ZenScreen MB249C
Portable Monitor

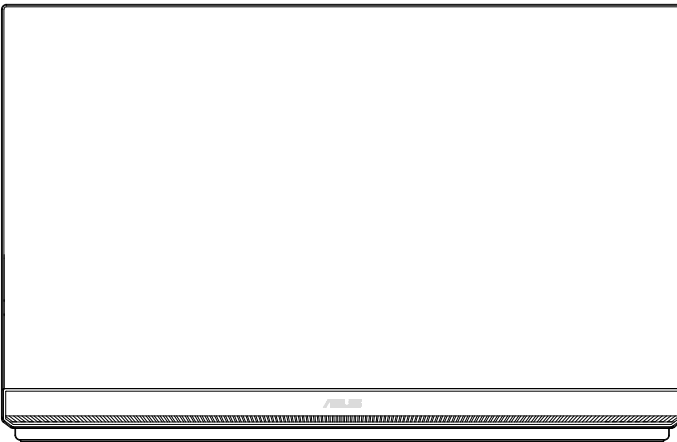# User Guide

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

Table of contents

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.

NOTE: This monitor is ENERGY STAR certified.

This product qualifies for ENERGY STAR® in the factory default (Home configuration) setting. Changing the factory default settings or enabling other features may increase power consumption that could exceed the limits necessary to qualify for ENERGY STAR®. Refer to ENERGYSTAR.gov (www. energystar.gov) for more information on the ENERGY STAR® program.

Declaration of Conformity

This device complies with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2014/30/EU), Low-voltage Directive (2014/35/EU), ErP Directive (2009/125/EC) and RoHS directive (2011/65/EU). This product has been tested and found to comply with the harmonized standards for Information Technology Equipment, these harmonized standards published under Directives of Official Journal of the European Union.

WEEE Symbol Statement

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

AEEE yönetmeliğine uygundur

■ ASUS CONTACT INFORMATION					
■ ASUSTeK Computer Inc.		**■ ASUS Computer International (America)**		**■ ASUS Computer GmbH (Germany and Austria)**	
Address	1F, No.15, Lide Rd., Beitou Dist., Taipei City, 112	Address	48720 Kato Rd, Fremont, CA 94538, USA	Address	Harkortstr. 21-23 D-40880 Ratingen, Germany
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Fax	+886-2-2894-7798	Fax	+1-510-608-4555	Website	http://www.asus.de/
E-mail	info@asus.com.tw	Website	http://usa.asus.com/	Online Contact	http://www.asus.de/sales
Website	http://www.asus.com.tw/				
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■ Technical Support		Telephone	+1-812-282-2787 (English Only)	Telephone	+49-1805-010923
Telephone	+86-21-38429911		+1-905-370-2787 (French Only)	Support Fax	+49-2102-959911
		Online Support	http://support.asus.com/	Online Support	http://support.asus.com/

Safety information

- Before setting up this Portable Monitor, carefully read all the documentation that came with the package.
- To prevent fire or shock hazard, never expose this Portable Monitor to rain or moisture.
- Never try to open this Portable Monitor cabinet.
- Before using this Portable Monitor, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- Avoid dust, humidity, and temperature extremes. Do not place this Portable Monitor in any area where it may become wet. Place this Portable Monitor on a stable surface.
- Never push objects or spill liquid of any kind into the slots on this Portable Monitor cabinet.
- If you encounter technical problems with this Portable Monitor, contact a qualified service technician or your retailer.
- DO NOT dispose of the product in fire
- DO NOT use monitor near heating equipment or in places where there is likelihood of high temperature
- Keep your monitor away from sharp objects
- DO NOT place objects on top of your monitor

WARNING

Restriction on Hazardous Substances statement (India) This product complies with the "India E-Waste (Management) Rules, 2016" and prohibits use of Lead, Mercury, Hexavalent Chromium, polybrominated biphenyls(PBBs) and polybrominated diphenyl ethers(PBDEs) in concentration exceeding 0.1% by weight in homogenous materials and 0.01% by weight in homogenous materials for cadmium, except of exemptions listed in Schedule 2 of the Rule.

Care & cleaning

- Cleaning. Turn your monitor off and unplug the cable. 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:

- 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.

3. About Flicker

https://www.asus.com/Microsite/display/eye_care_technology/

Takeback services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for our customers to be able to responsibly recycle our products, batteries and other components as well as the packaging materials.

