

JUSHA LCD Monitor



CP620G

User Manual

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1. Manual instructions









1.1 About this manual

- n This manual aims to guide users to correctly install, configure and operate this professional medical display properly. Please read this manual carefully before use.
- n When transfer the display to a third-party, please deliver this manual along with the display.
- n The product specifications are subject to change without prior notice.
- n 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.
- n 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 may 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.
	*Federal Communications Commission (FCC) Indicates the product meets the requirements of FCC.
	*Conformite European Certification (CE) Indicates the product meets the requirements of CE Certification.
	European Authorized Representatives Gives information of the Authorized European representatives.
	Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC Waste disposal should comply with local regulations.
	Recommend to refer the User Manual
	Manufacturer information
	JUSHA trademark
	Product serial number
Rx Only	Caution: Federal law restricts this device to sale by or on the order of a licensed health care practitioner

* The display will conform to corresponding certification standard only when the provided power supply is used.

1.3 Safety information



Warning:

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

About the environment

- n The equipment should be packed with the original leather bag in the attachment when moving or carrying.
- n The equipment should be installed near an easily accessible outlet.
- n 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.
- n Never use the display in the presence of flammable anesthetics mixture with air, oxygen or nitrous oxide.
- n 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.
- n 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.
- n 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

- n Please use power adapter provided with the display.
- n Please insert the plug into the socket firmly.
- n Don't touch power adapter or plug/unplug it when thundering, or it may cause electric shock.
- n Please hold the attaching plug when you unplug it. Don't unplug it by pulling adapter cord, otherwise the adapter cord may be injured and result in electric shock.
- n Don't overload capacity of the circuit, otherwise it may result in fire or electric shock.
- n 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.

- n If the device is not used for a long time, disconnect it from the AC inlet to avoid damage by transient over-voltage.
- n To fully disengage the power to the device, please disconnect the power cord from the AC inlet.
- n Please make sure that this product connected with a qualified computer or other devices, or it is connected to the protective earth.
- n Make sure the display is grounded properly.

About the maintains and repairs

- n 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.
- n 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.
- n 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

- n For mission critical applications, we strongly recommend that a replacement unit be immediately available.
- n Please avoid excessive compression on the LCD screen, which may cause damage to it.
- n 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.
- n The operator should not touch the video interface (such as DVI port, VGA port and etc.), or it may result in potential ESD (Electrostatic Discharge) damage to the display.

- n 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.
- n Please turn off the display if not use.
- n Waste disposal should comply with local regulations.
- n 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.
- n 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 device under interference into different power sockets.

Intended use

- n CP620G Series professional LCD monitor is intended to be used in displaying and viewing digital images for diagnosis of X-ray or MRI, etc. by trained medical practitioners. The device is not specified for digital mammography system.



Note:

1. CP620、CP620G、CP620M、CP620L、CP620E、CP620S、CP62****、JUSHA-CP620、JUSHA-CP620G、JUSHA-CP620M、JUSHA-CP620L、JUSHA-CP620E、JUSHA-CP620S、JUSHA-CP62****, where "*" represents the suffix. The suffixes indicate different marketing regions. The operation method and specifications are the same with CP620G and JUSHA-CP620G.
2. "*" here means 0-9, A-Z or blank.

Principle of operation

- n The monitor is used by trained medical practitioners to view the digital image. it converts the picture collected by PACS, CR and DR, MRI or CT

to digital signal by a graphic card. The digital information is send to the screen, then, the screen displays the pictures.

Mechanism of action

- n The principle of display digital images using medical monitor is the selection of graphic card and the screen, the graphic card and the screen will affect the quality of medical images.

2. Overview

Thank you for choosing JUSHA CP620G professional Display! CP620G is a 6MP portable color professional medical LED display.

CP620G portable color professional display 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 characteristics, and built-in DICOM standard LUT, CP620G can be used in a variety of medical imaging diagnostics and comparative analysis, such as: CR, DR, MRI, CT, PACS, etc.

2.1 Features

n High resolution and luminance

With up to 6 megapixels of resolution and 500cd/m² luminance , CP620G can totally display the details of medical imaging, and meet the medical need for accurate diagnosis.

n 14-bit grayscale display

CP620G is armed with a 14-bit (RGB) image processing chip. It can present up to 4,398 billion colors (16,384 grayscale), show image more accurately and smooth and guarantee that every detail is perfect.

n Conform to DICOM standard

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.

