S27B970D / S27B971D

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.
Chapter 1
Before Using the Product

Copyright

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- 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.
Securing the Installation Space

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

- The exterior may differ depending on the product.

Precautions for storage

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

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

Safety Precautions

Caution

Do not open the cover. You may suffer an electric shock. The components inside this product must not be repaired by home users. Contact a technician for repair.

Symbols

Warning

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

Caution

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

- Activities marked by this symbol are prohibited.

- Instructions marked by this symbol must be followed.
Cleaning

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

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

1. Power off the product.
2. Remove the power cable from the product.

**NOTE**

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

3. Wipe the product screen using a clean, soft and dry cloth.
   - Do not use detergents that contain alcohol, solvent or surface-active agents.
   - Do not spray water or detergent directly on the product.

4. To clean the exterior of the product, use a moist soft cloth and wring thoroughly before wiping the exterior.

5. After cleaning the product, connect the power cable to the product.
6. Power on the product to use it.

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 use multiple products with a single power socket.
  - Otherwise, the socket may cause a fire.

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

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

- Be sure to plug the power cable into a grounded power socket. (Type 1 insulated devices only).
  - An electric shock or injury may result.
Installation and Safety

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

Warning

DO NOT PLACE CANDLES, INSECT REPELANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.
- A fire may result.

Do not install the product in poorly ventilated spaces such as a bookcase or closet.
- An increased internal temperature may cause a fire.

Keep the plastic packaging out of the reach of children.
- Children may suffocate.

Do not install the product on an unstable or vibrating surface (insecure shelf, sloped surface, etc.)
- The product may fall and become damaged and/or cause an injury.
- Using the product in an area with excess vibration may damage the product or cause a fire.

Do not install the product in a vehicle or a place exposed to dust, moisture (water drips, etc.), oil, or smoke.
- A fire or electric shock may result.

Do not expose the product to direct sunlight, heat, or a hot object such as a stove.
The product lifespan may be reduced or a fire may result.

Caution

Do not disconnect the power cable while the product is being used.
- The product may become damaged by an electric shock.

Only use the power cable provided with your product by Samsung. Do not use the power cord with other products.
- A fire or electric shock may result.

Keep the power socket where the power cable is connected unobstructed.
- In the event of a problem with the product, you must disconnect the power cable to cut the power supply to the product.

Hold the plug when disconnecting the power cable from the power socket.
- A fire or electric shock may result.

Clean any dust around the pins of the power cable or the power outlet using a dry cloth.
- A fire may result.

Installation and Safety

Before Using the Product

Do not bend or pull the power cable with force. Also, do not place a heavy object on the power cable.
- Damage to the cord may result in a fire or electric shock.

Do not place the power cable or product near heat sources.
- A fire or electric shock may result.

Caution

Do not disconnect the power cable while the product is being used.
- The product may become damaged by an electric shock.

Only use the power cable provided with your product by Samsung. Do not use the power cord with other products.
- A fire or electric shock may result.

Keep the power socket where the power cable is connected unobstructed.
- In the event of a problem with the product, you must disconnect the power cable to cut the power supply to the product.

Hold the plug when disconnecting the power cable from the power socket.
- A fire or electric shock may result.
Do not install the product within the reach of young children. The product may fall and injure children.

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

**Caution**

- Do not drop the product while moving.
  - Product failure or personal injury may result.

- Do not set down the product on its front.
  - The screen may become damaged.

- When installing the product on a cabinet or shelf, make sure that the bottom edge of the front of the product is not protruding.
  - The product may fall and break or cause a personal injury.
  - Install the product only on cabinets or shelves of the right size.

- Set down the product gently
  - Product failure or personal injury may result.

**Warning**

- Installing the product in an unusual place (a place exposed to a lot of fine particles, chemical substances or extreme temperatures, or an airport or train station where the product should operate continuously for an extended period of time) may seriously affect its performance.
  - Be sure to consult Samsung Customer Service Center if you want to install the product at such a place.

**Operation and Safety**

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

**Operation and Safety**

- There is a high voltage inside the product. Never disassemble, repair or modify the product yourself.
  - A fire or electric shock may result.
  - Contact Samsung Customer Service Center for repairs.

- Before moving the product, turn off the power switch and disconnect the power cable and all other connected cables.
  - Damage to the cord may result in a fire or electric shock.

- If the product generates abnormal sounds, a burning smell or smoke, disconnect the power 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.
  - Children may become injured or seriously harmed.
If the product is dropped or the outer case is damaged, turn off the power switch and disconnect the power cable. Then contact Samsung Customer Service Center.  
- Continued use can result in a fire or electric shock.

Do not leave heavy objects or items that children like (toys, sweets, etc.) on top of the product.  
- The product or heavy objects may fall as children try to reach for the toys or sweets resulting in a serious injury.

If there is a thunderstorm or lightning strike, turn off the power and disconnect the power cable.  
- A fire or electric shock may result.

Do not drop objects on the product or apply impact.  
- A fire or electric shock may result.

Do not pull on the product holding only the power cable or any other cable.  
- Product failure, an electric shock or fire may result from a damaged cable.

If a gas leakage is found, do not touch the product or power cable. 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.  
- Product failure, an electric shock or fire may result from a damaged cable.

Do not use or keep combustible spray or an inflammable substance near the product.  
- An explosion or fire may result.

Ensure the vents are not blocked by tablecloths or curtains.  
- An increased internal temperature may cause a fire.

Do not insert metallic objects (chopsticks, coins, hairpins, etc) or objects that burn easily (paper, matches, etc) into the product (via the vent or input/output ports, etc).  
- Be sure to power off the product and disconnect the power cable when water or other foreign substances have entered the product. Then 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.  
- Be sure to power off the product and disconnect the power cable when water or other foreign substances have entered the product. Then 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 when not using the product for an extended period of time (vacation, etc.).
- Dust accumulation combined with heat can cause a fire, electric shock or electric leakage.

Use the product at the recommended resolution and frequency.
- Your eyesight may deteriorate.

Do not put DC power adapters together.
- Otherwise, a fire may result.

Remove the plastic bag from the DC power adapter before you use it.
- Otherwise, a fire may result.

Do not let water enter the DC power adapter or get the adapter wet.
- An electric shock or fire may result.
- Avoid using the product outdoors where it can be exposed to rain or snow.
- Take extra care to ensure the DC power adapter does not get wet when cleaning the floor with water.

Do not leave the DC power adapter near a heat source.
- Otherwise, a fire may result.

Keep the DC power adapter in a location with good ventilation.

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

Do not hold the product 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.
- A fire or electric shock may result.

Rest your eyes for more than 5 minutes for every 1 hour of product use.
- Eye fatigue will be relieved.

Do not touch the screen when the product has been turned on for an extended period of time as it will become hot.
Store small accessories out of the reach of children.

Do not place heavy objects on the product.
- Product failure or personal injury may result.

**Correct posture to use the product**

Use the product in the correct posture as follows:
- Straighten your back.
- Allow a distance of 45 to 50cm between your eye and the screen, and look slightly downward at the screen. Keep your eyes directly in front of the screen.
- Adjust the angle so light does not reflect on the screen.
- Keep your forearms perpendicular to your upper arms and level with the back of your hands.
- Keep your elbows at about a right angle.
- Adjust the height of the product so you can keep your knees bent at 90 degrees or more, your heels attached to the floor, and your arms lower than your heart.
Chapter 2
Preparation

Checking the Contents

Removing the Packaging

- The appearance of the actual product may differ from the images shown.

1. Open the packaging box. Be careful not to damage the product when you open the packaging with a sharp instrument.

2. Remove the styrofoam from the product.

3. Check the product and remove the styrofoam and plastic bag.

   **NOTE**
   - The appearance of the actual product may differ from the image shown.
   - This image is for reference only.

4. Store the box in a dry area so that it can be used when moving the product in the future.
Checking the Components

Contact the vendor where you purchased the product if any components are missing.

The appearance of the components and items sold separately may differ from the image shown.

Components

NOTE
Components may vary depending on the country.

Quick setup guide
Warranty card (Not available in some locations)
Natural Color Expert Data Sheet
User manual

Cleaning cloth
DP cable
Power cable
DC power adapter
USB 2.0 cable
HDMI-MHL cable
Dual-link DVI cable

Items sold separately

NOTE
The following items can be purchased at your nearest retailer.