Please go to **http://csr.asus.com/english/Takeback.htm** for detail recycling information in different region.

Product information for EU energy label

1.1　Welcome!

Thank you for purchasing the ASUS® Portable Monitor!

The latest ASUS Portable Monitor provides great portability and simplicity to your daily life, enhancing both of your viewing experience and style.

1.2　Package contents

Check your package for the following items:
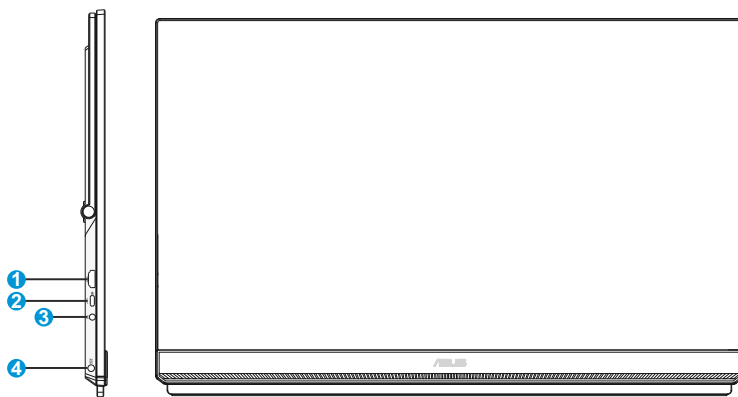
✓　Portable Monitor

✓　Quick Start Guide

✓　Warranty Card

✓　USB Type-C Cable

✓　Power Cord

✓　HDMI cable

✓　Power Adapter

✓　Monitor Arm

✓　Partition hook kit

✓　L-shaped Screwdriver

✓　Screw

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

1.3 Monitor introduction

Front View and Charging Instructions

1. HDMI port
2. USB Type-C port
3. Earphone - out Port
4. DC-IN Port

IMPORTANT:
- Use only bundled power adapter and USB cable to charge your monitor. Using different power adapter and cable might bring potential damage to your device.
- For the best performance, please use power adapter for MB16AHG.

WARNING: The adapter may become warm to hot while in use. DO NOT cover the adapter and keep it away from your body while it is connected to a power source. If your device become unusual hot, disconnect the USB cable from your device and send the device including the power adapter and USB cable to an ASUS qualified service personnel

2.1 Adjusting the monitor

2.1.1 Using of handle

- You can adjust the monitor to the best Angle for you.
- The monitor's Angle is between 12 and 60 degrees.
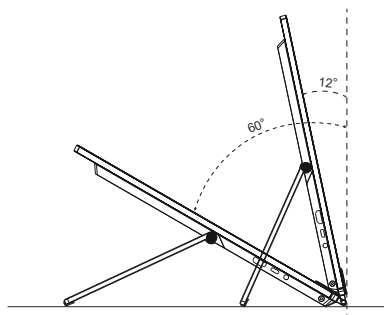
2.1.2 Using of hooks

1. Adjust the hook and screw, and then lock it to the baffle.

2. Hang the handle of the monitor on the hook.
   You can adjust and lock the screws according to the thickness.
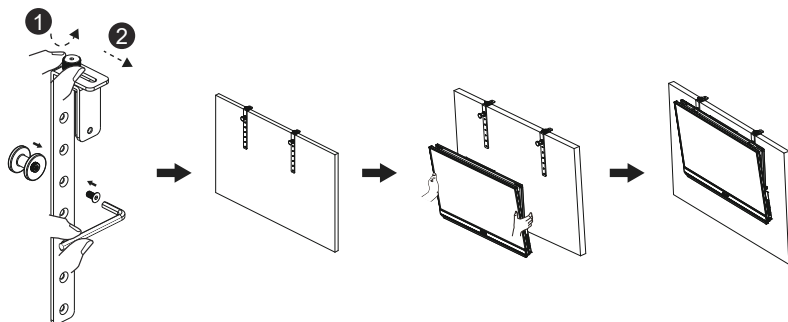
2.1.3   Locking bracket

1.   Secure the head of the support using an L-shaped screwdriver. And
      you can adjust the height by pinching the switch.