2.2 Packing list

JUSHA 6MP LED Professional Display comes with:

- ① JUSHA 6MP LCD Monitor ×1

Overview

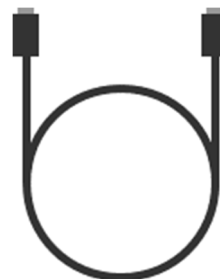
- ② AC power adapter ×1 (with one interchangeable AC plug Options)
- ③ USB Type-C cable ×2
- ④ User Manual ×1
- ⑤ Packing list ×1
- ⑥ Product certificate ×1



①



②

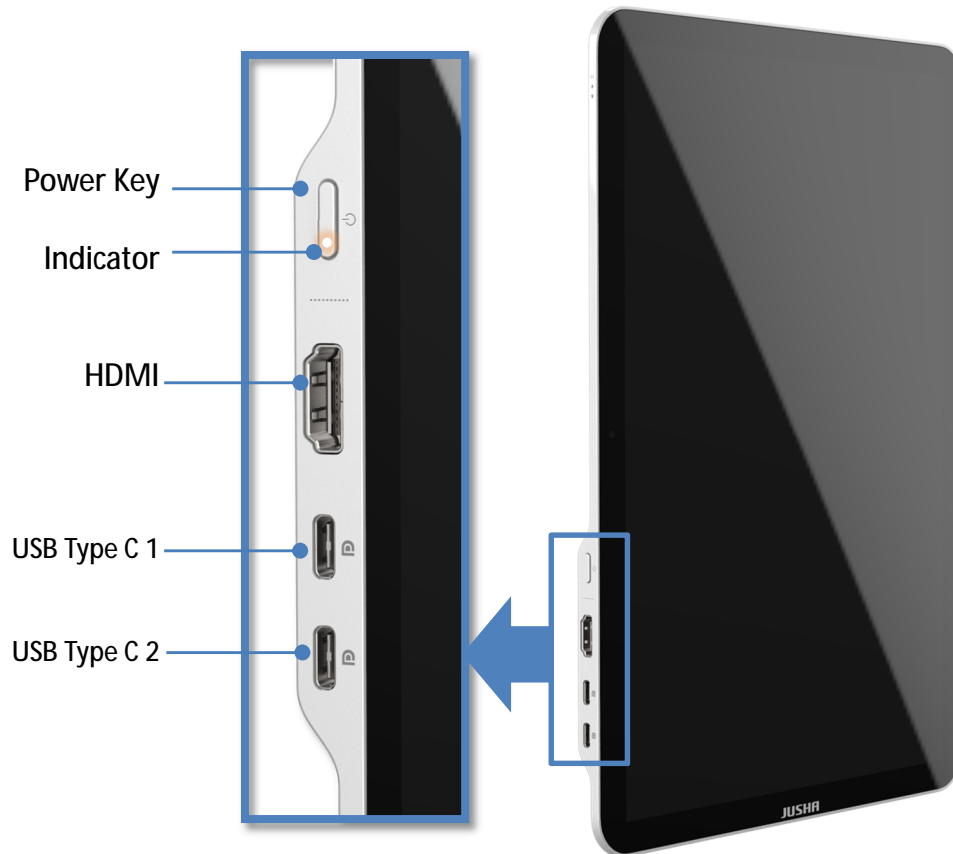


③


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 display port



The front of the display is full covered by a piece of glass. And there's a status indicator on the left side.

Item	Logo	Description
Power Key		Turn the display on or off
Status indicator	/	Steady white: Display works normally. Flash white: No video signal input on the display. Steady red: Display in high temperature alarm state.
HDMI	/	HDMI video interface

USB Type C 1		<ol style="list-style-type: none">1. Full function: video (DP alt mode)、power delivery、USB data communication2. The functions of the two interfaces are exactly the same and can be blind inserted at will
USB Type C 2		<ol style="list-style-type: none">3. Need to be used with USB 3.2 gen2 or Thunderbolt 3 or higher protocol USB cable4. The name “USB Type C” is often referred to simply as “USB-C” or “TypeC”.


