/ISUS®

MH2441A /MH2741A Series
Clinical Display

User Guide

First Edition

July 2023

Contents

Notices
About the monitor

*   This product has been adjusted specifically for use in the region to which it was originally shipped. If the product is used outside the region, it may not operate as specified in the specifications.

*   This product may not be covered by warranty for uses other than those described in this document.

*   The specifications noted in this document are only applicable for power cords and signal cables specified by us.

*   If any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State.

About the Panel

*   Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.

    Do not touch a damaged LCD panel directly with bare hands. The liquid crystal
*   which leaks from the panel is poisonous if it enters the eyes or mouth.

*   Do not push or scratch the LCD monitor's screen. Do not place a heavy object on the LCD monitor's screen. This may cause the screen to lose uniformity of clarity, color, or brightness.

*   The screen may have defective pixels. These pixels may appear as slightly light or dark area on the screen or may appear spontaneously. This is due to the characteristics of the panel itself, and is not a malfunction of the product.

*   If a still picture is displayed for a long time, a residual image may appear. The residual image will eventually disappear. These problems are not a malfunction.

*   To have the best performance of this product, it's recommended to replace the panel after it has been used for 3 years.

ENERGY STAR® complied product

ENERGY STAR®is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

All ASUS products with the ENERGY STAR® logo comply with the ENERGY STAR® standard, and the power management feature is enabled by default. The monitor and computer are automatically set to sleep after 10 and 30 minutes of user inactivity. To wake your computer, click the mouse or press any key on the keyboard. Please visit http://www.energystar.gov/powermanagement for detail information on power management and its benefits to the environment. In addition, please visit http://www.energystar.gov for detail information on the ENERGY STAR® joint program.

About this guide

There are four levels of precautionary or advisory statements that may be used in this user guide. In descending order of importance, they are:

Indicates an "electrical shock" hazard.

WARNING: Describes hazards or dangers that might result in personal injury or death.

CAUTION: Describes hazards that could damage the product.

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

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

TIPS Tips and additional information to aid in completing a task.

⚠ **IMPORTANT:**

- Before setting up the monitor, carefully read all the documentation that came with the package.

- This product has been adjusted specifically for use in the region to which it was originally shipped. If the product is used outside the region, it may not operate as specified in the specifications.

- For personal safety and proper maintenance, please read carefully this section and the caution statements on the monitor.

Excessive use may damage vision
- Rest for 10 minutes after every 30 minutes.
- Children under 2 years old should stay away from this product. Children 2 years old or more should not see the screen for more than 1 hour a day.

Flicker-Free technology
- The Monitor adopts Flicker-Free technology, which clears the eye visible flicker, brings comfort viewing experience and preventing users suffer from eye strain and fatigue.

Explanation of symbol

Symbols on the device

On the device or power supply, you may find the following symbols (nonrestrictive list):

MD	Indicates this is a Medical Device.
SN	Indicates the device serial number.
UDI	Indicates the Unique Device Identifier.
EC REP	Indicates the Authorised Representative for the European Union.
⚠⚡	**Warning:** dangerous voltage.
⚠!	**Caution**
📖i	Consult the Instructions For Use.
📖i eIFU indicator	Consult the Instruction For Use on website address that is provided as eIFU indicator.
📖	Refer to instruction manual/booklet. Refer to the manual for the appropriate adapters and safety instructions
🗑	Indicates this device must not be thrown in the trash but must be recycled, according to the European WEEE (Waste Electrical and Electronic Equipment) directive.
⎓	Indicates Direct Current (DC).
∿	Indicates Alternating Current (AC).
⏻	Stand-by
⏚	Equipotentiality
⏚ or ⏛	Protective earth (ground)

	Indicates Switch on.
	Indicates Switch off.
	Indicates the USB connectors on the device.t
	Indicates the DisplayPort connectors on the device.
	Indicates the legal manufacturer.
	Indicates the manufacturing date.
$C\,E$	Indicates the device meets the requirements of the applicable EC directives/regulations.
IEC 60601-1 EN 60601-1 TÜVRheinland ZERTIFIZIERT www.tuv.com ID 0217009752	Consult the Instruction For Use on website address that is provided as eIFU indicator.

Symbols on the box

On the box of the device, you may find the following symbols (nonrestrictive list):

	Indicates a device that can be broken or damaged if not handled carefully when being stored.
	Indicates a device that needs to be protected from moisture when being stored.
	Indicates the storage direction of the box. The box must be transported, handled and stored in such a way that the arrows always point upwards.
or	Indicates the maximum number of identical boxes which may be stacked on each other, where "n" is the limiting number.
or	Indicates the weight of the box and that it should be carried with two persons.
	Indicates that the box should not be cut with a knife, a cutter or any other sharp object.
	Indicates the temperature limits4 to which the device can be safely exposed when being stored.
	Indicates the range of humidity to which the device can be safely exposed when being stored.
	Indicates the range of atmospheric pressure to which the device can be safely exposed when being stored.

Safety information

General recommendations

- Read the safety and operating instructions before operating the device.
- Retain safety and operating instructions for future reference.
- Adhere to all warnings on the device and in the operating instructions manual.
- Follow all instructions for operation and use.

⚠️ **CAUTION:**

Modifications to the unit

- Do not modify this equipment without authorization of the manufacturer.

Preventive maintenance

With the monitor disconnected from mains perform the following periodical check:

- Check the integrity of the power cord and inspect its routing, so that it is not under the risk of being punched or cut.
- Check the integrity of the Protective Earth connection.
- Clean the area around the power plug, dust and liquids may result in fire.
- Clean the ventilation slot of the monitor, dust can obstruct the air flow and cause temperature increase of the electronics.

General recommendations:

- Keep the monitor clean to prolong its operational lifetime.
- LCD panel performances may deteriorate in the long-term. Periodically check that it is correctly operating.
- Periodically check the tightness of the VESA mount screws. If not sufficiently tight, the monitor may detach from the arm, which may result in injury or equipment damage.

Type of protection (electrical):

- Monitor with external adaptor supply.

Degree of safety (flammable anesthetic mixture):

- Equipment not suitable for use in the presence of a flammable anesthetic
- mixture with air or with oxygen or nitrous oxide.
  The equipment shall not be operable when the air oxygen content is above 25%.

