Adjustment Lock function is activated, users can adjust the brightness and contrast and can set up the adjustment function assigned to the [ECO].</p>
<p>ECO</p>	<p>Users can set the <Customized Key> to one of the following functions.</p> <ul style="list-style-type: none"> • <ECO> - <MAGIC> - <Image Size> <p> You can set the function of the <Customized Key> by selecting <SETUP&RESET> -> <Customized Key> in the OSD.</p>
<p>▲/▼</p>	<p>Use these buttons to navigate the menu or to adjust a value in the OSD.</p>
<p></p>	<p>Use this button to control the brightness of the screen.</p>
<p></p>	<p>Use this button to select a function.</p> <p>If you press the [] button when there is no OSD, the input signal (Analog/Digital/HDMI) is switched. When the input signal is switched by pressing [] button or the product is turned on, a message displaying the selected input signal appears at the top left of the screen.</p> <p> This function is not available for products with an Analog interface only.</p>

ICON	DESCRIPTION
<p>AUTO</p>	<p>Press [AUTO] button to adjust the screen settings automatically</p> <p> This function is only available in Analog mode.</p> <p>If the resolution settings are changed in the Display Properties, the AUTO adjustment function is performed.</p>
<p></p>	<p>Press this button to turn the product on or off</p> <p> • The buttons on the right of the product are touch-type buttons.</p> <p>• Touch the buttons lightly with your finger.</p> <p>Power LED</p> <p>This LED is turned on when the product works normally.</p> <p> For more information on the power-saving function, refer to the power saving function in More Information. When not using the product for a long time, unplugging the power cord is recommended to minimize power consumption.</p>

3-7 Using the Screen Adjustment Menu (OSD: On Screen Display)

The Screen Adjustment Menu (OSD: On Screen Display) Structure

Top Menu	Sub Menus				
 PICTURE	MAGIC	Brightness	Contrast	Sharpness	Response Time
	HDMI Black Level				
 COLOR	Red	Green	Blue	Color Tone	Gamma
 SIZE&POSITION	Image Size	H-Position	V-Position	Menu H-Position	Menu V-Position
 SETUP&RESET	ECO	Menu Transparency	Language	PC/AV Mode	Auto Source
	Display Time	Key Repeat Time	Customized Key	Off Timer On/Off	Off Timer Setting
	Reset				
 INFORMATION					

 Monitor functions may vary according to models. Please refer to actual product.











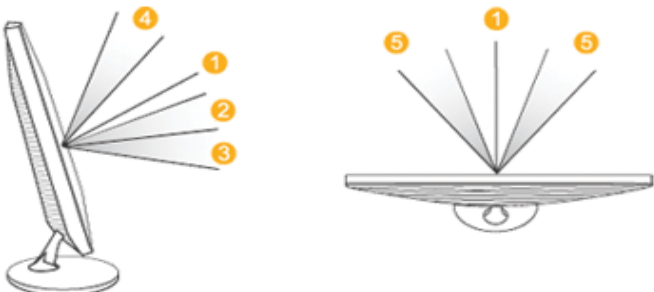

PICTURE






<PC signals>



<AV signals>






Menu	Description
MAGIC	<p>Sub items of <MAGIC> include: <SAMSUNG MAGIC Angle> / <SAMSUNG MAGIC Bright> / <SAMSUNG MAGIC Color>.</p> <div data-bbox="710 257 1157 526" style="text-align: center;">  </div> <ul style="list-style-type: none"> • <SAMSUNG MAGIC Angle> <p>This feature allows you to see optimal screen quality according to your viewing position. When viewing the screen at an angle from below, above or the side of the monitor, by setting the appropriate mode for each position you can obtain a similar picture quality as viewing the screen directly from the front.</p> <p> Set to <Off> when viewing directly in front of the screen.</p> <ul style="list-style-type: none"> • <Off>  - Select when viewing from the front position. • <Lean Back Mode1>  - Select when viewing from a slightly lower position. • <Lean Back Mode2>  - Select when viewing from the lower position. • <Standing Mode>  - Select when viewing from the upper position. • <Side Mode>  - Select when viewing from the left or right position. • <Group View> - Select when two or more persons view among , ,  position at the same time. • <Custom> - When <Custom> is selected, settings for <Lean Back Mode 1> is applied by default. Users can set suitable picture quality as needed. <div data-bbox="635 1265 1292 1556" style="text-align: center;">  </div> <p> • This menu is unavailable when <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast> or <Cinema> mode.</p> <p>• This menu is unavailable when <SAMSUNG MAGIC Color> is set.</p>

Menu	Description
MAGIC	<ul style="list-style-type: none"> • <SAMSUNG MAGIC Bright> Provides preset picture settings optimized for various user environments such as editing a document, surfing the Internet, playing games, or movies and so on. <ul style="list-style-type: none"> • <Custom> If the preset picture modes are not sufficient, users can configure the <brightness> and <Contrast> directly using this mode. • <Standard> This mode provides the picture setting appropriate for editing a document and surfing the Internet (text + picture). • <Game> This mode provides the picture setting appropriate for playing games that include lots of graphics and that require a fast screen refresh rate. • <Cinema> This mode provides brightness and sharpness settings similar to those of a TV for the best entertainment environment (movie, DVD, etc.). • <Dynamic Contrast> Controls the picture contrast automatically so that bright and dark pictures are balanced overall. <p>When the external input is connected through HDMI and <PC/AV Mode> is set to <AV>, <SAMSUNG MAGIC Bright> has four automatic picture settings (<Dynamic>, <Standard>, <Movie> and <Custom>) that are preset at the factory. You can activate either Dynamic, Standard, Movie or Custom. You can select Custom which automatically recalls your personalized picture settings.</p> <ul style="list-style-type: none"> • <Dynamic> Select this mode to view a sharper image than in Standard mode. • <Standard> Select this mode when the surroundings are bright. This also provides a sharp image. • <Movie> Select this mode when the surroundings are dark. This will save power and reduce eye fatigue. • <Custom> Select this mode when you want to adjust the image according to your preferences. <p> This menu is unavailable when <SAMSUNG MAGIC Angle> or <Eco Saving> or <Eco Light Sensor> is set.</p>
MAGIC	<ul style="list-style-type: none"> • <SAMSUNG MAGIC Color> Expresses natural colors more clearly without changing the picture quality using proprietary digital picture quality improvement technology developed by Samsung Electronics. <ul style="list-style-type: none"> • <Off> - Turns the <SAMSUNG MAGIC Color> function off. • <Demo> - You can compare the pictures processed by <SAMSUNG MAGIC Color> with the original pictures. • <Full> - Provides a clearer picture including areas corresponding to skin color. • <Intelligent> - Improves the chroma of pictures except for areas corresponding to skin color. <p> This menu is unavailable when <SAMSUNG MAGIC Angle> is set.</p>
Brightness	<p>Controls the screen brightness.</p> <p> • This menu is unavailable when <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast> mode.</p> <p>• This menu is unavailable when <Eco Saving> or <Eco Light Sensor> is set.</p>