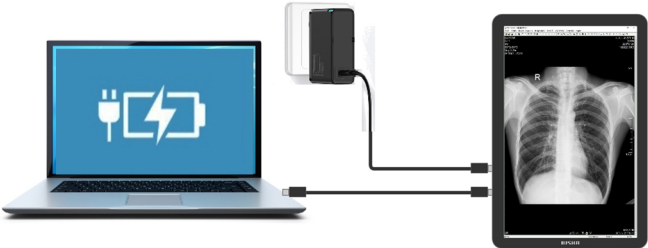
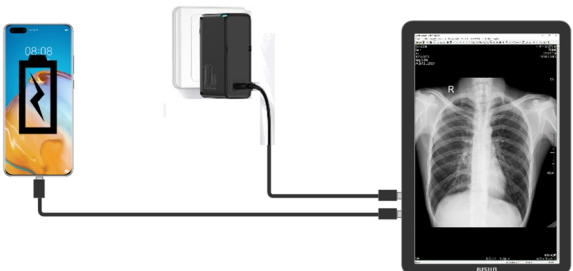
Note:

1. The display supported video interfaces can be found in 6.1 “Technical specifications”.
 2. When the HDMI port is connecting to the PC, the USB Type-C port should be connected to a power cord.
-



3. Display installation

3.1 Connecting the cables and power

There are four method to connect the display and the laptop or mobile phone:

No.	Method	Description
1	<p>Choose any USB port to connect to the computer</p>  	<p>1) Requires the laptop USB-C interface to support USB 3.2 gen2 or Thunderbolt 3 or higher protocol.</p> <p>2) support screen touch</p> <p>3) Support the screen display direction to automatically rotate with gravity sensor</p> <p>4) Limited by power, the maximum brightness is 300cd/m²</p> <p>5) Optionally connect another USB-C interface to the power adapter to increase the brightness limit to 500cd/m² and power the computer (the power adapter and the computer are required to support the PD protocol).</p>
2	<p>Two USB-C ports are respectively connected to the power adapter and the adapted mobile phone</p> 	<p>1) Adapted mobile phone: HUAWEI Mate 30/40 Pro</p> <p>2) Supports screen touch in copy projection mode</p> <p>3) Does not support the screen touch in the computer projection mode of Huawei mobile phones</p> <p>4) Support reverse power supply for mobile phones(Both power supply and mobile phone support PD protocol)</p>

Display installation


3	<p>Choose any USB port to connect to the power adapter, and connect the HDMI interface of CP620 to the HDMI signal source</p> 	<ol style="list-style-type: none"> 1) Support the screen display direction to automatically rotate with gravity sensor 2) HDMI signal maximum support 3000*2000@50Hz
4	<p>Choose any USB-C port to connect to the laptop, and connect the HDMI interface of CP620 to the HDMI signal source</p> 	<ol style="list-style-type: none"> 1) Requires the laptop USB-C interface to support USB 3.2 gen2 or Thunderbolt 3 or higher protocol. 2) Limited by power, the maximum brightness is 300cd/m² 3) Optionally connect another USB-C interface to the power adapter to increase the brightness limit to 500cd/m² and power the computer (the power adapter and the computer are required to support the PD protocol). 4) Do not support screen touch 5) Can only be used in landscape mode, does not support gravity sensor auto-rotation

Note:

The display supported video interfaces can be found in “6.1 Technical specifications”

It is recommended to use the power adapter provided in the accessory of the monitor. Connect the power cord to the display, when the Status

indicator is lit up, it means that the display has been powered up.

	<p>Warning: Please read the “6.3 Safety standard” section carefully before connecting the power supply. Otherwise, it may cause electric shock or display permanent damage.</p>

3.2 Adjusting the screen position

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

3.2.1 Adjusting screen tilt angle

Please use fingers to reach in the notch of the lower side of the kickstand, lift the kickstand to the desired angle with proper force, and then place the display on a flat table.



Note :

The allowed tilt angle range for the built-in kickstand is from 0° to 120° (±5°). In order to prevent the display from falling over and being damaged, the recommended angle of the kickstand is 40° to 120° in vertical screen mode or 60° to 120° in horizontal screen mode.

3.2.2 Rotating screen

1. Please pay attention to all cables on the monitor before rotating the monitor.
2. To avoid the monitor tipping over after rotating, please adjust the kickstand angle to the recommended range before rotating screen.
3. The rotation of the display will trigger the automatic rotation of the display's own gravity sensor, and the display will automatically sense the placement direction and adjust it to a suitable display direction.



Warning:

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

3.3 Multi-screen display setting

The Windows operating system supports multiple screen extension display, which has brought great convenience to people's work. A doctor may, for example, use two displays at the same time, one for diagnosis, and the other for writing diagnostic reports, or for reviewing previous medical records of a patient. The setting method of multi - screen display is introduced below.

