

12MP LED Medical Display



JUSHA-C1210 C1210
JUSHA-C1210G C1210G

User Manual

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1. Manual instructions

1.1 About this manual

- This manual aims to guide users to install, configure and operate this C1210G professional medical display properly.
- When transferring the display to a third-party, please deliver this manual along with the display.
- Our goal is to provide you with the most accurate and usable documentation as soon as possible. If you discover any errors, please call us, or email.
- For any further questions about this manual, you are welcome to contact Nanjing Jusha Display Technology Co., Ltd. (hereinafter referred to as JUSHA).

1.2 Explanation of symbols

This manual and product use the symbols below.

	Note Gives extra information about the described subject.
	Warning Indicates general cautionary, warning, or danger level information.
	Electrical Shock Caution Indicates possibility of electric shock.
	Prohibition Indicates a general prohibition.
	*China Compulsory Certification (CCC) Indicates the product meets the requirements of CCC.

	<p>*Federal Communications Commission (FCC) Indicates the product meets the requirements of FCC.</p>
	<p>*Conformite European Certification (CE) Indicates the product meets the requirements of CE Certification.</p>
	<p>*Societe Generale de Surveillance S.A. (SGS) Indicates the product has been certificated by SGS and qualified for North American market.</p>
	<p>European Authorized Representatives Gives information of the Authorized European representatives.</p>
	<p>Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC Waste disposal should comply with local regulations.</p>
	<p>Recommend to refer the User Manual</p>
	<p>Manufacturer information</p>
	<p>JUSHA trademark</p>
	<p>Product serial number</p>

* This display complies with these standards only when a medical grade power supply is used. Power supply is specified as a part of ME EQUIPMENT.

1.3 Safety information



Warning:

Read all the important safety information before installing and operating your display.

About the environment

- The equipment should be installed near an easily accessible outlet.
- 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 injury to a child or adult, and serious damage to the device.
- Never use the display in the presence of flammable anesthetics mixture with air, oxygen or nitrous oxide.
- Never expose the display to rain or moisture. Never use the display near water - e.g. near a bathtub, washbasin, swimming pool, kitchen sink, laundry tub or in a wet basement.
- Please heed necessary space between the display and the wall for ventilation. Do not cover or block any ventilation openings in the cover of the set.
- Keep small object away from the product. If small object gets into the display, please shut off power supply immediately and contact us for technical support.

About the powering and grounding

- Please use power cord provided with the display.
- Please insert the plug into the socket firmly.
- Don't touch power cord or plug/unplug it when thundering, or it may cause electric shock.
- Please hold the attaching plug when you unplug it. Don't unplug it by pulling power cord, otherwise the power cord may be injured and result in electric shock.
- Do not overload wall outlets and extension cords as this may result in fire or electric shock.
- Please use the appropriate power supply. Please use the power supply within the voltage range specified in this manual, otherwise it may cause fire, electric shock or product damage.
- If the device is not used for a long time, disconnect it from the AC inlet to avoid damage by transient over-voltage.

- To fully disengage the power to the device, please disconnect the power cord from the AC inlet.
- Please make sure that this product connected with a qualified computer or other devices, or it is connected to the protective earth.
- Make sure the display is grounded properly.

About the maintains and repairs

- Product failure may cause fire, electric shock or equipment damage. If the product gives off smoke or makes unusual noises, cut off the mains supply as soon as possible and pull out the plug from the socket. Please contact JUSHA for technical support.
- Repairing is limited to trained engineers. Do not try to repair or disassemble the product by yourself. It may cause product damage or personal injury.
- Please don't touch a damaged LCD screen with bared hand. Because the leaking liquid crystal material contains toxic substance. Please contact doctor immediately once it happens.

Some useful recommendations

- For mission critical applications, we strongly recommend that a replacement unit be immediately available.
- Please avoid excessive compression on the LCD screen, which may cause damage to it.
- In order to avoid scratches, don't touch the screen with sharp objects, such as pen or fingernail. Please use a soft cloth to clean the screen.
- The operator should not touch the video interface (such as DVI port, VGA port and etc.), or it may result in potential ESD (Electronic Static Discharge) damage to the display.
- The backlight of LCD has a service life limitation. We strongly suggest that this display is used in the recommended brightness to extend its service life.
- Please turn off the display if not use.
- Waste disposal should comply with local regulations.

- Benefiting from the FPD (Flat Panel Display) technology, this display has clearer image edge compared to a CRT display. It may take time for some new-users to get used to this change.
- If using this display improperly, potential interference to other electronic devices around could be possible. Following methods are proposed to eliminate such interference:
 - ◆ Relocate or reorient the device under interference.
 - ◆ Set up curtain appliance between the display and the device under interference.
 - ◆ Plug the display and the devices under interference into different power sockets.

2. Overview

Thank you for choosing C1210G professional medical Display!

C1210G is a kind of 12MP color integrated seamless dual-screen LED display.

C1210G professional display with seamless double vertical screen design provides the best visual experience for the diagnostic imaging. It uses the industry-leading LED technology with high luminance, multiple colors, high grayscale, uniform luminance, energy conservation and other advantages. With the advantage of high resolution, high brightness and built-in DICOM standard LUT, C1210G can be used in a variety of medical imaging diagnostics and comparative analysis, such as: CR, DR, MRI, CT, PACS, etc. Especially it can be applied to the breast tomography applications.

2.1 Features

- **High resolution**

With up to 12 megapixels of resolution, C1210G can totally display the details of medical imaging, and meet the medical need for accurate diagnosis.

- **16-bit grayscale display**

C1210G is armed with a 16-bit (RGB) image processing chip. It can present up to 281.47 trillion color depth (65536 grayscale), show image more accurately and smooth and guarantee that very detail is perfect.

- **DICOM compliance**

To ensure the most accurate and consistent shadings possible, JUSHA measures rigorously and sets every grayscale on the production line to produce a monitor compliant with DICOM Part 14.

- **Brightness immediately arise (BIA) technology**

Normally, it takes about 20 minutes for the traditional displays to reach the required luminance and remain stable. JUSHA develops the BIA technology, which shortens the waiting time to 30s with the innovation in luminance driver program.

- **X-ray film view (XFV) function**

Benefiting from the high brightness LED backlight, C1210G provides the X-ray film view function that allows the diagnosticians to use the display as a film lamp to view the conventional X-ray film.

- **CGA patent**

JUSHA mostly updated patented technology CGA (Color and Grayscale Auto-calibration), which distinguishes the color and grayscale pixel from the input signal and invokes DICOM calibration for grayscale images, GAMMA calibration for color images. CGA makes it possible for the perfect coexist of grayscale and color images, and guarantees the diagnostic accuracy.

- **FocusView technology**

According to the real-time coordinates of the mouse position, FocusView technology highlights the corresponding area of the screen. Such technology helps to diagnose the highlighted part more easily.