⚡ **Power connection – Equipment with power supply**

- 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, 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.
- 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.
- By means of a power cord connected to a socket-outlet with earthing connection.

Connections

- Any external connection with other peripherals must follow the requirements of clause 16 of IEC/EN 60601-1 4th Ed.

- To maintain compliance with EMC Regulation, use only well shielded interface cables for the connection to peripheral devices.

Power cords

Please use the power cord provided with this display. If a power cord is not supplied with this equipment, please contact your supplier. For all other cases, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country

- When you use this monitor in North America, you should use a North America Hospital Grade power cord.
- Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Do not overload wall outlets and extension cords as this may result in fire or electric shock.
- Mains lead protection: Power cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs and receptacles.
- The power supply cord should be replaced by the designated operator only at all time.

Grounding reliability

Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle.

Liquids and moisture

- Never expose the monitor to liquids or moisture.
- Never use the monitor near water - e.g. near a bathtub, washbasin, swimming pool, kitchen sink, laundry tub or in a wet basement.

Moisture condensation

- Do not use monitor under rapid temperature and humidity change condition or avoid cold air from air-conditioning outlet directly.
- 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.
- Moisture may condense on the surface or inside of the unit, or create a mist residue inside the protection plate, this is not a malfunction of the product itself, although it may cause damage to the monitor.
- If condensation happens, let the monitor stand unplugged until there is no condensation.

Ventilation

Do not cover or block any ventilation openings in the cover of the set. When installing the device in a cupboard or another enclosed location, heed the necessary space between the set and the sides of the cupboard.

Installation

- Before setting up the monitor, carefully read all the documentation that came with the package.
- Place the device on a flat, solid and stable surface that can support the weight of at least 3 devices. If you use an unstable cart or stand, the device may fall, causing serious injury to a child or adult, and serious damage to the device.
- Tilt the monitor: You should position the monitor and angle the screen to minimize the unwanted reflections from other light sources.
- When the equipment is attached to an arm, do not use the equipment as a handle or grip in order to move the equipment. Please refer to the instruction manual of the arm for instructions on how to move the arm with the equipment.
- All devices and complete setup must be tested and validated before taking into operation.
- At end user application level it is necessary to foresee a backup unit in case the video falls away.

Malfunctions

Disconnect the equipment's power cord from the AC inlet and refer servicing to qualified service technicians under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the equipment.
- If the equipment has been exposed to rain or water.
- If the equipment does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls.

⚠ **WARNING:**

Non-patient care equipment

- Equipment primarily for use in a health care facility that is intended for use where contact with a patient is unlikely (no applied part).
- The equipment shall not be used with life support equipment.
- The user should not touch the equipment, nor its signal input ports (SIP) / signal output ports (SOP) and the patient at the same time.

⚡ **Electrical Shock or Fire Hazard**

- 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.
- Do not remove cover or any internal components. Refer to a qualified technician for service.
- Make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the AC outlet. Do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
- Never spray cleaner directly on the screen while cleaning, as it may drip inside the monitor and cause an electric shock.

Mission critical applications

We strongly recommend there is a replacement monitor immediately available in mission critical applications.

General warnings

With the monitor disconnected from mains perform the following periodical check:

- The device has no means to be incorporated in an IT-network in the clinical environment.
- The enclosure has to be checked upon collision damage, refer to qualified service personnel.
- Nonetheless there is the possibility that it may crack if subject to strong impacts. Evaluate and prevent the risk of possible breakages of the protective screen by correctly handling and positioning the monitor in the intended area.
- The monitor is intended for indoor use.
- The monitor is not intended to be sterilized.
- The monitor is not intended to be an alarm system device. Do not use with another alarm supported device or decentralized alarm system.
- The monitor has not applied parts, but the front side of the LCD panel and the plastic enclosure have been treated as applied part because considered accidentally touchable by the patient for a time <1 minute.

Maintaining the display

Maintenance guidelines

To enhance the performance and extend the life of the display:

*   Do not open the display cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. If the display is not operating properly or has been dropped or damaged, contact an authorized ASUS dealer, reseller, or service provider.
*   Use only a power source and connection appropriate for this display, as indicated on the label/back plate of the display.
*   Be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the AC outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (AMPS or A) for each device.
*   Install the display near an outlet that you can easily reach. Disconnect the display by grasping the plug firmly and pulling it from the outlet. Never disconnect the display by pulling the cord.
*   Turn the display off when not in use. You can substantially increase the life expectancy of the display by using a screen saver program and turning off the display when not in use.

> NOTE: A burned-in image on the display screen is not covered under the warranty.

*   Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
*   Do not drop the display or place it on an unstable surface.
*   Do not allow anything to rest on the power cord. Do not walk on the cord.
*   Keep the display in a well-ventilated area, away from excessive light, heat or moisture.
*   When removing the display stand, you must position the display facedown on a soft area to prevent it from getting scratched, defaced, or broken.

Care & Cleaning

Unplug the monitor from the power outlet before cleaning. If you dropped any material or liquid such as water onto the monitor when cleaning, unplug the power cable immediately and contact your dealer or the nearest service center. Always make sure your hands are dry when unplugging the power cable.
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.

- Turn your monitor off and unplug the power cord and disconnect any external devices.
- Clean the monitor surface with a lint-free, non-abrasive cloth. Stubborn stains may be removed with a cloth dampened with mild cleaner.
- Do not scratch or rub the screen with a hard object.
- Do not apply spray liquid directly to the cabinet as excess liquid may cause damage to internal electronics.
- Use a cleaner intended for use with the monitor. Never spray cleaner directly on the screen, as it may drip inside the monitor and cause an electric shock.

CAUTION: If you don't have a screen clean solution, you can use water instead. Do not use cleaners that contain alcohol, acetone or any petroleum-based materials such as benzene, thinner, or any volatile substance to clean the display screen or cabinet. These chemicals may damage the display. If you don't have a screen cleaning solution, you can use water instead.

NOTE: Please follow your organization's infection-control policies and instructions provided by the disinfectant chemical manufacturer to determine the frequency and duration with the cleaning procedure should be performed above.

Recycling
Follow local governing ordinances and recycling plan regarding the recycling or disposal of this product. The recycling of materials will help to conserve natural resources and ensure that it is re-cycled in a manner that protects human health and environment.