Menu	Description
Contrast	<p>Controls the contrast of the pictures displayed on the screen</p> <ul style="list-style-type: none"> • This menu is unavailable when SAMSUNG MAGIC Bright is set to <Dynamic Contrast> or <Cinema> mode. • This menu is unavailable when SAMSUNG MAGIC Color is set to <Full> mode or <Intelligent> mode.
Sharpness	<p>Controls the clarity of details of pictures displayed on the screen</p> <ul style="list-style-type: none"> • This menu is unavailable when SAMSUNG MAGIC Bright is set to <Dynamic Contrast> or <Cinema> mode. • This menu is unavailable when SAMSUNG MAGIC Color is set to <Full> mode or <Intelligent> mode.
Response Time	<p>Accelerates the response time of the panel faster than the original response time so that moving pictures appear sharper and more natural.</p> <ul style="list-style-type: none"> • <Normal> • <Faster> • <Fastest> <ul style="list-style-type: none"> • It is recommended setting the <Normal> or <Faster> when not viewing a movie. • Monitor functions may vary according to models. Please refer to actual product.
HDMI Black Level	<p>When watching with a DVD or set-top box connecting to the product via HDMI, image quality deterioration (black level, lower-quality contrast, lighter color tone, etc.) may occur depending on the connected external device.</p> <ul style="list-style-type: none"> • <Normal> • <Low> <ul style="list-style-type: none"> • This function is active only when the external device is connected via <HDMI>. The <HDMI Black Level> function may not be compatible with all external devices.

COLOR



Menu	Description
Red	You can adjust the red color value of pictures according to your preference.  This menu is unavailable when <SAMSUNG MAGIC Color> is set to <Full> mode or <Intelligent> mode.
Green	You can adjust the green color value of pictures according to your preference.  This menu is unavailable when <SAMSUNG MAGIC Color> is set to <Full> mode or <Intelligent> mode.
Blue	You can adjust the blue color value of pictures according to your preference.  This menu is unavailable when <SAMSUNG MAGIC Color> is set to <Full> mode or <Intelligent> mode.
Color Tone	You can set the color temperature according to your preference. <ul style="list-style-type: none"> <Cool 2> - Sets the color temperature of the screen to very cool. <Cool 1>- Sets the color temperature of the screen to cool. <Normal> - Sets the color temperature of the screen to the standard color temperature. <Warm 1> - Sets the color temperature of the screen to warm. <Warm 2> - Sets the color temperature of the screen to very warm. <Custom> - Select this menu to set the color temperature manually. If you do not like the preset color temperatures, you can manually adjust the value of RGB.  <ul style="list-style-type: none"> This menu is unavailable when <SAMSUNG MAGIC Color> is set to <Full> mode or <Intelligent> mode. This menu is unavailable when <SAMSUNG MAGIC Angle> is set.
Gamma	Using this menu, you can change the intensity of the colors of medium brightness. <ul style="list-style-type: none"> <Mode1> - <Mode2> - <Mode3>  This menu is unavailable when <SAMSUNG MAGIC Angle> is set.

 This is unavailable when <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast> and <Cinema> mode.

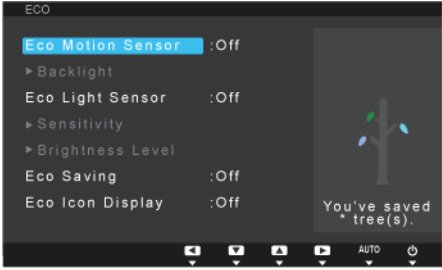

SIZE & POSITION





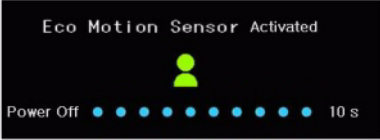
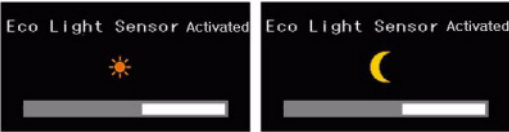

