

USER'S MANUAL MHSD-XX00RCT



MODEL
MHSD-1800RCT, MFMC-1800RCT, MHSD-2100RCT, MFMC-2100RCT,
MHSD-2400NRCT, MFMC-2400NRCT, MHSD-3200RCT, MFMC-3200RCT,
MHSD-4300RCT, MFMC-4300RCT, MHSD-5500RCT, MFMC-5500RCT

Rev.01

**MEDICAL & HEALTHCARE
MEDICAL GRADE
SURGICAL MONITORS
BUILT-IN RECORDING & STORAGE**

Important :
Please read PRECAUTIONS, this User's
Manual, carefully to familiarize
yourself with safe and effective usage.



For safe and efficient use of the product, read the manual thoroughly.



Warning : Neglecting this sign and misusing the product may result in fatality or severe injury.



Caution : Neglecting this sign and misusing the product may result in Injury/Physical Damage.



Prohibited : This sign indicates the actions that should be prohibited.



Compulsory : This sign indicates the actions that must be followed.



Reference : This sign proposes or suggests the ideal ways to use the product.

Longtime use of the product may cause dizziness. Frequent rest is recommended while in use. When the dizziness is severe, stop the use of the product immediately.

- The dizziness may last varying from a person to another.
- Usage for other purposes may cause physical harm.

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2. Notice for this 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 manual.

The specifications noted in this manual are only applicable when the following are used :

- Power cords provided with the product.
- Signal cables specified by us.

Only use optional products manufactured or specified by us with this product.

It takes about 30 minutes for the performance of electrical parts to stabilize. Please wait 30 minutes or more after the monitor power has been turned on, and then adjust the monitor.

Monitors should be set to a lower brightness to reduce changes in luminosity caused by long-term use and maintain a stable display.

If the monitor displays continuously on over a long period of time, dark smudges or burn-in may appear. To maximize the life of the monitor, we recommend the monitor be turned off periodically.

Periodic cleaning is recommended to keep the monitor looking new and to prolong its operation lifetime.

The LCD panel is manufactured using high-precision technology. Although, missing pixels or lit pixels may appear on the LCD panel, this is not a malfunction. Percentage of effective dots: 99.9994% or higher.

The backlight of the LCD panel has a fixed lifetime. When the screen becomes dark or begins to flicker, please contact Highness Support Team.

Do not press on the panel or edge of the frame strongly, as this may result in display malfunctions, such as interference patterns, etc. If pressure is continually applied to the panel, it may deteriorate or damage your panel. (If the pressure marks remain on the panel, leave the monitor with a black or white screen. The symptom may disappear.)

Do not scratch or press on the panel with any sharp objects, as this may result in damage to the panel. Do not attempt to brush with tissues as this may scratch the panel.

When the monitor is cold and brought into a room or the room temperature goes up quickly, dew condensation may occur on the interior and exterior surfaces of the monitor. In that case, do not turn the monitor on. Instead wait until the dew condensation disappears, otherwise it may cause some damage to the monitor.

3. Cleaning

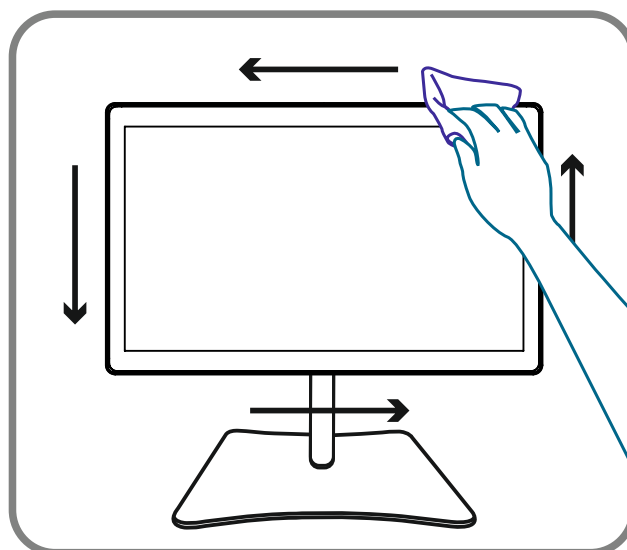
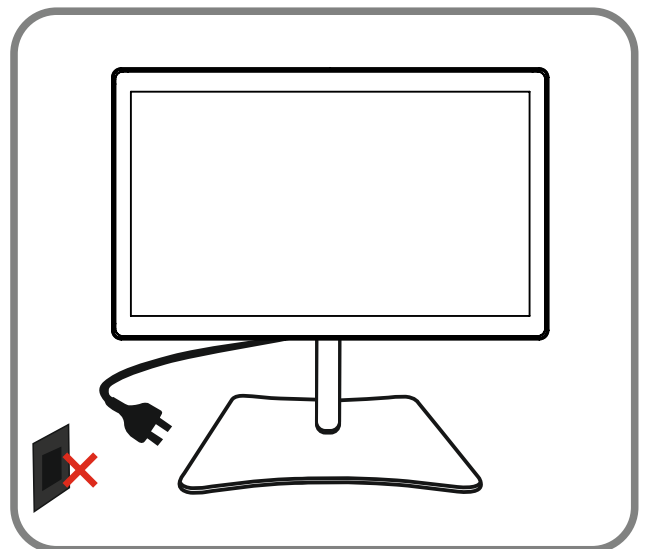
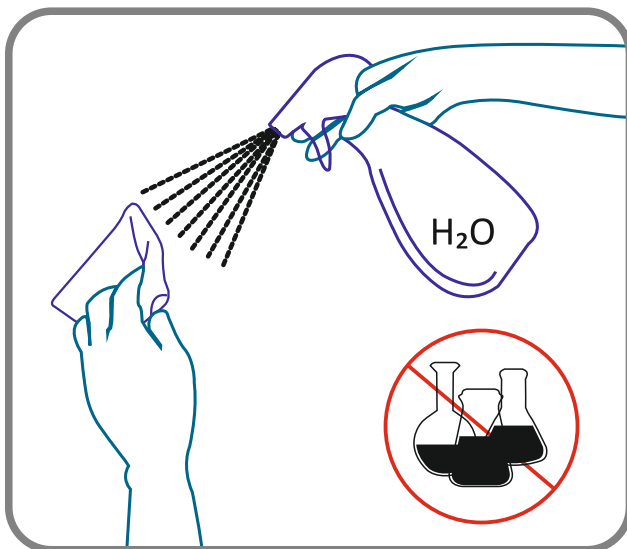
Attention :

- Chemicals such as alcohol and antiseptic solution may cause gloss variation, tarnishing, and fading of the cabinet or panel, and also quality deterioration of the image.
- Never use any thinner, benzene, wax, and abrasive cleaner, which may damage the cabinet or panel.

Note :

- The optional Screen Cleaner is recommended for cleaning the cabinet and panel surface.

If necessary, the stains on the cabinet and panel surface can be removed by moistening part of a soft cloth with water.



4. Precautions

4.1. Power



Warning :



Connect the power plug to an outlet which is GROUNDED. Otherwise electric shock or injury may occur (limited to insulation-type 1 devices).



During thunder and lightning, disconnect the power cable and signal cable from the monitor, otherwise electric shock or fire may occur. Also, disconnect the power plug from the outlet.



DO NOT touch the power plug with wet hands. Moisture may cause electric shock.



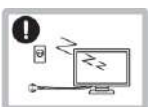
While disconnecting the power cable, hold the plug and do not bend the power cord excessively, or put heavy objects on it.



Caution :



Use the power adaptor provided for the monitor. The adaptors of other companies are manufactured by different standards, which may cause damage to the monitor, fire or electric shock.



In cases where the product is intended not to be used for a long time (left over for going outside) from the house, disconnect the power cable from the monitor. Dust may generate heat and cause fire.



