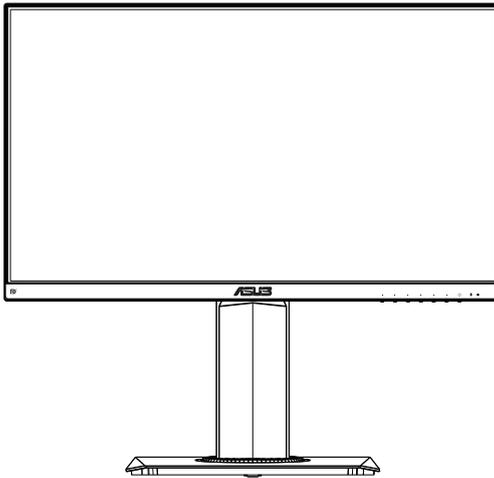


**ASUS®**

**VG249 Series  
LCD Monitor**

**User Guide**



**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

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# Notices

## Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.



## Safety information

- Before setting up the monitor, carefully read all the documentation that came with the package.
- To prevent fire or shock hazard, never expose the monitor to rain or moisture.
- Never try to open the monitor cabinet. The dangerous high voltages inside the monitor may result in serious physical injury.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- Slots and openings on the back or top of the cabinet are provided for ventilation. Do not block these slots. Never place this product near or over a radiator or heat source unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
- Use the appropriate power plug which complies with your local power standard.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Avoid dust, humidity, and temperature extremes. Do not place the monitor in any area where it may become wet. Place the monitor on a stable surface.
- Unplug the unit during a lightning storm or if it will not be used for a long period of time. This will protect the monitor from damage due to power surges.
- Never push objects or spill liquid of any kind into the slots on the monitor cabinet.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 ~ 240V AC.
- The socket-outlet shall be installed near the equipment and shall be easily accessible
- If you encounter technical problems with the monitor, contact a qualified service technician.
- Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.

## WARNING

Usage of other than specified head- or earphones can result in hearing loss due to excessive sound pressures.

## Care & Cleaning

- Before you lift or reposition your monitor, it is better to disconnect the cables and power cord. Follow the correct lifting techniques when positioning the monitor. When lifting or carrying the monitor, grasp the edges of the monitor. Do not lift the display by the stand or the cord.
- Cleaning. Turn your monitor off and unplug the power cord. Clean the monitor surface with a lint-free, non-abrasive cloth. Stubborn stains may be removed with a cloth dampened with mild cleaner.
- Avoid using a cleaner containing alcohol or acetone. Use a cleaner intended for use with the LCD. Never spray cleaner directly on the screen, as it may drip inside the monitor and cause an electric shock.

### The following symptoms are normal with the monitor:

- The screen may flicker during the initial use due to the nature of the fluorescent light. Turn off the Power Switch and turn it on again to make sure that the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- When the same image is displayed for hours, an afterimage of the previous screen may remain after switching the image. The screen will recover slowly or you can turn off the Power Switch for hours.
- When the screen becomes black or flashes, or cannot work anymore, contact your dealer or service center to fix it. Do not repair the screen by yourself!

### Conventions used in this guide



**WARNING:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Information that you **MUST** follow to complete a task.



**NOTE:** Tips and additional information to aid in completing a task.

## **Where to find more information**

Refer to the following sources for additional information and for product and software updates.

### **1. ASUS websites**

The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to **<http://www.asus.com>**

### **2. Optional documentation**

Your product package may include optional documentation that may have been added by your dealer. These documents are not part of the standard package.

## 1.1 Welcome!

Thank you for purchasing the ASUS® LCD monitor!

The latest widescreen LCD monitor from ASUS provides a crisper, broader, and brighter display, plus a host of features that enhance your viewing experience.

With these features, you can enjoy the convenience and delightful visual experience that the monitor brings you!

## 1.2 Package contents

Check your package for the following items:

- ✓ LCD Monitor
- ✓ Monitor Base
- ✓ Quick Start Guide
- ✓ Warranty Card
- ✓ 1x Power Cord\*
- ✓ 1x Audio Cable (optional)
- ✓ 1x HDMI Cable (optional)
- ✓ 1x VGA Cable (optional)
- ✓ 1x DisplayPort Cable (optional)

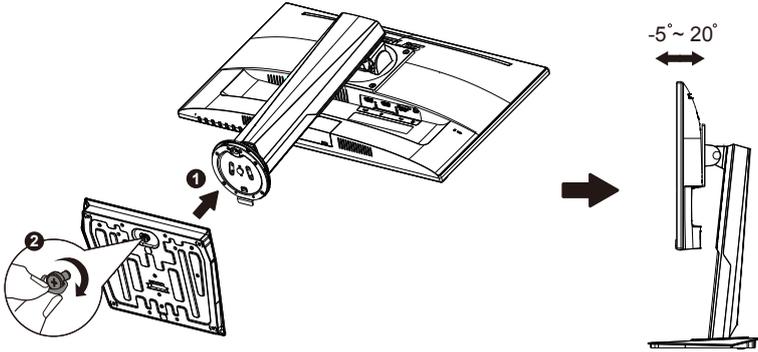


- 
- If any of the above items is damaged or missing, contact your retailer immediately.
-