2.   Attach the bracket to the desktop.

3.   Attach the tripod to the head of the bracket.
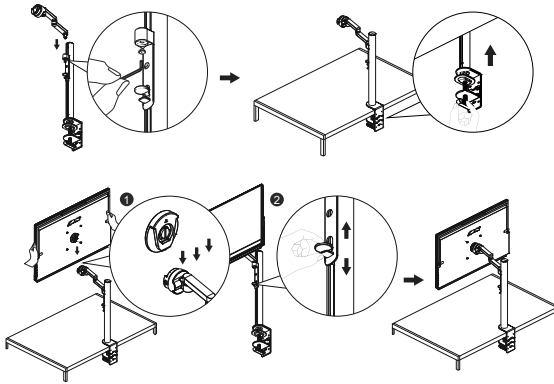
2.1.4   Assembly bracket

- 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.

1. Hold the stand to prevent the monitor from falling when you change its angle.

2. Adjust the monitor follow the pictures for the most comfortable viewing for you.
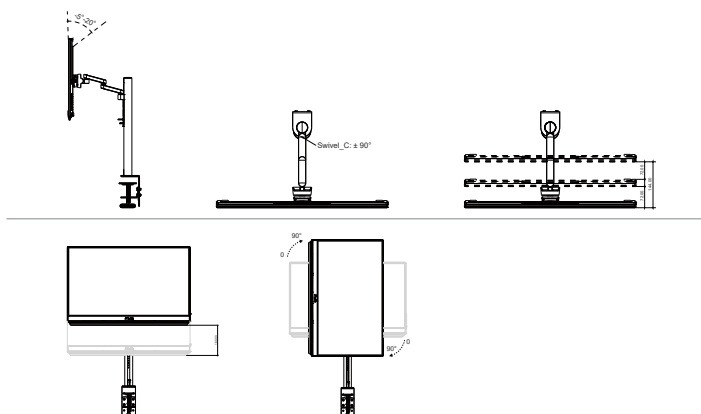
It is normal that the monitor slightly shakes while you adjust the viewing angle.

2.2 Outline dimension

Unit: mm [inch]
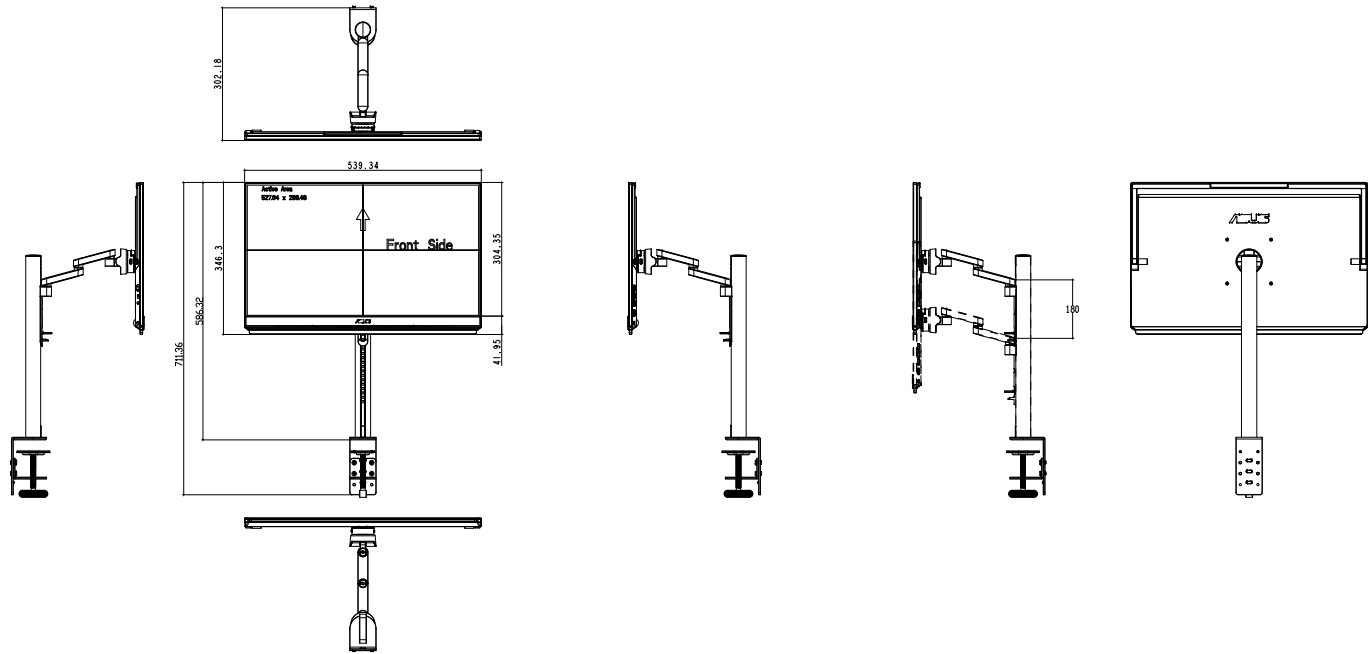
2.3 Detaching the arm/stand (for VESA wall mount)