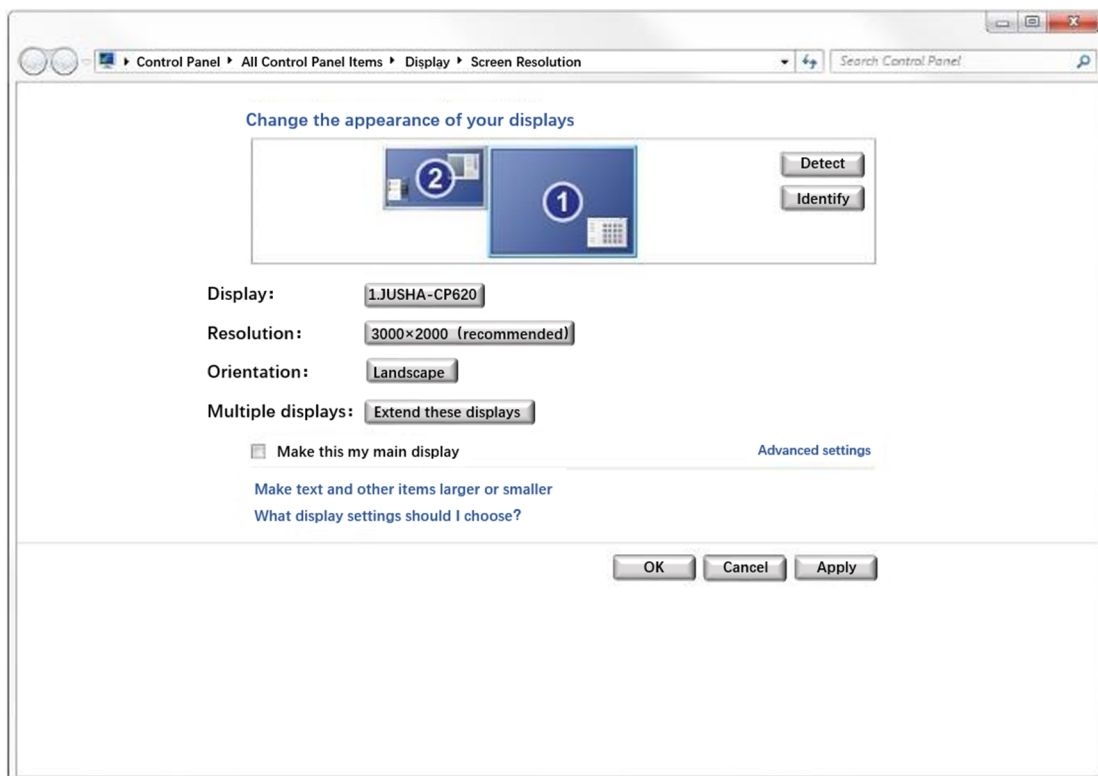
3.3.1 Windows XP operating system setting

1. Connect HDMI interface on the graphics card or laptop to the corresponding HDMI interface of the display through the video signal line.
2. Right-click mouse button on the desktop blank place, and then select [Properties] in the pop-up menu.
3. Click [Settings] to open the display settings windows.
4. Click [Identify] to identify multi-display number in Windows XP system. Click "Use the device as the primary monitor" item to setup the primary monitor.

5. Click [To expand Windows desktop to the monitor] item to expand Windows desktop to the selected monitor.
6. After the completion of the various Settings, and then identify the number of the screen representing.
7. For example, the monitor in 6MP single screen mode corresponds to the number 1 of the 6MP display in Windows XP. Slide from left to right in [Screen resolution] to select the recommended resolution 2000×3000.
8. Finally, to click “Sure” to make the all of above options to take effect.

3.3.2 Windows 7 operating system setting

1. Connect HDMI interface on the graphics card or laptop to the corresponding HDMI of the display through the video signal line.
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:

- I Arrange the logical position of the two displays by dragging the display icons.
- I Browse the connected display devices at the [Display] pull-down menu.
- I Choose different multi-display mode in the [Multiple displays] pull-down menu. For example, you can choose [Extend these displays] to obtain a larger onscreen workspace.
- I Designate which screen is the primary one to display the windows Taskbar and Start menu by selecting the [Make this my main display] check box.

3.3.3 Windows 10 operating system setting

1. Connect USB Type-C or HDMI on the graphics card or laptop to the corresponding USB Type-C or HDMI interface of the display through the video signal line.
2. Right-click mouse on the windows desktop blank place, and select the [Display Setting] on the pop-up menu.
3. Windows can automatically detect additional displays, as shown below.

Settings

Home

Find a setting

System

- Display
- Sound
- Notifications & actions
- Focus assist
- Power & sleep
- Battery
- Storage
- Tablet
- Multitasking
- Projecting to this PC
- Shared experiences
- Clipboard
- Remote Desktop
- About

Display

Rearrange your displays

Select a display below to change the settings for it. Press and hold (or select) a display, then drag to rearrange it.