Disconnecting the power cord during the use of the monitors may cause electric shock and damage the monitor.

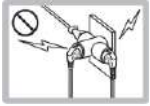


Contact the service centre first for the usage of a power other than 110-220V. The product is set to be used at the power of 110V-220V/60Hz when shipped from the plant.

4.2. Installation



Warning :



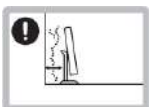
DO NOT use multiple products with a single outlet at the same time. Electric shock or fire may occur.



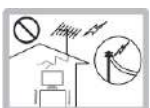
DO NOT install at the locations where excessive heat is produced such as a place with an electric heater. Electric shock, fire, malfunctioning, or deformation may occur.



DO NOT put into the monitor the metallic objects (coins, hairpins, chopsticks, wires, etc.), or flammable objects (paper, matchsticks, etc.). Please do not let your children play with the monitor and always supervise their usage of the monitor. Electric shock, fire, or injury may occur. If foreign objects get into the product, turn off the power immediately and contact the service centre.



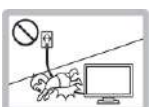
DO NOT block the ventilator of the monitor. The product should be installed in a wide place where it is ventilated well, by no less than 10cm off the wall. The monitor's deformation or even the fire can occur due to the increase in the internal temperature.



Install the product at a place free of electromagnetic interference. High-Tension wires, and some specific electric devices emit excessive electromagnetic waves, thereby affecting the performance of the monitor.



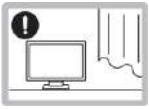
DO NOT place heavy objects on the monitor or climb up on the monitor. Injuries may occur for being dropped down from the monitor : especially for children. Please do not let your children play with the monitor and always supervise their usage of the monitor.



DO NOT leave the power cable or signal cable on the passage way. Falling over the cable may cause electric shock, fire, the damage of product, or injuries.



Caution :



Place the monitor on a flat and stable space lest it fall down and where there is no sunlight.



Place the monitor in a clean and dry space. If you smell smoke, hear a loud noise, or any strange odor is coming from the monitor, turn off the power and contact the service centre.



If the Monitor is dropped, or its cover case is damaged, turn the power off and contact the service centre.

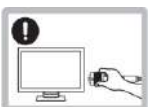
4.3. Move



Warning :



Turn the power off first before moving the product.



Disconnect all the cables before moving the product.



Ensure that the product is not dropped or bumped in any way while being moved.



Keep the box in which the product was delivered. It will be of use for moving the product.



Ensure that the product's panel faces forward, carry by grabbing it with both hands. If the product is dropped, and it is damaged, electric shock or fire may occur. Contact the service centre and have the product repaired.

4.4. Usage



Warning :



DO NOT disassemble, repair, or remodel the product yourself. Only our trained professionals at the service centre can repair the monitor.



When cleaning, DO NOT use flammable sprays directly on the monitor, or wipe it with flammable solutions (paint thinner, benzene, etc.).



DO NOT spray the product with water, or have it wet. Fire, electric shock, or malfunctioning may occur.



Prior to the cleaning of the panel, disconnect the power cord. Wipe the panel lightly with smooth cloth to prevent any scratches. Wet cloth is never to be used.



Caution :

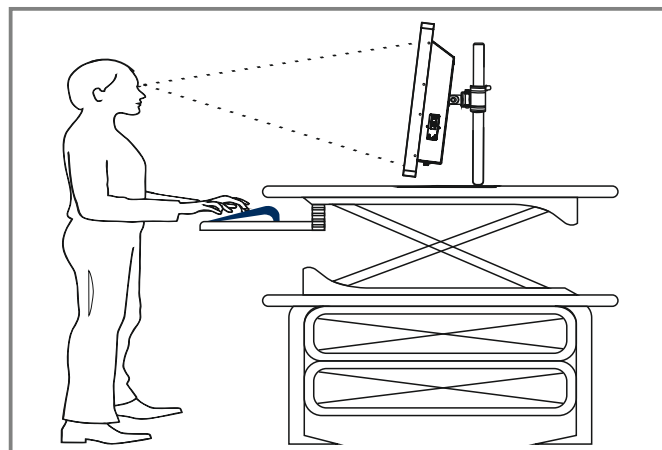


DO NOT stab or scratch the panel with a hand or any sharp objects (nail, pencil, pen etc.). The panel can be scarred, which may cause malfunctioning.



In case where monitor is used for a long time, dizziness or fatigue can be felt. To protect the eyes and reduce the fatigue on muscles, frequent rest is highly recommended.

Proper
postures for
watching the
Monitor :



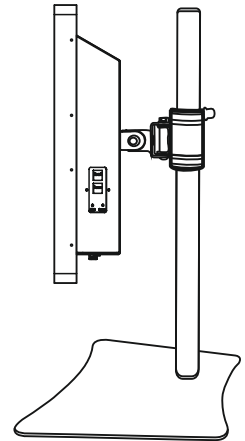
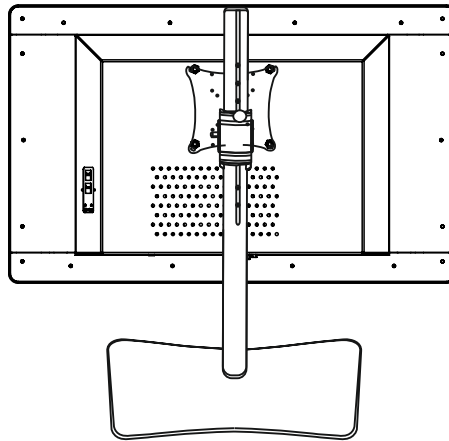
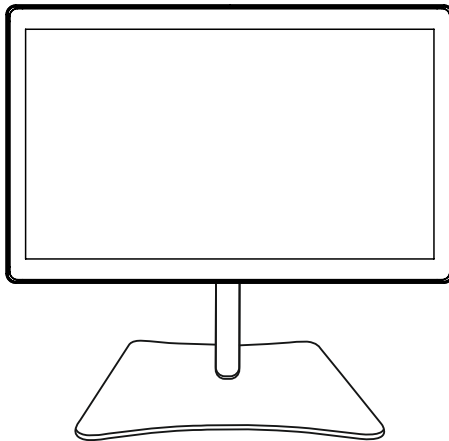
5. Product Description

5.1. Product Components :

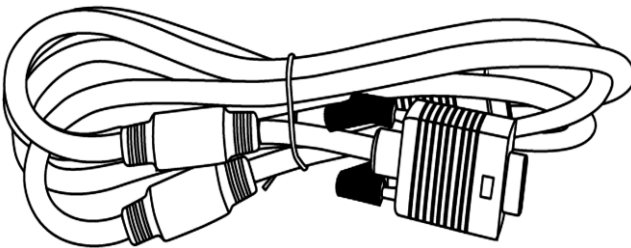


Check if all the parts and accessories are in the box. If any components are missing from what is stated below, please contact the retail store where the product was purchased. For purchasing additional parts or accessories, contact the service centre.