HDMI-DVI cable
HDMI cable
**Front Buttons**

- The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.
- This is a touch-type button. Tap the button lightly with a finger.
- This product contains a power circuit unit causing the stand to generate heat. The heat does not mean the product is defective.

<table>
<thead>
<tr>
<th>Icons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Power Button" /></td>
<td>Turn the power on or off. The power indicator will be lit when the product is operating normally.</td>
</tr>
<tr>
<td><img src="image" alt="Menu Button" /></td>
<td>This button can be used to display/exit from the OSD menu. The button can also be used to go back to the previous menu.</td>
</tr>
<tr>
<td><img src="image" alt="Down Button" /></td>
<td>Move down to another menu item or adjust a setting when the OSD menu is displayed.</td>
</tr>
<tr>
<td><img src="image" alt="Color Mode Button" /></td>
<td>Configure the Color Mode using the [▲/▼] buttons when no OSD menu is displayed.</td>
</tr>
<tr>
<td><img src="image" alt="Input Source Button" /></td>
<td>Confirm a menu selection.</td>
</tr>
</tbody>
</table>

**NOTE**
- For details on the power-saving function, refer to "Power-saving Function" in the product specifications.
- To reduce power consumption, it is best to remove the power cable when not using the product for an extended period of time.
- To lock the OSD control, press and hold the [▼] button for 10 seconds.
- To unlock the OSD control, press and hold the [▼] button for more than 10 seconds.
- If the OSD control is locked, Brightness, Contrast, Image Size can be adjusted, and INFORMATION can be viewed.
- For further details on Color Mode, refer to "Configuring Color Mode" in the section "Configuring the Tint Settings."
- A message that shows the current input source will appear at the top left corner of the screen each time you turn on the power or press the [▼] button to change the input source.
## Icons Description

| ![Move Up/Down](icons/move_up_down.png) | Move up to another menu item or adjust a setting when the OSD menu is displayed. When no OSD menu is displayed, the ![Move Up/Down](icons/move_up_down.png) buttons can be used to adjust the Volume, Brightness or Contrast.

**NOTE**
- The Volume can be adjusted if the input source is DisplayPort or HDMI.
- The Brightness or Contrast can be adjusted if the input source is DVI.
- For further details on the Volume, Brightness or Contrast go to the section “INFORMATION Menu and Others” and refer to “Configuring Volume in the Initial Screen” or “Configuring Brightness and Contrast in the Initial Screen.” |

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### Rear View

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

#### Ports

| ![Port](icons/port.png) | Connect to a PC using a USB cable. **NOTE** This port can connect to a PC only. |
| ![Port](icons/port.png) | Connects to a PC using a DP cable |
| ![Port](icons/port.png) | Connects to a PC via a DVI cable. |
| ![Port](icons/port.png) | Connect to a PC or source device using an HDMI cable. Connect to a source device that has the MHL function using the HDMI-MHL cable. |
| ![Port](icons/port.png) | Connect to a DC power adapter. |
Preparation

Side View

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

USB USB

Ports

<table>
<thead>
<tr>
<th>Ports</th>
<th>About ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB ~ USB</td>
<td>Connect to a source device using a USB cable.</td>
</tr>
</tbody>
</table>

**NOTE**

Source devices can be charged using these USB ports.

Adjusting the Product Tilt

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

0° ~ 15°

0.5° ~ -2°

- You can adjust the product tilt.
- To avoid damage to the product when adjusting the tilt, push or pull the top area of the product at the center while holding the top of the stand.
Adjusting the Product Height

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

- You can adjust the product height.
- To avoid damage to the product, hold the middle of the left and right hand sides of the product when adjusting the tilt.
Configure the screen settings such as brightness and color tone.

**What is Monitor Calibration?**

Most of digital images are managed onscreen. That is why a monitor is very important for photographers and designers. The process to calibrate a monitor in order to display proper colors is called monitor calibration.

This product went through a calibration process using color measurement equipment in the factory before shipment.

To obtain the optimum picture quality after calibration, select "Standard" or "sRGB" mode on the monitor.

**Supported calibrators**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>I1 Pro</th>
<th>i1Display Pro</th>
<th>ColorMunki Design</th>
<th>CA-210 / CA-310</th>
<th>Spyder 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xrite</td>
<td>xrite</td>
<td>xrite</td>
<td>KONICA MINOLTA</td>
<td>datacolor</td>
</tr>
<tr>
<td>Supported operating systems (Windows)</td>
<td>Windows Vista 32 &amp; 64</td>
<td>Windows Vista 32 &amp; 64</td>
<td>Windows Vista 32 &amp; 64</td>
<td>Windows Vista 32 &amp; 64</td>
<td>Windows Vista 32 &amp; 64</td>
</tr>
<tr>
<td></td>
<td>Windows 7 32 &amp; 64</td>
<td>Windows 7 32 &amp; 64</td>
<td>Windows 7 32 &amp; 64</td>
<td>Windows 7 32 &amp; 64</td>
<td>Windows 7 32 &amp; 64</td>
</tr>
<tr>
<td></td>
<td>Windows 8 32 &amp; 64</td>
<td>Windows 8 32 &amp; 64</td>
<td>Windows 8 32 &amp; 64</td>
<td>Windows 8 32 &amp; 64</td>
<td>Windows 8 32 &amp; 64</td>
</tr>
<tr>
<td>Supported operating systems (Mac)</td>
<td>Mac OS X 10.6 Snow Leopard</td>
<td>Mac OS X 10.6 Snow Leopard</td>
<td>Mac OS X 10.6 Snow Leopard</td>
<td>Mac OS X 10.6 Snow Leopard</td>
<td>Mac OS X 10.6 Snow Leopard</td>
</tr>
<tr>
<td></td>
<td>Mac OS X 10.7 Lion</td>
<td>Mac OS X 10.7 Lion</td>
<td>Mac OS X 10.7 Lion</td>
<td>Mac OS X 10.7 Lion</td>
<td>Mac OS X 10.7 Lion</td>
</tr>
</tbody>
</table>
What is NCE (Natural Color Expert)?

The Natural Color Expert (hereinafter "NCE") program was developed by Samsung Electronics to display optimized colors customized by users.

**NOTE**
- This product supports the monitor calibration feature through the internal NCE function and the provided NCE program. (A calibrator can be purchased separately).
- The default calibration settings measured at the factory can be restored after the product is calibrated using the NCE software.
  
  Note that the default calibration settings measured at the factory may vary depending on the panel characteristics. Panel characteristics can change according to operating time.

NCE Program Installation/Uninstallation

**Installation**

1. Insert the installation CD into the CD-ROM drive.
2. Click the **Natural Color Expert v3** installation program.

**NOTE**
If the software installation screen does not pop up on the main screen, go to CD-ROM → **AutoPlay** → Manual → NCE folder. Next, install using the **Natural Color Expert v3** execution file.
3. If the "**Natural Color Expert v3 InstallShield Wizard**" screen appears, click "**Next**" and "**Install**" in sequence.
4. Installation progress will be displayed.
5. Click "**Finish**" in the displayed "**InstallShield Wizard Complete**" screen.
6. The **Natural Color Expert v3** shortcut icon will be created on the desktop after installation.

**NOTE**
- The **Natural Color Expert v3** execution icon may not be displayed depending on the PC system or product specifications.
- Press the F5 key (**Refresh**) if the execution icon does not appear.

**Uninstallation**

1. Go to **Settings** → **Control Panel** on the Start menu and double-click **Add or Remove Programs**.
2. Select **Natural Color Expert v3** from the list and click **Change/Remove**.

**NOTE**
**Natural Color Expert v3** installation can be affected by the graphics card, motherboard and network conditions.
Starting NCE (Natural Color Expert)

Connecting the Calibrator

1. Connect the PC IN port on the product to a USB port on the PC using the USB cable.
2. Connect the calibrator to a USB port on the product.

NOTE
Install the driver (which is usually provided with a calibration program) provided by the calibrator manufacturer first before connecting the calibrator.

3. The connected calibrator will automatically appear in the "Select a Calibrator" screen.

NOTE
If more than one calibrator is connected, select the desired calibrator in the "Select a Calibrator" screen. Next, click "Next."

Features of the NCE Program

Layout and Menu Items on the NCE Home Screen

Select "Profile List" to view information on each profile. Select the Start button to perform calibration.