Identify Detect

Brightness and color

Change brightness for the built-in display

Night light

Off

[Night light settings](#)

Windows HD Color

Get a brighter and more vibrant picture for videos, games and apps that support HDR.

[Windows HD Color settings](#)

Scale and layout

Change the size of text, apps, and other items

100% (Recommended)

[Advanced scaling settings](#)

Display resolution

3000 x 2000 (Recommended)

Display orientation

Landscape

Rotation lock

On

Multiple displays

Multiple displays

Extend these displays

Make this my main display

In the [Display] control panel, you can:

- I Arrange the logical position of the two displays by dragging the display icons.
- I Select the display by left-click mouse on the display icon, and then the display settings could be changed at the [Resolution] and [Orientation] pull-down menu.
- I Choose different multi-display mode in the [Multiple displays] pull-down menu. For example, you can choose “Extend these displays” to obtain a larger onscreen workspace.
- I Designate which screen is the primary one to display the windows Taskbar and Start menu by selecting the [Make this my main display] check box.



Note:

In view of compatibility issues, it is not recommended to use the USB-C interface on windows XP/7/8/8.1



Note:

The setup method of multi-display extension function in Windows 8/8.1/11 is similar to Windows 10.

4. Display settings

4.1 Start the display

Connect the monitor power adapter and turn on the computer or mobile phone connected to the display. Make sure that a graphic card and graphic card driver has been installed correctly. The display will automatically turn on and recognize the video signal, then the status indicator will turn white.

When the display is turned on, press the power button to turn off the display, and the status indicator will go out after the display is turned off



Note:

Please disconnect the power adapter or power cable directly when not in use for a long time.

4.2 No signal status

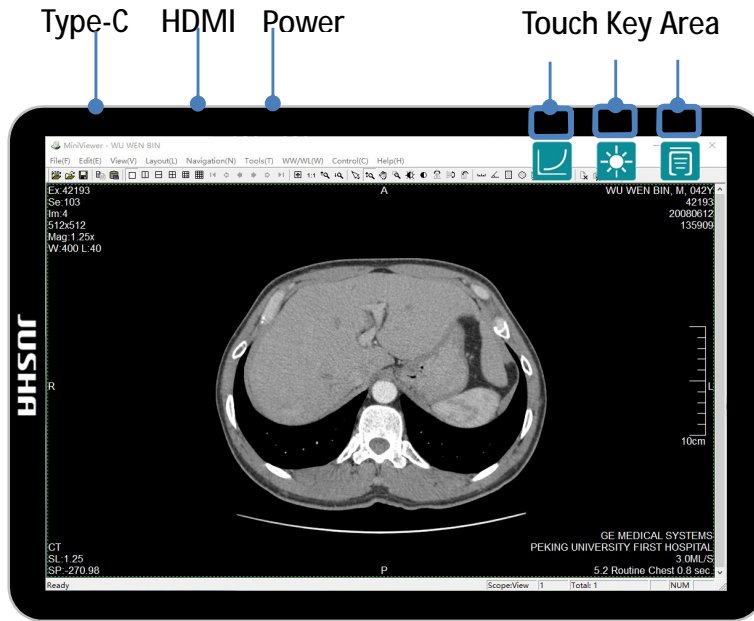
The display will turn to no signal status automatically when there is no video signal input, and the status indicator will blink white.

4.3 Display sleep mode

The display will automatically enter sleep mode after no signal state for more than 5 minutes, and the status indicator will be off in sleep mode.













4.4 Display OSD menu

Swipe the black edge of the glass as shown in the figure below, and the button reminder icon will pop up. Tap the glass area corresponding to the reminder icon to operate the corresponding function. At this time, you can hear the beeping feedback.