Menu	Description
Image Size	<p>🔒 Supplied for the wide models only such as 16:9 or 16:10.</p> <p>PC signals</p> <ul style="list-style-type: none"> • <Auto> - The picture is displayed at the aspect ratio of the input signal. • <Wide> - The picture is displayed in full screen regardless of the aspect ratio of the input signal. <p>🔒</p> <ul style="list-style-type: none"> • A signal not in the standard mode table is not supported. • If the resolution is set to the optimal resolution, the aspect ratio does not change whether the <Image Size> is set to <Auto> or <Wide>. <p>AV signals</p> <ul style="list-style-type: none"> • <4 : 3> - Displays pictures at the 4:3 aspect ratio. • <16 : 9> - Displays pictures at the 16:9 aspect ratio. • <Screen Fit> - If a 720P, 1080i or 1080P signal is input in HDMI/DVI input mode, the picture is displayed as is without truncation. <p>🔒 This can only be set when the external input is connected through HDMI/DVI and <PC/AV Mode> is set to <AV>.</p> <ul style="list-style-type: none"> •
H-Position	<p>Moves the position of the display area on the screen horizontally.</p> <p>🔒</p> <ul style="list-style-type: none"> • This function is only available in Analog mode. • When a 720P, 1080i or 1080P signal is input in AV mode ,select <Screen Fit >to adjust horizontal position in 0-6 levels.
V-Position	<p>Moves the position of the display area on the screen vertically.</p> <p>🔒</p> <ul style="list-style-type: none"> • This function is only available in Analog mode. • When a 720P, 1080i or 1080P signal is input in AV mode ,select <Screen Fit >to adjust vertical position in 0-6 levels.
Menu H-Position	You can adjust the horizontal position of the OSD.
Menu V-Position	You can adjust the vertical position of the OSD.

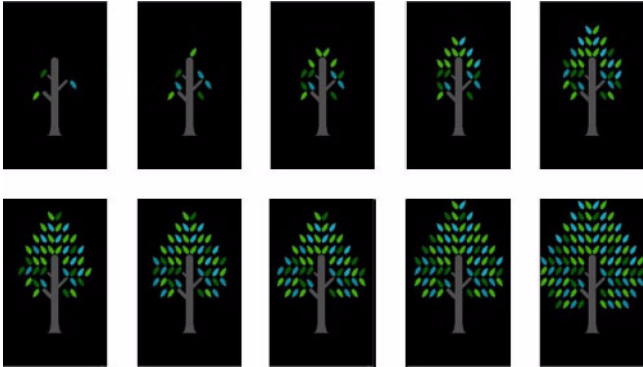




🔧 SETUP&RESET




Menu	Description
ECO	<p>The <Eco Motion Sensor>, <Eco Light Sensor>, and <Eco Saving> options are displayed on the same menu page so that you can conveniently configure the power saving settings.</p>  <p>There are two ways to access the ECO menu page.</p> <ul style="list-style-type: none"> • Click "ECO/▼" (hot key), which is the second function key, to go directly to the ECO menu page. (Note that the key will function as a hot key only when <Customized Key> is set to ECO. ECO is selected by default.) • Alternatively, go to the <SETUP&RESET> menu. <p><Eco Motion Sensor></p> <p>The <Eco Motion Sensor> activates to save power when it does not detect any movement within a specified area for a specified period of time.</p> <p>Configuring settings</p> <ul style="list-style-type: none"> • Time setting Deactivate the <Eco Motion Sensor> (<Off>) or select the time interval for the sensor to activate: <5 min>, <10 min>, <20 min>, <30 min>, or <1 h>. • <Backlight> Customize the controls for the monitor screen when <Eco Motion Sensor> is active. <ul style="list-style-type: none"> • <Off> - Turn off the screen and activate DPMS mode. If <Off> is selected, it takes several seconds for the monitor to detect movement and turn on after it turned off. • <Dimming> - Reduce the brightness of the screen (still turned on). <p> • The optimal working area for <Eco Motion Sensor> is within a certain distance (1m) and at certain angle (40°).</p> <ul style="list-style-type: none"> • If there is no user movement, the <Eco Motion Sensor> may fail to detect motion. • If you think that the mode entry message appears too frequently, increase the time setting of the <Eco Motion Sensor> or turn the <Eco Icon Display> <Off>. • Avoid using radio equipment such as a walkie-talkie near the product as this may cause a product malfunction.

Menu	Description
ECO	<ul style="list-style-type: none"> • <Eco Light Sensor> The <Eco Saving> feature optimizes the view condition and contributes to power saving by adjusting the screen brightness depending on the ambient light intensity. <ul style="list-style-type: none">  • This menu is unavailable when <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast> mode. • This menu is unavailable when <Eco Saving> is set . • <Sensitivity> Specify the <Sensitivity> level of the <Eco Light Sensor> to respond according to the ambient light intensity. <ul style="list-style-type: none"> • <High> - High sensitivity that maximizes the varying level of screen brightness depending on the ambient light intensity. • <Medium> - Intermediate sensitivity that sets a varying level of screen brightness between <High> and <Low> depending on the ambient light intensity.. • <Low> - Low sensitivity that minimizes the varying level of screen brightness depending on the ambient light intensity. • <Brightness Level> Additionally customize the screen brightness adjusted by <Eco Light Sensor>. <ul style="list-style-type: none"> • <Brighter> - Increase the current brightness of the screen. • <Current> - Maintain the current brightness of the screen. • <Dimmer> - Decrease the current brightness of the screen.
ECO	<ul style="list-style-type: none"> • <Eco Saving> The <Eco Saving> function reduces power consumption by controlling the electric current used by the monitor panel. <ul style="list-style-type: none"> • <75%> - Change the monitor power consumption to 75% of the default level. • <50%> - Change the monitor power consumption to 50% of the default level. • <Off> - Deactivate the <Eco Saving> function.  • This menu is unavailable when <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast> mode. • This menu is unavailable when <Eco Light Sensor> is set.