### 1.3 Assembling the monitor

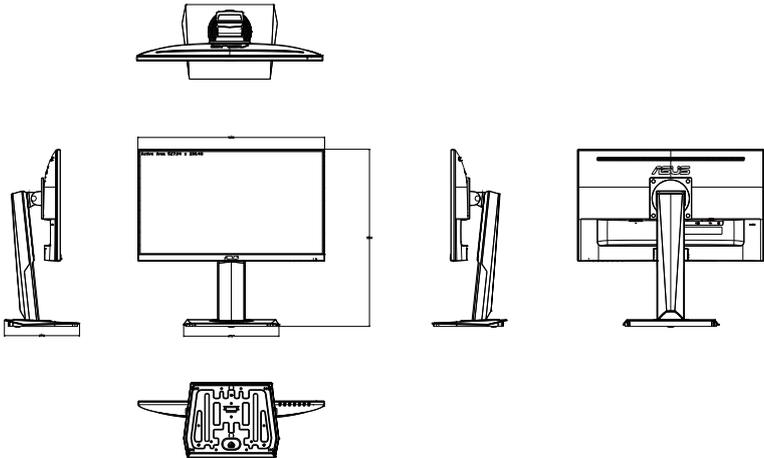
#### To assemble the monitor:

1. Place the display flat on a cloth on the table, Then attach the base to the arm and fix with the screw to join them tightly. You can easily tighten the screw by fingers.
2. Adjust the monitor to the angle that is most comfortable for you.



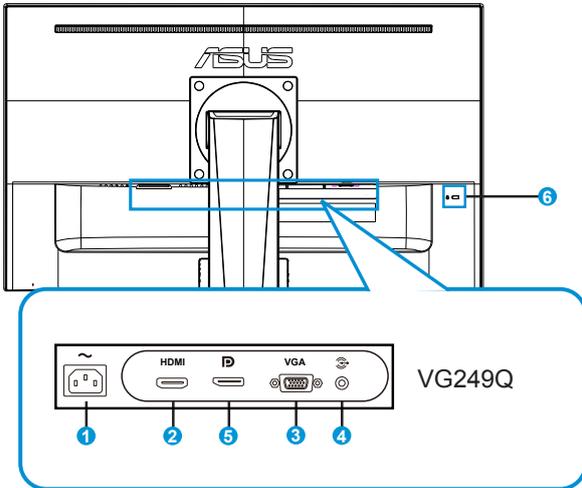
### 1.4 Outline dimension

Unit: mm [inch]



## 1.5 Connect cables

### 1.5.1 Rear of the LCD monitor

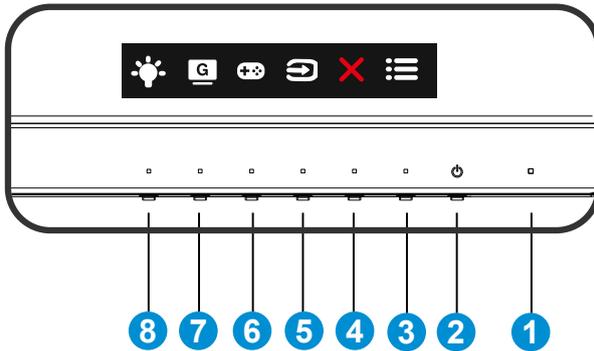


1. AC-IN Port
2. HDMI Port
3. VGA Port
4. Audio - in Port
5. DisplayPort Port
6. Kensington Lock

## 1.6 Monitor introduction

### 1.6.1 Using the Controls button

Use the control button on the back of the monitor to adjust the image settings.



1. Power Indicator:

- The color definition of the power indicator is as the below table.

| Status | Description  |
|--------|--------------|
| White  | ON           |
| Amber  | Standby mode |
| OFF    | OFF          |

2.  Power Button:

- Press this button to turn the monitor on/off.

3.  MENU Button:

- Press this button to enter the OSD menu.

4.  Close Button

- Exit the OSD menu.