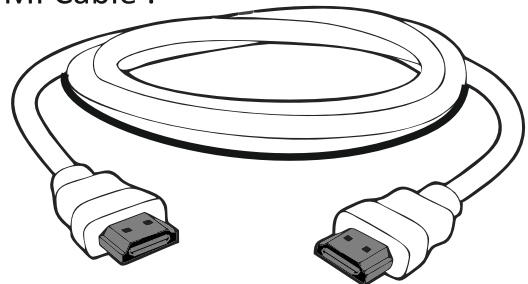
Monitor :



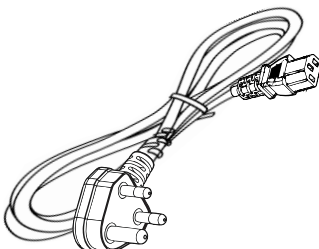
15 Pin D-Sub Cable :



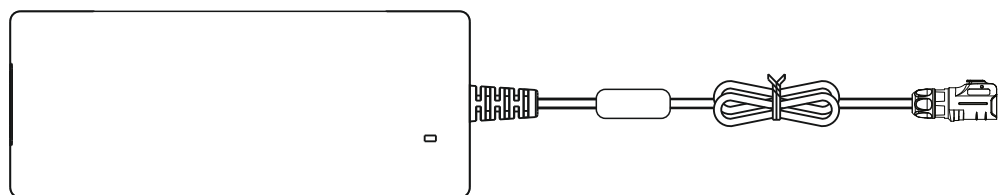
HDMI Cable :



Power Cord :

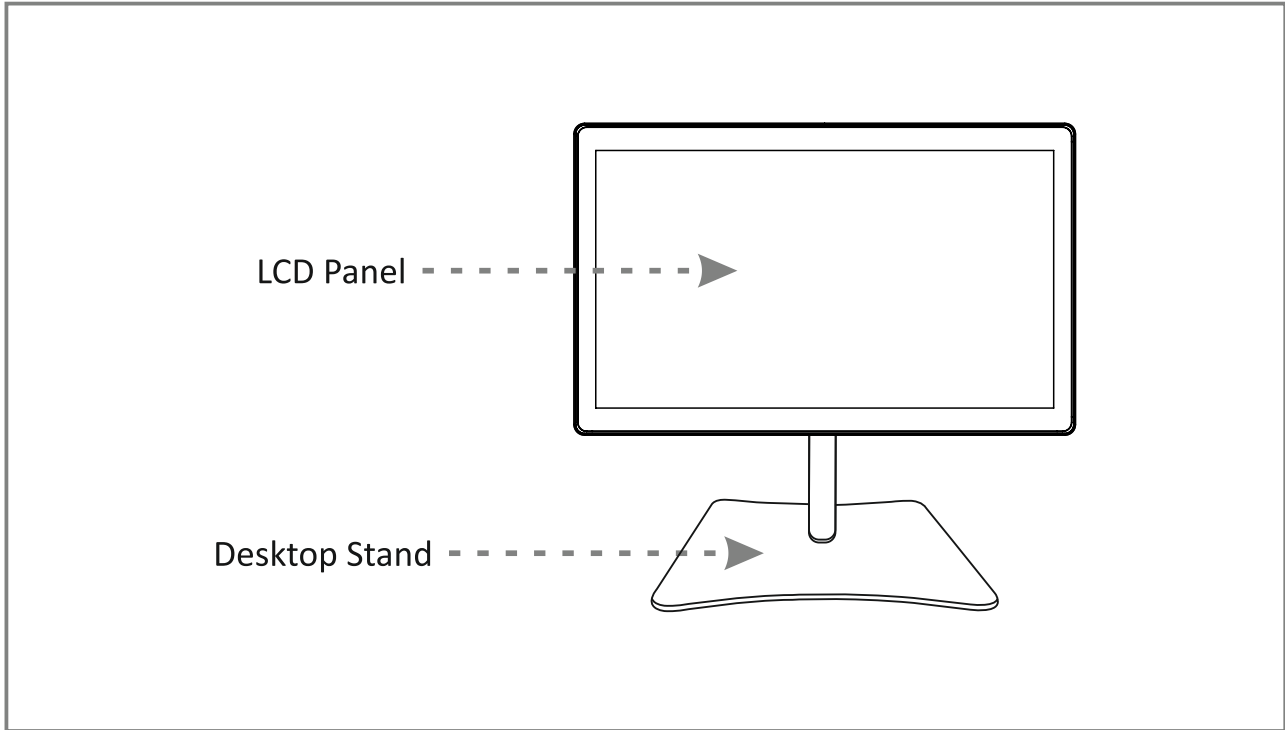


DC 12V/24V :