Menu	Description
ECO	<p data-bbox="395 181 603 210"><Eco Icon Display></p> <p data-bbox="395 226 1461 286">If the <Eco Icon Display> option is <On> and the <Eco Motion Sensor> and <Eco Light Sensor> are active, a pop-up guide will appear showing the operation status of the sensors.</p> <div data-bbox="742 327 1123 465" style="text-align: center;">  <p data-bbox="742 327 1123 465">Eco Motion Sensor Activated Power Off ●●●●●●●●●● 10 s</p> </div> <ul data-bbox="395 499 1442 629" style="list-style-type: none"> <li data-bbox="395 499 1442 555">• The <Eco Motion Sensor> will activate power-saving mode if it is set to on and does not detect any movement for a specified time. <li data-bbox="395 566 1442 629">• A 10-second countdown timer will start along with the above picture before the power-saving mode activates showing the operation status of the <Eco Motion Sensor>. <div data-bbox="676 667 1187 797" style="text-align: center;">  <p data-bbox="676 667 1187 797">Eco Light Sensor Activated Eco Light Sensor Activated</p> </div> <ul data-bbox="395 831 1461 1055" style="list-style-type: none"> <li data-bbox="395 831 1461 887">• If the screen brightness is adjusted according to the ambient light intensity when the <Eco Light Sensor> is on, a pop-up as shown above will appear showing the adjusting screen brightness. <li data-bbox="395 898 1461 1055">• When the screen becomes brighter as the ambient light becomes brighter and the <Eco Light Sensor> activates, the brightness slide bar level will increase with a sun image displayed above the bar. When the screen becomes darker, the brightness slide bar level will decrease with a moon image displayed above the bar. The brightness slide bar will be displayed for three seconds after the sensor activates. <div data-bbox="842 1099 1023 1384" style="text-align: center;">  <p data-bbox="842 1099 1023 1384">You've saved 1000 trees.</p> </div> <p data-bbox="395 1417 1442 1473">A pop-up as shown above will appear when an energy tree completes while <Eco Icon Display> is <On>.</p> <p data-bbox="408 1507 1461 1570"> <input type="checkbox"/> If the above picture is displayed, it means the <Eco Icon Display> option is <On>. Change this setting to <Off> if you do not want to display the pop-up. </p>

Menu	Description
ECO	<ul style="list-style-type: none"> <li data-bbox="391 181 587 210">• <Energy Tree> <div data-bbox="608 248 1254 613" style="text-align: center;">  </div> <ul style="list-style-type: none"> <li data-bbox="427 645 1453 701">• The amount of energy saved by the <Eco Motion Sensor>, <Eco Light Sensor>, and <Eco Saving> functions will accumulate and the progress can be viewed as a growing energy tree. <ul style="list-style-type: none"> <li data-bbox="480 734 1469 824">  The energy tree grows as the energy savings of the monitor accumulate. Accordingly, the tree's growth will also be affected by other functions that involve power consumption such as the brightness control function. <li data-bbox="427 853 1469 909">• The amount of energy savings accumulated by the <Eco Motion Sensor>, <Eco Light Sensor>, and <Eco Saving> functions will be represented as an amount of carbon dioxide. <li data-bbox="427 920 1453 976">• A complete energy tree will be displayed when the amount of energy savings accumulates to as much as the amount of carbon dioxide a tree absorbs in a year. <li data-bbox="427 987 1469 1077">• This shows that your energy saving is as effective as planting a tree so that you can easily understand the accumulation of energy savings over time and its effect by viewing the progress of a tree growing. <li data-bbox="427 1088 1453 1178">• The progress of a tree growing will be represented as 10 different images (stages). After one full-grown tree is complete, the initial image will be restored and the number of trees will continue to accumulate. The number for energy trees will be rounded to one decimal place.
Menu Transparency	<p data-bbox="391 1211 871 1240">You can select the transparency of the OSD.</p> <ul style="list-style-type: none"> <li data-bbox="391 1252 576 1281">• <Off> - <On>
Language	<p data-bbox="391 1301 727 1330">Select a language for the OSD.</p> <ul style="list-style-type: none"> <li data-bbox="587 1375 1278 1435">• Deutsch,English,Español,Français,Italiano,Magyar,Polski,Português,Русский,Svenska,Türkçe,日本語,한국어,汉语 <p data-bbox="405 1480 1465 1541">  The selected language is only applied to the product OSD. This setting does not affect the other functions of the PC. </p>
PC/AV Mode	<p data-bbox="391 1581 775 1610">Set to PC when connected to a PC.</p> <p data-bbox="391 1621 863 1650">Set to AV when connected to an AV device.</p> <p data-bbox="405 1682 1437 1854">  <ul style="list-style-type: none"> <li data-bbox="453 1682 975 1711">• This function does not support Analog mode. <li data-bbox="453 1722 1098 1751">• Supplied for the wide models only such as 16:9 or 16:10. <li data-bbox="453 1762 1437 1854">• If the monitor (when set to HDMI) is in power saving mode or is displaying the message <Check Signal Cable>, press the MENU button to display the On Screen Display (OSD). You can select <PC> or <AV>. </p>
Auto Source	<ul style="list-style-type: none"> <li data-bbox="391 1895 1054 1924">• <Auto> - The monitor automatically selects an input signal. <li data-bbox="391 1935 1046 1964">• <Manual> - Users have to manually select an input signal. <p data-bbox="405 1995 1110 2024">  Not applicable to analog (D-SUB)-or-HDMI-dedicated models. </p>

Menu	Description
Display Time	The OSD automatically disappears if no action is taken by the user. You can determine the time to wait before the OSD is hidden. <ul style="list-style-type: none"> <5 sec> - <10 sec> - <20 sec> - <200 sec>
Key Repeat Time	Controls the repeat delay of a button. You can set to <Acceleration>, <1 sec> or <2 sec>. If <No Repeat> is selected, the button only responds once.
Customized Key	You can set the function of the Customized Key to one of the following. <ul style="list-style-type: none"> <ECO> - <MAGIC> - <Image Size>
Off Timer On/Off	You can turn the Off Timer on or off. <ul style="list-style-type: none"> <Off> - <On>
Off Timer Setting	Turns the power off automatically when the configured time is reached. <ul style="list-style-type: none">  When <On> of <Off Timer On/Off> is selected, This function is available only.
Reset	Use this function to restore the visual quality and color settings to the factory defaults. <ul style="list-style-type: none"> <No> - <Yes>

INFORMATION



Menu	Description
INFORMATION	Shows the frequency and resolution set on the PC. <ul style="list-style-type: none">  For models with an Analog interface only, <Analog/Digital/HDMI> is not shown in the <Information>.