5.  Input Select Button.

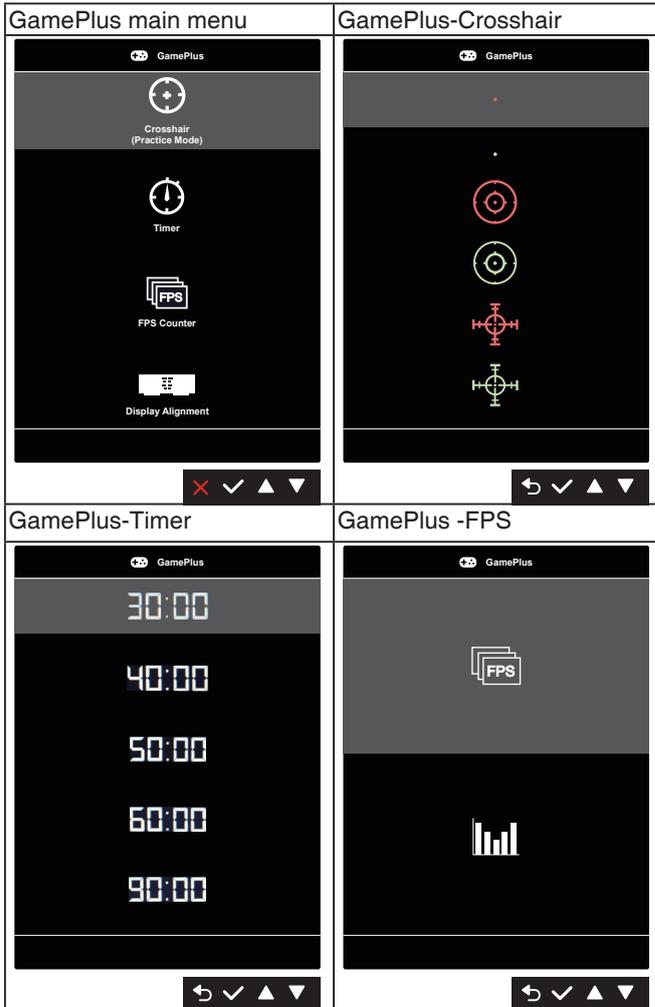
- Use this hotkey to switch from VGA, HDMI, DisplayPort input signal.

6.  GamePlus Button:

- **GamePlus:** The GamePlus Function provides a toolkit and creates a better gaming environment for users when playing different types of games. Particularly, Crosshair function is specially designed for new gamers or beginners interested in First Person Shooter (FPS) games.

To active GamePlus:

- Press **GamePlus** Button to enter the GamePlus main menu.
- Activate Crosshair, Timer or FPS Counter or Display Alignment function.
- Press the ▼ and ▲ buttons to select and press ✓ to confirm the function needed. Press ✗ to go off, and exit.



7.  Shortcut key1:
  - This is a Shortcut key. The default setting is GameVisual.
8.  Shortcut key2
  - This is a Shortcut key. The default setting is Blue Light Filter.

## 2.1 Detaching the arm/stand (for VESA wall mount)

The detachable stand of this monitor is specially designed for VESA wall mount.

### To detach the arm/stand

1. Disconnect power and signal cables. Carefully put the front of the monitor face down on a clean table.
2. Use a screwdriver to remove the four screws on the arm (Figure 1), and then detach the arm/stand from the monitor (Figure 2).



- We recommend that you cover the table surface with soft cloth to prevent damage to the monitor.
- Hold the stand of the monitor while removing the screws.

Figure 1

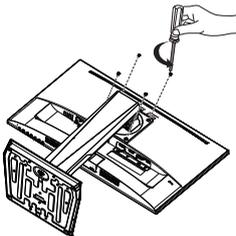
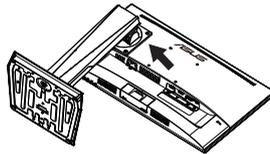


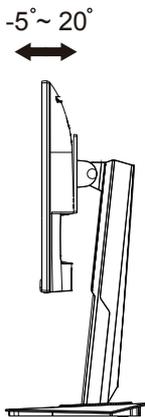
Figure 2



- The VESA wall mount kit ( 100 x 100 mm) is purchased separately.
- Use only the UL Listed Wall Mount Bracket with minimum weight/load 12 kg (Screw size: M4 x 10 mm).

## 2.2 Adjusting the monitor

- For optimal viewing, we recommend that you look at the full face of the monitor, then adjust the monitor to the angle that is most comfortable for you.
- Hold the stand to prevent the monitor from falling when you change its angle.
- You can adjust the monitor's angle from  $+20^{\circ}$  to  $-5^{\circ}$  .



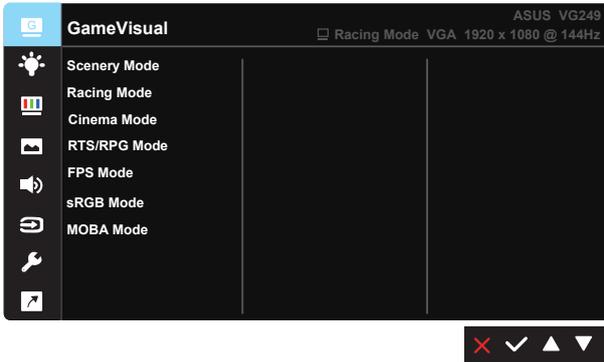
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It is normal that the monitor slightly shakes while you adjust the viewing angle.