Complies with WEEE regulation

This symbol of the crossed out wheeled bin indicates that the product (electrical, electronic equipment, and mercury-containing button cell battery) should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

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.
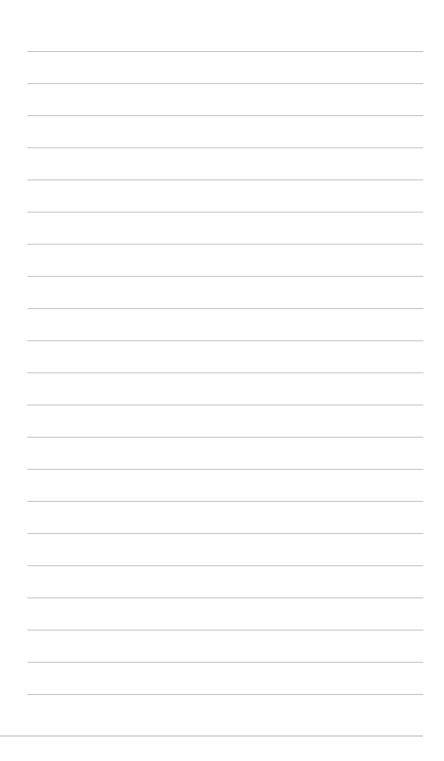
Where to find more information

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

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

Take-back 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 ASUS Global Take Back Service Website for detail recycling information in different region.

Welcome!

Thank you for purchasing the ASUS® Clinical Monitor!

The latest widescreen LCD monitor from ASUS provides a broader, brighter and crystal-clear 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 to you!

Package contents

Check your package for the following items:
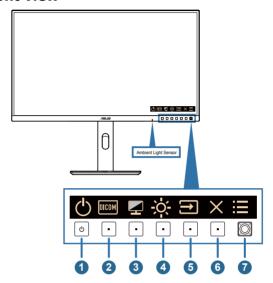
- ✓ LCD monitor
- ✓ Monitor base
- ✓ Quick start guide
- ✓ Power cord
- ✓ HDMI cable
- ✓ DisplayPort cable
- ✓ USB C to C cable
- ✓ Adapter
- ✓ Warranty Card

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

1.3   Monitor introduction

1.3.1   Front view

1. Power button/power indicator

- Turns the monitor on/off. Press and hold this button for 0.6 seconds will shut down the monitor.

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

Status	Description
White	On
Amber	Standby mode
Off	Off

2. DICOM button:

- Press this button to change DICOM mode(DICOM_0lux, DICOM_50lux, DICOM_100lux, DICOM_Auto).

3. Monochrome button:

- Press this button to change Monochrome(Positive Film, Negative Film, Off).

4. Shortcut 1
- Press this button to display the OSD menu when the OSD is off.
- Default: Brightness Hotkey.
- To change the hotkey function, go to the Shortcut > Shortcut 1 menu.

5. Shortcut 2
- Press this button to display the OSD menu when the OSD is off.
- Default: Input Select hotkey
- To change the hotkey function, go to the Shortcut > Shortcut 1 menu.
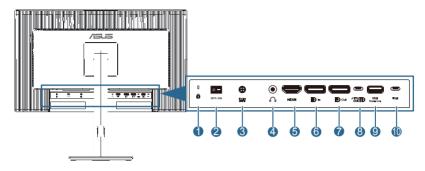
6. Exit button:
- Press this button to display the OSD menu when the OSD is off.
- Exits the OSD menu.

7. Menu (5-way) button:
- Press this button to display the OSD menu when the OSD is off. Press this button again to enter the OSD main menu.
- Enacts the selected OSD menu items.
- Increases/Decreases values or moves your selection up/down/left/ right.
- Push the 5-way button down for over 5 seconds to toggle the Key Lock function between on and off.
- Double-click this button to display the current source, then double-click again to switch to the next active input source (if available).

1.3.2 Back view

1. **Kensington lock slot**.
2. **Power switch**: Press the switch to turn on/off power.
3. **DC-IN port**: This port connects the adaptor.
4. **Earphone jack:** This port is only available when an HDMI/DisplayPort/USB Type-C cable is connected.
5. **HDMI port :** This port is for connection with an HDMI compatible device.
6. **DisplayPort in**: This port is for connection with a DisplayPort compatible device.
7. **Daisy-Chain DisplayPort output**: This port allows you to connect multiple DisplayPort compatible monitors.
8. **USB 3.2 Gen 1 Type-C**: This port is for connection with a USB upstream cable. The connection supports USB power and data delivery.

> This monitor is Super-Speed USB 3.2 Gen 1 compatible(5Gbps). The port offer 15W power delivery with output voltage of 5V/3A and 9V/1.66A and 12V/1.25A.

9. **USB 3.2 Gen 1 Type-A** These ports are for connection with USB devices, such as USB keyboard/mouse, USB flash drive, etc.
10. **USB 3.2 Gen 1 Type-C**: This port is for connection with USB devices, such as USB keyboard/mouse, USB flash drive, etc.
11. **USB 3.2 Gen 1 Type-A**: These ports are for connection with USB devices, such as USB keyboard/mouse, USB flash drive, etc.
12. **USB 3.2 Gen 1 Type-A**: These ports are for connection with USB devices, such as USB keyboard/mouse, USB flash drive, etc.

1.3.3 Other Function(s)
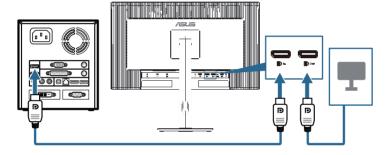
Daisy chaining (for selected models)

The monitor supports daisy chain on DisplayPort and USB Type-C. Daisy Chaining allows up to 1 monitors to be connected in series with the video signal being passed from the source to a monitor (when the input source is 2560 x 1440@75Hz and no USB-C device is connected). In order to enable daisy chaining, please make sure the source transported.