4 Installing the Software

4-1 Natural Color

What is Natural Color ?

This software works only for Samsung products and enables adjusting the displayed colors on the product and matches the colors on the product with the colors of the printed pictures. For more information, refer to the online help of the software (F1).

The Natural Color is provided online. You can download it from the website below and install;

http://www.samsung.com/us/consumer/learningresources/monitor/naturalcolorexpert/pop_download.html

What is MagicTune?



MagicTune is a software program that helps with monitor adjustments by providing comprehensive descriptions of monitor functions and easy-to-understand guidelines.

Users can adjust the product with the mouse and the keyboard without using the operating buttons of the product.

MagicTune can not support clone mode.

Installing the Software

1. Insert the installation CD into the CD-ROM drive.
2. Select the MagicTune setup program.
 - If the pop-up screen for the software installation does not appear on the main screen, find and double-click the MagicTune setup file on the CD-ROM.
3. Select the installation language and click [Next].
4. Complete the remaining software installation steps according to the instructions displayed on the screen.
 - The software may not work properly if you do not restart the computer after the installation.
 - The MagicTune icon may not appear depending on the computer system and the product specifications.
 - If the shortcut icon does not appear, press the F5 key.

Restrictions and Problems with the Installation (MagicTune™)

The installation of MagicTune™ may be affected by the graphics card, motherboard and the networking environment.

System Requirements

OS

- Windows 2000
- Windows XP Home Edition
- Windows XP Professional
- Windows Vista 32Bit
- Windows 7 32Bit

For MagicTune™, Windows 2000 or later is recommended.

Hardware


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

For more information, refer to the website.

Removing the Software

You can only remove MagicTune™ through [Add or Remove Programs] in Windows.

To remove MagicTune™, complete the following steps.



1. Click [Start] select [Settings], and select [Control Panel] from the menu.
For Windows XP, click [Start], and select [Control Panel] from the menu.
 2. Double-click the [Add or Remove Programs] icon in the Control Panel.
 3. In the [Add/Remove] window, find and select MagicTune™ so that it is highlighted.
 4. Click [Change or Remove Programs] to remove the software.
 5. Select [Yes] to start removing MagicTune™.
 6. Wait until a message box appears informing you that the software has been removed completely.
-  For technical support, the [FAQ \(frequently asked questions\)](#) or information about the software upgrade for MagicTune™, please visit our [website](#).

What is MultiScreen ?



MultiScreen enables users to use the monitor by partitioning multiple sections.

Installing the Software

1. Insert the installation CD into the CD-ROM drive.
2. Select the MultiScreen setup program.
 -  If the pop-up screen for the software installation does not appear on the main screen, find and double-click the MultiScreen setup file on the CD-ROM.
3. When the Installation Wizard appears, click [Next].
4. Complete the remaining software installation steps according to the instructions displayed on the screen.
 - 
 - The software may not work properly if you do not restart the computer after the installation.
 - The MultiScreen icon may not appear depending on the computer system and the product specifications.
 - If the shortcut icon does not appear, press the F5 key.

Restrictions and Problems with the Installation (MultiScreen)

The MultiScreen installation may be affected by the graphics card, motherboard and the networking environment.

Operating System

OS

- Windows 2000
- Windows XP Home Edition
- Windows XP Professional
- Windows Vista 32Bit
- Windows 7 32Bit

 For MultiScreen, the operating systems Windows 2000 or later is recommended.

Hardware

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

Removing the Software

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


Select MultiScreen from the program list and click the [Add/Delete] button.



5 Troubleshooting

5-1 Monitor Self-Diagnosis

- You can check if the product is working properly using the Self-Diagnosis function.
 - If a blank screen is displayed and the Power LED blinks even if the product and the PC are properly connected, perform the self-diagnosis function according to the procedures below.
1. Turn the product and the PC off.
 2. Separate the signal cable from the product .
 3. Turn the product on.
 4. If the product is working properly, the <Check Signal Cable> message appears.
In this case, if a blank screen is displayed again, make sure that there is no problem with the PC and the connection. The product is working properly.

5-2 Before Requesting Service

-  Please check the following before requesting After-Sales service. If the problem continues, please contact your nearest Samsung Electronics Service Center.

A blank screen appears / I cannot turn the product on	
Is the power cord connected properly?	Check the connection status of the power cord.
Is the <Check Signal Cable> message displayed on the screen?	(Connected using the D-sub cable) Check the cable connecting the PC and the product. (Connected using the DVI cable) If the message appears on the screen even if the cable is properly connected, recheck the input signal by pressing the [ / ] button of the product.
Is the <Not Optimum Mode> message displayed on the screen?	This occurs when the signal from the graphics card exceeds the maximum resolution or the maximum frequency of the product. In this case, set up the appropriate resolution and the frequency for the product.
Is a blank screen displayed and does the power LED blink at a 1 second interval?	<ol style="list-style-type: none"> 1. This occurs when the power saving function is running. If you click the mouse or press any key, the screen will be turned on. 2. If the "Check Signal Cable" condition persists for more than five minutes, Lossless mode will be activated. In Lossless mode, the backlight of the monitor will turn off.
Did you connect with a DVI cable?	If you connect the DVI cable when the PC has booted up or if you reconnect the DVI cable after disconnecting the cable while using a PC, the screen may not be displayed because some graphics cards do not output the video signal. In this case, reboot the PC while the DVI cable is connected.
Blank spaces are found at the top and bottom of the screen when an [HDMI] or [HDMI-DVI] cable is connected to the monitor and PC.	Blank spaces on the screen are not caused by the monitor. The cause of the problem is the PC or graphics card, and can be fixed by adjusting the screen size in the HDMI or DVI option of the graphics card settings menu. If the graphics card settings menu has no option to adjust the screen size, update the graphics card driver to the latest version. (Please contact the graphics card or computer manufacturer for details on how to adjust the screen settings.)
THE IMAGE IS TOO LIGHT OR TOO DARK.	
Adjust the <Brightness> and <Contrast>. (Refer to the <Brightness>, <Contrast>)	
The display brightness can differ according to the mode set for <SAMSUNG MAGIC Angle>.	
If <SAMSUNG MAGIC Bright> is set to <Dynamic Contrast>, the display brightness can differ according to the input signal.	
The on screen adjustment menu (OSD) does not appear.	
Did you cancel the screen adjustment?	Check if the OSD Adjustment Lock function is set to Off.