1. Select a tab to perform the desired functions.
2. If the "Profile List" does not contain a profile, select "Default" and then start calibration.
   If the "Profile List" contains profiles, select a profile to edit or calibrate the profile.
3. Select a profile to preview the screen. Ensure the "Profile List" contains profiles.
Select **More** to edit a profile as follows.
- **Rename**: Change a profile name.
- **Delete**: Delete the selected profile.
- **Delete All**: Delete all profiles on the list of profiles.
- **Export**: Save the selected profile to another path.
- **Import**: Import a profile from another path.

Configure the system settings.

### Layout and Menu Items on the Uniformity Screen
Perform calibration for **Uniformity** to optimize the display uniformity of the monitor.

1. Specify the number of blocks displayed per screen during **Uniformity** calibration. A greater number of blocks will increase the precision of uniformity calibration.

2. Select **Luminance only** to perform calibration only for the brightness. Select **Luminance and Color** to perform calibration for both the brightness and colors. If both **Luminance and Color** are enabled, the color temperature uniformity will also increase after calibration.

3. Specify the color temperature when performing calibration. To obtain a more accurate color temperature, it is recommended to perform **Uniformity** calibration before color calibration.
Overview and Functions of the Verification Screen
This screen allows you to verify the difference between the current monitor picture quality and the target value. (for calibration mode only)

1. Perform color verification for the currently displayed screen compared with profiles (for calibration mode only).
2. Perform Uniformity verification for the currently displayed screen (for calibration mode only).

Starting Calibration
If the "Profile List" does not contain a profile, select "Default" and then start calibration.
If the "Profile List" contains profiles, select a profile to edit or calibrate the profile.
Go to "Home screen – System settings – Profile Mode."

Basic mode
1. Select Default or a profile from the "Profile List." Next, select the Start button.
2. Specify the color gamut.

3. Configure the Brightness. The brightness level after calibration may depend on the color temperature.

4. Configure the Black Level setting. If you do not adjust the black level setting by moving the slider button, the minimum brightness will automatically be applied.

5. Configure the color temperature for White Point (range: 4000K – 10000K). To select a standard brightness, click the Standard button.
6. Configure the **R/G/B Gamma** settings. If you configure LUT, the gamma curve of sRGB will be applied.
   - If **Linear Gray** is selected, **DeltaE** (color difference) for the gray scale changes to less than 1 after calibration.
   - If **Deep Black** is selected, the black luminance becomes darker than **Linear Gray** after calibration. The minimum brightness varies depending on the "Black Level" settings.

7. Start calibration.
   - Select the connected calibrator, then click **"Next."**
   - Attach the calibrator to the indicated spot on the screen, then click **"Next."**

**NOTE**
- Set the screensaver time to at least 30 minutes before starting measurement.
- The calibration process will be performed in full screen. To cancel a calibration that is in progress, press the **ESC** key.
8. After calibration, you can compare the screens before and after the calibration using the **After / Before** buttons.

   Click "**Save**" to save the calibration results to **Calibration** on the monitor.

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**Advanced**

1. Settings required to calibrate can be configured from a single page.
2. Start calibration.
   - Select the connected calibrator, then click "Next."
   - Attach the calibrator to the indicated spot on the screen, then click "Next."

   **NOTE**
   - Set the screensaver time to at least 30 minutes before starting measurement.
   - The calibration process will be performed in full screen. To cancel a calibration that is in progress, press the ESC key.

3. After calibration, you can compare the screens before and after the calibration using the After / Before buttons.
   Click "Save" to save the calibration results to Calibration on the monitor.
MHL (Mobile High-Definition Link)

Connect a mobile device that supports MHL to the product and view videos and photos (saved on the device) using the product screen.

**NOTE**
- To use the MHL function, you need an MHL-certified mobile device. You can check if your mobile device is MHL certified on the website of the device manufacturer. To find a list of MHL-certified devices, visit the official MHL website (http://www.mhlconsortium.org).
- To use the MHL function, the latest version of software must be installed on the mobile device.
- On some mobile devices, the MHL function may not be available depending on the device performance or functionality.
- Since the display size of the product is larger than those of mobile devices, the picture quality may degrade.
- This product is officially MHL-certified. In the event of a problem with a mobile device connection, contact the mobile device manufacturer.
- The picture quality may degrade when content (imported from the mobile device) with a low resolution is displayed on the product.

Using MHL

1. Connect the HDMI IN(MHL) port on the product to the Micro USB port on the mobile device using the mobile cable.
2. Connect the DC power adapter to the product and a power socket.
3. After the power is connected, the product will automatically detect and change the input source.
   - If the input source is not set to HDMI/MHL, press the [ ] button to change the input source.
   - If the screen is blank in HDMI/MHL mode, power the product off and then on again.

**NOTE**
Mobile devices should be purchased separately.
4. If the following message appears, MHL mode is activated. After about 3 seconds, the MHL screen will be displayed.

NOTE
The indicated time "after 3 seconds" may vary depending on the mobile device.

When the mobile device is in power-saving mode
If the mobile device is in power-saving mode, deactivate the power-saving mode. The MHL screen will appear normally.

When the mobile device is not connected or does not support MHL
If MHL mode does not activate, check the connection of the mobile device.
If MHL mode does not activate, check if the mobile device supports MHL.
If MHL mode does not activate even though the mobile device supports MHL, update the firmware on the device to the latest version.

Disabling MHL

When the cable is disconnected or the mobile device is powered off
If the HDMI-MHL cable is disconnected or the mobile device is powered off when MHL is active, the MHL function will be disabled.

NOTE
If the mobile cable is disconnected, HDMI/MHL mode will still be enabled.
Checklist before Connecting to Source Devices

Check the following before you connect this product with other devices.
You can connect a camcorder, audio player or DVD player to the product.
(Note that the optimal performance can be achieved when the resolution of the source device is Full HD 1080p.)

Pre-connection Checkpoints

Check the available ports on the back of the source device.
Refer to the user manual for the source device when connecting it to the product. The number and locations of ports can vary depending on the source device.
Do not connect the power cable until all connections are completed. Connecting the power cable during connection may damage the product.

Connecting the Power

1. Connect the power cable to the DC power adapter. Next, connect the adapter to the product.
**Connecting and Using a PC**

**Connecting to a PC**
Select a connection method suitable for your PC.
- Connecting parts may differ in different products.

**Connection Using an HDMI-DVI Cable**

1. Connect the HDMI-DVI cable to the **HDMI IN (MHL)** port on the back of the product and the **DVI** port on the PC.

2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC.

3. Press the \[ \text{ } \] button on the product to change the input source to **HDMI/MHL**.

**NOTE**
- Open the SETUP&RESET menu. Next, set **PC/AV Mode** to **PC**.
- Audio is not available if the source device is connected using an HDMI-DVI cable.

**Connection Using an HDMI Cable (Digital Type)**

1. Connect the HDMI cable to the **HDMI IN (MHL)** port on the back of the product and the **HDMI** port on the PC.

2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC.

3. Press the \[ \text{ } \] button on the product to change the input source to **HDMI/MHL**.

**NOTE**
- Open the SETUP&RESET menu. Next, set **PC/AV Mode** to **PC**.
**Connection using a Dual-link DVI cable (digital type)**

1. Connect the DVI cable to the **DVI IN** port on the back of the product and the **DVI** port on the PC.

2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC.

3. Press the \[ \text{button} \] on the product to change the input source to **DVI**.

**NOTE**
- Open the SETUP&RESET menu. Next, set **PC/AV Mode** to **PC**.
- Audio is not available if the PC and product are connected via the DVI port.

---

**Connection Using the DP Cable**

1. Connect the DP cable to the **DP IN** port on the back of the product and the **DP** port on the PC.

2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC.

3. Press \[ \text{button} \] to change the input source to **DisplayPort**.

**NOTE**
- Open the SETUP&RESET menu. Next, set **PC/AV Mode** to **PC**.
Connecting the Product to a PC as a USB HUB

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

1. Connect the USB cable to **PC IN** on the back of the product and **USB** on the PC.
2. Using the product as a hub, connect and use various source devices with the product at the same time.
   - A PC cannot connect to multiple source devices at the same time as it has a limited number of input/output ports available. The HUB feature on the product will improve your work efficiency by allowing you to connect multiple source devices to the USB ports on the product at the same time without connecting them to a PC.
   - If source devices are connected to the PC, the numerous cables around the PC can get tangled and look messy. Connecting them directly to the product will resolve this.