- **Dual-screen seamless image display technology**

This technology can splice images or videos from two different devices source or video interfaces seamlessly together to display synchronously on the same monitor, which make the medical diagnosis become more accurate and more convenient.

- **Ambient Brightness Adaption (ABA) technology**

According to the changes of the ambient brightness, this technology can automatically adjust the display backlight to make the display effect more accurate.

- **SmarTouch patent**

This patent technology can help doctors working in different mode to quickly select the corresponding optimal brightness.

- **Eco-guardian technology**

Eco-guardian technology means that intelligent management of power consumption. It can switch the different energy consumption mode according the working state of display by infrared sensor technology, which prolongs the service life of the display.

- **Pathology Mode**

Digital pathology is sweeping the globe, JUSHA C1210G unique pathology model can achieve the best color reduction, bring users microscope image resolution and accuracy.

2.2 Packing list

C1210G LED Professional Display comes with:

- the display with stand
- a graphics card
- a film clipcard
- an AC power cord
- two DP cables
- a USB cable
- a CD
- this user manual
- after-sales service record (in triplicate)
- a packing list
- a product warranty card
- a product certificate








Note:






1. The packing list is for reference, please refer to our packing list inside the box.
 2. If there is any accessory damage or loss, please contact us.
 3. Please only use the original accessories supplied with the display. JUSHA is not responsible for any technical problems caused by using third-part accessories.
 4. Please keep the original package. If you need to transport the product, use the original package.
-

2.3 Front view and keypad

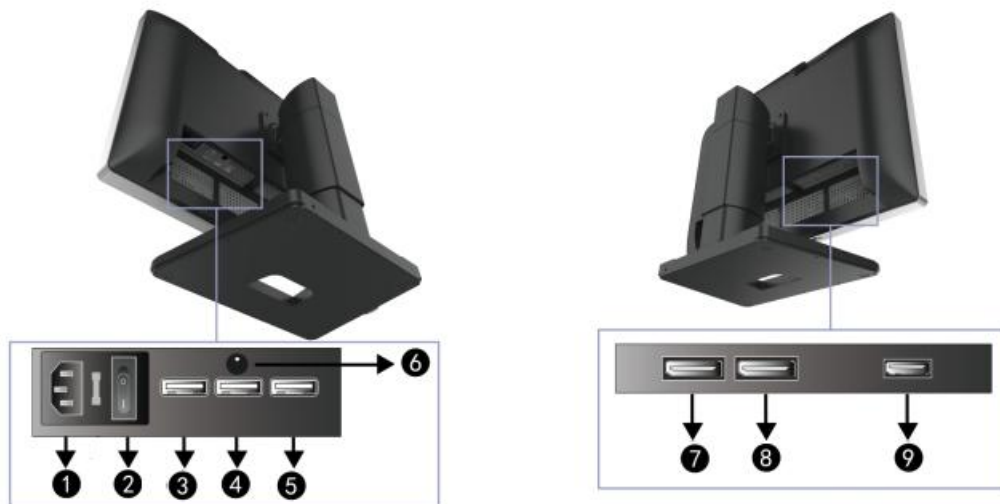


	Function Keys	Icon	Function
1	Power Key		1.Turn on/off the display.
2	Exit Key		1.Exit the OSD (sub)menu
3	Confirm Key		1.To go into a sub menu 2.Confirm adjustments and selections
4	Menu Key		Bring up the OSD menu
5	Down Key		Use the down keys move through the (sub)menus, change values or make selections.

Overview

6	Up Key		Use the up keys move through the (sub)menus, change values or make selections.
Shortcut Keys		Icon	Function
7	SmarTouch Key		Turn on/off SmarTouch
8	Keyboard light Key		Turn on/off Keyboard light
9	Spotlight Key		1.Turn on/off Spotlight function(FocusView technology) 2.Change the type of Spotlight
10	X-ray film view (XfV) Key		1. Turn on/off X-ray film view function 2.Change the type of X-ray film

2.4 Rear view and connection panel



1	AC Power input	6	DC Power out
2	AC Power switch	7	DP (DisplayPort) video input
3	USB1(USB upstream connector)	8	DP (DisplayPort) video input
4	USB2(USB downstream connector)	9	HDMI video output
5	USB3(USB downstream connector)		



Note:

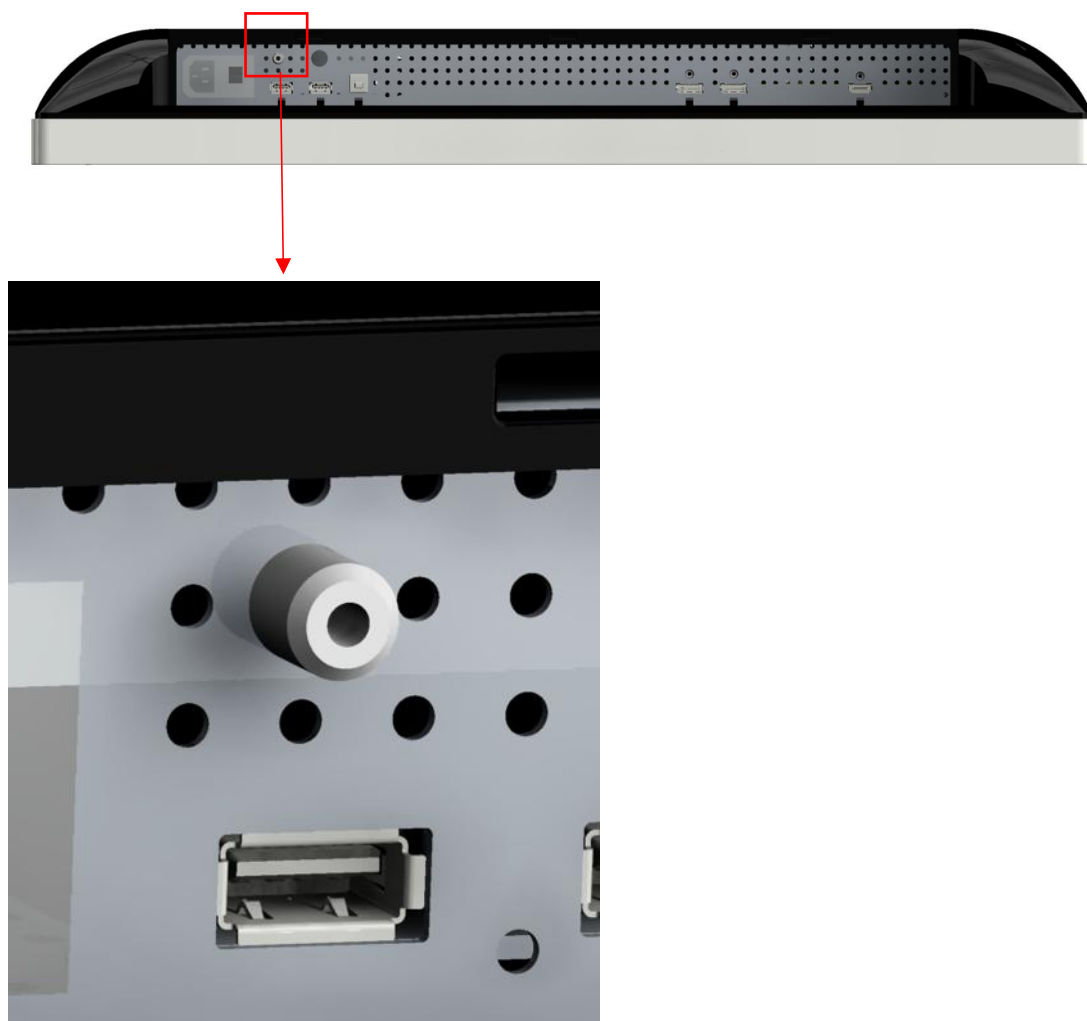
1. When USB1 is connected to a host computer, USB2 and USB3 can connect to a mouse or a keyboard.