⚠️ • Avoid damaging the monitor surface. While detaching the monitor stand, always keep the monitor inside its paper packaging.

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

To detach the arm/stand

1. Push the locking clips inward to detach the monitor from the stand.

2. Hold the monitor with both hands, tilt the base and slide it out.

3. Detach the monitor from the stand/arm.
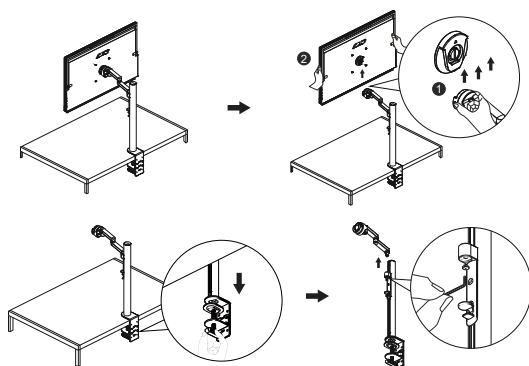
4. Remove the four screws and tripod from the rear cover to mount the monitor on the wall.
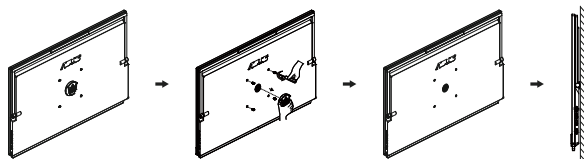
📝 • Use only the UL Listed Wall Mount Bracket with minimum weight/load 30 kg (Screw size: M4 x 10 mm).

3.1 OSD (On-Screen Display) menu

3.1.1 How to reconfigure
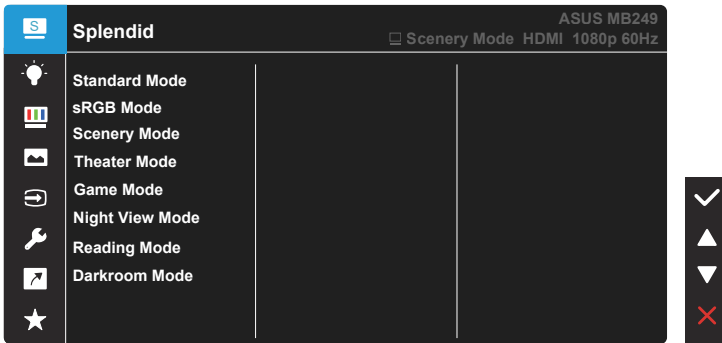
1. Press the MENU button to activate the OSD menu.

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 ✓ key.

4. Press the ▼ and ▲ buttons to select the desired parameter.

5. Press the ✓ key to enter the slide bar and then use the ▼ or ▲ buttons, according to the indicators on the menu, to make your changes.

3.1.2 OSD Function Introduction

1. Splendid

This function contains eight sub-functions that you can select for your preference.

	Splendid	ASUS MB249
		Scenery Mode HDMI 1080p 60Hz

Standard Mode
sRGB Mode
Scenery Mode
Theater Mode
Game Mode
Night View Mode
Reading Mode
Darkroom Mode

- **Standard Mode**: This is the best choice for document editing with SPLENDID™ Video Intelligence Technology.
- **sRGB Mode**: This is the best choice for viewing photos and graphics from PCs.
- **Scenery Mode**: This is the best choice for scenery photo displaying with SPLENDID™ Video Intelligence Technology.
- **Theater Mode**: This is the best choice for movie watching with SPLENDID™ Video Intelligence Technology.
- **Game Mode**: This is the best choice for game playing with SPLENDID™ Video Intelligence Technology.
- **Night View Mode**: This is the best choice for playing dark-scene game or watching dark-scene movie with SPLENDID™ Video Intelligence Technology.
- **Reading Mode** : This is the best choice for book reading.
- **Darkroom Mode** : This is the best choice for a weak ambient light environmen.