NOTE

• An external mass-storage HDD requires external power supply. Be sure to connect it to a power source.

Driver Installation

1. Insert the user manual CD provided with the product into the CD-ROM drive.
2. Click "Windows Driver."
3. Follow the instructions given on the screen to proceed with installation.
4. Select your product model from the list of models.
5. Go to Display Properties and check that the resolution and refresh rate are appropriate. Refer to your Windows OS manual for further details.
Setting Optimum Resolution

An information message about setting optimum resolution will appear if you power on the product for the first time after purchase.
Select a language and change the resolution to the optimum value.

The optimal resolution for this monitor is as follows:

2560 x 1440 60Hz

Follow the above settings to set the resolution.

1. Press [△/▲], [◄/▼] to move to the language you want and press [Enter].
2. To hide the information message, press [Exit].

**NOTE**

• If the optimal resolution is not selected, the message will appear up to three times for a specified time even after the product is turned off and on again.

• The resolution can also be changed to the optimal setting (2560 x 1440) using Control Panel on your PC.

Changing the Resolution Using a PC

**NOTE**

Adjust the resolution and refresh rate in Control Panel on your PC to obtain optimum picture quality.
The picture quality of TFT-LCDs may degrade if the optimum resolution is not selected.

Changing the Resolution on Windows XP

Go to **Control Panel** → **Display** → **Settings** and change the resolution.
Connecting and Using a Source Device

Changing the Resolution on Windows Vista
Go to **Control Panel → Personalization → Display Settings** and change the resolution.

Changing the Resolution on Windows 7
Go to **Control Panel → Display → Screen Resolution** and change the resolution.

Changing the Resolution on Windows 8
Go to **Settings → Control Panel → Display → Screen Resolution** and change the resolution.
Connecting to a Video Device

The product can be connected to a video device.

- Connecting parts may differ in different products.

Connection Using an HDMI Cable

1. Connect the HDMI cable to the **HDMI IN(MHL)** port on the product and the **HDMI** port on the video device.

2. Press the [button on the product to change the input source to **HDMI/MHL**.

**NOTE**

- Open the **SETUP&RESET** menu. Next, set **PC/AV Mode** to **AV**.
Chapter 6

Screen Setup

Configure the screen settings such as brightness and color tone.

**Dynamic Contrast**

Dynamic Contrast automatically adjusts the picture contrast to maintain a balance of bright and dark areas.

**Changing the Dynamic Contrast Setting**

2. Move to PICTURE using the [△]/[▲], [▼]/[▼] buttons. Next, press the [▲] button.
3. Press [△]/[▲], [▼]/[▼] to move to Dynamic Contrast and press [▲]. The following screen will appear.

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Contrast</td>
<td>Off</td>
</tr>
<tr>
<td>Brightness</td>
<td></td>
</tr>
<tr>
<td>Contrast</td>
<td>60</td>
</tr>
<tr>
<td>Sharpness</td>
<td>75</td>
</tr>
<tr>
<td>Response Time</td>
<td>Faster</td>
</tr>
<tr>
<td>HDMI Black Level</td>
<td>Off</td>
</tr>
</tbody>
</table>

4. Move to the desired option using the [△]/[▲], [▼]/[▼] buttons. Next, press the [▲] button.
5. The selected option will be applied.

**Brightness**

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

A higher value will make the picture appear brighter.

**NOTE**

This option is enabled if Dynamic Contrast is set to Off.

**Configuring Brightness**

2. Move to PICTURE using the [△]/[▲], [▼]/[▼] buttons. Next, press the [▲] button.
3. Move to Brightness using the [△]/[▲], [▼]/[▼] buttons. Next, press the [▲] button. The following screen will appear.

4. Adjust the Brightness setting using the [△]/[▲], [▼]/[▼] buttons.

Screen Setup
Screen Setup

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.

**NOTE**
This option is enabled if Dynamic Contrast is set to Off.

Configuring Contrast

1. Press [ ]] on the product.
2. Move to PICTURE using the [ ]/[ ] buttons. Next, press the [ ] button.
3. Move to Contrast using the [ ]/[ ] buttons. Next, press the [ ] button. The following screen will appear.

![Contrast Screen](image)

4. Adjust the Contrast setting using the [ ]/[ ] buttons.

Sharpness

Make the outline of objects more clear or blurry. (Range: 0~100)
A higher value will make the outline of objects clearer.

**NOTE**
This option is enabled if Dynamic Contrast is set to Off.

Configuring Sharpness

1. Press [ ]] on the product.
2. Move to PICTURE using the [ ]/[ ] buttons. Next, press the [ ] button.
3. Move to Sharpness using the [ ]/[ ] buttons. Next, press the [ ] button. The following screen will appear.

![Sharpness Screen](image)

4. Adjust the Sharpness setting using the [ ]/[ ] buttons.
Response Time

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

**NOTE**
- It is recommended to set the response rate to Normal or Faster when you are not viewing a video.
- The functions available may vary depending on the product model. Refer to the actual product.

### Configuring Response Time

1. Press [Ⅲ] on the product.
2. Move to PICTURE using the [◄]/[►] buttons. Next, press the [▼] button.

![Response Time Menu](image)

- Normal - Faster - Fastest
4. Move to the desired option using the [◄]/[►] buttons. Next, press the [▼] button.
5. The selected option will be applied.

HDMI Black Level

If you connect a DVD player or set-top box to the product using an HDMI cable, the contrast and color may degrade making the picture look darker. If this is the case, correct the degraded picture quality using the HDMI Black Level menu.

### Configuring HDMI Black Level

1. Press [Ⅲ] on the product.
2. Move to PICTURE using the [◄]/[►] buttons. Next, press the [▼] button.
3. Move to HDMI Black Level using the [◄]/[►] buttons. Next, press the [▼] button. The following screen will appear.

![HDMI Black Level Menu](image)

- Normal: Set the brightness of the darkest parts of the screen to be normal.
- Low: Set the brightness of the darkest parts of the screen to be darker than Normal mode.
4. Move to the desired option using the [◄]/[►] buttons. Next, press the [▼] button.
5. The selected option will be applied.

**NOTE**
- Available only when the product is connected to a source device using an HDMI cable.
- The HDMI Black Level function may not be compatible with some source devices.
Chapter 7

Configuring the Tint Settings

Adjust the tint of the screen. Adjust the tint of the screen.

Color Mode

NOTE
This option is enabled if Dynamic Contrast is set to Off.

Configuring Color Mode

1. Press [⿵] on the product.
2. Move to COLOR using the [⿵/⿷], [⿱/⿳] buttons. Next, press the [⿴] button.
3. Move to Color Mode using the [⿵/⿷], [⿱/⿳] buttons. Next, press the [⿴] button. The following screen will appear.

- Standard: Some users may not find the brightness and sharpness comfortable for their eyes in this mode. If this is the case, adjust the brightness and sharpness.
  - When Color Mode is set to Standard, the default mode for Color Temp. is set to Default.
  - If changing the settings for Red, Green, and Blue, the mode of Color Temp. will change to Custom.
- High Bright: Increase the brightness more than when in Cinema and sRGB modes.
- Cinema: This mode is suitable to view entertainment content (video, DVD, etc.) providing a bright and sharp picture.
- sRGB: Change the color system to sRGB mode.
- Calibration: This mode analyzes the color characteristics of your monitor and allows you to save color information of the monitor as an ICC profile. This will tell your monitor what color space it should use and how it should interpret and display colors. Optimized color from the Natural Color Expert program and Calibration will be displayed on the screen.
  - When Color Mode is set to Calibration, all the options of the color settings menu will be disabled.
4. Move to the desired option using the [⿵/⿷], [⿱/⿳] buttons. Next, press the [⿴] button.
5. The selected option will be applied.

Configuring the Tint Settings

Chapter 7
Configuring the Tint Settings

**Red**

Adjust the value of the color red in the picture. (Range: 0~100)
A higher value will increase the intensity of the color.

**Configuring Red**

1. Press [ ] on the product.
2. Move to **COLOR** using the [ ] buttons. Next, press the [ ] button.
3. Move to **Red** using the [ ] buttons. Next, press the [ ] button.
   The following screen will appear.