2.5 Grounding

Please connect one end of the ground line to the ground screw, connect the other end to the common ground.

Overview

ENGLISH



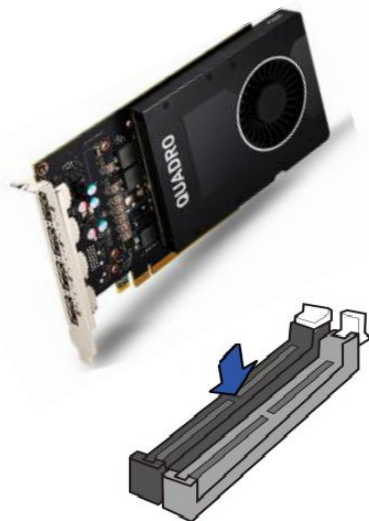
3. Display installation

3.1 Graphic card installation

**Note:**

Before start to install the graphic card, please make sure the computer motherboard supports the PCI Express graphic card and has an empty PCI Express x1 Slot. Carefully read the manual of the motherboard about how to install an expansion card.

1. Turn off the computer and unplug the power cord from the power outlet before installing the graphic card.
2. Open the computer chassis cover and locate a PCI Express x1 Slot that supports the graphic card. Remove the metal slot cover from the chassis back panel.
3. Align the card with the slot, and press down on the card until it is fully seated in the slot. Make sure the metal contacts on the card are completely inserted into the slot.



PCI Express x1 Slot



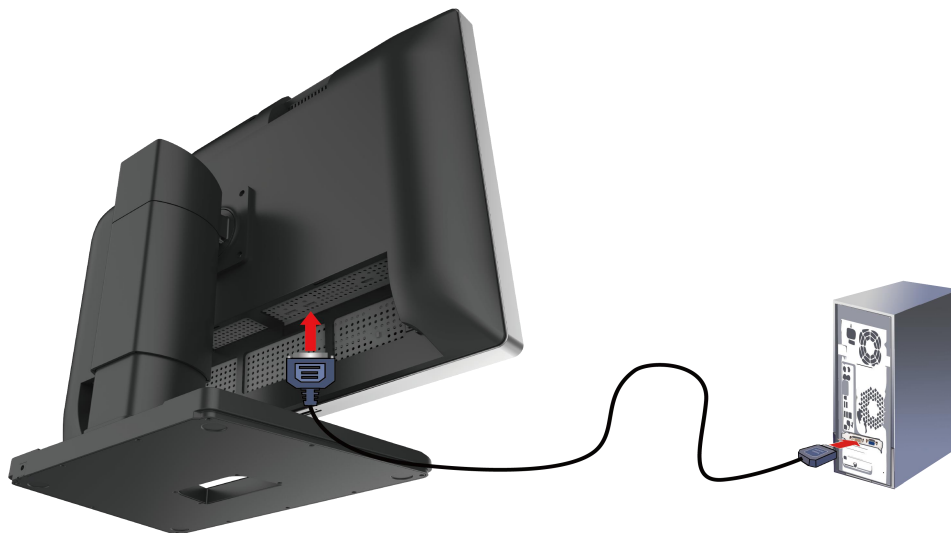
4. Secure the card's metal bracket to the chassis back panel with a screw.
5. If the graphics card needs independent power supply, please connect power supply line to the graphics card.

6. After installation, put the computer chassis back to normal and connect the display to the computer (See “**Connecting the cables**”, → Page 14). After that, turn on the computer.
7. As for the video card driver installation, please refer to the driver installation instructions in CD.

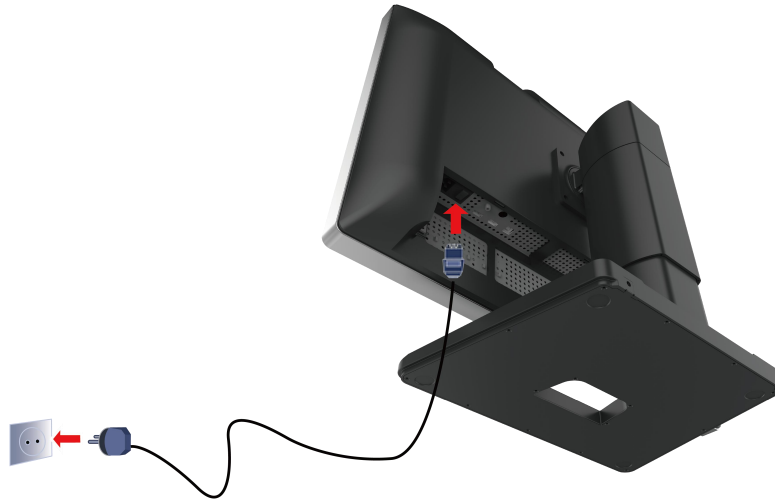
3.2 Connecting the cables

Use the DP video cables to connect the monitor to the computer host graphic card. The display will automatically complete the selection of video input signal.

1. Through the video cables, put the video interface on the graphics, such a DP , connect to the corresponding video interface on the display.



2. Connect the power cord to the power input interface on the display.
3. Turn on the power AC switch. When the power key indicator light is lit up, it means that the display has been powered up.



Warning:

Restrictions specified on other equipment or NETWORK/DATA COUPLINGS, other than those forming part of an ME SYSTEM, to which a SIGNAL INPUT/OUTPUT PART may be connected.

3.3 Adjusting the screen position



Warning:

At the factory, the power cord of the automatic lifting base is removed to prevent damage during transportation. You must connect the power cable of the base before adjusting the height position of the monitor.

You can adjust the height and angle of the display screen, in order to get the most comfortable viewing angle.

3.3.1 Unlocking the height mechanism

To remove the hook:

1. Connect the power cable of the automatic lifting base to DC Power out interface.
2. Adjust the height of the monitor with the left and right buttons on the lifting base.