---

## 3.1 OSD (On-Screen Display) menu

### 3.1.1 How to reconfigure

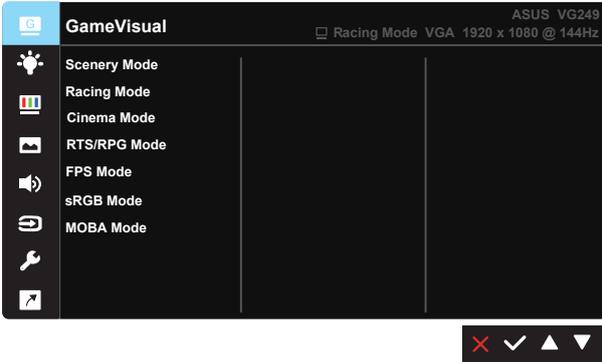


1. Press the MENU button to activate the OSD menu.
2. Press the ▼ and ▲ buttons to toggle between options in the Menu. As you move from one icon to another, the option name is highlighted.
3. To select the highlighted item on the menu press the ✓ button.
4. Press the ▼ and ▲ buttons to select the desired parameter.
5. Press the ✓ button to enter the slide bar and then use the ▼ or ▲ buttons, according to the indicators on the menu, to make your changes.
6. Select the ↶ to return to previous menu or ✓ to accept and return to previous menu.

### 3.1.2 OSD Function Introduction

#### 1. GameVisual

This function contains seven sub-functions that you can select for your preference. Each mode has the Reset selection, allowing you to maintain your setting or return to the preset mode.



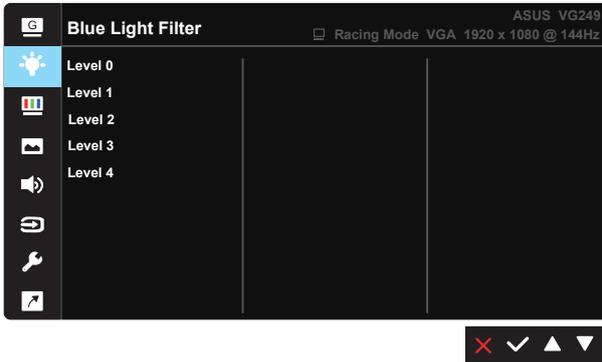
- **Scenery Mode:** This is the best choice for scenery photo displaying with GameVisual™ Video Intelligence Technology.
- **Racing Mode:** This is the best choice for racing game playing with GameVisual™ Video Intelligence Technology.
- **Cinema Mode:** This is the best choice for movie watching with GameVisual™ Video Intelligence Technology.
- **RTS/RPG Mode:** This is the best choice for Real-Time Strategy(RTS)/ Role-Playing Game(RPG) playing with GameVisual™ Video Intelligence Technology.
- **FPS Mode:** This is the best choice for First Person Shooter game playing with GameVisual™ Video Intelligence Technology.
- **sRGB Mode:** This is the best choice for viewing photos and graphics from PCs.
- **MOBA Mode :** This is the best choice for Multiplayer Online Battle Arena (MOBA) games playing with GameVisual™ Video intelligence Technology.



- 
- In the Racing Mode, the Saturation, Sharpness, and ASCR functions are not user-configurable.
  - In the sRGB, the Saturation, Skin Tone, Color Temp., Sharpness, Brightness, Contrast and ASCR functions are not user-configurable.
  - In the MOBA Mode, the Saturation, Sharpness and ASCR functions are not user-configurable.
-

## 2. Blue Light Filter

Adjust the energy level of blue light emitted from LED backlight.



- **Level 0:** No change.
- **Level 1~4:** The higher the level, the more blue light will be reduced.



- When Blue Light Filter is activated, the default settings of Standard Mode will be automatically imported.
- Between Level 1 to Level 3, the Brightness function is user-configurable.
- Level 4 is optimized setting. It is compliance with TUV Low Blue Light Certification. The Brightness function is not user-configurable.

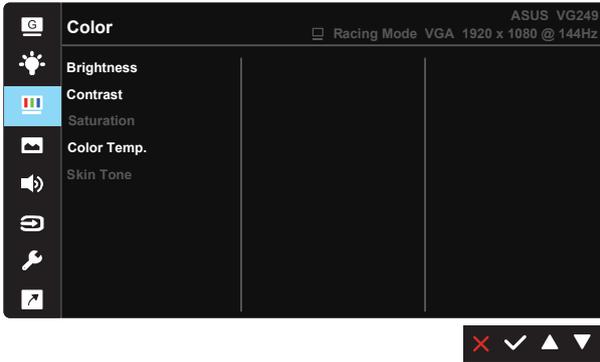


Please refer to the following to alleviate eye strains:

- Users should take some time away from the display if working for long hours. It is advised to take short breaks (at least 5 mins) after around 1 hour of continuous working at the computer. Taking short and frequent breaks is more effective than a single longer break.
- To minimize eye strain and dryness in your eyes, users should rest the eye periodically by focusing on objects that are far away.
- Eye exercises can help to reduce eye strain. Repeat these exercises often. If eye strain continues please consult a physician. Eye exercises: (1) Repeating look up and down (2) Slowly roll your eyes (3) Move your eyes diagonal.
- High energy blue light may lead to eye strain and AMD (Age-Related Macular Degeneration). Blue light filter to reduce 70% (max.) harmful blue light to avoiding CVS (Computer Vision Syndrome).

### 3. Color

Select the image color you like from this function.