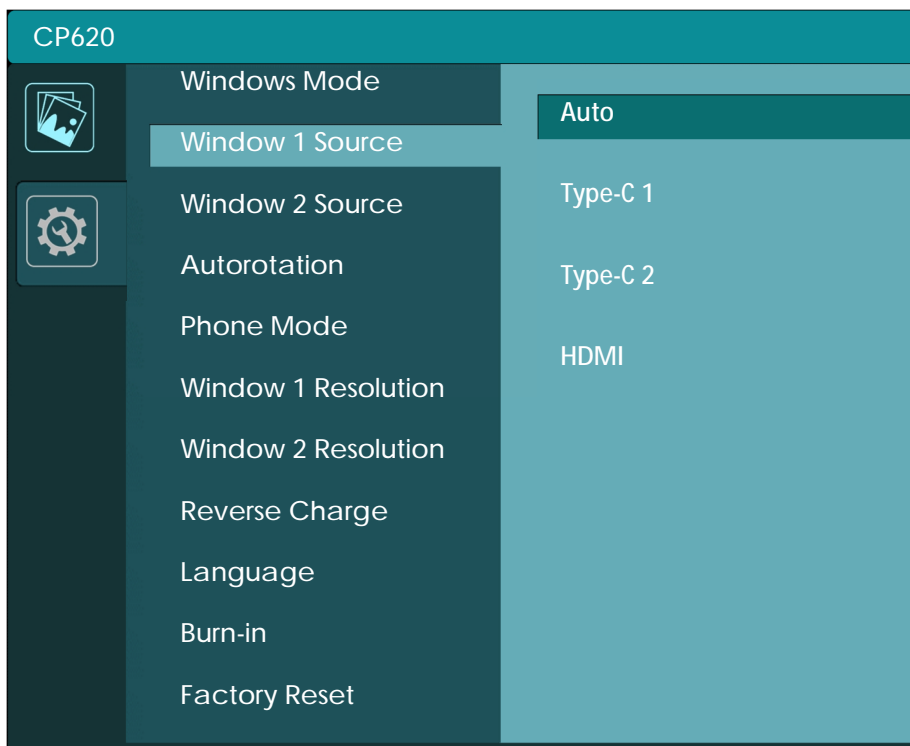
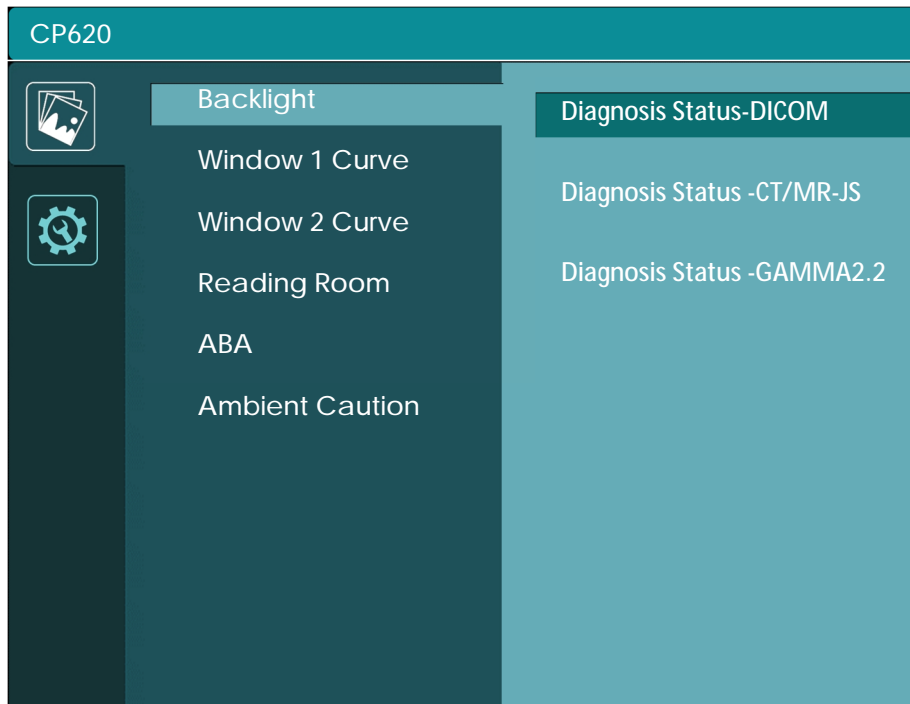


4.4.1 Menu hierarchical reminder icon

Corresponding prompt icons under different menu levels will change accordingly. The corresponding indication buttons for each menu level are as follows

Menu level	Key 1	Key 2	Key 3
Navigation menu	 Curve	 Luminance	 Main menu
Level 1 menu level 2 menu	 Back	 Down	 Enter
Shortcut menu Level 3 bar	 Up	 Down	 Back
Level 3 menu	 Up	 Down	 Enter