> This function is only available when Power Saving is Normal Level. If you set Power Saving to Deep Level, all the connected monitors will display the same content at the same time (clone). **Note: Input port will be fixed (no auto detection) when DP out cable is plugged.**

2560 x 1440 @75Hz
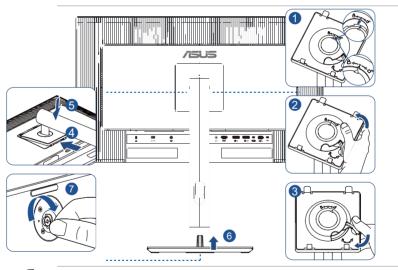
2.1   Assembling the monitor arm/base

To assemble the monitor base:

1.   Make sure the triangle marks of VESA cover aligned.

2.   Attach the arm into the VESA cover.

3.   Shut the lock to make the arm and VESA cover assembled.

4.   Have the front of the monitor face down on a table, slide the tabs on the arm into the slots on the VESA cover.

5.   Press down the arm assembly to snap it into place.

6.   Attach the base into the arm, making sure the tab on the arm fits into the groove on the base.

7.   Fix the base to the arm by fastening the bundled screw.

> ⚠ We recommend that you cover the table surface with soft cloth to prevent damage to the monitor.
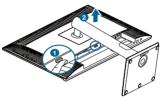
> ✎ Base screw size: M6 x 16.2 mm.

2.2   Detaching the arm/base (for VESA wall mount)

The detachable arm/base of this monitor is specially designed for VESA wall mount.

To detach the arm/base:

1.   Have the front of the monitor face down on a table.

2.   Press the release button, and then detach the arm/base from the monitor (Figure 1).

⚠️   We recommend that you cover the table surface with soft cloth to prevent damage to the monitor.
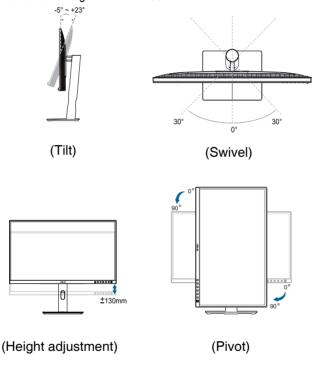
✎   •   The VESA wall mount kit (100 x 100 mm) is purchased separately.

   •   Use only with UL/CSA/GS Listed Wall Mount Bracket with minimum weight/load bearing capacity of 5.85 kg (12.9 lb) (Screw size: M4 x 10 mm).

2.3   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 +23˚ to -5˚, +/- 30˚ swivel adjustment from either left or right, and it allows +/- 90˚ pivot adjustment. You can also adjust the monitor's height within +/- 130 mm.

-5˚ ~ +23˚

(Tilt)

30˚   30˚
        0˚

(Swivel)

0˚
90˚

±130mm

(Height adjustment)

0˚
90˚

0˚
90˚

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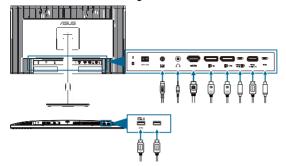
It is normal that the monitor slightly shakes while you adjust the viewing angle.

2.4   Connecting the cables

Connect the cables as the following instructions:

*   **To connect the power cord**: Connect one end of the power cord securely to the Adapter's AC input port, the other end to a power outlet.

*   **To connect the HDMI/ DisplayPort/ USB Type-C cable**:
    a. Plug one end of the HDMI/ DisplayPort/ USB Type-C cable to the monitor's HDMI/ DisplayPort/ USB Type-C jack.
    b. Connect the other end of the HDMI/ DisplayPort/ USB Type-C cable to your device's HDMI/ DisplayPort/ USB Type-C jack.

> It is suggested to use USB cerified Type-C cable. If the signal source supports DP Alt mode, all video, audio and data signal can be transmitted.

*   **To use the earphone:** connect the end with plug type to the monitor's earphone jack when an HDMI/ DisplayPort/ USB Type-C signal is fed.

*   **To use the USB 3.2 Gen 1 ports**:
    Upstream: Use an USB Type-C cable and plug on end of the Type-C connector to the monitor's USB Type-C port as upstream and the other end to your computer's USB Type-C jack. Or use an USB Type-C to Type-A cable and plug the Type-C connector to the the monitor's USB Type-C as upstream and the Type-A connector to your computer's USB Type-A jack. Make sure your computer is installed with the Windows, macOS operating system. That will enable the USB ports on the monitor to work.

> Downstream: Do not use extension cord. Please direct connect your USB device with the monitor's USB Type-A or Type-C jack.

> When these cables are connected, you can choose the desired signal from the **Signal** item in the OSD menu.

> If you need to replace the power cord or the connection cable(s), please contact ASUS customer service.

2.5   Turning on the monitor

Press the power button ⏻ . See page 1-2 for the location of the power button. The power indicator ⏻ lights up in white to show that the monitor is ON.

3.1 OSD (On-Screen Display) menu

3.1.1 How to reconfigure

1. Press any button to display the OSD menu.
2. Press the ⸬☰ Menu (5-way) button to enter the OSD main menu.
3. Move the ⸬☰ Menu (5-way) button up/down/left/right to navigate through the functions. Highlight the desired function and press the Menu (5-way) button to activate it. If the function selected has a sub-menu, move the ⸬☰ Menu (5-way) button up/down to navigate through the sub-menu functions. Highlight the desired sub-menu function and press the ⸬☰ Menu (5-way) button or move the ⸬☰ Menu (5-way) button to activate it.
4. Move the ⸬☰ Menu (5-way) button up/down to change the settings of the selected function.
5. To exit and save the OSD menu, press the ✕ button or move the ⸬☰ Menu (5-way) left repeatedly until the OSD menu disappears. To adjust other functions, repeat steps 1-4.

3.1.2 OSD function introduction

1. Mode

This function contains 8 sub-functions you can select for your preference. Each mode has the Reset selection, allowing you to maintain your setting.

- **Native Mode**: Best choice for document editing.

- **sRGB Mode**: Compatible with sRGB color space, sRGB mode is the best choice for document editing.

    sRGB Mode meets ENERGY STAR® requirements.

- **DICOM 0lux:** When ambient luminance around 0lux, we recommend to choose DICOM_0lux for best viewing image.

- **DICOM 50lux:** When ambient luminance around 50lux, we recommend to choose DICOM_50lux for best viewing image.

- **DICOM 100lux:** When ambient luminance around 100lux, we recommend to choose DICOM_100lux for best viewing image.