- In the Standard Mode, the Saturation, SkinTone, Sharpness, and ASCR functions are not user-configurable.
- In the sRGB, the Saturation, Color Temp., SkinTone, Sharpness, Brightness, Contrast and ASCR functions are not user-configurable.
- In the Reading Mode, the Saturation, SkinTone, Sharpness, ASCR, contrast, and Color Temp functions are not user-configurable.

2.	**Blue Light Filter**

Adjust the energy level of blue light emitted from LED backlight.
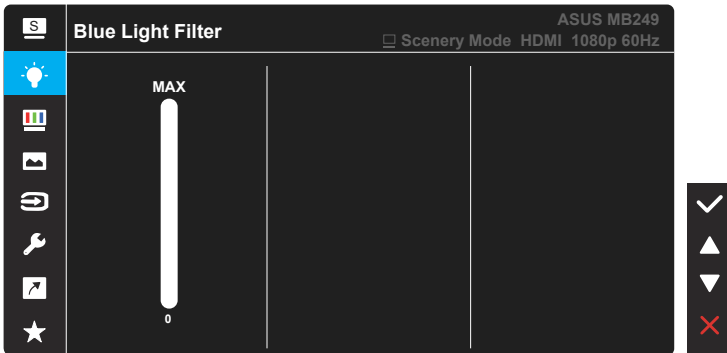
- **Blue Light Filter**: In this function, you can adjust the blue light filter from Min to max. Min: no changes；Max: The higher the level, the less blue light is scattered. When blue light filter is activated, the default settings of Standard Mode will be automatically imported. Besides maximum level, the brightness is user-configurable. Maximum is the optimized setting. It is compliance with TUV low blue light certification*. The brightness function is not user configurable.

- When the user adjusts blue light filter bar to maximum level.

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 reduces 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.
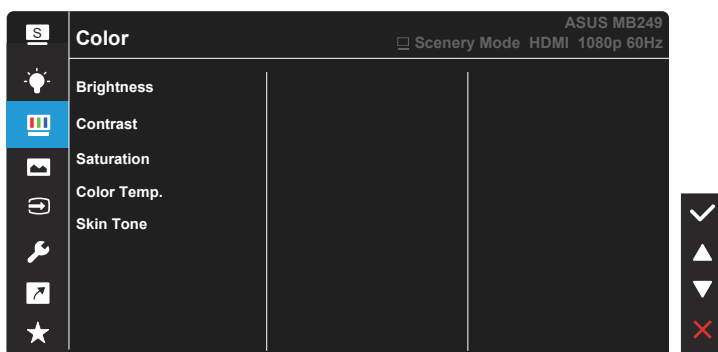
- **Brightness**: The adjusting range is from 0 to 100.
- **Contrast**: The adjusting range is from 0 to 100.
- **Saturation**: The adjusting range is from 0 to 100.
- **Color Temp.**: Contains three preset color modes (**Cool**, **Normal**, **Warm**) and **User** Mode.
- **Skin Tone**: Contains three 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, FreeSync and Shadow Boost from this main function.
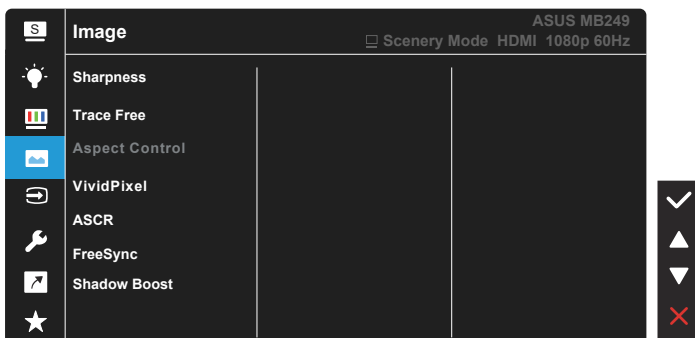
- **Sharpness**: Adjusts the picture sharpness. The adjusting range is from 0 to 100.

- **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**".