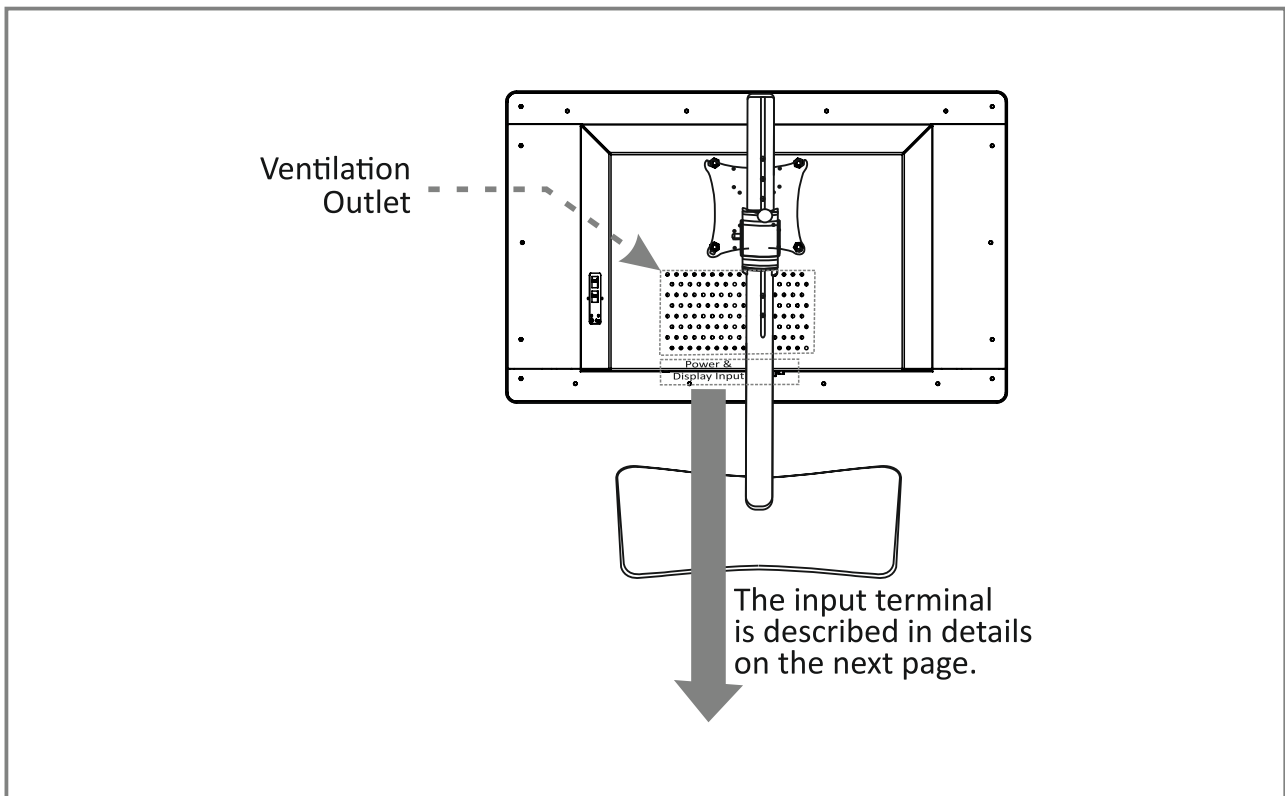


5.2. Name of Components :

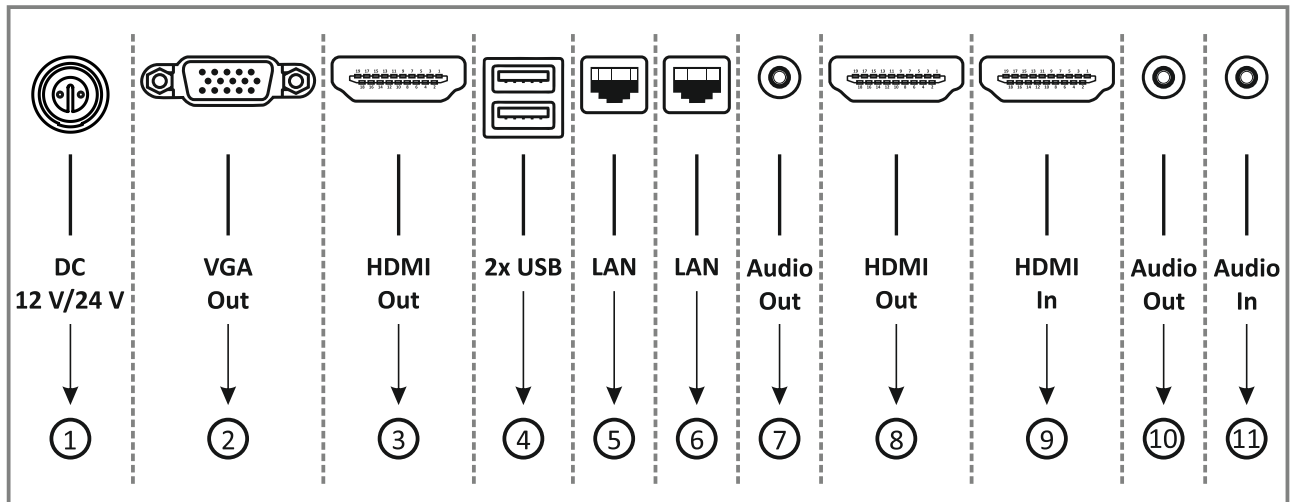
A. Front Side :



B. Back Side :



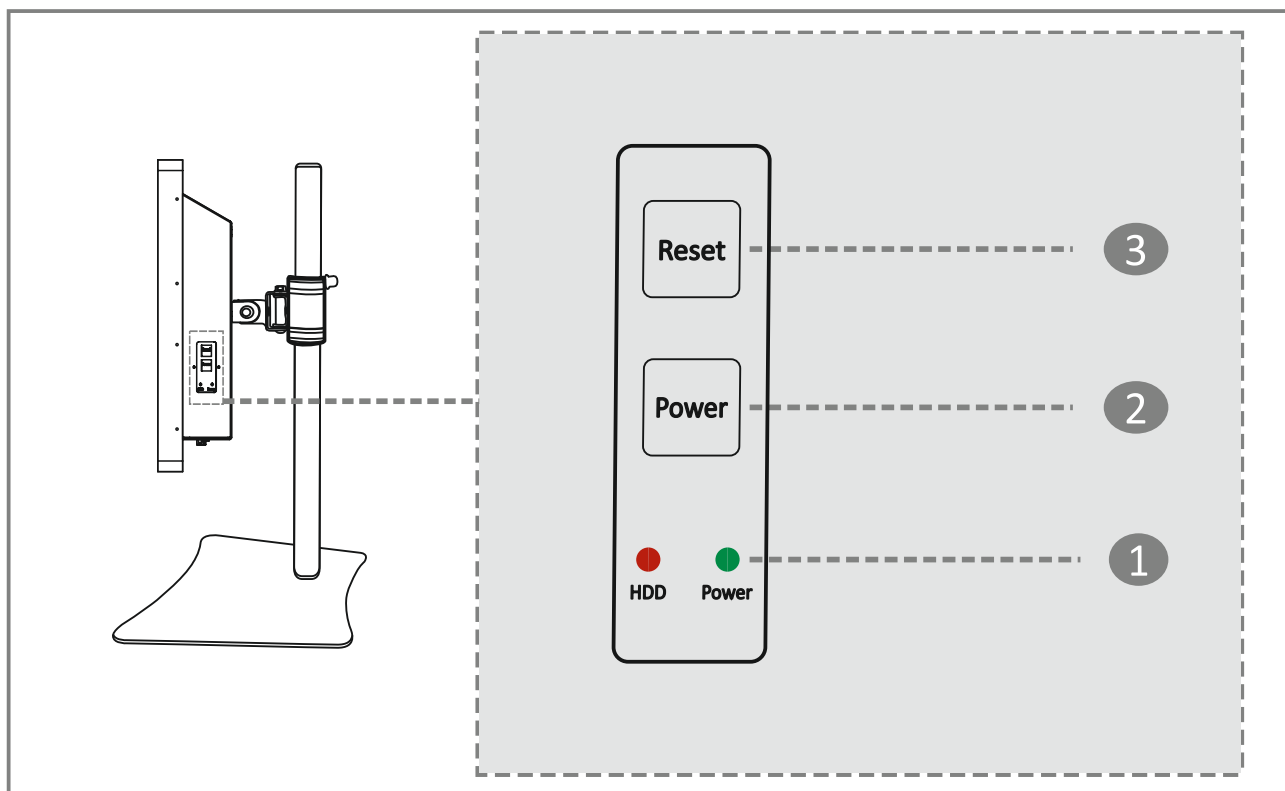
- Detailed Description on Terminal :



- | | | |
|--------------------------------|--------------------------|--------------------------|
| 1. DC 12 V/24 V - Power Input. | 2. VGA Output Terminal. | 3. HDMI Output Terminal. |
| 4. 2xUSB Terminal. | 5. LAN Terminal. | 6. LAN Terminal. |
| 7. Audio Out Terminal. | 8. HDMI Output Terminal. | 9. HDMI Input Terminal. |
| 10. Audio Out Terminal. | 11. Audio In Terminal. | |

C. Side View :

- **Detail Description on Button :**



1. Power LED : Indicates the monitor's operation status.

Green : Operating

Red : Power saving mode/Power off

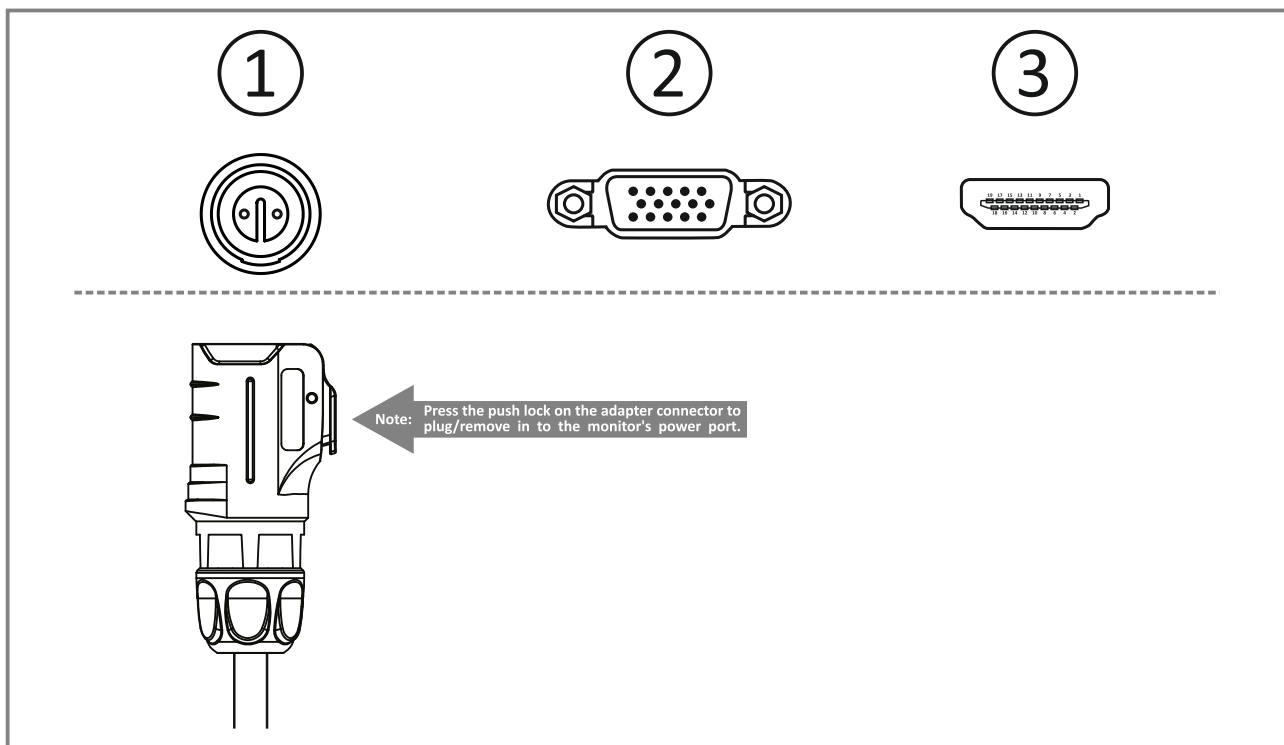
2. Power : Turns the power on or off.