3. Keep pressing the up button, the monitor's height will keep rising until it reaches the highest point, keep pressing the down button, the monitor's height will keep dropping until it reaches the lowest point.



Warning:

When moving the screen down, don't handle the stand of the display to avoid hand injury.



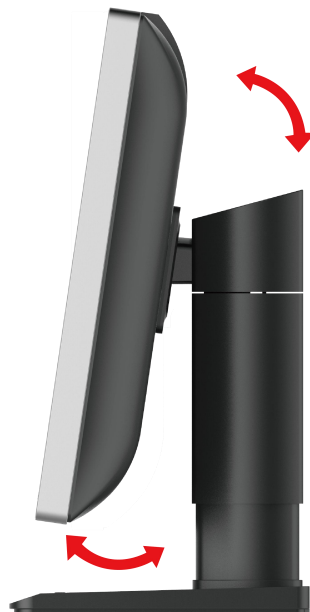
3.3.2 Removing the covers



Warning:

The connector compartment cover should be removed to get access to the connectors.

1. Tilting the display with a pitching angle.



Display installation

ENGLISH

2. Rotate the lid up to make the card buckle at both undersides off.



3. Pull away the lid down to make it off from the display.



3.3.3 Adjusting the tilt and swivel angel

Please hold the screen at both sides and adjust it to an convenient tilt and swivel angel.

**Note:**

The allowed tilt angel range for this display is from -0° ($\pm 2^{\circ}$) to $+ 20^{\circ}$ ($\pm 2^{\circ}$) . The Swivel angel range is from -40° to $+ 40^{\circ}$.



3.4 Installing the display to wall or suspended arm

This display can be installed onto wall or suspension arm that complies with the international VESA standards.

**Warning:**

Contact a technician for the installation. JUSHA is not responsible for any damages to the product or harm to customers when the installation is done by the customer

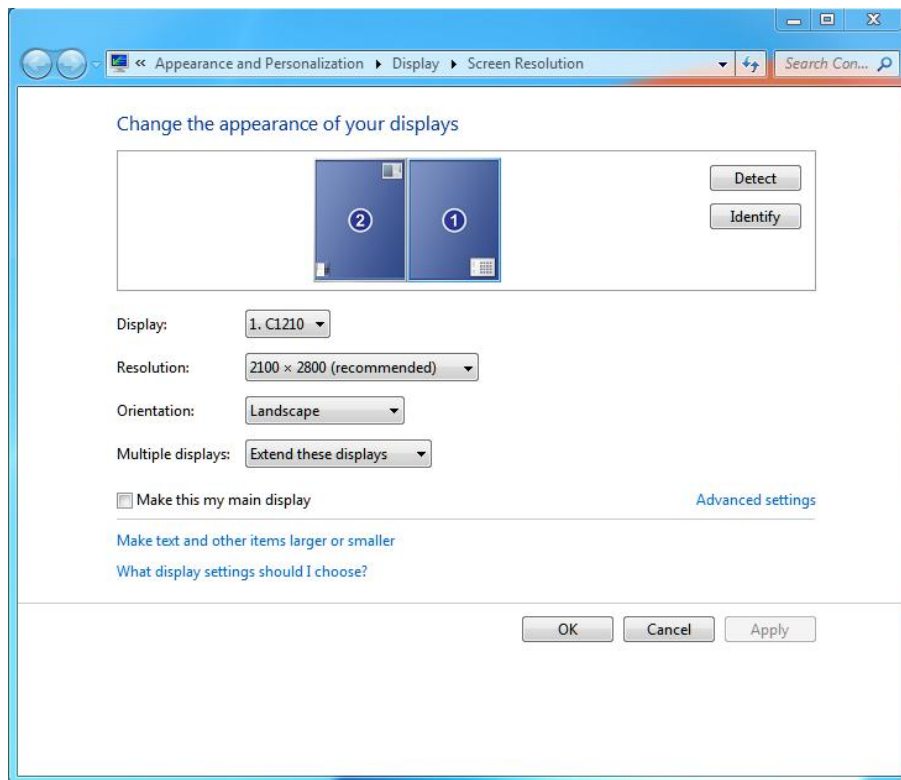
3.5 Multi-display configuration

Windows OS provides the multi-display feature to allow applications to make use of multiple display devices at the same time. This is useful whenever you need to maximize your onscreen workspace. For example, there are two displays used at the same time: one is used to view the

medical images for diagnosis, while the other is used to browse the patient medical history.

3.5.1 For Microsoft Windows 7 operation system

1. The DP interface on the graphics card is connected to the display corresponding DP interface by using video cables. (Please see “3.2 connecting the cables” section).
2. Right-click mouse on the windows desktop blank place, and select the “**Screen resolution**” on the pop-up menu.
3. Windows can automatically detect additional displays, as shown below.



In the “**Screen resolution**” control panel, you can:

- Arrange the logical position of the two displays by dragging the display icons.
- Browse the connected display devices at the “**Display**” pull-down menu.
- Choose different multi-display mode in the “**Multiple display**” pull-down menu. For example, you can choose “**Extend these displays**” to obtain a larger onscreen workspace.

- Designate which screen is the primary one to display the windows Task bar and Start menu by selecting the “**Make this my main display**” check box.


**Note:**

Multi-display extension function of the Windows 8/10 is similar to Windows 7 setup method.

3.5.2 Dual-screen settings

1. Any two interfaces between DP on the graphics card are connected to the display corresponding DP interface by using video cables.
2. Switch to the dual-screen display mode.
3. Dual-screen resolution is switched to 2100×2800, and windows is extended automatically.

3.6 The order of work on the monitor and preparation for work

Turn on a computer connected to the display. Make sure that the display, graphic card and graphic card driver have been installed correctly. Turn on the AC switch, and then touch the power key  for approximately 3 second, all the key lights are lit up at the same time. As a result, the display will be switched on. If it does not display properly, check that the input channel is correct and switch to the correct channel.

**Warning:**

The connected power supply also provides a switch that can be used to turn the power completely off. To use the display, please make sure to switch on this power supply. This can be done by pushing the on/off switch on the power supply into the " | " position.

4. Display settings

4.1 First time starting up

1. Turn on a computer connected to your monitor. Make sure that a display and a graphics card and graphics card driver has been installed correctly.
2. Turn on the AC switch, and then touch the [Power Key] for approximately 3 seconds, all the key lights are lit up at the same time. As a result, the display will be switched on.



Warning:

The connected power supply also provides a switch that can be used to turn the power completely off. To use the display, please make sure to switch on this power supply. This can be done by pushing the on/off switch on the power supply into the " | " position.

4.2 Sleeping

When a display works on normally, touch the [Power Key] once, and then brings up a note: Press the power button in 10s to enter sleep mode. And touch the [Power Key] again, the display will go into Sleeping Mode. In this mode, except the [Power Key], all button lights are off.