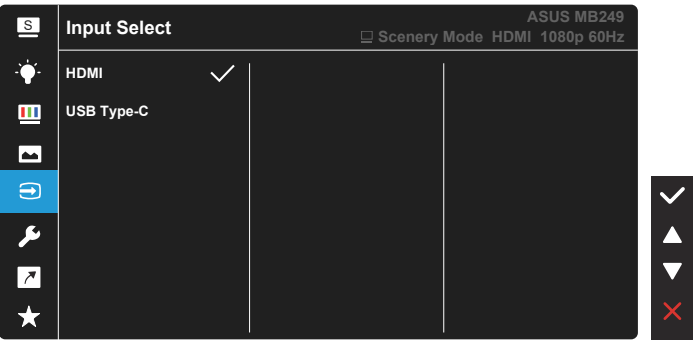- **VividPixel**: ASUS Exclusive Technology that brings lifelike visuals for crystal-clear and detail-oriented enjoyment. The adjusting range is from 0 to 100.

- **ASCR**: Select **ON** or **OFF** to enable or disable dynamic contrast ratio function.

- **FreeSync**: It can allow a 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.

- **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.

> - 4:3 is only available when input resolution H:V < 16:9.

5. **Input Select**

Select the input source from HDMI or USB Type-C input signal.

		ASUS MB249
Input Select		⬚ Scenery Mode HDMI 1080p 60Hz
HDMI	✓	
USB Type-C		

6. **System Setup**

Adjusts the system configuration.

	ASUS MB249
System Setup	⬚ Scenery Mode HDMI 1080p 60Hz
Splendid Demo Mode	
Volume	
GamePlus	
QuickFit	
ECO Mode	
OSD Setup	
Language	
More	

	ASUS MB249
System Setup	⬚ Scenery Mode HDMI 1080p 60Hz
Back	
Key Lock	
Power Key Lock	
Information	
Power Indicator	
All Reset	•••
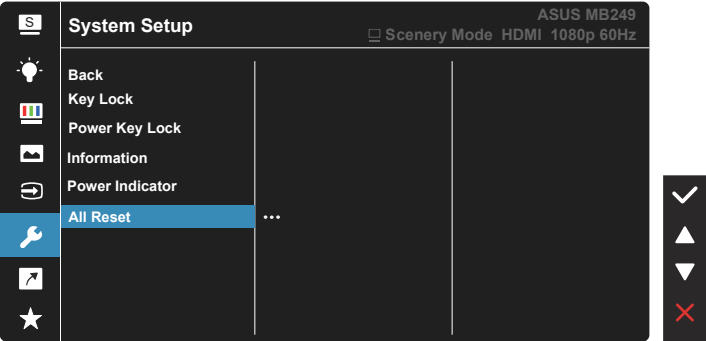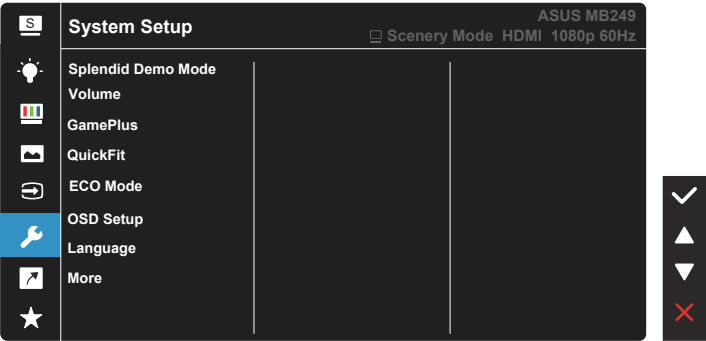
- **Splendid Demo Mode**: Activate the demo mode for the Splendid function.
- **Volume:** Adjusts the output volume level.
- **GamePlus**: The GamePlus Function provides a toolkit and creates a better gaming environment for users when playing different types of games. Particularly, Crosshair function is specially designed for new gamers or beginners interested in First Person Shooter (FPS) games. To active GamePlus:
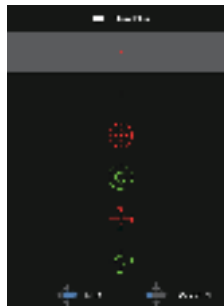   - Press **GamePlus** Button to enter the GamePlus main menu.
    - Activate Crosshair, Timer, FPS Counter or Display Alignment function.
    - Press ▼ and ▲ to select and press ✓ to confirm the function needed.
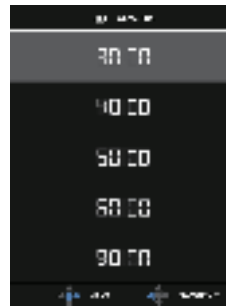   - Crosshair/Timer/FPS Counter is movable by moving ▼ and ▲.
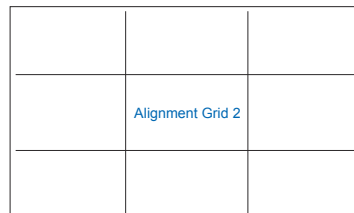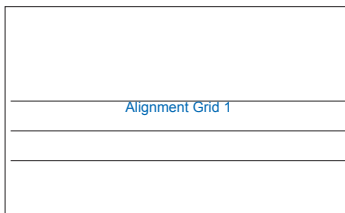
GamePlus main menu   GamePlus-Crosshair   GamePlus-Timer