4.4.2 Menu content



Navigation	Level 1	Level 2	Level 3	instruction	
Shortcut	Backlight	0-100	/	Short press the “q”/“p” key to change in real time with a step length of 1. Long press to speed up step adjustment. The maximum brightness is automatically limited when the power supply is insufficient	
Shortcut	Display Mode	DICOM CT/MRI-JS GAMMA 2.2	/	Single screen mode : Press the “q”/“p” key to switch the curve in both directions. Dual screen mode : Press the “p” key to switch the curve of the right half of the screen in one direction. Press the “q” key to switch the curve of the left half of the screen in one direction.	
Main Menu	Image	Backlight	0-100	0-100 range corresponds to 300-500cd/m ² Default range 100; Press the menu button to confirm and return to the previous level.	
		Window Curve	1	Diagnosis Standard Diagnosis CT/MRI-JS Media Mode	Default Diagnosis Standard(which is DICOM curve)
			2	Diagnosis Standard Diagnosis CT/MRI-JS Media Mode	Default Diagnosis Standard(which is DICOM curve)
			Reading Room*	OFF Auto X-rays CT/MR Office Viewing Room Emergency Room Operating Room	Only has actual effect under the DICOM curve. Illumination value corresponding to the environment : X-rays: 5-10lux CT/MR: 10-60lux Office: 60-180lux Viewing Room: 180-240lux Emergency Room: 240-300lux Operating Room: 300-400lux
		ABA	ON		Ambient Brightness Adaptive Default OFF
			OFF		After manually adjusting the brightness, it will automatically turn off
		Ambient Caution	OFF		Default OFF
			0.5h		After turning on, the working time exceeds the selected time and the ambient light value will be detected. If the ambient light exceeds the preset value of 400 Lux, the screen will automatically
			1h		
			2h		

				cycle to prompt every selected time: "Caution! Ambient light exceeds the legal limit!"
Setup	Windows Mode	Single Screen		Default Single Screen
		Dual Screen		**USB-C1 and USB-C2 cannot be displayed at the same time
	Window Source 1	Auto Type-C 1 Type-C 2 HDMI		Default Auto
	Window Source 2	Type-C 1 Type-C 2 HDMI		The options are grayed out in single screen mode Options are available in dual screen mode Default Type-C 1
	Autorotation	ON		Default ON
		OFF		Screen display direction automatically rotate with gravity sensor
	Phone Mode	HUAWEI		Default HUAWEI
		APPLE		
	Window Resolution 1	3000x2000		Default 3000x2000; Automatically switch to 1500x2000 in Dual screen mode; Screen touch is not supported when "1500x2000"/"1080p" is selected
		1500x2000		
		1080P		
	Window Resolution 2	1500x2000		The options are grayed out in single screen mode Options are available in dual screen mode Default 1500x2000 Screen touch is not supported
		1080P		
Reverse Charge	ON		Default ON	
	OFF			
Language	中文		Default Chinese	
	English			
Burn-in	/		Screen aging mode, press any key to exit	
Factory Reset	/		The language does not change when the factory is reset	

*The function menu options of the "Reading Room" are provide to comfort different scence of using. The Technical theory is "ambient light compensation", The ALC (ambient light compensation) function is to superimpose the corresponding compensation value on the DICOM brightness curve of the CP620 according to the preset ambient light brightness value, so that the displayed image of the CP620 can reach the same actual viewing effect in human eye under different ambient light brightness. (Refer to AAPM 3.4.4)



Note:

Please refer to the help documentation for more information. The menu options and specifications of this product are subject to change without notice.

5. Quality Control

I Quality Control

The monitor quality of monitors is affected by the quality level of input signals and the degradation of the product. It is recommended that daily checkups and periodical constancy test be performed to comply with medical standards/guidelines according to your application. Use of the WEBQA Software monitor quality control software enables you to perform high-level total quality control that meets medical standards/guidelines.

The monitor CP620G has been adapted to the WEBQA 3.0.4 version. Support for subsequent WEBQA 4.0 versions will be upgrade without notice.

I Calibration function

DICOM calibration of each machine is completed before outing factory. In order to ensure the conformity of DICOM, it is recommended to use WEBQA for verification regular.



Note:

To maintain the measurement accuracy of DICOM, perform periodical correlation using WEBQA Software.

6. Important information

6.1 Technical specifications

Input voltage	DC 20V
Power consumption	<20W (Typical)
LCD Panel	13.5 inches, Color Active Matrix TFT Liquid Crystal Display
Viewing angle	≥170°H and V @ CR ≥10
Resolution	3000×2000(Horizontal mode); 2000×3000(Vertical mode)
Color Tone	4,398 Billion Colors(14bit)
Active screen size	285.3 mm × 190.2 mm
DICOM calibrated luminance	500±20cd/m ² (default, typical, maximum)
GAMMA calibrated luminance	500±20cd/m ² in the case of 7500K color temperature (default, typical, maximum)
Input video interface	HDMI 2.0 ×1 MAX Resolution 3000×2000@50Hz
	Type-C ×2 MAX Resolution 3000×2000@60Hz
Net weight	750g
Operating Environment	Temperature: 0°C - 40°C
	Humidity: 20% - 80% (No condensation)
	Air pressure: 700hPa - 1060hPa
Transportation and storage Environment	Temperature: -20°C - 60°C
	Humidity: 20% - 90% (No condensation)
	Air pressure: 700hPa - 1060hPa
Certification standards	CCC, CE



Note:

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

6.2 Environmental information

All materials of this product are below the limit requirement in RoHS, without toxic or hazardous substances.