The color is weird / The picture is displayed in black and white	
Is the entire screen displayed in the same color as if viewing the screen through a cellophane paper?	Check the cable connection to the computer. Reinsert the graphics card into the computer completely.
Is the graphics card configured correctly?	Set up the graphics card referring to the user manual.
The display area suddenly moves to an edge or to the center.	
Did you change the graphics card or the driver?	Please press the [AUTO] button to run the auto adjustment function.
Did you change the resolution and frequency appropriate to the product?	Set the resolution and the frequency to the appropriate values in the graphics card refer to the (Standard Signal Mode Table)
Is the graphics card configured correctly?	Set up the graphics card referring to the user manual.
The pictures are out-of-focus.	
Did you change the resolution and the frequency appropriate to the product?	Set the resolution and the frequency to the appropriate values in the graphics card refer to the (Standard Signal Mode Table)
The color is displayed in 16 bit (16 colors). The color has been changed after changing the graphics card.	
Did you install the device driver for the product?	Windows XP : Set the color again by selecting Control Panel → Appearance and Themes → Display → Settings. Windows ME/2000 : Set the color again by selecting Control Panel → Display → Settings. Windows Vista : Change the color settings by selecting Control Panel → Appearance and Personalization → Personalization → Display settings. Windows 7 : Change the color settings by selecting Control Panel → Appearance and Personalization → Display → Adjust resolution → Advanced settings → Monitor. (For more information, refer to the Windows user manual for the computer.)
Is the graphics card configured correctly?	Configure the color again in accordance with the new graphics card driver.
When I connect the monitor, the 'Unknown monitor, Plug&Play (VESA DDC) monitor found' message is displayed.	
Did you install the device driver for the product?	Install the device driver referring to the descriptions about the driver installation.
Check if all the Plug&Play (VESA DDC) functions are supported referring to the User Manual of the graphics card.	Install the device driver referring to the descriptions about the driver installation.
When I look at the exterior edges of the product, small alien substances appear on it.	
Since this product is designed so that the color has a soft appearance by coating it with a transparent material over the black edges, such things may be seen. This is not a defect of the product.	
A “beep, beep” sound is heard when booting the computer.	
If the beep sound is generated 3 or more times when booting up the computer, please request service for the computer.	

FAQ!	PLEASE TRY THE FOLLOWING!
<p>How can I change the frequency (refresh rate) of the video signal?</p>	<p>You have to change the frequency of the graphics card.</p> <p>Windows XP : Change the frequency by selecting Control Panel → Appearance and Themes → Display → Settings → Advanced → Monitor, and then change the refresh rate under Monitor Settings.</p> <p>Windows ME/2000 : Change the frequency by selecting Control Panel → Display → Settings → Advanced → Monitor, and then change the refresh rate under Monitor Settings.</p> <p>Windows Vista : Change the frequency by selecting Control Panel → Appearance and Personalization → Personalization → Display settings → Advanced settings → Monitor, and then change the refresh rate under Monitor Settings.</p> <p>Windows 7 : Change the frequency by selecting Control Panel → Appearance and Personalization → Display → Adjust resolution → Advanced settings → Monitor, and then change the refresh rate under Monitor Settings.</p> <p>(For more information, refer to the User Manual of the computer or the graphics card.)</p>
<p>How can I change the resolution?</p>	<p>Windows XP : Change the resolution by selecting Control Panel → Appearance and Themes → Display → Settings.</p> <p>Windows ME/2000 : Change the resolution by selecting Control Panel → Display → Settings.</p> <p>Windows Vista : Change the resolution by selecting Control Panel → Appearance and Personalization → Personalization → Display settings.</p> <p>Windows 7 : Change the resolution by selecting Control Panel → Appearance and Personalization → Display → Adjust resolution.</p> <p>(For more information, refer to the User Manual of the computer or the graphics card.)</p>
<p>How can I use the power saving function?</p>	<p>Windows XP : Configure it by selecting Control Panel → Appearance and Themes → Display → Screen Saver Setting or configure it in the BIOS Setup of the computer.</p> <p>Windows ME/2000 : Configure it by selecting Control Panel → Display → Screen Saver Setting or Configure it in the BIOS Setup of the computer.</p> <p>Windows Vista : Change settings by selecting Control Panel → Appearance and Personalization → Personalization → Screen Saver. You can also use the BIOS SETUP menu on the PC.</p> <p>Windows 7 : Change settings by selecting Control Panel → Appearance and Personalization → Personalization → Screen Saver. You can also use the BIOS SETUP menu on the PC.</p> <p>(For more information, refer to the Windows user manual for the computer.)</p>

6 More Information

6-1 Specifications

MODEL NAME		S20A550H
Panel	Size	20 inches (50 cm)
	Display area	442.8 mm (H) x 249.08 mm (V)
	Pixel Pitch	0.27675 mm (H) x 0.27675 mm (V)
Synchroniza- tion	Horizontal	30 ~ 81 kHz
	Vertical	56 ~ 75 Hz
Display Color		16.7 M
Resolution	Optimum resolution	1600 x 900 @ 60 Hz
	Maximum resolution	1600 x 900 @ 60 Hz
Input Signal, Terminated		RGB Analog, HDMI 0.7 Vp-p ± 5% separate H/V sync, Composite, SOG TTL level (V high ≥ 2.0V, V low ≤ 0.8V)
Maximum Pixel Clock		164MHz (Analog,HDMI)
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.
Signal Cable		15pin-to-15pin D-sub cable, Detachable HDMI-DVI Cable, Detachable
Dimensions (WxHxD) / Weight		492 x 311 x 63 mm (19.4 x 12.2 x 2.5 inches) (Without Stand) 492 x 396 x 235 mm (19.4 x 15.6 x 9.3 inches) (With Stand) / 2.9 kg (6.4 lbs)
Environmen- tal consider- ations	Operating	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Humidity : 10 % ~ 80 %, non-condensing
	Storage	Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %, non-condensing
Tilt		-1°(±2°)~20°(±2°)

 Design and specifications are subject to change without prior notice.