   ![Red Screen](image)

4. Adjust the **Red** setting using the [ ] buttons.

**Green**

Adjust the value of the color green in the picture. (Range: 0~100)
A higher value will increase the intensity of the color.

**Configuring Green**

1. Press [ ] on the product.
2. Move to **COLOR** using the [ ] buttons. Next, press the [ ] button.
3. Move to **Green** using the [ ] buttons. Next, press the [ ] button.
   The following screen will appear.

![Green Screen](image)

4. Adjust the **Green** setting using the [ ] buttons.
Blue

Adjust the value of the color blue in the picture. (Range: 0~100)
A higher value will increase the intensity of the color.

Configuring Blue

The following screen will appear.

   ![Screen Image]

4. Adjust the Blue setting using the [△]/[▼] buttons.

Color Temp.

Configuring Color Temp.

The following screen will appear.

   ![Screen Image]

   - Default
   - Custom
   - 4000K - 10000K

   **NOTE**
The available modes for Color Temp. depend on the setting of Color Mode.

5. The selected option will be applied.
Gamma

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

**Configuring Gamma**


   The following screen will appear.

   ![Gamma Screen](image)


5. The selected option will be applied.
Image Size

Change the picture size.

NOTE
The available Image Size menu options depend on the setting of PC/AV Mode under SETUP&RESET.

Configuring Image Size

1. Press [③] on the product.

   In PC mode

   In AV mode

   • 4:3: This mode is suitable to view the 4:3 aspect ratio picture of video content or standard broadcasts.
   • 16:9: This mode is suitable to view the 16:9 aspect ratio picture of DVD content or widescreen broadcasts.
   • Screen Fit: This mode displays input without truncating the original picture.

   NOTE
   • Adjusting the H-Position and V-Position settings is possible if Image Size is set to Screen Fit.

5. The selected option will be applied.

• Auto: Display the picture according to the aspect ratio of the input source.
• Wide: Stretch the picture to full screen regardless of the aspect ratio of the input source.
**H-Position**

Move the screen to the left or right.

**NOTE**

Adjusting the H-Position and V-Position settings is possible if Image Size is set to Screen Fit.

**Configuring H-Position**

1. Press [ ] on the product.
2. Move to SIZE&POSITION using the [ ] buttons. Next, press the [ ] button.
3. Move to H-Position using the [ ] buttons. Next, press the [ ] button.
   The following screen will appear.

   ![H-Position Screen](image)

   - Adjusting the H-Position and V-Position settings is possible if Image Size is set to Screen Fit.
4. Adjust the H-Position setting using the [ ] buttons.

**V-Position**

Move the screen up or down.

**NOTE**

Adjusting the H-Position and V-Position settings is possible if Image Size is set to Screen Fit.

**Configuring V-Position**

1. Press [ ] on the product.
2. Move to SIZE&POSITION using the [ ] buttons. Next, press the [ ] button.
3. Move to V-Position using the [ ] buttons. Next, press the [ ] button.
   The following screen will appear.

   ![V-Position Screen](image)

   - Adjusting the H-Position and V-Position settings is possible if Image Size is set to Screen Fit.
4. Adjust the V-Position setting using the [ ] buttons.
Menu H-Position

Move the menu position to the left or right.

Configuring Menu H-Position

The following screen will appear.

4. Adjust the Menu H-Position setting using the [△]/[□] buttons.

Menu V-Position

Move the menu position up or down.

Configuring Menu V-Position

The following screen will appear.

4. Adjust the Menu V-Position setting using the [△]/[□] buttons.
Eco Saving

Adjust the power consumption of the product to save energy.

**Configuring Eco Saving**


<table>
<thead>
<tr>
<th>Eco Saving</th>
<th>Menu Transparency</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 75%: Reduce the power consumption of the product to 75%.</td>
<td></td>
</tr>
<tr>
<td>≥ 50%: Reduce the power consumption of the product to 50%.</td>
<td></td>
</tr>
<tr>
<td>Off: Disable Eco Saving.</td>
<td></td>
</tr>
</tbody>
</table>

5. The selected option will be applied.

Menu Transparency

Configure the transparency for the menu windows.

**Configuring Menu Transparency**


5. The selected option will be applied.
**Language**

Set the menu language.

**NOTE**
- 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.

**Configuring Language**

5. The selected option will be applied.

**PC/AV Mode**

Set PC/AV Mode to AV. The size of the image displayed on the screen will be enlarged. This option is useful when viewing a movie.

**Configuring PC/AV Mode**

5. The selected option will be applied.
**Auto Source**

Enable/disable Auto Source mode that detects the input source automatically.

**Configuring Auto Source**

1. Press [/menu] on the product.

   - Auto: Automatically detect the input source.
   - Manual: Manually select an input source.
5. The selected option will be applied.

**Display Time**

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

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

**Configuring Display Time**

1. Press [menu] on the product.

   - 5 sec - 10 sec - 20 sec - 200 sec
5. The selected option will be applied.
Key Repeat Time

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

Configuring Key Repeat Time

1. Press [ME] on the product.
2. Move to SETUP&RESET using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button.
3. Move to Key Repeat Time using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button. The following screen will appear.

- The available options include Acceleration, 1 sec, and 2 sec. If No Repeat is selected, a button will respond only when it is pressed.
4. Move to the desired option using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button.
5. The selected option will be applied.

Off Timer On/Off

You can set the product to automatically turn off.

Configuring Off Timer On/Off

1. Press [ME] on the product.
2. Move to SETUP&RESET using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button.
3. Move to Off Timer On/Off using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button. 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.
4. Move to the desired option using the [△]/[▲], [▼]/[●] buttons. Next, press the [▼] button.
5. The selected option will be applied.
Off Timer Setting

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.

**NOTE**
Available only when Off Timer On/Off is set to On.

Configuring Off Timer Setting

2. Move to SETUP&RESET using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons. Next, press the [ ▼ ] button.
3. Move to Off Timer Setting using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons. Next, press the [ ▼ ] button. The following screen will appear.

![](image)

4. Configure the Off Timer Setting using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons.

**NOTE**
For products for the market in Europe, the Off Timer On/Off 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 and set Off Timer On/Off to Off.

Reset

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

**NOTE**
Settings saved for Calibration mode are not changed after a reset.

Restoring the default settings (Reset)

2. Move to SETUP&RESET using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons. Next, press the [ ▼ ] button.
3. Move to Reset using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons. Next, press the [ ▼ ] button. The following screen will appear.

![](image)

4. Move to the desired option using the [ Dillon ]/[ △ ], [ △ ]/[ ▼ ] buttons. Next, press the [ ▼ ] button.
5. The selected option will be applied.
Chapter. 10

INFORMATION Menu and Others

INFORMATION

View the current input source, frequency and resolution.

Viewing information (INFORMATION)

2. Move to INFORMATION using the [△]/[△], [▽]/[▽] buttons. The current input source, frequency and resolution will appear.

Configuring Color Mode in the Initial Screen

Configure the Color Mode using the [△/▽] buttons when no OSD menu is displayed.
1. Press [△/▽] when the initial screen is displayed. The following screen will appear.
2. Adjust the Color Mode setting using the [△]/[△], [▽]/[▽] buttons.

• Standard - High Bright - Cinema - sRGB - Calibration
Configuring Volume in the Initial Screen

**NOTE**
Available only when the input source is DisplayPort or HDMI.

Adjust the Volume using the [↓][↑] buttons when the initial screen (that displays no menu screen) is displayed.

1. Press [↓][↑] when the initial screen is displayed. The following screen will appear.

   ![Volume Screen](image)

2. Adjust the Volume setting using the [↓][↑], [←][→] buttons.

   ![Volume Adjustment](image)

If there is no sound output after adjusting the volume, do the following:

- Check that the DP or HDMI cable is properly connected.
- Adjust the sound output port settings according to the conditions where the product is used.

Control Panel → Sound → Speakers → Configure Speakers

1. ![System Properties](image)
2. ![Advanced](image)
3. ![Sound](image)
4. ![Configure Speakers](image)

- Click the volume icon [A] on the Windows taskbar to adjust the volume [B].
Configuring Brightness and Contrast in the Initial Screen

**NOTE**
Available only when the input source is DVI.

Adjust the **Brightness** or **Contrast** using the [△]/[▲] buttons when the initial screen (that displays no menu screen) is displayed.