6.3 Safety standard

Safety standard	This device complies with GB4943.1-2011 IEC60601-1:2012 EN60601-1:2013
Compliance disclaimer	CCC, CE

6.4 Electromagnetic compatibility

The product's electromagnetic compatibility conforms to the following conditions:

EMI Voltage/ Radiated interference	GB/T9254-2008 GB17625.1-2012 IEC60601-1-2:2014 EN60601-1-2:2015
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Guidance and Manufacturer's Declaration

Below cables information are provided for EMC reference.

Cable	Max. cable length, Shielded/unshielded		Number	Cable classification
DC Power Line(USB Type-C Cable)	1.0m	Shielded	2 Set	DC Power/Signal

Important information regarding Electro Magnetic Compatibility (EMC)

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

The equipment with no ESSENTIAL PERFORMANCE is intended to use in Home healthcare environment.

WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

The use of accessories and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

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 CP610, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

When the AC input voltage is interrupted, the equipment 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.

EMI Compliance Table (Table 1)

Table 1 - Emission

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

EMS Compliance Table (Table 2-5)

Table 2 - Enclosure Port

Phenomenon	Basic EMC standard	Immunity test levels
		Home healthcare environment
Electrostatic Discharge	IEC 61000-4-2	±8 kV contact ±2kV, ±4kV, ±8kV, ±15kV air
Radiated RF EM field	IEC 61000-4-3	10V/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
		Home healthcare 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		
870	800-960	Pulse modulation 18Hz, 28V/m
930		
1720		
1845	1700-1990	Pulse modulation 217Hz, 28V/m
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
		Home healthcare 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
Conducted disturbances induced by RF fields	IEC 61000-4-6	3V, 0.15MHz-80MHz 6V in ISM bands and amateur radio bands 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

7. Maintenance

7.1 Avoid screen over-heat

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

7.2 Maintain the proper humidity

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

7.3 Clean the monitor properly

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

To clean the screen:



- I Wipe the screen with a clean, soft, lint-free cloth.
- I 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 monitor is powered off before cleaning.
-

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2. Never spray or pour any liquid directly onto the surface of the screen or case.
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Some chemical cleanser may damage the screen and case of the monitor. 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.

7.4 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.

7.5 Do not disassemble the monitor

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

Warning:



1. Please do not touch the metal part of power plug to avoid electric shock.
 2. Please keep the power socket and 5V DC away from water.
 3. Please do not drop the LCD Monitor to avoid hurt yourself.
-

8. Cleaning and Disinfection

8.1 Cleaning

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



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

To clean the screen:

- I Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
- I 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

8.2 Disinfection

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



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

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

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 necessarily 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 are beyond the scope of this quality assurance.



Note:

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

Please keep well the original package and, if the product is transported again, the original package must be selected. No heavy load on the

package is permitted during transportation.

The user shall not maintain or repair products at a place other than the after-sale service point of Nanjing Jusha Display Technology Co., Ltd., the original equipment number shall not be modified or removed. In order to obtain this quality assurance, the use shall not be contrary to the requirements of this manual, and the quality assurance will fail in such cases.

This product provides limited liability quality assurance. Nanjing Jusha Display Technology Co., Ltd. is not responsible for the direct, indirect and accidental damage caused by the users themselves. Users should pay attention to the system settings, software, application programs, user data and operation control of the product. All of the above factors will affect the performance of product. This product can be compatible with many systems, and users may decide to use the characteristics and functions of this product in their own discretion.

9.3 Declaration of Conformity

This machine could meet the following two conditions

- I This machine will not generate Dangerous interference
- I This machine will not come into unpredictable results

9.4 Statement of ownership

Nanjing Jusha Display Technology Co., Ltd. reserves all patents, copyrights and other ownership of the User Manual. Without the explicit authorization of Nanjing Jusha Display Technology Co., Ltd., it is forbidden to plagiarize the product design, or duplicate, use and sell the product.