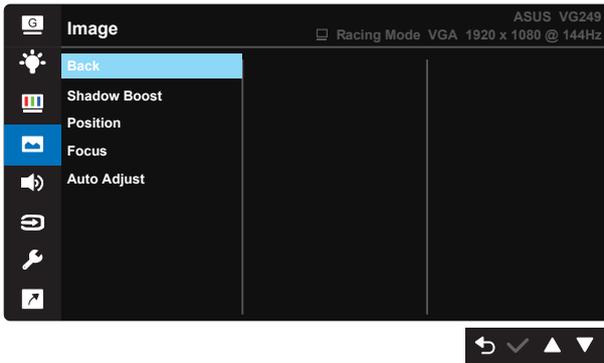
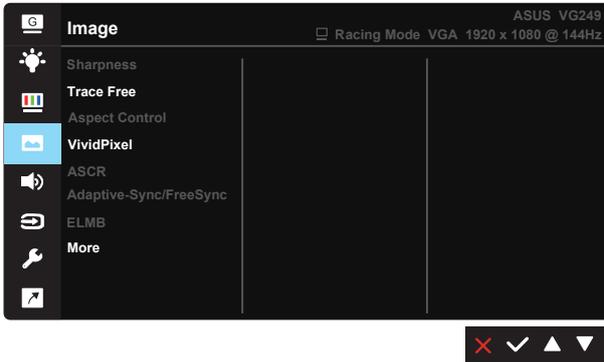
- **Brightness:** The adjusting range is from 0 to 100.
- **Contrast:** The adjusting range is from 0 to 100.
- **Saturation:** The adjusting range is from 0 to 100.
- **Color Temp.:** Contains three preset color modes (**Cool**, **Normal**, **Warm**) and **User Mode**.
- **Skin Tone:** Contains three color modes including **Reddish**, **Natural**, and **Yellowish**.



- 
- In the User Mode, colors of R (Red), G (Green), and B (Blue) are user-configurable; the adjusting range is from 0 ~ 100.
-

#### 4. Image

You can adjust the image Sharpness, Trace Free, Aspect Control, VividPixel, ASCR, Adaptive-Sync/FreeSync, ELMB, Shadow Boost, Position (VGA only), Focus (VGA only), and Auto Adjust (VGA only), from this main function.



- **Sharpness:** Adjusts the picture sharpness. The adjusting range is from 0 to 100.
- **Trace Free:** Speeds up the response time by Over Drive technology. The adjusting range is from lower 0 to faster 100.
- **Aspect Control:** Adjusts the aspect ratio to “Full”, “4:3”, “Overscan(Only For HDMI)”.
- **VividPixel:** ASUS Exclusive Technology that brings lifelike visuals for crystal-clear and detail-oriented enjoyment. The adjusting range is from 0 to 100.
- **ASCR:** Select **ON** or **OFF** to enable or disable dynamic contrast ratio function.

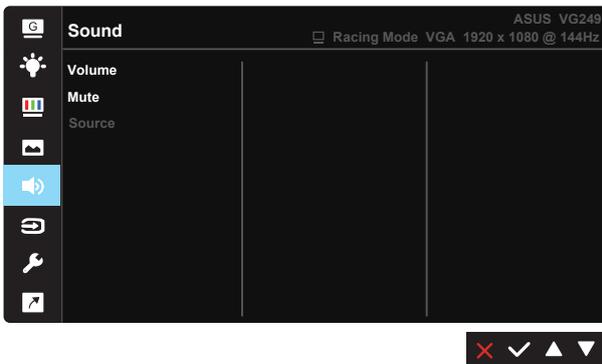
- **Adaptive-Sync/FreeSync:** It can allow a Adaptive-Sync/FreeSync supported graphics source to dynamically adjust display refresh rate based on typical content frame rates for power efficient, virtually stutter free and low-latency display update.
- **ELMB:** Check to decrease motion blur and minimize ghosting part when on-screen objects are fast moving. It can only be turned on at 80Hz or above.
- **Back:** Return the previous page of Image Setting.
- **Shadow Boost:** Dark color enhancement adjust monitor gamma curve to enrich the dark tones in an image making dark scenes and objects much easier be found.
- **Position:** Adjusts the horizontal position (**H-Position**) and the vertical position (**V-Position**) of the image. The adjusting range is from 0 to 100 (Only available for VGA input).
- **Focus:** Reduces Horizontal-line noise and Vertical-line noise of the image by adjusting (**Phase**) and (**Clock**) separately. The adjusting range is from 0 to 100 (Only available for VGA input).
- **Auto Adjust.:** Automatically adjust the image to its optimized position, clock, and phase. (Only available for VGA input.)



- 
- 4:3 is only available when input source is in 4:3 format. OverScan is only available for the HDMI input source
  - Phase adjusts the phase of the pixel clock signal. With a wrong phase adjustment, the screen shows horizontal disturbances.
  - Clock (pixel frequency) controls the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the image is not proportional.
- 

## 5. Sound

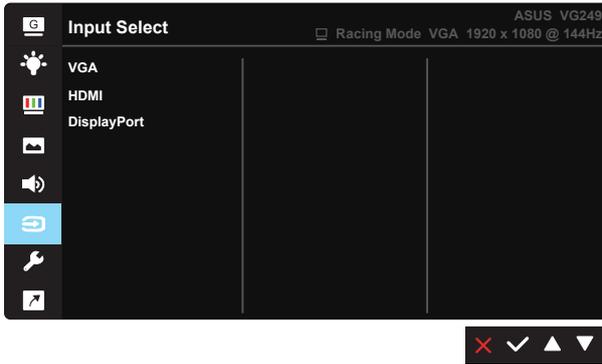
Adjust the sound settings to your preference.