1. Press [△]/[▲] when the initial screen is displayed. The following screen will appear.

2. Adjust the **Brightness** and **Contrast** setting using the [△]/[▲], [▼]/[▼] buttons.
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.
   
   **NOTE**
   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. Follow the instructions given on the screen to proceed with installation.

**NOTE**
- 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"
- "Windows 8 32bit"

**NOTE**
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.
Requirements Before Contacting Samsung Customer Service Center

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

Testing the Product
Check if your product is operating normally by using the product test function.
If the screen is turned off and the power indicator blinks even though the product is properly connected to a PC, perform a self-diagnosis test.

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

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

Checking the Resolution and Frequency
For a mode that exceeds the supported resolution (refer to "Preset Timing Modes"), the message "Not Optimum Mode" will appear repeatedly.

Check the following.

Installation issue (PC mode)

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The screen keeps switching on and off.</td>
<td>Check that the cables are properly connected between the product and PC and that the connectors are firmly locked.</td>
</tr>
</tbody>
</table>

Screen issue

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The power LED is off. The screen will not switch on.</td>
<td>Make sure that the power cable is connected.</td>
</tr>
<tr>
<td>The message &quot;Check Signal Cable&quot; appears.</td>
<td>Check that the cable is properly connected to the product. Check that the device connected to the product is powered on.</td>
</tr>
</tbody>
</table>
# Troubleshooting Guide

## Audio issues

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no sound.</td>
<td>Adjust the product volume.</td>
</tr>
<tr>
<td>The volume is too low.</td>
<td>Adjust the volume.</td>
</tr>
<tr>
<td>There are shadows or ghost images left on the screen.</td>
<td>Check that the source device connected to the product is powered on. 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.</td>
</tr>
<tr>
<td>The screen appears unstable and shaky.</td>
<td>Have your PC serviced if it makes a beeping sound when booting.</td>
</tr>
<tr>
<td>The screen is too bright.</td>
<td>Adjust the Brightness setting.</td>
</tr>
<tr>
<td>The screen is too dark.</td>
<td>Adjust the COLOR settings.</td>
</tr>
<tr>
<td>Screen color is inconsistent.</td>
<td>Adjust the COLOR settings.</td>
</tr>
<tr>
<td>The colors on the screen have a shadow and are distorted.</td>
<td>Adjust the COLOR settings.</td>
</tr>
<tr>
<td>White does not really look white.</td>
<td>Adjust the COLOR settings.</td>
</tr>
<tr>
<td>There is no image on the screen and the power LED blinks every 0.5 to 1 second.</td>
<td>Press any key on the keyboard or move the mouse to return to normal operating mode.</td>
</tr>
</tbody>
</table>

## Source device issue

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A beeping sound is heard continuously when my PC is booting.</td>
<td>Have your PC serviced if it makes a beeping sound when booting.</td>
</tr>
</tbody>
</table>

## Other issues

<table>
<thead>
<tr>
<th>Troubleshooting</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The stand generates heat. Why is that? Does this mean that the product is defective?</td>
<td>The upper part of the stand may become slightly hot at room temperature. This occurs as the heat inside the stand releases naturally. The intensity of heat you feel can vary depending on whether the room is sealed or depending on the surrounding temperature. This does not indicate a defect. You can use the product without worry. It is recommended to use the product in a location that offers good ventilation at the back of the monitor stand.</td>
</tr>
</tbody>
</table>

## Troubleshooting Solutions

- The message "Not Optimum Mode." appears on the screen.
  - This message appears when the signal from the graphics card exceeds the maximum resolution or frequency for the product.
  - Set the maximum resolution and frequency according to the product specifications referring to the Standard Signal Mode Table.

- The images on the screen look distorted.
  - Check the cable connection to the product

- The screen is not clear. The screen is blurry.
  - Remove components (video cable, etc.) and try again.
  - Set the resolution and frequency to the recommended level.

- The screen appears unstable and shaky.
  - Check that the resolution and frequency of the PC and graphics card are set within a range compatible with the product. Then, change the screen settings if required by referring to the additional information on the product menu.

- There are shadows or ghost images left on the screen.
  - Check that the resolution and frequency of the PC and graphics card are set within a range compatible with the product. Then, change the screen settings if required by referring to the additional information on the product menu.

- The screen is too bright. The screen is too dark.
  - Adjust the Brightness setting.

- Screen color is inconsistent.
  - Adjust the COLOR settings.

- The colors on the screen have a shadow and are distorted.
  - Adjust the COLOR settings.

- White does not really look white.
  - Adjust the COLOR settings.

- There is no image on the screen and the power LED blinks every 0.5 to 1 second.
  - The product is operating in power-saving mode.
  - Press any key on the keyboard or move the mouse to return to normal operating mode.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How can I change the frequency?</strong></td>
<td>• Windows XP: Go to <strong>Control Panel → Appearance and Themes → Display → Settings → Advanced → Monitor</strong>, and adjust <strong>Refresh rate</strong> under <strong>Monitor settings</strong>.</td>
</tr>
<tr>
<td></td>
<td>• Windows ME/2000: Go to <strong>Control Panel → Display → Settings → Advanced → Monitor</strong>, and adjust <strong>Refresh rate</strong> under <strong>Monitor settings</strong>.</td>
</tr>
<tr>
<td></td>
<td>• Windows Vista: Go to <strong>Control Panel → Appearance and Personalization → Personalization → Display Settings → Advanced Settings → Monitor</strong>, and adjust <strong>Refresh rate</strong> under <strong>Monitor settings</strong>.</td>
</tr>
<tr>
<td></td>
<td>• Windows 7: Go to <strong>Control Panel → Appearance and Personalization → Display → Screen Resolution → Advanced settings → Monitor</strong>, and adjust <strong>Refresh rate</strong> under <strong>Monitor settings</strong>.</td>
</tr>
<tr>
<td></td>
<td>• Windows 8: Go to <strong>Settings → Control Panel → Appearance and Personalization → Display → Screen Resolution → Advanced settings → Monitor</strong>, and adjust <strong>Refresh rate</strong> under <strong>Monitor settings</strong>.</td>
</tr>
<tr>
<td><strong>How can I change the resolution?</strong></td>
<td>• Windows XP: Go to <strong>Control Panel → Appearance and Themes → Display → Settings</strong>, and adjust the resolution.</td>
</tr>
<tr>
<td></td>
<td>• Windows ME/2000: Go to <strong>Control Panel → Display → Settings</strong>, and adjust the resolution.</td>
</tr>
<tr>
<td></td>
<td>• Windows Vista: Go to <strong>Control Panel → Appearance and Personalization → Personalization → Display Settings</strong>, and adjust the resolution.</td>
</tr>
<tr>
<td></td>
<td>• Windows 7: Go to <strong>Control Panel → Appearance and Personalization → Display → Adjust Resolution</strong>, and adjust the resolution.</td>
</tr>
<tr>
<td></td>
<td>• Windows 8: Go to <strong>Settings → Control Panel → Appearance and Personalization → Display → Adjust Resolution</strong>, and adjust the resolution.</td>
</tr>
</tbody>
</table>

**NOTE**

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

**Question** How do I set power-saving mode?

**Answer**

• Windows XP: Set power-saving mode in **Control Panel → Appearance and Themes → Display → Screen Saver Settings** or BIOS SETUP on the PC.

• Windows ME/2000: Set power-saving mode in **Control Panel → Display → Screen Saver Settings** or BIOS SETUP on the PC.

• Windows Vista: Set power-saving mode in **Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings** or BIOS SETUP on the PC.

• Windows 7: Set power-saving mode in **Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings** or BIOS SETUP on the PC.