- **DICOM Auto:** Auto compensation of DICOM curve by environment light changing via ambient light sensor detection.

- **User Mode 1/User Mode 2**: Allows you to make color adjustments in the Advanced Setting.

Below table shows the default configurations for each mode:

Function	Native Mode	sRGB Mode	DICOM_0lux	DICOM_50lux	DICOM_100lux	DICOM_Auto	User Mode 1/ User Mode 2
Color Temp.	6500K	Fixed 6500K	7500K	7500K	7500K	7500K	Fixed 6500K
Brightness	50	Fixed 80 nits	100	100	100	100	50
Contrast	80	80	Disable (Gray out)	Disable (Gray out)	Disable (Gray out)	Disable (Gray out)	80
Sharpness	Enable (0)	Enable (0)	Enable (0)	Enable (0)	Enable (0)	Enable (0)	Enable (0)
RGB Tuning	Enable (Default)	Disable	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)
Uniformity	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Gray Out
Morochrome	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)	Enable (Default Off)
Darkness	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)	Enable (Default)
Gamma	Enable (2.2)	Fixed (2.2)	Disable (Gray out)	Disable (Gray out)	Disable (Gray out)	Disable (Gray out)	Fixed (2.2)
Light sensor	Enable (Default Off)	Enable (Default Off)	Disable (Gray out)	Disable (Gray out)	Disable (Gray out)	Always On	Enable (Default Off)

2. Image

Set a desired color setting from this menu.

- **Brightness:** The adjusting range is from 0 to 100.

- **Contrast:** The adjusting range is from 0 to 100.

- **Color Temp.:** Contains 6 modes including 5000K, 5500K, 6500K, 7500K, 9300K, 12000K.

- **Gamma:** Allows you to set the color mode to 2.4, 2.2, 2.0.

- **Sharpness:** The adjusting range is from 0 to 100.

- **Uniformity:** Turn Uniformity on/off.

- **RGB Color:**

    * **Gain**: The adjusting range is from 0 to 100.

    * **Offset**: The adjusting range is from 0 to 100.

- **Monochrome:** Contains 3 modes including Positive Film, Negative Film, and Off.

- **Darkness:** Contains 3 modes including Default, Std_1 and Std_2.
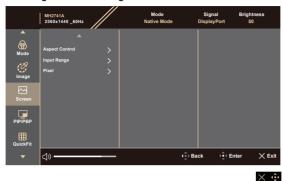
⚠️ Not recommended to adjust any imange parameters to an **extreme-high** or an **extreme-low** condition while viewing images.

⚠️ Be aware of the **duplicated setting** to any relevant parameters in the connected devides.

3. Screen

Set the image related setting from this menu.

- **Aspect Control:** Adjusts the aspect ratio to **Full**, **Dot to Dot** or **1:1 Ratio**.

    > To activate this function, you need to do the following: turn off **Adaptive-Sync** and **PBP.**

- **Input Range:** To map signal range with whole black to white presented range of display.

- **Pixel:** Adjusts the Pixel to 3MP or 4MP.

4. PIP/PBP

The PIP/PBP menu allows you to open up another sub-window connected from another video source (when input source is below 60Hz) besides the main-window from your original video source.

> To activate this function, you need to do the following: turn off Adative-Sync and disable HDR on your device.

● **Mode:** Selects **PIP**, **PBP** function, or turn it off.

> To scale both displays to full screen in PBP mode, set resolution settings for both as 1280 x 1440 in OS display settings. (And make sure that the scaling option is "Maintain Display Scaling" if you are using an Intel graphic card.)

● **Source:** Selects the video input source from among **HDMI, DisplayPort** and **USB Type-C**. The table below shows the input source combinations.

● **Color setting:** Select color Preset for Main and Sub windows.

● **PIP Size**: Adjusts the PIP size to **Small**, **Medium** or **Large** (Only available for the PIP mode).

5. QuickFit

In this function, you can use different kinds of alignment patterns.

> To activate this function, you need to do the following: turn off PIP/PBP, disable HDR on your device and restore your screen back to normal position (do not rotate).

- **Frame Line:** Facilitates designers and users to organize content and layout on one page and achieve a consistent look and feel. The selections are: **1:1**, **3 x 3** .

- **Center Marker:** Adjusts the **Type 1**, **Type 2**, **Type 3**.

- **Ruler:** This pattern presents physical ruler on top and left side.

- **Customization:** You can decide the frame size by moving the Menu (5-way) button up/down/left/right.

6. Eye Care

Allows you to adjust settings related to eye care.

- **Blue Light Filter:** In this function, you can adjust the blue light filter from 0 to max. 0: 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 us 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.
- When color augmentation is in default value (50).
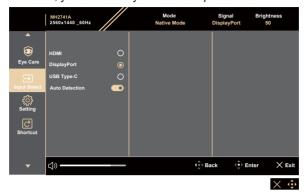
Please refer to the following to alleviate eye strains:

- 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.

- V[Á_ å {̃ ̃^Á ^̂Ácæ]Á&æ åÁ&¦^}^••Á̃Á[̆¦Á^̂•ĚÁ•^¦Á@ ̆ |åÁ^•oć@ Á ^̂^Á_ ^¦åa̋æ]̆ Á&^Á&[&̆ •å̃ *Á} Á̊}àb̂ç[Aĉ@æ̊Á^̂Áæ̊Á&̧ æ̂È

- Ò̂^Á*̂^¦&æ̃^•Á&æ]Á@[ ]]Á̊[Á&^å ̆ &̂ÁÁ^̂^Ácæ]ÁËÁ̂Ù^]^æ&ć@ •^ÁÁ̂^¦&æ̃^•Á [-&^}ÁËÁ̂Ácæ]Á&̊[}á̊] ̆ ̂• Á̊¦_| ^æ^^&̊[}•̆ |Ácæ̊Á@ • æ̃æ]ÁËÁÒ^^Á̂^¦&æ̃^̊Á Ç̂FÁ̋Ü^]^æ]̆ ̆ * Á̊[[\ Á] Á̊æ̊̊Áå̊Á[̆ }ÁÁ̆ÇÒËÁÙ̊Á|[̆ ˙|Á̊[||Á̊[̆ ¦Á̂̂ ^̂•Á̊ÁGHËÁF̂Á[ç̂Á̊[̆ ¦Á ^̂•̊•Á̊æ̊æ̂̊[}Áæ̂È

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7. Input select

In this function, you can select your desired input source.