4.3 Lock and unlock the keypad

If the keys are unlocked, you can operate any key on the display. Turn on the "Menu Lock" on [Setup] page, the keys will automatically be locked except the [Power Key].

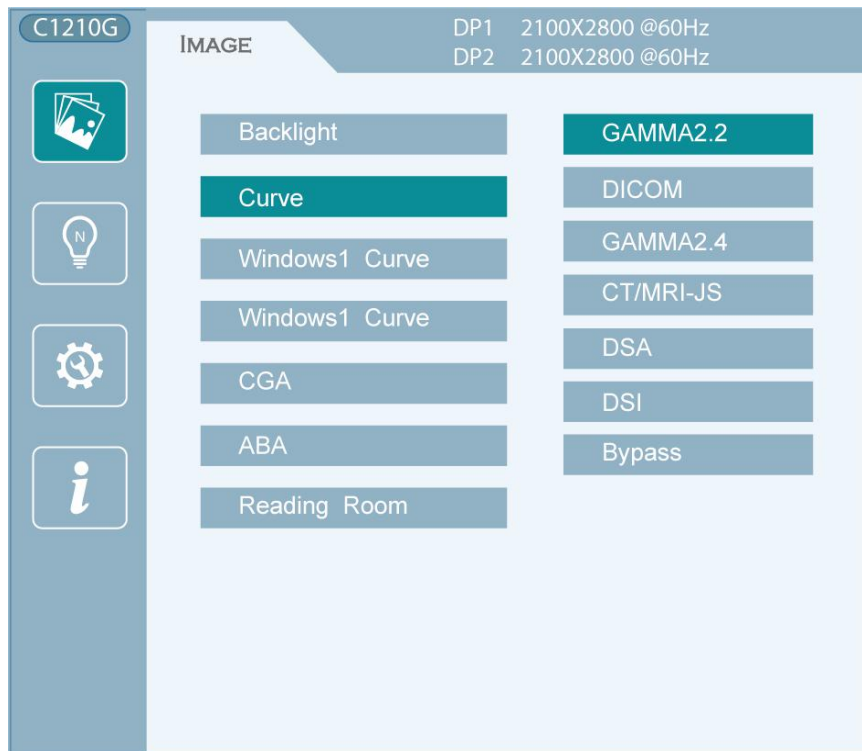
To unlock, press the third key (counting from left to right) and the fourth key, then press the third key, the fourth key, and then press the third key again to realize the keys and menu Unlock.

4.4 OSD overview

User can change display settings by keypad and OSD (On Screen Display) menu to meet the needs of the working environment. Similarly, the user can also view the basic information and the current settings of the display by using OSD menu.

The OSD menu is divided into 3 regions:

- The top of the OSD menu is the status region, showing the signal source and the current video input signal resolution.
- The lower left region is the Main Menu.
- The lower right region is the Sub Menu.
 - ◆ If one item is selected in the Main Menu, the Sub Menu region shows its detailed settings.



Note:

The menu is only a schematic, please refer to our actual OSD menu.

The following table shows structure and parameters of the OSD menu in English.

Display settings

ENGLISH

Main Menu	Sub Menu	Parameter Specification	Default Settings
Image	Backlight	Diagnostic Mode: 500cd/m ² -800 cd/m ² Pathology Mode: 200cd/m ² -600 cd/m ²	Diagnostic Mode: 500 cd/m ² Pathology Mode: 400 cd/m ²
	Curve	DICOM	DICOM
		CT/MRI-JS	
		GAMMA2.2	
		GAMMA2.4	
		DSA	
		DSI	
		BYPASS	
	Window1 Curve	DICOM	DICOM
		CT/MRI-JS	
		GAMMA2.2	
		GAMMA2.4	
		DSA	
		DSI	
		BYPASS	
	Window2 Curve	DICOM	DICOM
		CT/MRI-JS	
		GAMMA2.2	
		GAMMA2.4	
		DSA	
		DSI	
		BYPASS	
	Color Temperature	5000K-10000K	Pathology Mode: 6500K
	CGA	ON	OFF
		OFF	
	ABA	ON	OFF
		OFF	
Reading Room	OFF	OFF	
	Auto		
	Diagnostic		
	CT/MR/NM		
	Office		

		Viewing	Diagnostic
		ER	
		OR	
	Apply Mode	Diagnostic	
		Pathology	
Advanced Functions	PI	ON	OFF
		OFF	
	XFV Size	Small	Large
		Large	
	Spotlight Size	Small	Middle
		Middle	
		Large	
	User Mode	OFF	OFF
		Left Text	
		Right Text	
QA	OFF		
Setup	Windows Mode	Single Window	Single Window
		Dual Window	
	Window Source	DP1	Single window source
		DP2	
		DP1+DP2	
		DP1+DP2	Dual window source
		DP2+DP1	
	Key Tone	ON	OFF
		OFF	
	Menu Lock	ON	OFF
		OFF	
	Panel Out	Close	Close
		4K2K	
	Language	Chinese	English
English			
Factory Reset			
Information	Temperature	XX.X°C	Inner temperature of display
	Backlight Sensor	Normal	
		Abnormal	

	Fan1	Normal	
		Abnormal	
	Fan2	Normal	
		Abnormal	
	Fan Control		
	Backlight on Time	XXXX h	



Note:

The above specifications are only schematic, please refer to our actual OSD menu. The options and specifications of this product menu are subject to change without notice.

4.5 OSD operation

4.5.1 Open OSD

Bringing up the OSD menu can be done by:

1. In the state of that the display is turned on, touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD menu. As a result, the OSD main menu comes up in the screen. However, if no further action is taken within the following 30 seconds, the OSD will disappear.

4.5.2 Exit OSD

1. When OSD cursor is in the sub menu region, touch the [Exit Key] to return to the OSD main menu region. When OSD cursor is in the main menu region, touch the [Exit Key] to exit OSD menu.
2. If no further action is taken within the following 30 seconds, the OSD menu will disappear automatically.

4.5.3 Change Backlight

The backlight can be adjusted, and the operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.

4. Touch the [UP Key] or [Down Key] to move the cursor to the "Backlight" item, and then touch the [Confirm Key] to enter the brightness progress bar item.
5. Touch the [UP Key] or [Down Key] to make the value of the backlight progress bar item to increase or decrease. Set a luminance target value as desired.

**Note:**

LED backlight has a certain lifetime. Recommend to use the brightness of the factory default values to optimize the lifetime of your display.

4.5.4 Change Curve

There are several calibration curves, and the user can choose any curve as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Window1 Curve" or "Window2 Curve" item, and then touch the [Confirm Key] to enter the "Window Curve" item.
5. Touch the [UP Key] or [Down Key] to select any curve as desired and touch the [Confirm Key] to confirm.

4.5.5 Change color temperature

In pathology mode, color temperature can be selected. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Color temperature" item, and then touch the [Confirm Key] to enter the color temperature progress bar item.