- **Volume:** Adjusts the output volume level.
- **Mute:** Mute the output volume.
- **Source:** Adjusts audio source to “Line In” or “HDMI” (only available for HDMI input); Adjusts audio source to “Line In” or “DisplayPort” (only available for DisplayPort input).

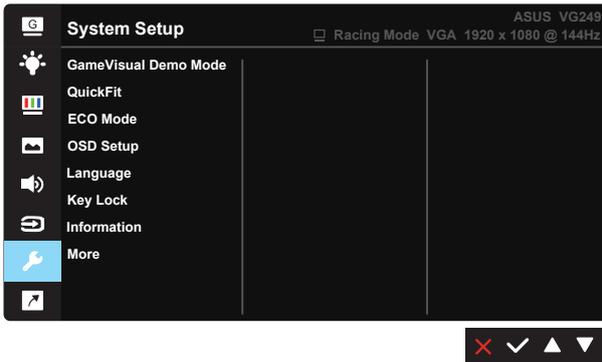
## 5. Input Select

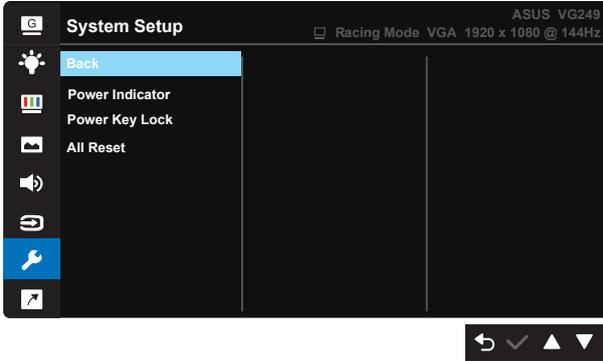
Select the input source from **VGA**, **HDMI**, **DisplayPort** input signal.



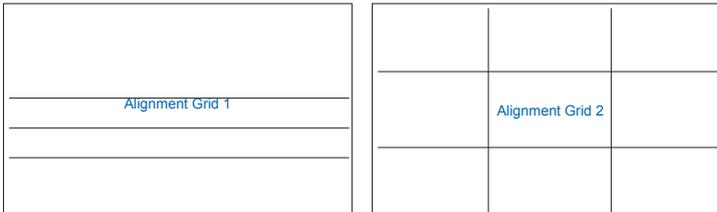
## 6. System Setup

Adjusts the system configuration.

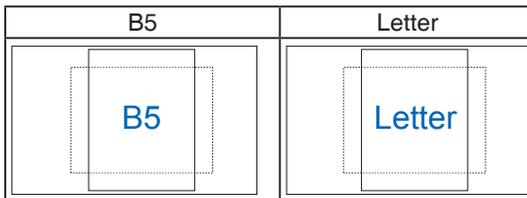




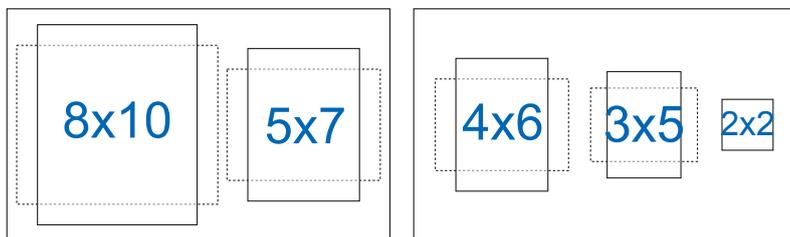
- **GameVisual Demo Mode:** Activate the demo mode for the GameVisual function.
- **QuickFit:** contains three patterns: (1) Grid (2) Paper size (3) Photo size.
  1. Grid pattern: Facilitates designers and users to organize content and layout on one page and achieve a consistent look and feel.



2. Paper size: Provides users to view their documents in real size on the screen.



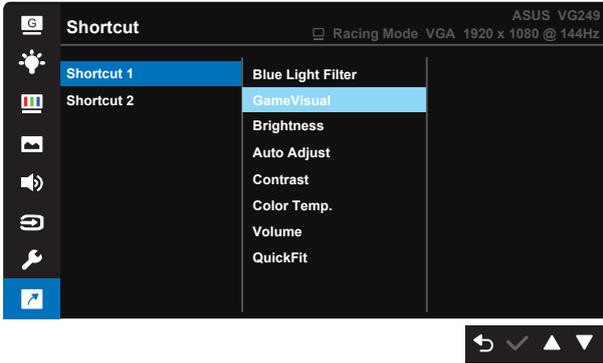
3. Photo size: Provides photographers and other users to accurately view and edit their photos in real size on the screen.