● **Auto Detection**: automatically detects other active signals when current input signal is inactive.

> To activate this function, you need to do the following: remove the connection of Daisy-Chain DisplayPort output (to disable MST output).

8. Setting

Allows you to adjust the system.

● **Power Saving**: Select **Normal Level** for power on hub during power saving. Select **Deep Level** for power off hub during power saving.

> To activate daisy chaining, you need to do the following: set Power Saving to Normal Level. Note: Input port will be fixed (no auto detection) when DP out cable is plugged.

- **OSD Setup:**
    - * Adjusts the **Timeout** from 10 to 120 seconds.
    - * Enables or disables the **DDC/CI** function.
    - * Adjusts the OSD background from **Opaque** to **Transparent**.
    - * Enables or disables the **Auto Rotation** function.

    To activate Auto Rotation, you need to do the following: turn off PIP/PBP.

- **Language:** There are 22 languages for your selection, including English, French, German, Italian, Spanish, Dutch, Portuguese, Russian, Chinese, Traditional Chinese, Japanese, Korean, Thai, Indonesian, Persian, Ukrainian.

- **Sound:**
    - * Adjusts **Volume** from 0 to 100.
    - * **Mute** or un-Mute the audio output.

    To activate Sound function, you need to do the following: turn on PIP/PBP.

- **DisplayPort Stream:** Compatibility with graphic card. Select **DisplayPort 1.2**, **DisplayPort 1.4** or **DisplayPort 1.4 + USB 3.2** by graphic card DP version.

    To activate daisy chaining, you need to do the following: set Power Saving to Normal Level. Note: Input port will be fixed (no auto detection) when DP out cable is plugged.

- **Key Lock:** To disable all function keys. Push the 5-way button down for over 5 seconds to cancel the key lock function.
- **Power Indicator:** Turns the power LED indicator on/off.
- **Ambient Effect:** Turns the Light Effect and Adative Color on/off.
- **HDR:** Turns HDR on/off.
- **Adaptive-Sync:**
    - * Adaptive-Sync can only be activated within 48Hz ~ 75Hz.
    - ***** For supported GPUs, minimum PC system and driver requirements, please contact the GPU manufactures.

    To activate this function, you need to do the following: turn off PIP/PBP.

- **Information:** Shows the monitor information.
- **All Reset:** "Yes" allows you to restore the default settings, meanwhile meet ENERGY STAR ® requirements.

9. Shortcut

Defines the functions for Shortcut 1 and 2 buttons.

● **Shortcut 1/Shortcut 2**: Selects a function for Shortcut 1 and 2 buttons.

When a certain function is selected or activated, your shortcut key may not support. Available function choices for shortcut: Brightness, Aspect Control, Input select, Pixel, PIP/PBP Setting, Color Temp., Blue Light Filter,User Mode 1, User Mode 2.

3.2 Specifications summary   MH2441A

Panel Type	TFT LCD
Panel size	23.8" (16:9, 60.45cm) wide screen
Max. Resolution	2560 x 1440
Pixel pitch	0.2058 mm x 0.2058mm
Brightness(Typ.)	300 cd/m^2
Contrast Ratio (Typ.)	900:1
Viewing angle (H/V) CR>10	178˚/178˚
Display colors	16.7 M
Response time	5 ms (GTG)
Preset selection	8 color preset modes
Auto adjustment	No
Color temperature selection	6 color temperatures
Analog input	No
Digital input	DisplayPort v1.4, HDMI 2.0 x 1, DisplayPort over USB Type-C
Digital Output	Yes
Earphone jack	Yes
Audio input	No
USB 3.2 Gen 1 port	1 x USB 3.2 Gen 1 Type-C 3 x USB 3.2 Gen 1 Type-A
Colors	Black/ White
Power LED	White (On)/Amber (Standby)
Tilt	+23˚~ -5˚
Pivot	+90˚~ -90˚
Swivel	+30˚~ -30˚
Height Adjustment	130 mm
Kensington lock	Yes
AC input voltage	AC: 100~240V
Power consumption	Power On: 14.5 W**, Power Standby: ≤ 0.5 W, DC Power Off: ≤ 0.3 W Power Rating: DC/ 90.06W max.
Temperature (Operating)	0˚C~40˚C
Temperature (Non-operating)	-20˚C~+60˚C
Dimension (W x H x D) without stand	539.6mm x 322.2mm x 44.6mm
Dimension (W x H x D) with stand	539.6mm x 515.1mm x 197.2mm (highest) 539.6mm x 385.1mm x 197.2mm (lowest) 620mm x 390mm x 127mm (package)
Weight (Esti.)	5.4kg (Net); 3.7kg (Net, without stand); 8.2kg (Gross)

3.2   Specifications summary   MH2741A

Panel Type	TFT LCD
Panel size	27" (16:9, 68.46 cm) wide screen
Max. Resolution	2560 x 1440
Pixel pitch	0.2333mm x 0.2333mm
Brightness(Typ.)	350 cd/m^2
Contrast Ratio (Typ.)	900:1
Viewing angle (H/V) CR>10	178˚/178˚
Display colors	16.7 M
Response time	5 ms (GTG)
Preset selection	8 color preset modes
Auto adjustment	No
Color temperature selection	6 color temperatures
Analog input	No
Digital input	DisplayPort v1.4, HDMI 2.0 x 1, DisplayPort over USB Type-C
Digital Output	Yes
Earphone jack	Yes
Audio input	No
USB 3.2 Gen 1 port	1 x USB 3.2 Gen 1 Type-C 3 x USB 3.2 Gen 1 Type-A
Colors	Black/ White
Power LED	White (On)/Amber (Standby)
Tilt	+23˚~ -5˚
Pivot	+90˚~ -90˚
Swivel	+30˚~ -30˚
Height Adjustment	130 mm
Kensington lock	Yes
AC input voltage	AC: 100~240V
Power consumption	Power On: 13W**, Power Standby: ≤ 0.5 W, DC Power Off: ≤ 0.3 W Power Rating: DC/ 90.06W max.
Temperature (Operating)	0˚C~40˚C
Temperature (Non-operating)	-20˚C~+60˚C
Dimension (W x H x D) without stand	613.3mm x 363.4mm x 44.9mm
Dimension (W x H x D) with stand	613.3mm x 536.7mm x 197.2mm (highest) 613.3mm x 406.7mm x 197.2mm(lowest) 695mm x 421mm x 133mm (package)
Weight (Esti.)	6.7kg (Net); 5kg (Net, without stand);9.3kg(Gross)