5. Touch the [UP Key] or [Down Key] to make the value of the color temperature progress bar item to increase or decrease. Set a color temperature target value as desired.

4.5.6 Color and Grayscale Auto-Calibration(CGA)

In diagnostic mode,CGA can be selected.The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "CGA" item, and then touch the [Confirm Key] to enter the "CGA" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.

4.5.7 Reading environment (Reading Room)

The display has Reading Room function to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Reading Room" item, and then touch the [Confirm Key] to enter the "Reading Room" item.
5. Touch the [UP Key] or [Down Key] to select "Reading Room" as desired and touch the [Confirm Key] to confirm.



Note:

Reading Room can only be enabled on your display when the DICOM display function is selected.

4.5.8 Ambient Brightness Adaptation

The display has Ambient Brightness Adaptation (ABA) function to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [Confirm Key] to enter the [Image] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "ABA" item, and then touch the [Confirm Key] to enter the "ABA" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.



Note:

1. The function of the ambient brightness adaptation and the function of the SmarTouch, X-ray film viewing cannot be used at the same time. Before open the function of the ambient brightness adaptation, the function of the SmarTouch, X-ray film viewing will automatically be closed.
2. When open the function of the ambient brightness adaptation, the brightness menu on the OSD menu can't be adjusted.

4.5.9 Change Single/Dual Display

The display has Single/Dual Display mode to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Window Mode" item, and then touch the [Confirm Key] to enter the "Window Mode" item.
5. Touch the [UP Key] or [Down Key] to select "Window Mode" as desired and touch the [Confirm Key] to confirm.

4.5.10 Change Input Source

The display has different video input source to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Window1 Source" item, and then touch the [Confirm Key] to enter the "Window1 Source" item.
5. Touch the [UP Key] or [Down Key] to select "Window1 Source" or "Window2 Source" as desired and touch the [Confirm Key] to confirm.

4.5.11 Presence Induction

The display has Presence Induction (PI) function to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "PI" item, and then touch the [Confirm Key] to enter the "PI" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.

4.5.12 Key Tone

The display has a keypad tone to be chosen as desired. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Key Tone" item, and then touch the [Confirm Key] to enter the "Key Tone" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.

4.5.13 Menu Lock

The display has Menu Lock function. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
4. Touch the [UP Key] or [Down Key] to move the cursor to the "Menu Lock" item, and then touch the [Confirm Key] to enter the "Menu Lock" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.

4.5.14 Panel OUT

The display has a HDMI output. The operation is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.

4. Touch the [UP Key] or [Down Key] to move the cursor to the "Panel Out" item, and then touch the [Confirm Key] to enter the "Panel Out" item.
5. Touch the [UP Key] or [Down Key] to turn on or turn off this function and touch the [Confirm Key] to confirm.

4.5.15 OSD Language

The display provides two kinds of languages to be chosen . The operation to choose OSD menu language is as follows:

6. Touch any key except [Power Key] to bring up the navigation key icon.
7. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
8. Touch the [UP Key] or [Down Key] to move the cursor to the[Setup] main menu, and then touch the [Confirm Key] to enter the [Setup] sub menu.
9. Touch the [UP Key] or [Down Key] to move the cursor to the "Language" item, and then touch the [Confirm Key] to enter the "Language" item.
10. Touch the [UP Key] or [Down Key] to choose Chinese or English language and touch the [Confirm Key] to confirm.

4.5.16 Fan Control

This function uses default setting, can't be changed by users.

4.5.17 Factory Reset

Before delivery, the display has a default and recommended factory settings. User can reset factory settings this function. The operation to reset factory settings is as follows:

1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image] main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the[Setup] main menu, and then touch the [Confirm Key] to enter the [Setup]

sub menu.

4. Touch the [UP Key] or [Down Key] to move the cursor to the "Factory Reset" item, and then touch the [Confirm Key] to reset factory settings.

4.5.18 Display Status

By viewing OSD menu, get the current status information about the display, including temperature, backlight sensor status and backlight on time. The operation about the display status is as follows:


1. Touch any key except [Power Key] to bring up the navigation key icon.
2. Touch the [Menu Key] to bring up the OSD main menu. By default, the OSD cursor is in the [Image]main menu.
3. Touch the [UP Key] or [Down Key] to move the cursor to the [Information] main menu to view the display status information on the OSD sub menu.

4.6 Feature function setting

For the convenience of users, C1210G provides shortcuts to quickly call useful special functions.

4.6.1 SmarTouch

Touch any key except [Power Key] to bring up the navigation key icon.

Then touch the key  to turn on or off the function of the SmarTouch.




Note:

1. The function of the SmarTouch and Ambient brightness cannot be used at the same time. When open the function of the SmarTouch, the function of the ambient brightness will automatically be closed. Only to close the function of the SmarTouch, the function of the ambient brightness will automatically be opened.
 2. When open the function of the SmarTouch, the brightness menu on the OSD menu can't be adjusted.
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4.6.2 X-ray film viewing

Touch any key except [Power Key] to bring up the navigation key icon.

Then touch the key  to turn on or off the function of the X-ray film viewing.




Note:

1. The function of the X-ray film viewing and the function of the ambient brightness cannot be used at the same time. Once turning on the function of the X-ray film viewing, the function of the ambient brightness will automatically be closed. When turning off the function of the X-ray film viewing, the function of the ambient brightness will automatically be opened.
2. When open the function of the X-ray film viewing, the brightness menu on the OSD menu can't be adjusted.

4.6.3 FocusView

Touch any key except [Power Key] to bring up the navigation key icon.

Then touch the key  to turn on or off the function of the FocusView function.



Note:

1. The function of the FocusView function. and the function of the ambient brightness cannot be used at the same time. Once turning on the function of the FocusView function, the function of the ambient brightness will automatically be closed. When turning off the function of the FocusView function.the function of the ambient brightness will automatically be opened.
2. When open the function of the FocusView, the brightness menu on the OSD menu can't be adjusted.

4.6.4 Keyboard Light

Touch any key except [Power Key] to bring up the navigation key icon.

Then touch the key  to turn on or off the keyboard light.

5. Important information

5.1 Technical specifications

Input voltage	AC 220V
Power consumption	<180W(Typical)
LCD Panel	31 inches
Viewing angle	$\geq 178^\circ$ (CR>10)
Resolution	4200 × 2800
Color Tone	10bit
Active screen size	784mm × 522.6mm
Input video interface	DP × 2 Resolution(Max.) 3840 × 2160
Output video interface	HDMI1.4 × 1
Net weight with stand	22.4~23.4Kg
Net weight w/o stand	17.4Kg
Operating Environment	Temperature: 0°C - 40°C (15°C- 30°C within spec) Humidity: 20% - 80% (No condensation) Air pressure: 700hPa - 1060hPa
Transportation and storage Environment	Temperature: -20°C - 60°C Humidity: 5% - 85%(No condensation) Air pressure: 200hPa - 1060hPa
Certification standards	CCC,CE



Note:

The specifications of JUSHA products are subject to change without notice.