• Windows 8: Set power-saving mode in **Settings → Control Panel → Appearance and Personalization → Personalize → Screen Saver Settings** or BIOS SETUP on the PC.
## General

<table>
<thead>
<tr>
<th>Specification</th>
<th>S27B970D</th>
<th>S27B971D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Name</strong></td>
<td>S27B970D</td>
<td>S27B971D</td>
</tr>
<tr>
<td><strong>Panel</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>27 inches (69 cm)</td>
<td></td>
</tr>
<tr>
<td>Display area</td>
<td>596.74 mm (H) x 335.66 mm (V)</td>
<td>23.49 inches (H) x 13.21 inches (V)</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>0.2333 mm (H) x 0.2333 mm (V)</td>
<td>0.009185 inches (H) x 0.009185 inches (V)</td>
</tr>
<tr>
<td><strong>Synchronization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Frequency</td>
<td>30 ~ 81 kHz</td>
<td>30 ~ 81 kHz</td>
</tr>
<tr>
<td>Vertical Frequency</td>
<td>49 ~ 75 Hz</td>
<td>49 ~ 75 Hz</td>
</tr>
<tr>
<td><strong>Display Color</strong></td>
<td>16.7 M</td>
<td>16.7 M</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>Optimum Resolution: 2560 x 1440</td>
<td>Maximum Resolution: 2560 x 1440</td>
</tr>
<tr>
<td><strong>Maximum Pixel Clock</strong></td>
<td>241.5 MHz(DL-DVI)</td>
<td></td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>This product uses 100 to 240 V.</td>
<td>Refer to the label at the back of the product as the standard voltage can vary in different countries.</td>
</tr>
<tr>
<td><strong>Ports</strong></td>
<td>Side View: USB (1UP/2DN(USB2.0))</td>
<td>Rear View: DVI(Dual link), HDMI(MHL), DisplayPort</td>
</tr>
<tr>
<td><strong>Internal Speaker</strong></td>
<td>7.0W X 2 (Channel)</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions (W x H x D) / Weight</strong></td>
<td>645.0 x 467.0(567.0) x 247.0 mm / 7.9 kg</td>
<td>645.0 x 467.0(567.0) x 247.0 mm / 7.5 kg</td>
</tr>
<tr>
<td><strong>Environmental conditions</strong></td>
<td>Operating: Temperature: 50 °F ~ 104 °F (10 °C ~ 40 °C) Humidity: 10 % ~ 80 %, non-condensing</td>
<td>Storage: Temperature: -4 °F ~ 113 °F (-20 °C ~ 45 °C) Humidity: 5 % ~ 95 %, non-condensing</td>
</tr>
</tbody>
</table>
| **Panel Dots (Pixels)**| Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may be brighter or darker on the LCD panel. This does not affect product performance. | |}

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

(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
**PowerSaver**

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

<table>
<thead>
<tr>
<th>PowerSaver</th>
<th>Normal operation mode</th>
<th>Power saving mode</th>
<th>Power turned off (Power button)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power lamp</td>
<td>On</td>
<td>Blinking</td>
<td>Off</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>53 W (W/O USB)</td>
<td>less than 0.5 W</td>
<td>less than 0.5 W</td>
</tr>
<tr>
<td></td>
<td>63 W (W/USB)</td>
<td>less than 0.5 W</td>
<td>less than 0.5 W</td>
</tr>
</tbody>
</table>

- The power consumption level can vary in different operating conditions or when settings are changed.
- To reduce the power consumption to 0 watts, turn off the power switch on the back of the product or disconnect the power cable. Be sure to disconnect the power cable when you will not be using the product for an extended period of time. To reduce the power consumption to 0 watts when the power switch is not available, disconnect the power cable.

**Preset Timing Modes**

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.

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.

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Horizontal Frequency (kHz)</th>
<th>Vertical Frequency (Hz)</th>
<th>Clock Frequency (MHz)</th>
<th>Sync Polarity (H/V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM, 640 x 350</td>
<td>31.469</td>
<td>70.086</td>
<td>25.175</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 640 x 480</td>
<td>31.469</td>
<td>59.940</td>
<td>25.175</td>
<td>+/-</td>
</tr>
<tr>
<td>MAC, 640 x 480</td>
<td>35.000</td>
<td>66.667</td>
<td>30.240</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 640 x 480</td>
<td>37.861</td>
<td>72.809</td>
<td>31.500</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 640 x 480</td>
<td>37.500</td>
<td>75.000</td>
<td>31.500</td>
<td>+/-</td>
</tr>
<tr>
<td>IBM, 720 x 400</td>
<td>31.469</td>
<td>70.087</td>
<td>28.322</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 800 x 600</td>
<td>35.156</td>
<td>56.250</td>
<td>36.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 800 x 600</td>
<td>37.879</td>
<td>60.317</td>
<td>40.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 800 x 600</td>
<td>48.077</td>
<td>72.188</td>
<td>50.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 800 x 600</td>
<td>46.875</td>
<td>75.000</td>
<td>49.500</td>
<td>+/-</td>
</tr>
<tr>
<td>MAC, 832 x 624</td>
<td>49.726</td>
<td>74.551</td>
<td>57.284</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1024 x 768</td>
<td>48.363</td>
<td>60.004</td>
<td>65.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1024 x 768</td>
<td>56.476</td>
<td>70.069</td>
<td>75.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1024 x 768</td>
<td>60.023</td>
<td>75.029</td>
<td>78.750</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1152 x 864</td>
<td>67.500</td>
<td>75.000</td>
<td>108.000</td>
<td>+/-</td>
</tr>
</tbody>
</table>
Specifications

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Horizontal Frequency (kHz)</th>
<th>Vertical Frequency (Hz)</th>
<th>Clock frequency (MHz)</th>
<th>Sync Polarity (H/V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC, 1152 x 870</td>
<td>68.681</td>
<td>75.062</td>
<td>100.000</td>
<td>-/-</td>
</tr>
<tr>
<td>VESA, 1280 x 800</td>
<td>49.702</td>
<td>59.810</td>
<td>83.500</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1280 x 960</td>
<td>60.000</td>
<td>60.000</td>
<td>108.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1280 x 1024</td>
<td>63.981</td>
<td>60.020</td>
<td>108.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1280 x 1024</td>
<td>79.976</td>
<td>75.025</td>
<td>135.000</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1440 x 900</td>
<td>55.935</td>
<td>59.887</td>
<td>106.500</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1600 x 1200</td>
<td>75.000</td>
<td>60.000</td>
<td>106.500</td>
<td>+/-</td>
</tr>
<tr>
<td>VESA, 1680 x 1050</td>
<td>65.290</td>
<td>59.954</td>
<td>146.250</td>
<td>-/+</td>
</tr>
<tr>
<td>VESA, 1920 x 1200</td>
<td>74.556</td>
<td>59.885</td>
<td>193.250</td>
<td>-/+</td>
</tr>
<tr>
<td>VESA, 2560 x 1440(RB)</td>
<td>88.787</td>
<td>59.951</td>
<td>241.500</td>
<td>+/-</td>
</tr>
</tbody>
</table>

- **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.
## Contact SAMSUNG WORLD WIDE