|	
Multi-languages	22 languages (English, French, German, Italian, Spanish, Dutch, Portuguese, Russian, Czech, Croatian, Polish, Romanian, Hungarian, Turkish, Simplified Chinese, Traditional Chinese, Japanese, Korean, Thai, Indonesian, Persianm Ukrainian)
Accessories	Quick start guide, warranty card, Adapter, Power cord, HDMI cable (optional), DisplayPort cable (optional), USB C to C cable (optional)
Compliance and Standards	FCC, ICES-3, CCC, CEL, BSMI, VCCI, RoHS, CE, CB, Windows 10/11 WHQL, TUV T mark, TFDA, FDA, HC, TÜV Flicker Free, TÜV Low Blue Light
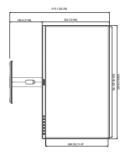
*Specifications are subject to change without notice.
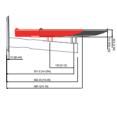****Power consumption of On Mode as defined in Energy Star 8.0 version.**
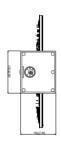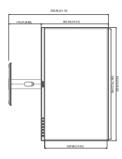
3.3 Outline dimensions

MH2441A

MH2741A
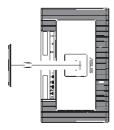
3.4 Troubleshooting (FAQ)

Problem	Possible Solution
Power LED is not ON	• Press the ⏻ button to check if the monitor is in the ON mode. • Check if the power cord is properly connected to the monitor and the power outlet. • Check if the power switch is ON.
The power LED lights amber and there is no screen image	• Check if the monitor and the computer are in the ON mode. • Make sure the signal cable is properly connected the 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 Contrast and Brightness settings via OSD.
Screen image bounces or a wave pattern is present in the image	• Make sure the signal cable is properly connected to the monitor and the computer. • Move electrical devices that may cause electrical interference.
Screen image has color defects (white does not look white)	• Inspect the signal cable and make sure that none of the pins are bent. • Perform All Reset via OSD. • Adjust the R/G/B color settings or select the Color Temperature via OSD.
No sound or sound is low	• Ensure that the HDMI/DisplayPort/USB Type C cable is properly connected to the monitor and the computer. • Adjust the volume settings of both your monitor and HDMI/DisplayPort/USB Type C device. • Ensure that the computer sound card driver is properly installed and activated.

3.5   Supported operating modes

Input Timing Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Dot Clock Frequency (MHz)
640x350	31.47(P)	70(N)	25.18
640x480	31.47(N)	59.94(N)	25.18
640x480	37.87(N)	72.82(N)	31.5
640x480	37.5(N)	75.00(N)	31.5
720x400	31.47(N)	70.08(P)	28.32
800x600	35.16(P)	56.25(P)	36
800x600	37.88(P)	60.32(P)	40
800x600	48.08(P)	72.12(P)	50
800x600	46.86(P)	75.00(P)	49.5
832X624	49.72(P/N)	74.55(P/N)	57.28
848x480	31.0(P)	60(P)	33.75
1024x768	48.36(N)	60.00(N)	65
1024x768	56.476(N)	70.069(N)	75
1024x768	60.02(N)	75.00(N)	78.75
1152x864	67.5(P/N)	75.00(P/N)	108
1280x720	44.77(N)	60	74.5
1280x768	47.8(N)	60(N)	79.5
1280x768	60.3(P)	75(P)	102.25
1280x800	49.7(N)	60(P)	84.5
1280x960	60.00(P)	60.00(N)	108
1280x1024	63.98(P)	60.02(P)	108
1280x1024	79.98(P)	75.02(P)	135
1366x768	47.712(P)	59.79(P)	85.5
1400x1050	65.3(N)	60(P)	121.75
1440x900	55.94(N)	59.89(P)	106.5
1600x1200	75.00(P)	60.00(P)	162
1680x1050	65.29(N)	60.00(P)	146.25
1920x1080	67.5(P)	60.00(P)	148.5
2560x1080	66.636(P)	59.978(N)	181.25
2560x1440	88.787(P)	59.951(N)	241.5
2560x1440	111.857(P)	74.971(N)	304.25

"P" / "N" stands for "Positive" / "Negative" polarity of incoming H-sync/V-sync (input timing).

When the monitor is operating in the video mode (ie, not displaying data), the following high definition modes shall be supported in addition to standard definition video.

Timing Name	Input Vert Freq (Hz)	Horizontal.Frequency.(KHz)	Out put Vert Freq (Hz)
1920 × 1080p	24Hz	27	48Hz
	25Hz	28.125	50Hz
	30Hz	33.175	60Hz
	50Hz	56.25	50Hz
	59.94Hz	67.43	59.94Hz
	60Hz	67.5	60Hz
1920 × 1080i	50Hz	28.13	50Hz
	59.94Hz	33.72	59.94Hz
	60Hz	33.75	60Hz
1280 × 720p	50Hz	37.5	50Hz
	59.94Hz	44.95	59.94Hz
	60Hz	45	60Hz
720 × 576p	50Hz	31.25	50Hz
720 × 480p	59.94Hz	31.47	59.94Hz
	60Hz	31.5	60Hz
640 × 480p(VGA)	59.94Hz	31.47	59.94Hz
	60Hz	31.5	60Hz
720(1440) × 576i	50Hz	15.63	50Hz
720(1440) × 480i	59.94Hz	15.73	59.94Hz
	60Hz	15.75	60Hz

Regulatory Information

Indications for use

The intended purpose of this device is to provide transmission and viewing of medical images in medical institutions.

Intended usage environment

This device also can be used in the patient area.

Contra-indications

This device is not intended for the direct diagnostic and interventional radiology purpose.

Intended users

This device is intended to be used by trained physicians and medical practitioners.

Notice to the user and/or patient

Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

Manufacturing country

The manufacturing country of the product is indicated on the product label ("Made in …").