5.2 Environmental information

All materials of this product are below the limit requirement in RoHS, without consisting of Pb, Hg and other toxic or hazardous substances.

5.3 Safety standard

Safety standard	This device complies with IEC 60601-1: 2005 + CORR. 1:2006 + CORR. 2:2007 + AM1:2012 EN 60601-1:2006/A1:2013 GB4943.1-2011
Compliance disclaimer	CCC、CE

5.4 Electromagnetic compatibility

5.4.1 EMC information



Warning: Display requires special precautions regarding EMC and need to be installed, put into service and used according to the following information.

1. Do not use other cables provided or specified by us. Using other cables may cause the increase of emission or decrease of immunity.
2. With the installation of the device, use only the delivered power supply or a spare part provide legal manufacturer. Using another can result in a decrease of the immunity level of the device.
3. Do not put any portable and mobile RF communications equipment close to display. Doing so may affect display.
4. Display 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.
5. Anyone who connects additional equipment to the signal input part or signal output parts, configuring a medical system, are responsible that the system complies with the requirements of IEC/EN60601-1-2.

Below cables information are provided for EMC reference.

Cable	Max. cable length, Shielded/unshielded		Number	Cable classification
AC Power Line	1.8m	Unshielded	1 Set	AC Power
HDMI Cable	1.8m	shielded	1Set	DC Power
DP Cable	1.8m	shielded	2Set	DC Power
USB Cable	1.8m	shielded	1 Set	DC Power
Earth Cable	3m	Unshielded	1 Set	--

Important information regarding Electro Magnetic Compatibility (EMC)

LCD MEDICAL DISPLAY needs special precautions regarding EMC and put into service according to the EMC information provided in the user manual; LCD MEDICAL DISPLAY conforms to this IEC 60601-1-2:2014 standard for both immunity and emissions. Nevertheless, special precautions need to be observed:

- LCD MEDICAL DISPLAY with no ESSENTIAL PERFORMANCE.
- WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the LCD MEDICAL DISPLAY, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.”
- The use of accessories, and cables other than those specified by NANJING JUSHA, with the exception of accessories and cables sold by NANJING JUSHA of LCD MEDICAL DISPLAY as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of the LCD MEDICAL DISPLAY.
- WARNING: Use of this equipment LCD MEDICAL DISPLAY adjacent to or stacked with other equipment should be avoided because it could result in improper operation.”
- When the AC input voltage is interrupted, the LCD MEDICAL DISPLAY will shut down and if the power supply restored, it should be recovered by operator manually, this degradation could be accepted because it will not lead to unacceptable risks and it will not result in the loss of basic safety or essential performance.

5.4.2 EMI information

EMI Voltage/ Radiated interference	IEC60601-1-2:2014 EN60601-1-2:2015 GB/T9254-2008 GB17625.1-2012
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Table 1 - Emission

Phenomenon	Compliance	Electromagnetic environment
RF emissions	CISPR 11 Group 1, Class B	Professional healthcare facility environment
Harmonic distortion	IEC 61000-3-2 Class A	Professional healthcare facility environment
Voltage fluctuations and flicker	IEC 61000-3-3 Compliance	Professional healthcare facility environment

5.4.3 EMS information

Table 2 - Enclosure Port

Phenomenon	Basic EMC standard	Immunity test levels
		Professional healthcare facility environment
Electrostatic Discharge	IEC 61000-4-2	±8 kV contact ±2kV, ±4kV, ±8kV, ±15kV air
Radiated RF EM field	IEC 61000-4-3	3V/m 80MHz-2.7GHz 80% AM at 1kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	Refer to table 3
Rated power frequency magnetic fields	IEC 61000-4-8	30A/m 50Hz or 60Hz

Table 3 – Proximity fields from RF wireless communications equipment

Test frequency (MHz)	Band (MHz)	Immunity test levels
		Professional healthcare facility environment
385	380-390	Pulse modulation 18Hz, 27V/m
450	430-470	FM, ±5kHz deviation, 1kHz sine, 28V/m
710	704-787	Pulse modulation 217Hz, 9V/m
745		
780		

810	800-960	Pulse modulation 18Hz, 28V/m
870		
930		
1720	1700-1990	Pulse modulation 217Hz, 28V/m
1845		
1970		
2450	2400-2570	Pulse modulation 217Hz, 28V/m
5240	5100-5800	Pulse modulation 217Hz, 9V/m
5500		
5785		

Table 4 – Input a.c. power Port

Phenomenon	Basic EMC standard	Immunity test levels
		Professional healthcare facility environment
Electrical fast transients/burst	IEC 61000-4-4	±2 kV 100kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	±0.5 kV, ±1 kV
Surges Line-to-ground	IEC 61000-4-5	±0.5 kV, ±1 kV, ±2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3V, 0.15MHz-80MHz 6V in ISM bands and between 0.15MHz and 80MHz 80%AM at 1kHz
Voltage dips	IEC 61000-4-11	0% U _T ; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°
		0% U _T ; 1 cycle and 70% U _T ; 25/30 cycles Single phase: at 0°
Voltage interruptions	IEC 61000-4-11	0% U _T ; 250/300 cycles

Table 5 – Signal input/output parts Port

Phenomenon	Basic EMC standard	Immunity test levels
		Professional healthcare facility environment
Electrical fast transients/burst	IEC 61000-4-4	±1 kV 100kHz repetition frequency
Conducted disturbances induced by RF fields	IEC 61000-4-6	3V, 0.15MHz-80MHz 6V in ISM bands between 0.15MHz and 80MHz 80%AM at 1kHz

6. Maintenance

1. Avoid screen over-heat

Please use the display in the recommended environments, including appropriate temperature, humidity and air pressure. Turn off the display or lower its luminance if not in use, or it may cause over-heat damage. In addition, if the screen displays the same image for a long time, it may over-heat and cause damage to some pixels.

2. Maintain the proper humidity

The display can work properly at the humidity between 20% and 85%. When humidity is higher than 85%, the condensation may occur inside the display. It makes the display components easy to rust, corroded, or even short-circuit. Therefore, LCD display must be moisture proof. If the display is not used for a long time, user should power on the display once a month at least.

If there is condensation in the screen surface, use a soft cloth to wipe gently before turn on the power. If the moisture has got into the screen, put the screen to a warm (no higher than 60°C) and dry environment to evaporate the moisture. Power a humid LCD will cause a permanent damage.

3. Clean the display properly

It is recommended to clean the display regularly to maintain appearance and extend product service life.

To clean the screen:

- 1) Wipe the screen with a clean, soft, lint-free cloth.
- 2) For further cleaning, apply a small amount of non-ammonia, non-alcohol based cleanser onto the cloth and wipe the screen.