3. Reset : Restart the Monitor.

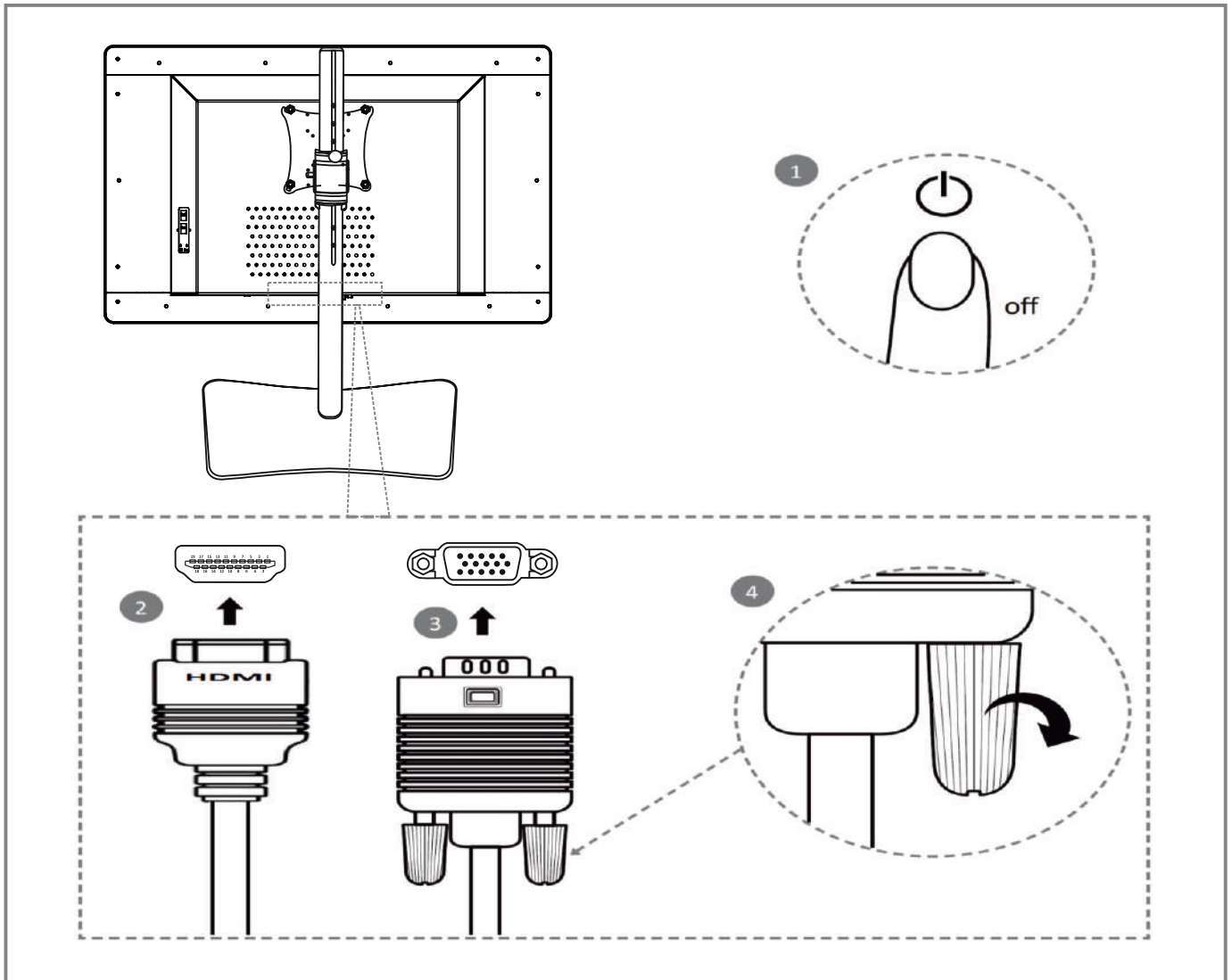
- Connect the Power Cord to the Adaptor Power Connector.
- Connect the Plug of the DC power connector device to the power input terminal at the back of the monitor.

Only use the adaptor provided together with the Monitor, or compatible adaptors. The use of incompatible adaptors may damage the computer. (Selected Model Only)

D. Power Connection :



E. Display Signal :



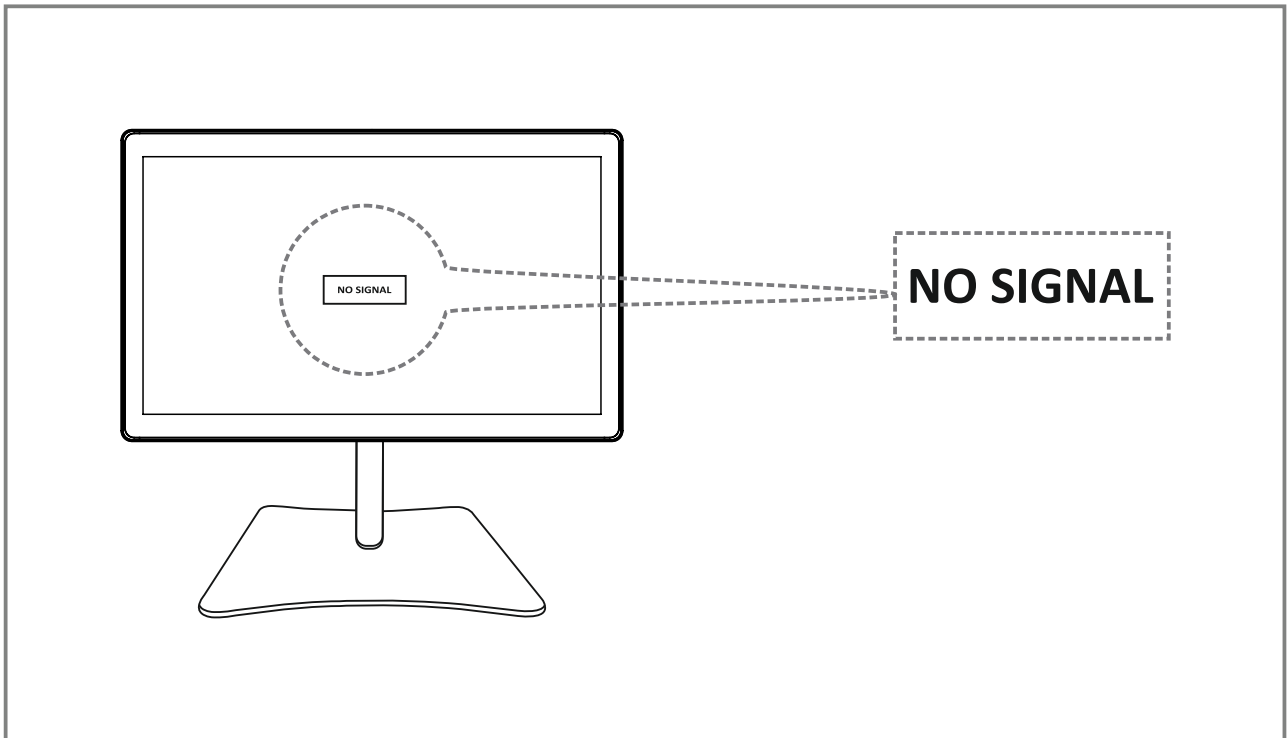
1. First turn off the power of the computer and peripheral devices.
2. **Connection on with the HDMI cable :** Connect the HDMI input terminal at the bottom of the monitor.
3. **Connection on with the VGA cable :** In order to use the monitor by receiving the signal from the VGA terminal.
4. After connecting, tighten both the screws at each end of cable to be fixed.