 Class B (Information Communication equipment for residential use)

This device is registered for EMC requirements for home use (Class B). It can be used in all areas.

(Class B equipment emits less electromagnetic waves than Class A equipment.)

6-2 Power Saving Function

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor to low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

STATE	NORMAL OPERATION	POWER SAVING MODE	POWER OFF	PIR MONITOR OFF
Power Indicator	On	Blinking	Off	On
Power Consumption (Typical)	23 W	0.3 W	0.3 W	3 W

 If there is no power cut-off switch, the power consumption is "0" only when the power cord is disconnected.

6-3 Specifications

MODEL NAME		S23A550H
Panel	Size	23 inches (58 cm)
	Display area	509.76 mm (H) x 286.74 mm (V)
	Pixel Pitch	0.2655 mm (H) x 0.2655 mm (V)
Synchroniza- tion	Horizontal	30 ~ 81 kHz
	Vertical	56 ~ 75 Hz
Display Color		16.7 M
Resolution	Optimum resolution	1920 x 1080 @ 60 Hz
	Maximum resolution	1920 x 1080 @ 60 Hz
Input Signal, Terminated		RGB Analog, HDMI 0.7 Vp-p ± 5% separate H/V sync, Composite, SOG TTL level (V high ≥ 2.0V, V low ≤ 0.8V)
Maximum Pixel Clock		164MHz (Analog,HDMI)
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.
Signal Cable		15pin-to-15pin D-sub cable, Detachable HDMI-DVI Cable ,Detachable
Dimensions (WxHxD) / Weight		559 x 349 x 61 mm (22.0 x 13.7 x 2.4 inches) (Without Stand) 559 x 434 x 235 mm (22.0 x 17.1 x 9.3 inches) (With Stand) / 3.4 kg (7.5 lbs)
Environmen- tal consider- ations	Operating	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Humidity : 10 % ~ 80 %, non-condensing
	Storage	Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %, non-condensing
Tilt		-1°(±2°)~20°(±2°)

 Design and specifications are subject to change without prior notice.

 Class B (Information Communication equipment for residential use)

This device is registered for EMC requirements for home use (Class B). It can be used in all areas.

(Class B equipment emits less electromagnetic waves than Class A equipment.)

6-4 Power Saving Function

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor to low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

STATE	NORMAL OPERATION	POWER SAVING MODE	POWER OFF	PIR MONITOR OFF
Power Indicator	On	Blinking	Off	On
Power Consumption (Typical)	31 W	0.3 W	0.3 W	3 W

 If there is no power cut-off switch, the power consumption is "0" only when the power cord is disconnected.

6-5 Specifications

MODEL NAME		S27A550H
Panel	Size	27 inches (68 cm)
	Display area	597.6 mm (H) x 336.15 mm (V)
	Pixel Pitch	0.31125 mm (H) x 0.31125 mm (V)
Synchroniza- tion	Horizontal	30 ~ 81 kHz
	Vertical	56 ~ 75 Hz
Display Color		16.7 M
Resolution	Optimum resolution	1920 x 1080 @ 60 Hz
	Maximum resolution	1920 x 1080 @ 60 Hz
Input Signal, Terminated		RGB Analog, HDMI 0.7 Vp-p ± 5% separate H/V sync, Composite, SOG TTL level (V high ≥ 2.0V, V low ≤ 0.8V)
Maximum Pixel Clock		164MHz (Analog,HDMI)
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.
Signal Cable		15pin-to-15pin D-sub cable, Detachable HDMI-DVI Cable, Detachable
Dimensions (WxHxD) / Weight		648 x 399 x 69 mm (25.5 x 15.7 x 2.7 inches) (Without Stand) 648 x 483 x 258 mm (25.5 x 19.0 x 10.1 inches) (With Stand) / 4.3 kg (9.5 lbs)
Environmen- tal consider- ations	Operating	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Humidity : 10 % ~ 80 %, non-condensing
	Storage	Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %, non-condensing
Tilt		-1°(±2°)~20°(±2°)

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6-6 Power Saving Function

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor to low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

STATE	NORMAL OPERATION	POWER SAVING MODE	POWER OFF	PIR MONITOR OFF
Power Indicator	On	Blinking	Off	On
Power Consumption (Typical)	41 W	0.5 W	0.5 W	3 W

 If there is no power cut-off switch, the power consumption is "0" only when the power cord is disconnected.