- **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.

Alignment Grid 1

Alignment Grid 2

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

B5	Letter
B5	Letter
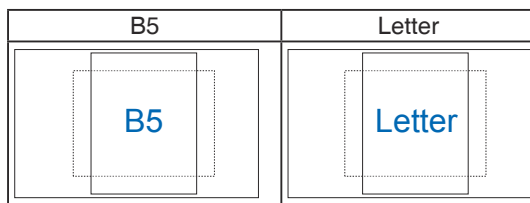
3.   Photo size: Provides photographers and other users to accurately view and edit their photos in real size on the screen.

8x10 5x7	4x6 3x5 2x2
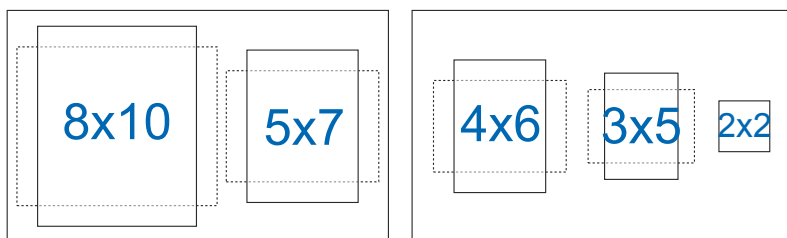
- **ECO Mode:** Activate this ecology mode for power saving.
- **OSD Setup**: Adjusts the **OSD Timeout**, **DDC/CI**, and **Transparency** of the OSD screen.
- **Language**: Select OSD language. The selections are: **English**, **French**, **German**, **Spanish**, **Italian**, **Dutch**, **Russian**, **Poland**, **Czech**, **Croatia**, **Hungary**, **Romania**, **Portugal**, **Turkey**, **Simplified Chinese**, **Traditional Chinese**, **Japanese**, **Korean**, **Persian**, **Thai**, **Indonesian** and **Ukraine**.
- **More**: More related Settings.
- **Back**: Return to the previous menu.
- **Key Lock**: Disable all key functions. Pressing the ▼ button for more than five seconds to disable key lock function.
- **Power Key Lock**: To disable / enable power key.
- **Information**:Displays the monitor information.
- **Power Indicator**: Turn the power LED indicator on/off.
- **All Reset**: Selects "**Yes**" to revert all settings to the factory default mode.

7. Shortcut

Selecting this option allows you to set shortcut key.

	Shortcut	**ASUS MB249**
		Scenery Mode HDMI 1080p 60Hz
	Blue Light Filter	
	Splendid	
	Brightness	
	Contrast	
	Color Temp.	
	Volume	
	QuickFit	
	GamePlus	
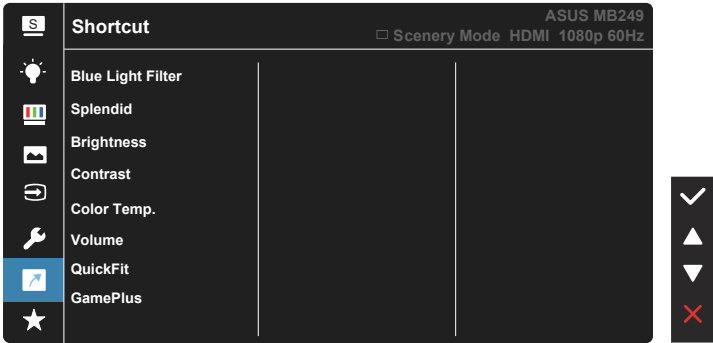
- **Shortcut** : User can select from "Blue Light Filter" "Splendid", "Brightness", "Contrast", "Color Temp.", "Volume", "QuickFit", "GamePlus" and set as shortcut key.