- **ECO Mode:** Activate the ecology mode for power saving.
- **OSD Setup:** Adjusts the **OSD Timeout**, **DDC/CI**, and **Transparency** of the OSD screen.
- **Language:** Select OSD language. The selections are: **English, French, German, Spanish, Italian, Dutch, , Russian, Poland, Czech, Croacia, Hungary, Romania, Portugal, Turkey, Simplified Chinese, Traditional Chinese, Japanese, Korean, Persian, Thai, Indonesian.**
- **Key Lock:** Disable all key functions. Pressing the second button on the right for more than five seconds to disable key lock function.
- **Information:** Displays the monitor information.
- **More:** Return the next page of System Setting.
- **Back:** Return the previous page of System Setting.
- **Power Indicator:** Turn the power LED indicator on/off.
- **Power Key Lock:** To disable / enable power key
- **All Reset:** Selects “Yes” to revert all settings to the factory default mode.

## 7. Shortcut

Selecting this option allows you to set two shortcut keys.



- **Shortcut 1:** User can select from “Blue Light Filter” “GameVisual”, “Brightness”, “Auto Adjust”, “Contrast”, “Color Temp.”, “Volume”, “QuickFit”, and set as shortcut key. The default setting is .GameVisual.
- **Shortcut 2:** User can select from “Blue Light Filter” “GameVisual”, “Brightness”, “Auto Adjust”, “Contrast”, “Color Temp.”, “Volume”, “QuickFit”, and set as shortcut key. The default setting is Blue Light Filter.

## 3.2 Specifications

| <b>Model</b>   | <b>VG249Q</b>   |
|--|---|
| Panel Size   | 23.8"W(60.45cm)   |
| Max. Resolution  | 1920x1080@144Hz   |
| Brightness (Typ.)  | 250cd/m <sup>2</sup>  |
| Intrinsic Contrast Ratio (Typ.)                                | 1000:1  |
| Viewing Angle (CR>10)  | 178°(H) /178°(V)  |
| Display Colors   | 16.7 M  |
| Response Time  | 4ms (G To G ) 1ms(MPRT)   |
| Sound from HDMI  | Yes   |
| HDMI input   | Yes   |
| D-Sub input  | Yes   |
| DisplayPort  | Yes   |
| Audio Line-in  | Yes   |
| Power ON Consumption   | <15.08w<br>(Measuring a screen brightness of 200 nits Without audio / USB / Card reader connection) |
| Note   | *Based on Energy Star 7.0 standard  |
| Chassis Colors   | Black   |
| Power saving mode  | < 0.5W  |
| Power off mode   | < 0.5W  |
| Tilt   | -5° ~ +20°  |
| VESA Wall Mounting   | Yes (100mm x 100mm)   |
| Phys. Dimension with stand (WxHxD)                             | 540.5mm x 515mm x 217.6mm   |
| Phys. Dimension without stand (WxHxD)<br>(For VESA Wall Mount) | 540.5mm x 325.2mm x 51.7mm  |
| Box Dimension (WxHxD)  | 723mm x 400mm x 200mm   |
| Net Weight (Esti.)   | 6.5 kg  |
| Gross Weight (Esti.)   | 9.0 kg  |
| Voltage Rating   | AC 100~240V(Built-in)   |
| Temperature(operation)   | 0°C~40°C  |

### 3.3 Troubleshooting (FAQ)

| Problem  | Possible Solution   |
|--|---|
| Power LED is not ON  | <ul style="list-style-type: none"> <li>• Press the  button to check if the monitor is in the ON mode.</li> <li>• Check if the power cord is properly connected to the monitor and the power outlet.</li> <li>• Check Power Indicator function in main menu OSD. Select "ON" to turn on power LED.</li> </ul>     |
| The power LED lights amber and there is no screen image        | <ul style="list-style-type: none"> <li>• Check if the monitor and the computer are in the ON mode.</li> <li>• Make sure the signal cable is properly connected the monitor and the computer.</li> <li>• Inspect the signal cable and make sure none of the pins are bent.</li> <li>• Connect the computer with another available monitor to check if the computer is properly working.</li> </ul> |
| Screen image is too light or dark                              | <ul style="list-style-type: none"> <li>• Adjust the Contrast and Brightness settings via OSD.</li> </ul>  |
| Screen image bounces or a wave pattern is present in the image | <ul style="list-style-type: none"> <li>• Make sure the signal cable is properly connected to the monitor and the computer.</li> <li>• Move electrical devices that may cause electrical interference.</li> </ul>  |
| Screen image has color defects (white does not look white)     | <ul style="list-style-type: none"> <li>• Inspect the signal cable and make sure that none of the pins are bent.</li> <li>• Perform Reset via OSD.</li> <li>• Adjust the R/G/B color settings or select the Color Temperature via OSD.</li> </ul>  |
| No sound or sound is low                                       | <ul style="list-style-type: none"> <li>• Make sure the audio cable is properly connected to the monitor.</li> <li>• Adjust the volume settings of both your monitor and computer.</li> <li>• Make sure the computer sound card driver is properly installed and activated.</li> <li>• Make sure the audio source is correct on the OSD.</li> </ul>  |