Warning:



1. Make sure the display is powered off before cleaning.
2. Never spray or pour any liquid directly onto the surface of the screen or case.

Some chemical cleanser may damage the screen and case of the display. We recommend you to use non-ammonia and non-alcohol based cleanser. We are not liable for damage resulting from ammonia or alcohol based cleanser.

4. Avoid shock and vibration

The LCD screen is quite fragile, so avoid strong shock and vibration. Falling to the ground or other strong shocks will cause damage to the LCD screen and the electrical components. Besides, please avoid any heavy pressure on the LCD screen surface.

5. Do not disassemble the display

Never try to disassemble the display or remove/change its LCD panel. Unauthorized repair and refit will result in temporary or permanent display failure.

Warning:

1. Please do not touch the metal part of power plug to avoid electric shock.
 2. Please keep the power socket away from water.
 3. Please do not drop the LCD Monitor to avoid hurt yourself.
-

7. Cleaning and Disinfection

7.1 Cleaning

It is recommended to clean the monitor regularly to maintain appearance and prolong product cycle life.

- Make sure the monitor is turned off.
- Never spray or pour any liquid directly onto the screen or case.



To clean the screen:

1. Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
2. If still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.

Disclaimer

JUSHA does not recommend the use of any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. JUSHA will not be liable for damage resulting from use of any ammonia or alcohol based cleaners

7.2 Disinfection

It is recommended to disinfect the monitor using 75% alcohol regularly to disinfect the LCD Monitor.

1. Make sure the monitor is turned off.
2. Wipe the screen with a clean, soft, lint-free cloth.



Attention: Never spray or pour alcohol directly onto the screen or case.

8.Malfuction analysis



Note:

Please contact us if failed to resolve problem after reading the recommended solutions followed.

To solve the problem, please contact Nanjing Jusha display technology co., Ltd after-sales service or read the manual to find proper solutions. If you use the recommend below solution still can't solve the problem, please contact Nanjing Jusha display technology co., Ltd.

Problems	Probable solutions
The monitor does not respond	Check that the monitor's Power Switch is on. You turn on the system. Turn off the power and check the monitor's power cord and signal cable for proper connection.
"Out of Range display"	Check to see of the resolution or vertical frequency of your computer is higher than that of the LCD monitor. Reconfigure the resolution of your computer to make it less than or equal to 2100 x 2800. 2100 x 2800 is optimal. See Appendix A for more information on resolution.
Screen too bright or dark	Modify <Backlight> (There if life cycle limit for backlight of monitor. When it becomes dark or vibrant, please contact us.)
Appear ghost	Please confirm in long time display the same image, whether to use screen savers or timer. Ghost is caused by the liquid crystal monitor itself characteristic, should avoid long time display the same image.
Restart the computer graphics installed after found no new hardware tips	Graphic card is not inserted or PCI slot has a problem, change slot to install
Snowflake on screen	1. Connection problem of power wire or signal wire 2. Main board static electricity or dust affection the connection of graphic card.

Malfunction analysis

No figure after displaying well for a while	<ol style="list-style-type: none">1. Connection problem of power wire or signal wire2. Main board static electricity or dust affection the connection of graphic card.
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9. Declarations

9.1 Legal notice

The auxiliary equipment that is connected with JUSHA display should meet the corresponding IEC Standard (data processing equipment should meet IEC 60950-1 Standard and armamentariums should meet IEC60601-1 Standard). In addition, all configurations should meet IEC 60601-1-1 Standard. Before a configuration is connected to signal output or input interface for processing system configuration, technician should make sure that the system meets IEC 60601-1-1 Standard.

Staffs that are responsible for connecting the display with system should make sure that installed devices meet IEC 60601-1-1 Standard. If there is any question, please contact with JUSHA Engineering Technology Service Department or local marketing representatives.

JUSHA markets its products through armamentarium manufacturers, distributors and franchisers. Therefore, please consult your seller whether he/she provides relevant maintenance service.

JUSHA will neither take any responsibility nor authorize anyone to take any responsibility for product distribution and its use. Please read carefully the related documents, operation instruction and labels on package before you apply the product so that you can use and maintain the product properly.

Please note that its performance will be affected by system configuration, software, application program and client's data and client's operating control. Though JUSHA product is compatible with many systems, client's specific function might be come true differently. Whether the product is suitable for specific purpose or application program it depends on clients, therefore, JUSHA should not guarantee for it.

JUSHA expressly disclaims all warranties of any kind, whether statutory, express or implied, including, but not limited to, implied warranties of merchantability, fitness for particular purpose and non-infringement. JUSHA hereby explicitly rejects all warranties and state of any kind, any property or extent whether statutory, express or it leads to any laws, rules, commercial practice, conventions or trade disputes etc.

In no event shall JUSHA and its suppliers/franchisers be liable for any special, incidental, punitive, indirect or consequential damages (including, but not limited to, delay deliver, non-delivery, fault items,

product design or production manufacture, being unable to use the product and service, loss of business or profits or other reasons, and any responsibility caused by buy or sell, lease, install or use related products, these terms and conditions and related articles of agreement.

The limits in this article and/or exclusions are not necessary suitable for some inadmissible exclusion clause, warranties or limited judicial districts. The maximum extent is permitted by applicable law in named jurisdiction under the circumstance.

JUSHA keeps patents, copyright and its exclusive right and all information in this manual including JUSHA all designs and related materials. Anyone cannot plagiarize JUSHA design or copy its product to sell or use without the company's explicit authority.

9.2 After-sale service declaration

The after-sale warranty is three years from the date of purchase, only if the product has been used with the recommended brightness. We are responsible for the quality problems caused by non-artificial factors and the maintenances are free of charge.

Quality assurance is only for the product that Nanjing Jusha Display Technology Co., Ltd provides. Any other third-party equipment problems is beyond the scope of this quality assurance.



Note:

The user must contact and get permission from JUSHA before sending back the product for repairs.

To avoid the damage and/or loss during transit, the user must deliver the product in its original package or other adequate package with an equal degree of protection to the local distributor. Meanwhile, user must present proof of the product purchase date.

The user is not allowed to repair the display from anywhere except the authorized after-service spots. The original serial number should not be modified or removed. Don't derogate from requirements of this manual, otherwise it may result in quality assurance failure.

This product provides limited responsibility for quality assurance. JUSHA isn't responsible for malfunction caused directly/indirectly /accidentally by users themselves. Users should pay attention to the settings of the

operation system and other applications. Above factors will affect the product performance.

Manufacture will provide circuit diagrams, component part lists, descriptions, calibration instructions to assist to SERVICE PERSONEL in parts repair.

9.3 Proprietary rights

Nanjing Jusha Display Technology Co., Ltd keeps the copyright of this manual and other related ownership. It is not allowed to copy, use or sell this manual without authorization of Nanjing Jusha Display Technology Co., Ltd.

10. Contact information

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