6-7 Contact SAMSUNG WORLDWIDE

 •If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

NORTH AMERICA		
U.S.A	1-800-SAMSUNG (726-7864)	http://www.samsung.com
CANADA	1-800-SAMSUNG (726-7864)	http://www.samsung.com
MEXICO	01-800-SAMSUNG (726-7864)	http://www.samsung.com
LATIN AMERICA		
ARGENTINA	0800-333-3733	http://www.samsung.com
BRAZIL	0800-124-421 4004-0000	http://www.samsung.com
CHILE	800-SAMSUNG (726-7864)	http://www.samsung.com
COLOMBIA	01-8000112112	http://www.samsung.com
COSTA RICA	0-800-507-7267	http://www.samsung.com
ECUADOR	1-800-10-7267	http://www.samsung.com
EL SALVADOR	800-6225	http://www.samsung.com
GUATEMALA	1-800-299-0013	http://www.samsung.com
HONDURAS	800-7919267	http://www.samsung.com
JAMAICA	1-800-234-7267	http://www.samsung.com
NICARAGUA	00-1800-5077267	http://www.samsung.com
PANAMA	800-7267	http://www.samsung.com
PERU	0-800-777-08	http://www.samsung.com
PUERTO RICO	1-800-682-3180	http://www.samsung.com
REP. DOMINICA	1-800-751-2676	http://www.samsung.com
TRINIDAD & TOBAGO	1-800-SAMSUNG (726-7864)	http://www.samsung.com
VENEZUELA	0-800-100-5303	http://www.samsung.com
EUROPE		
ALBANIA	42 27 5755	-
AUSTRIA	0810 - SAMSUNG (7267864,€ 0.07/ min)	http://www.samsung.com
BELGIUM	02-201-24-18	http://www.samsung.com/be (Dutch) http://www.samsung.com/be_fr (French)
BOSNIA	05 133 1999	-
BULGARIA	07001 33 11	http://www.samsung.com
CROATIA	062 SAMSUNG (062 726 7864)	http://www.samsung.com
CZECH	800 - SAMSUNG (800-726786)	http://www.samsung.com
Distributor pro Českou republiku: Samsung Žrt., česká organizační složka, Oasis Florenc, Sokolovská394/17, 180 00, Praha 8		

EUROPE		
DENMARK	70 70 19 70	http://www.samsung.com
EIRE	0818 717100	http://www.samsung.com
ESTONIA	800-7267	http://www.samsung.com
FINLAND	030 - 6227 515	http://www.samsung.com
FRANCE	01 48 63 00 00	http://www.samsung.com
GERMANY	01805 - SAMSUNG (726-7864, € 0,14/Min)	http://www.samsung.com
HUNGARY	06-80-SAMSUNG (726-7864)	http://www.samsung.com
ITALIA	800-SAMSUNG (726-7864)	http://www.samsung.com
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LATVIA	8000-7267	http://www.samsung.com
LITHUANIA	8-800-77777	http://www.samsung.com
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MACEDONIA	023 207 777	-
MONTENEGRO	020 405 888	-
NETHERLANDS	0900 - SAMSUNG (0900-7267864) (€ 0,10/Min)	http://www.samsung.com
NORWAY	815-56 480	http://www.samsung.com
POLAND	0 801 1SAMSUNG (172678) 022 - 607 - 93 - 33	http://www.samsung.com
PORTUGAL	80820 - SAMSUNG (726-7864)	http://www.samsung.com
RUMANIA	1. 08010 SAMSUNG (72678) – doar din rețeaua Romtelecom, tarif local; 2. 021.206.01.10 – din orice rețea, tarif normal	http://www.samsung.com
SERBIA	0700 Samsung (0700 726 7864)	http://www.samsung.com
SLOVAKIA	0800-SAMSUNG (726-7864)	http://www.samsung.com
SPAIN	902 - 1 - SAMSUNG (902 172 678)	http://www.samsung.com
SWEDEN	0771 726 7864 (SAMSUNG)	http://www.samsung.com
SWITZERLAND	0848-SAMSUNG (7267864, CHF 0.08/min)	http://www.samsung.com/ch http://www.samsung.com/ch_fr (French)
U.K	0330 SAMSUNG (7267864)	http://www.samsung.com
CIS		
ARMENIA	0-800-05-555	-
AZERBAIJAN	088-55-55-555	-
BELARUS	810-800-500-55-500	-
GEORGIA	8-800-555-555	-
KAZAKHSTAN	8-10-800-500-55-500 (GSM: 7799)	http://www.samsung.com
KYRGYZSTAN	00-800-500-55-500	http://www.samsung.com
MOLDOVA	00-800-500-55-500	-

CIS		
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TADJIKISTAN	8-10-800-500-55-500	http://www.samsung.com
UKRAINE	0-800-502-000	http://www.samsung.com/ua http://www.samsung.com/ua_ru
UZBEKISTAN	8-10-800-500-55-500	http://www.samsung.com
ASIA PACIFIC		
AUSTRALIA	1300 362 603	http://www.samsung.com
NEW ZEALAND	0800 SAMSUNG (0800 726 786)	http://www.samsung.com
CHINA	400-810-5858 010-6475 1880	http://www.samsung.com
HONG KONG	(852) 3698 - 4698	http://www.samsung.com/hk http://www.samsung.com/hk_en/
INDIA	3030 8282 1800 110011 1800 3000 8282 1800 266 8282	http://www.samsung.com
INDONESIA	0800-112-8888 021-5699-7777	http://www.samsung.com
JAPAN	0120-327-527	http://www.samsung.com
MALAYSIA	1800-88-9999	http://www.samsung.com
PHILIPPINES	1-800-10-SAMSUNG (726-7864) 1-800-3-SAMSUNG (726-7864) 1-800-8-SAMSUNG (726-7864) 02-5805777	http://www.samsung.com
SINGAPORE	1800-SAMSUNG (726-7864)	http://www.samsung.com
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THAILAND	1800-29-3232 02-689-3232	http://www.samsung.com
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Oman	800-SAMSUNG (726-7864)	http://www.samsung.com
Saudi Arabia	9200-21230	http://www.samsung.com
TURKEY	444 77 11	http://www.samsung.com
U.A.E	800-SAMSUNG (726-7864)	http://www.samsung.com

AFRICA

NIGERIA	0800 - SAMSUNG (726-7864)	http://www.samsung.com
SOUTH AFRICA	0860-SAMSUNG (726-7864)	http://www.samsung.com

6-8 Correct Disposal of This Product (Waste Electrical & Electronic Equipment) - Europe only



(Applicable in the European Union and other European countries with separate collection systems)

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

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

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