## 3.4 Supported Timing List

### PC Supported Primary Timing

| Resolution | Refresh Rate | Horizontal Frequency |
|------------|--------------|----------------------|
| 640x480    | 60Hz         | 31.469kHz            |
| 640x480    | 72Hz         | 37.861kHz            |
| 640x480    | 75Hz         | 37.5kHz              |
| 800x600    | 56Hz         | 35.156kHz            |
| 800x600    | 60Hz         | 37.879kHz            |
| 800x600    | 72Hz         | 48.077kHz            |
| 800x600    | 75Hz         | 46.875kHz            |
| 1024x768   | 60Hz         | 48.363kHz            |
| 1024x768   | 70Hz         | 56.476kHz            |
| 1024x768   | 75Hz         | 60.023kHz            |
| 1152x864   | 75Hz         | 67.5kHz              |
| 1280x960   | 60Hz         | 60kHz                |
| 1280x1024  | 60Hz         | 63.981kHz            |
| 1280x1024  | 75Hz         | 79.976kHz            |
| 1440x900   | 60Hz         | 55.935kHz            |
| 1440x900   | 75Hz         | 70.635kHz            |
| 1680x1050  | 60Hz         | 65.29kHz             |
| 1920x1080  | 60Hz         | 67.5kHz              |
| 1280x720   | 60Hz         | 44.772kHz            |
| 1920x1080  | 100Hz        | 137.3kHz             |
| 1920x1080  | 120Hz        | 139.1kHz             |
| 1920x1080  | 144Hz        | 158.1kHz             |

#### IBM Modes, Factory Preset Timing

| Resolution | Refresh Rate | Horizontal Frequency |
|------------|--------------|----------------------|
| 640x350    | 70Hz         | 31.469kHz            |
| 720x400    | 70Hz         | 31.469kHz            |

#### MAC Modes, Factory Preset Timing

| Resolution | Refresh Rate | Horizontal Frequency |
|------------|--------------|----------------------|
| 640x480    | 67Hz         | 35kHz                |
| 832x624    | 75Hz         | 49.725kHz            |

#### VESA Modes, User Available Timing

| Resolution   | Refresh Rate | Horizontal Frequency |
|--------------|--------------|----------------------|
| 848x480      | 60Hz         | 31.02kHz             |
| 1280x720(RB) | 60Hz         | 44.444kHz            |
| 1280x720     | 60Hz         | 44.772kHz            |
| 1280x720     | 75Hz         | 56.456kHz            |
| 1280x768(RB) | 60Hz         | 47.396kHz            |
| 1280x800(RB) | 60Hz         | 49.306kHz            |
| 1280x800     | 60Hz         | 49.702kHz            |
| 1280x800     | 75Hz         | 62.795kHz            |
| 1366x768     | 60Hz         | 47.712kHz            |

|               |      |           |
|---------------|------|-----------|
| 1440x900(RB)  | 60Hz | 55.469kHz |
| 1440x900      | 75Hz | 70.635kHz |
| 1680x1050(RB) | 60Hz | 64.674kHz |
| 1920x1080     | 60Hz | 66.587kHz |

## SD/HD Timings

HDMI/DP,CEA-861B Formats, SD/HD Supported Primary Timings of

| Resolution         | Refresh Rate | Horizontal Frequency |
|--------------------|--------------|----------------------|
| 640 x 480 P 4:3    | 59.94/60Hz   | 31.469kHz            |
| 720 x 480 P 4:3    | 59.94/60Hz   | 31.469/31.5kHz       |
| 720 x 480 P 16:9   | 59.94/60Hz   | 31.469 / 31.5kHz     |
| 720 x 576 P 4:3    | 50Hz         | 31.25kHz             |
| 720 x 576 P 16:9   | 50Hz         | 31.25kHz             |
| 1280 x 720 P 16:9  | 50Hz         | 37.5kHz              |
| 1280 x 720 P 16:9  | 59.94/60Hz   | 44.955/45kHz         |
| 1440 x 480 P 4:3   | 59.94/60Hz   | 31.469/ 31.5kHz      |
| 1440 x 480 P 16:9  | 59.94/60Hz   | 31.469/ 31.5kHz      |
| 1440 x 576 P 4:3   | 50Hz         | 31.25kHz             |
| 1440 x 576 P 16:9  | 50Hz         | 31.25kHz             |
| 1920 x 1080 P 16:9 | 50Hz         | 56.25kHz             |
| 1920 x 1080 P 16:9 | 59.94/60Hz   | 67.433/67.5kHz       |

HDMI/DP,CEA-861B Formats, SD/HD Supported Optional Timings of

| Resolution | Refresh Rate | Horizontal Frequency |
|------------|--------------|----------------------|
| 1440x480P  | 59.94 / 60Hz | 31.469 / 31.5kHz     |
| 1440x576P  | 50Hz         | 31.25kHz             |
| 1920x1080P | 50Hz         | 56.25kHz             |
| 1920x1080P | 59.94 / 60Hz | 67.433 / 67.5kHz     |

\* The modes not listed in the above tables may not be supported. For optimal resolution, we recommend that you choose a mode listed in the above tables.