Importers contact information

To find your local importer, contact one of ASUS regional offices via the contact information provided on our website.

Taiwan		Worldwide		China	
MH2441A	MH2741A	MH2441A	MH2741A	MH2441A	MH2741A

Classification

- Type of protection against electric shock: Class I
- The degree of protection against electric shock: No Applied Part.
  - The mode of operation: Continuous Operation
  - Degree of protection against the ingress of water: IPX0

Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide. (Non AP or APG Category)

Medical Standard

It shall be assured that the final system is in compliance to IEC 60601-1 requirement.

Power adapter safety information

(Manufacture: ADAPTER, Model: ATM090T-P190) is a forming part of the monitor.
External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 60950 for IT equipment, UL 60601-1 and ANSI/AAMI ES60601-1 / IEC 60601 series for systems – shall comply with the standard IEC 60601-1, Safety requirements for medical electrical systems.
•Power adapter can emit electromagnetic waves, which could influence, limit or result in malfunction of the monitor. Install the equipment in a controlled environment, where such effects are avoided.

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 into 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.

⚠ **CAUTION:**

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

This Class B digital apparatus meets all requirements of the Canadian Interfer-ence - Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Régle-ment sur le matériel brouiller du Canada.

Electro-Magnetic Compatibility Information

Electro-Magnetic Emissions

This EUT is intended for use in the electromagnetic environment specified below. The customer or the user of the EUT should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – Guidance
RF emissions **CISPR 11/EN55011**	Group 1	The EUT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment
RF emissions **CISPR 11/EN55011**	Class B	The EUT is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions **IEC/ EN 61000-3-2**	Class D	
Voltage fluctuations/ flicker emissions **IEC/ EN 61000-3-3**	Complies	

Electro-Magnetic Immunity

This product is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that it is used in such an environment.

Immunity test	IEC/ EN 60601-1-2 Test levels	Compliance level	Electromagnetic environment guidance
Electrostatic discharge (ESD) IEC/ EN 61000-4-2	±8 (kV) contact ±2,±4,±8,±15 (kV) air	±8 (kV) contact ±2,±4,±8,±15 (kV) air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC/ EN 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/ output lines 100 kHz repetition frequency	± 2 kV for power supply lines ± 1 kV for input/ output lines 100 kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment
Surge IEC/ EN 61000-4-5	Line to line: ± 0.5 kV, ± 1 kV Line to ground: ± 0.5 kV, ± 1 kV, ± 2 kV	Line to line: ± 0.5 kV, ± 1 kV Line to ground: ± 0.5 kV, ± 1 kV, ± 2 kV	Mains power quality should be that of a typical commercial or hospital environment
Voltage dips, short interruptions and voltage variations on power supply input lines IEC/ EN 61000-4-11	0 % U_T; 0,5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle 70 % U_T; 25/30 cycles 0 % U_T; 250/300 cycle	0 % U_T; 0,5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle 70 % U_T; 25/30 cycles 0 % U_T; 250/300 cycle	Mains power quality should by that of a typical commercial or hospital environment. If the user of this product requires continued operation during power mains interruptions, it is recommended that this product be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC/ EN 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC/ EN 61000-4-6	3 Vrms 150 kHz - 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of this product, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
	6 Vrms ISM bands between 150 kHz and 80 MHz	6 Vrms	Recommended separation distance
Radiated RF IEC/ EN 61000-4-3	3 V/m 80 MHz - 2.7 GHz	3 Vrms	d = 1.2√ P 80 MHz to 800 MHz d = 2.3√ P 800 MHz to 2.7 GHz Where "P" is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and "d" is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a] should be less than the compliance level in each frequency range. [b] Interference may occur in the vicinity of equipment marked with symbol:

NOTE:

- UT is the A.C mains voltage prior to application of the test level.
- At 80 MHz and 800 MHz, the higher frequency range applies.
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
- a: Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which this product is used exceeds the applicable RF compliance level above, this product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating this product.
- b: Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

The EUT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer of the user of this product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and this product as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter(m)		
	150kHz to 80MHz150kHz to 80MHz $d=1.2\sqrt{P}$	150k80MHz to 800MHz $d=1.2\sqrt{P}$Hz to 80MHz	150kHz to 800MHz to 2.7GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance "d" in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where "P" is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE:
- At 80 MHz and 800 MHz, the higher frequency range applies.
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Immunity to RF wireless communications equipment

The EUT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. Portable RF communications equipment should beused no closer than 30 cm (12 inches) to any part of the EUT. Otherwise, degradation of the performance of this equipment could result.

Immunity test	Band a)	Service a)	Modulation	IEC 60601-1-2 test level	Compliance level
Proximity fields from RF wireless communications equipment IEC 61000-4-3	380 - 390 MHz	TETRA 400	Pulse modulation 18 Hz	27 V/m	27 V/m
	430 - 470 MHz	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	28 V/m	28 V/m
	704 - 787 MHz	LTE Band 13, 17	Pulse modulation 217 Hz	9 V/m	9 V/m
	800- 960 MHz	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE Band 5	Pulse modulation 18 Hz	28 V/m	28 V/m
	1,700 - 1,990 MHz	GSM 1800 CDMA 1900 GSM 1900 DECT LTE Band 1, 3, 4, 25 UMTS	Pulse modulation 217 Hz	28 V/m	28 V/m
	2,400 - 2,570 MHz	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE Band 7	Pulse modulation 217 Hz	28 V/m	28 V/m
	5,100 - 5,800 MHz	WLAN 802.11 a/n	Pulse modulation 217 Hz	9 V/m	9 V/m

NOTE: If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

(a) For some services, only the uplink frequencies are included.

(b) The carrier shall be modulated using a 50 % duty cycle square wave signal.

(c) As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

⚠ IMPORTANT:

This product should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

When using a portable RF communication equipment, keep it 30 cm (12 inches) or more away from any part, including cables, of this product. Otherwise, degradation of the performance of this equipment could result.

Be sure to use the cables attached to the product, or cables specified by ASUS. Use of cables other than those specified or provided by ASUS of this equipment could result in in-creased electromagnetic emissions or decreased electromagnetic immunity of this equipment and improper operation.

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EC | REP

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