Note :

Extended Display through the RCT Monitor Using HDMI / VGA, Depend on BIOS Set Secondary Display Out another monitor. If the Secondary display is not show, then restart the first RCT monitor.

F. Connection Status checkup :




If the LED lamp frequently blinks, and a “No Signal (as shown below)” appears on the screen, check out the connection status of the HDMI, VGA cable.

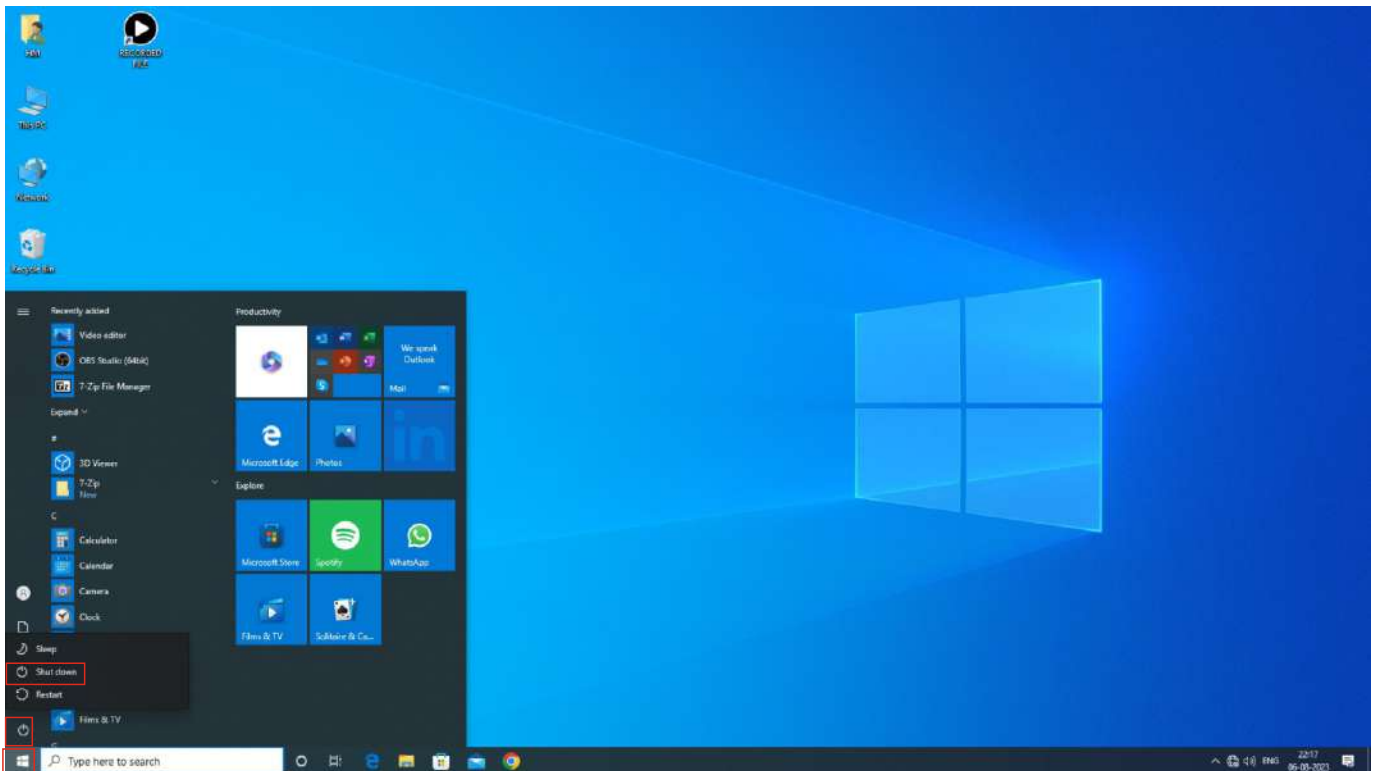


6. Shut Down

For the shut down operation of monitor **do not directly Plug Off / Power Button** from the monitor. It can be cause to internal hardware damage otherwise internal PCB programming damage.

Please Shut down your monitor this way to turn of your monitor :

- Select the start button  → Select the power button  → select the shut down .
- When system fully Shut down, then plug off from the monitor.



7. Functions

7.1. Wi-Fi :

Wi-Fi is a wireless networking technology that allows devices such as a computers (Monitors and desktops), mobile devices and other equipment to interface with the Internet. Wi-Fi also use for the DATA transfer. We can use the internet access through the Wi-Fi

7.2. Network :

Wi-Fi, Bluetooth, LAN Network
Output Signal for Connecting to Slave/Passive Monitor

7.3. Bluetooth :

Bluetooth is a short-range wireless technology standard that is used for exchanging data between fixed and mobile devices over short distances and building personal area networks. Bluetooth can use for the file sharing & Receiving can easily share file between smart phone, tablet and the desktop.

7.4. Full HD :

An FHD (Full HD) monitor is a common display resolution of 1920x1080 pixels. Full HD is the standard for High - definition display in terms of visual quality and sharpness of image. a monitor with FHD display has 1920x1080 resolution. It meance 1920 Horizontal Pixel and 1080 Vertical pixels is better for motion and fast moving content.

7.5. Built in System :

Processor : Intel® Core™ i7 CPU@2.20GHz~2.60GHz
DDR4 SODDIM 8GB~16GB
1TB Storage (Expandable to 2TB)
128GB / 256GB SSD For Operating System
Simultaneous Recording & Video Display

7.6. Port :

Video input signals → HDMI
Video output port → 2xHDMI, VGA
I/O → 2X USB, 2X LAN, AUDIO OUT
Capture card → HDMI OUT, HDMI IN, AUDIO OUT, AUDIO IN

7.7. Operating System :

Windows 10 Pre-Installed. (If we have better version instead of windows 10 in feature, then we can give the updated version of monitor)

7.8. Multitasking Screen :

Multitasking on a windows refers to the ability to run multiple applications simultaneously. Multitasking Screen panel in enables a user to execute multiple tasks at the same time multiprogramming can Operate smoothly without showing down the system.

7.9. Touch Screen :

Touch support with 10 Point Multipoint Touch Capacitive.