8. MyFavorite

Load/Save all settings on the monitor.

	MyFavorite	**ASUS MB249**
		Scenery Mode HDMI 1080p 60Hz
	Setting 1	
	Setting 2	
	Setting 3	
	Setting 4	

3.2   Specifications

Model	MB249C
Panel Size	23.8" (16:9, 39.62cm) wide screen
Resolution	1920 x 1080
Brightness (Typ.)	250 nits
Contrast (Typ.)	1000:1
Display Colors	16.7 M
Digital Input	DisplayPort™ Alt Mode for USB Type-C™ HDMI
Colors	Black
Power Consumption	$<$ 13 W
Operating Temp.	5°C ~ 35°C
Operating Humidity	20-90% RH
Speaker	1W x 2
Phys. Dimension (WxHxD)	539.34 x 711.36 x 302.18 mm
Box Dimension (WxHxD)	600 x 426 x 124 mm
Net Weight (Esti.)	4.84 kg
Gross Weight (Esti.)	7.6 kg
Regulation Approvals	CE KCC BSMI EAC(CU) RCM VCCI J-Moss UkrSEPRO RoHS WEEE Windows 7 & 8.1 & 10 WHQL ES8.0 ErP MEPS CEL KCC E-Standby
Voltage Rating	19V ⎓, 4.74A
Adapter	ASUS/ADP-90LE B 100-240V~50/60Hz 1.5A 19V ⎓, 4.74A

*Specifications are subject to change without notice.

3.3 Troubleshooting (FAQ)

Problem	Possible Solution
Power LED is not ON	• Press the ⏻ button to check if the monitor is in the ON mode. • Check if the Type-C and HDMI port connected to source of signal. • Check if the signal source is ON.
The power LED lights blue and there is no screen image	• Check if the monitor and the computer are in the ON mode. • Make sure the USB Type-C and HDMI cable is properly connected between the Portable Monitor and the computer. • Inspect the signal cable and make sure none of the pins are bent. • Connect the computer with another available monitor to check if the computer is properly working.
Screen image is too light or dark	• Adjust the Brightness settings via the button.
Screen image bounces or a wave pattern is present in the image	• Make sure the USB Type-C and HDMI cable is properly connected between the Portable Monitor and the computer. • Move electrical devices that may cause electrical interference.
Screen image has color defects (white does not look white)	• Inspect the USB Type-C and HDMI cable and make sure that none of the pins are bent.

3.4   Supported Timing List

PC Supported Primary Timing

Resolution	H(KHz)	V(Hz)	Pixel(MHz)
640x350, 70Hz	31.469	70.087	25.175
640x480, 60Hz	31.469	59.94	25.175
640x480, 67Hz	35	66.667	30.24
640x480,72Hz	37.861	72.809	31.5
640x480,75Hz	37.5	75	31.5
720x400, 70Hz	31.469	70.087	28.322
800x600,56Hz	35.156	56.25	36
800x600,60Hz	37.879	60.317	40
800x600,72Hz	48.077	72.188,	50
800x600,75Hz	46.875	75	49.5
832x624, 75Hz	49.725	74.551	57.2832
1024x768,60Hz	48.363	60.004	65
1024x768,70Hz	56.476	70.069	75
1024x768,75Hz	60.023	75.029	78.75
1152x864,75Hz	67.5	75	108
1280x960,60Hz	60	60	108
1280x1024,60Hz	63.981	60.02	108
1280x1024,75Hz	79.976	75.025	135
1280x720, 60Hz	44.772	59.855	74.5
1280x800, 60Hz	49.702	59.81	83.5
1366x768,60Hz	47.712	59.79	85.5
1440x900,60Hz	55.935	59.887	106.5
1680x1050,60Hz	65.29	59.954	146.25
1920x1080, 60Hz	67.5	60	148.5
1920x1080, 75Hz	83.894	74.975	174.5