**NOTE**
If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care Center.

<table>
<thead>
<tr>
<th>Country</th>
<th>Contact Details</th>
<th>Website Language</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NORTH AMERICA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANADA</td>
<td>1-800-SAMSUNG (726-7864)</td>
<td><a href="http://www.samsung.com/ca">http://www.samsung.com/ca</a> (English) <a href="http://www.samsung.com/ca_fr">http://www.samsung.com/ca_fr</a> (French)</td>
</tr>
<tr>
<td>MEXICO</td>
<td>01-800-SAMSUNG (726-7864)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td><strong>LATIN AMERICA</strong></td>
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<tr>
<td>ARGENTINE</td>
<td>0800-333-3733</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>BOLIVIA</td>
<td>800-10-7260</td>
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</tr>
<tr>
<td>BRAZIL</td>
<td>0800-124-421 4004-0000</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
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<td>CHILE</td>
<td>800-SAMSUNG (726-7864) From mobile 02-24 82 82 00</td>
<td><a href="http://www.samsung.com/cl">http://www.samsung.com/cl</a></td>
</tr>
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<td>01-8000112112 Bogotá: 6001272</td>
<td><a href="http://www.samsung.com/co">http://www.samsung.com/co</a></td>
</tr>
<tr>
<td>COSTA RICA</td>
<td>0-800-507-7267</td>
<td><a href="http://www.samsung.com/latin">http://www.samsung.com/latin</a> (Spanish) <a href="http://www.samsung.com/latin_en">http://www.samsung.com/latin_en</a> (English)</td>
</tr>
<tr>
<td>DOMINICA</td>
<td>1-800-751-2676</td>
<td><a href="http://www.samsung.com/latin">http://www.samsung.com/latin</a> (Spanish) <a href="http://www.samsung.com/latin_en">http://www.samsung.com/latin_en</a> (English)</td>
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<td>ECUADOR</td>
<td>1-800-10-7267</td>
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<tr>
<td>EL SALVADOR</td>
<td>800-6225</td>
<td><a href="http://www.samsung.com/latin">http://www.samsung.com/latin</a> (Spanish) <a href="http://www.samsung.com/latin_en">http://www.samsung.com/latin_en</a> (English)</td>
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<tr>
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<td>Company Website</td>
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<td>HONDURAS</td>
<td>800-27919267</td>
<td><a href="http://www.samsung.com/latin">http://www.samsung.com/latin</a> (Spanish) <a href="http://www.samsung.com/latin_en">http://www.samsung.com/latin_en</a> (English)</td>
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<td>JAMAICA</td>
<td>1-800-234-7267</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>NICARAGUA</td>
<td>00-1800-5077267</td>
<td><a href="http://www.samsung.com/latin">http://www.samsung.com/latin</a> (Spanish) <a href="http://www.samsung.com/latin_en">http://www.samsung.com/latin_en</a> (English)</td>
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<tr>
<td>PARAGUAY</td>
<td>98005420001</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>PERU</td>
<td>0-800-777-08 (Only from landline) 336-8686 (From HHP &amp; landline)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>PUERTO RICO</td>
<td>1-800-682-3180</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>TRINIDAD &amp; TOBAGO</td>
<td>1-800-SAMSUNG(726-7864)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>URUGUAY</td>
<td>40543733</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>VENEZUELA</td>
<td>0-800-100-5303</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>AUSTRIA</td>
<td>0810 - SAMSUNG (7267864, € 0.07/min)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>BELGIUM</td>
<td>02-201-24-18</td>
<td><a href="http://www.samsung.com/be">http://www.samsung.com/be</a> (Dutch) <a href="http://www.samsung.com/be_fr">http://www.samsung.com/be_fr</a> (French)</td>
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<td>051 133 1999</td>
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<td>CROATIA</td>
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<td>CZECH</td>
<td>800 - SAMSUNG (800-726786)</td>
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<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>ESTONIA</td>
<td>800-7267</td>
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<td>FINLAND</td>
<td>030-6227 515</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>FRANCE</td>
<td>01 48 63 00 00</td>
<td><a href="http://www.samsung.com/fr">http://www.samsung.com/fr</a></td>
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| GERMANY          | 0180 5 SAMSUNG bzw. 0180 5 7267864* (*0,14 €/Min. aus dem dt. Festnetz, aus dem Mobilfunk max. 0,42 €/Min.) | http://www.samsung.com/
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<td>GREECE</td>
<td>80111-SAMSUNG (80111 726 7864) only from land line (+30) 210 6997691 from mobile and land line</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>HUNGARY</td>
<td>06-80-SAMSUNG (726-7864)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>ITALIA</td>
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<tr>
<td>LATVIA</td>
<td>8000-7267</td>
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<td>LITHUANIA</td>
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<td><a href="http://www.samsung.com/lt">http://www.samsung.com/lt</a></td>
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<td>LUXEMBURG</td>
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<td>MONTENEGRO</td>
<td>020 405 888</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>NETHERLANDS</td>
<td>0900-SAMSUNG (0900-7267864) (€ 0,10/Min)</td>
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<tr>
<td>NORWAY</td>
<td>815 56480</td>
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<tr>
<td>POLAND</td>
<td>&quot;0 801-1SAMSUNG(172-678) * lub +48 22 607-93-33 ** *(całkowity koszt połączenia jak za 1 impuls według taryfy operatora) ** (koszt połączenia według taryfy operatora)&quot;</td>
<td><a href="http://www.samsung.com/pl">http://www.samsung.com/pl</a></td>
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<tr>
<td>PORTUGAL</td>
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<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>SERBIA</td>
<td>+381 11 321 6899 (old number still active 0700 7267864)</td>
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<tr>
<td>SLOVAKIA</td>
<td>0800 - SAMSUNG (0800-726 786)</td>
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<td>SPAIN</td>
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<td>SWEDEN</td>
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<td>SWITZERLAND</td>
<td>0848 - SAMSUNG (7267864, CHF 0.08/min)</td>
<td><a href="http://www.samsung.com/ch">http://www.samsung.com/ch</a> (German) <a href="http://www.samsung.com/ch_fr">http://www.samsung.com/ch_fr</a> (French)</td>
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<td>AZERBAIJAN</td>
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<td>BELARUS</td>
<td>810-800-500-55-500</td>
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<td>KAZAKHSTAN</td>
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<td>KYRGYZSTAN</td>
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<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>MOLDOVA</td>
<td>0-800-614-40</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>TADJIKISTAN</td>
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<tr>
<td>UKRAINE</td>
<td>0-800-502-000</td>
<td><a href="http://www.samsung.com/ua">http://www.samsung.com/ua</a> (Ukrainian) <a href="http://www.samsung.com/ua_ru">http://www.samsung.com/ua_ru</a> (Russian)</td>
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<td>UZBEKISTAN</td>
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### ASIA PACIFIC

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<tr>
<td>Australia</td>
<td>1300 362 603</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>China</td>
<td>400-810-5858</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>(852) 3698 4698</td>
<td><a href="http://www.samsung.com/hk">http://www.samsung.com/hk</a> (Chinese)</td>
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<td></td>
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<td><a href="http://www.samsung.com/hk_en">http://www.samsung.com/hk_en</a> (English)</td>
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<tr>
<td>India</td>
<td>1800 3000 8282, 1800 266 8282</td>
<td><a href="http://www.samsung.com/in">http://www.samsung.com/in</a></td>
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<tr>
<td>Indonesia</td>
<td>0800-112-8888, 021-5699-7777</td>
<td><a href="http://www.samsung.com/id">http://www.samsung.com/id</a></td>
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<td>Japan</td>
<td>0120-327-527</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>Malaysia</td>
<td>1800-88-9999</td>
<td><a href="http://www.samsung.com/my">http://www.samsung.com/my</a></td>
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<tr>
<td>New Zealand</td>
<td>0800 SAMSUNG (0800 726 786)</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<tr>
<td>Philippines</td>
<td>1-800-10-SAMSUNG (726-7864) for PLDT, 1-800-3-SAMSUNG (726-7864) for Digitel, 1-800-8-SAMSUNG (726-7864) for Globe 02-5805777</td>
<td><a href="http://www.samsung.com/ph">http://www.samsung.com/ph</a></td>
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<td>Singapore</td>
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<td>Taiwan</td>
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<td>Thailand</td>
<td>1800-29-3232, 02-689-3232</td>
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<td>Vietnam</td>
<td>1 800 588 889</td>
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### MENA

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<td>Iran</td>
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<td>Oman</td>
<td>800-SAMSUNG (726-7864)</td>
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<td>U.A.E</td>
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### AFRICA

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<td>91-726-7864</td>
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<tr>
<td>BOTSWANA</td>
<td>0800-726-000</td>
<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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<td>CAMEROON</td>
<td>7095-0077</td>
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<td>COTE D’IVOIRE</td>
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<td>GHANA</td>
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<td><a href="http://www.samsung.com">http://www.samsung.com</a></td>
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</table>

### Responsibility for the Pay Service

**NOTE**

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

**Not a product defect**

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

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

**A Product damage caused by customer’s fault**

Product damage caused by customer’s mishandling or wrong repair

If a product damage is caused by;

- external impact or drop.
- use of supplies or separately sold product unspecified by Samsung.
- repair from a person besides an engineer of outsourcing service company or partner of Samsung Electronics Co., Ltd..
- remodeling or repairing the product by customer.
- using it with incorrect voltage or non-authorised electrical connections.
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.)

**NOTE**

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

---

**Correct Disposal**

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

(Applicable in countries with separate collection systems)

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

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

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

Correct disposal of batteries in this product

(Applicable in countries with separate collection systems)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.
Terminology

OSD (On Screen Display)

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

Gamma

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

Grey scale

Scale refers to levels of 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 85000 times per second. The horizontal frequency is indicated in 85kHz.

Vertical Frequency

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

Resolution

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

Plug & Play

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

MHL (Mobile High-Definition Link)

The MHL feature allows you to view videos and photos (saved on a connected mobile device that supports MHL) using the product screen.