7.10. Recording System :

Recording Start & Pause Button

Screenshot Button

USB for Copying Recorded Videos

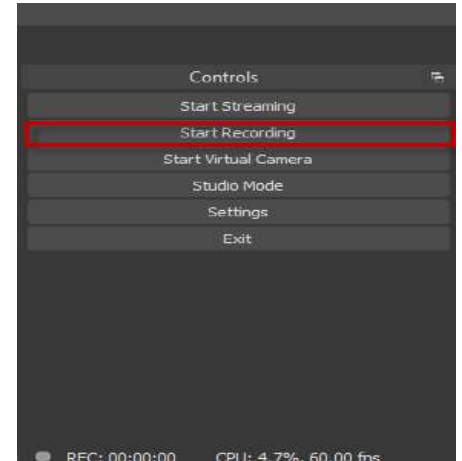
Ethernet for Connectivity with Hospital / Clinic Network

8. OBS STUDIO

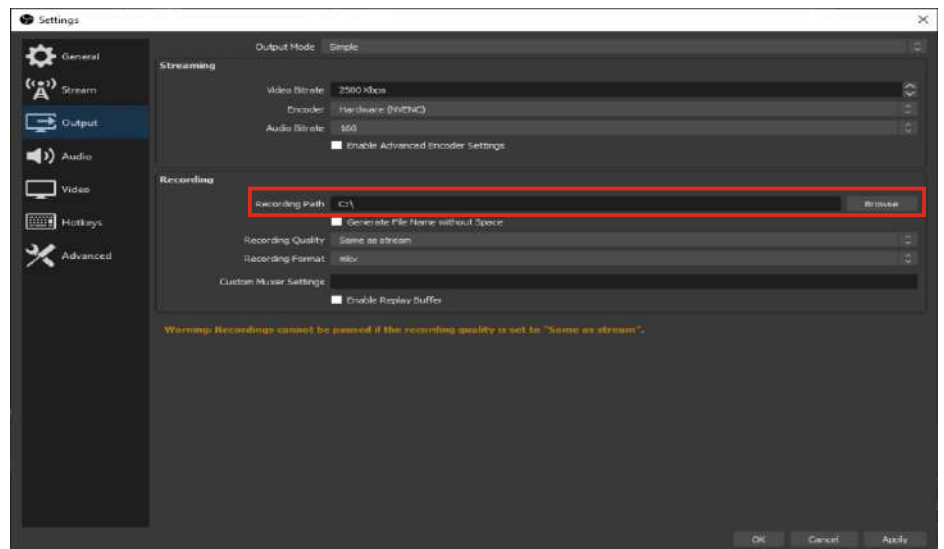
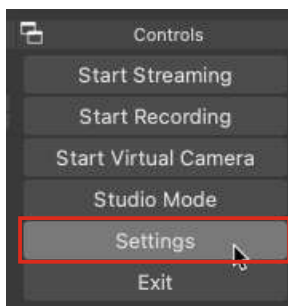
8.1. How do I record my screen with OBS? :

1. Open OBS and click the plus sign in the Sources section.
2. Choose a name for the source and click OK.
3. Choose a display and capture method and then OK again.
4. If you don't want to use the default file destination source, click Settings and then Output.

Click Start Recording.



8.2. Select path for save recording video :



8.3. Features of OBS STUDIO Application :

OBS Studio is a free and open-source software for screen recording and live streaming. Its key purpose is to allow users to capture and mix audio and video sources, such as webcams, microphones, and your computer screen.

8.4. Taking Screenshots :

You can take screenshot of any source you see in OBS Studio preview at any time. Corresponding options are located in right-click menus of the Scene, Source, Program and Preview views of the application.

Note : For more OBS Studio information check below link.

<https://shorturl.at/JU645>

9. Screen Adjustment

9.1. Digital Signal Input :

When digital signals are input, images are displayed correctly based on the preset data of the monitor.

9.2. Analog Signal Input :

Attention

- It takes about 30 minutes for the performance of electrical parts to stabilize. Please wait 30 minutes or more after the monitor power has been turned on, and then adjust the monitor.

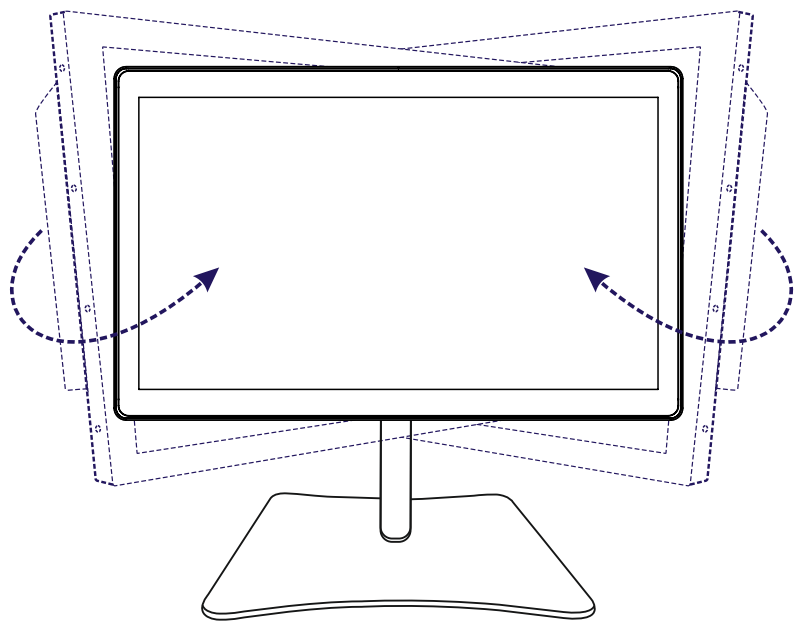
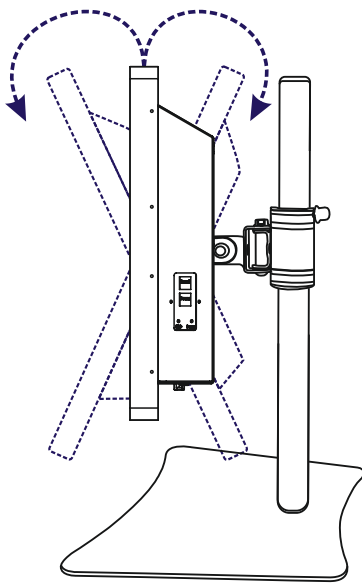
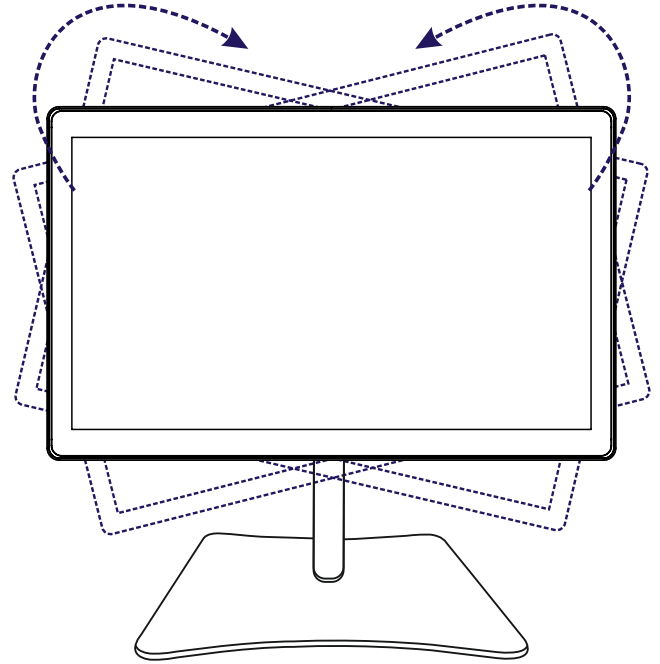
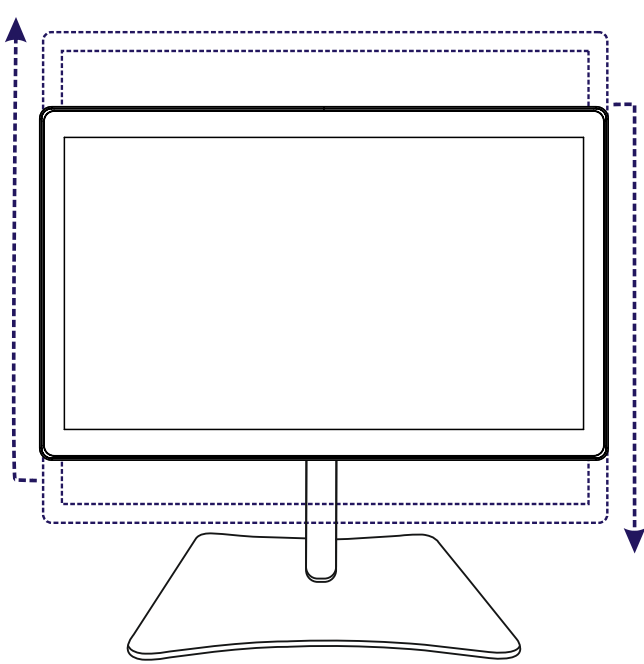
The monitor screen adjustment is used to suppress flickering of the screen or adjust screen position and screen size correctly according to the Module to be used.

Note

- The Self Adjust function works when all of the following conditions are satisfied :
 - When a signal is input into the monitor for the first time or when a resolution or vertical/ horizontal scan frequency not used before is set.

10. Compensating viewing angle deficiency

When the screen is to be viewed from below, the viewing angle can be compensated for so the screen looks as if it is being seen from directly ahead.

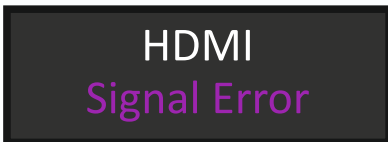


11. Troubleshooting

If a problem still remains after applying the suggested remedies, contact your Highness Support Team.

11.1. No picture :

Problem	Possible cause and remedy
1. No picture <ul style="list-style-type: none"> Power indicator does not light. 	<ul style="list-style-type: none"> Check whether the power cord is connected properly. Turn the main power switch on. Press Power Turn off the main power, and then turn it on again a few minutes later.
<ul style="list-style-type: none"> Power indicator is lighting green. 	<ul style="list-style-type: none"> Increase “Brightness”, “Contrast” in the Setting menu.
2. The message below appears. <ul style="list-style-type: none"> The message shows that the input signal is out of the specified frequency range. Example : 	<p>This message appears when the signal is not input correctly even when the monitor functions properly.</p> <ul style="list-style-type: none"> Check whether the Module is configured to meet the resolution and vertical scan frequency requirements of the monitor Reboot the Module. Select an appropriate setting.



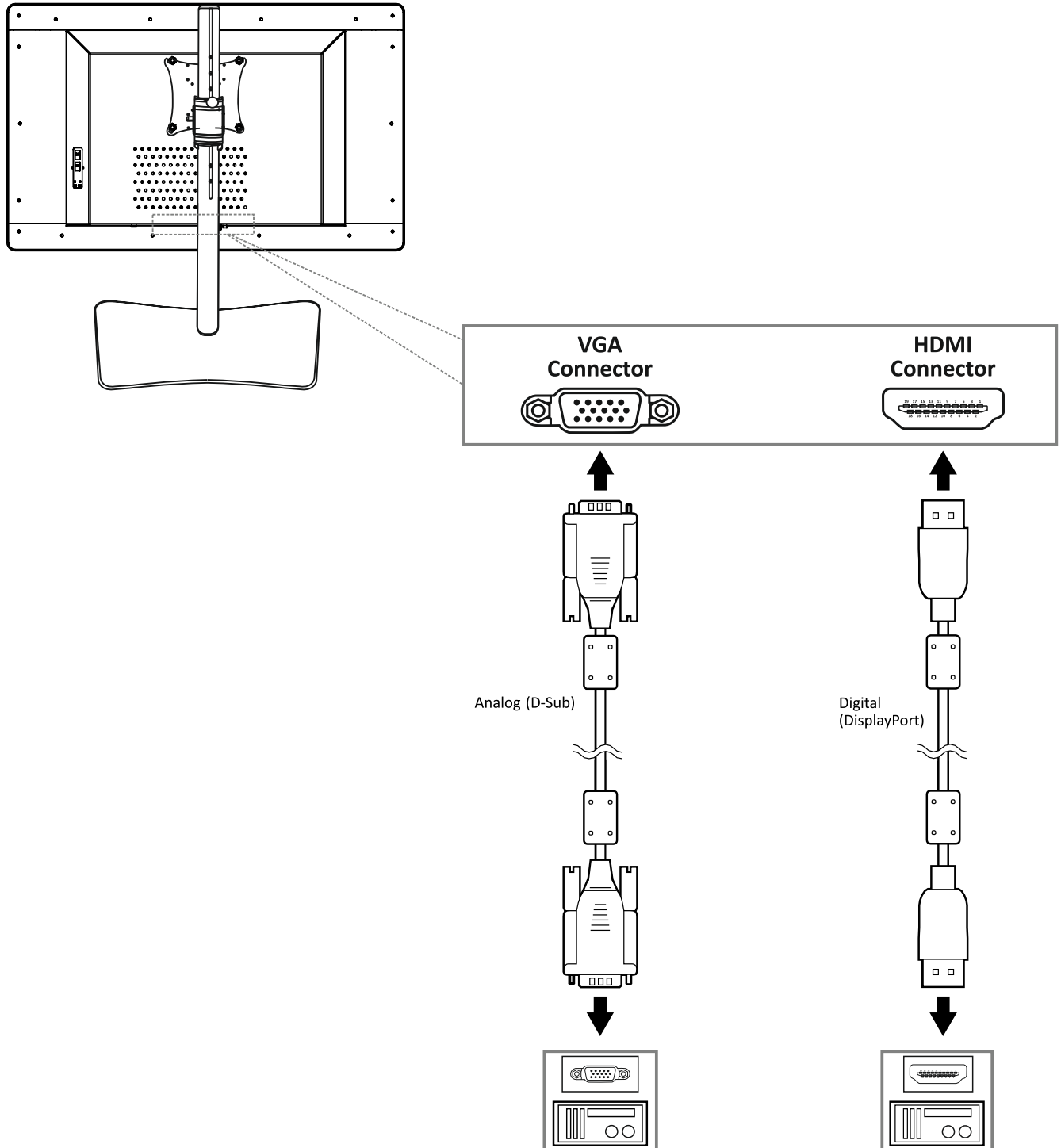
11.2. Imaging problems (for both digital and analog) :

Problem	Possible cause and remedy
1. The screen is too bright or too dark.	<ul style="list-style-type: none"> • Use “Brightness” or “Contrast” in the Setting menu to adjust it. (The LCD monitor backlight has a limited life span. When the screen becomes dark or begins to flicker, contact your Highness Support Team.)
2. After images appear.	<ul style="list-style-type: none"> • Afterimages are particular to LCD monitors. Avoid displaying the same image for a long time. • Use the screen saver or power save function to avoid displaying the same image for extended periods of time.
3. Green / Red / Blue / White dots or defective dots remain on the screen.	<ul style="list-style-type: none"> • This is due to LCD panel characteristics and is not a failure.
4. Interference patterns or pressure marks remain on the screen.	<ul style="list-style-type: none"> • Leave the monitor with a white or black screen. The symptom may disappear.

11.3. Other Problems :

Problem	Possible cause and remedy
1. The Setting menu does not appear.	<ul style="list-style-type: none"> • Check whether the signal cable is connected.

12. Connection Examples



13. Inquiry & A/S Request

If the manual does not prove the information you wanted, or any other help is needed about this product, Please contact Highness Microelectronics Ltd., Technical Support Team.

URL : www.highnessmicro.com/support

E. : support@highnessmicro.com

Manufacturer : Highness Microelectronics Ltd.

Collect the information from the Internet

From the internet, download the manual from our website.

www.highnessmicro.com



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All images are for representation purpose only. All images and content are copyrighted & copy, reprint or reproduction without written permission prohibited.
(Manufacturer reserves the sole right to change the specifications without prior notice.) (Touch screen will reduce the original luminance of the LCD display.)