Diagnostic

User Manual

C42W+

4MP Dual Screen Medical Display

Table of contents

1 Introduction

1.1 About the product

C42W+ is a 30 inch TFT color LCD monitor . It is specifically designed to provide the high definition images output for general radiography.

With built-in multi-display modes, it is convenient for doctors to view various image information. The product has been strictly made a calibration so it meets DICOM Part 3.14 and other standards. Thanks to the accurate medicine image, built-in brightness stability control circuit and 10 bits image processing technology(with 14bit LUT), the fast brightness stability for monitor and brightness uniformity for the whole lifespan can be guaranteed. Multi-interfaces are suitable for signal inputs for various devices at operating rooms. The monitor is with the specially designed base, so it supports tilt and reversal etc.

1.2 About the user manual

This document describes the functionality and the reasonable usage of C42W+. For ensuring the clarity, please note that it does not contain all detailed information on this product.

This user manual contains important information that you have to read in order to ensure your personal safety and prevent damages to your property. Please read these safety information and product information so that you can operate the machine safely and effectively.

This user manual is only suitable for C42W+.

Please save this manual for future use.

This user manual is updated or changed without any notices.

1.3 Packing list

Please check the following articles when you buy the display. Please note that the pictures are only for references. The following pictures only mean the similar items.

1.3.1 Standard

LCD monitor   1pc

Power cord   1pc

LCD monitor

Power cord

1.3.2 Non-standard (optional ■, non-optional □)

VGA signal cable	□		USB cable	■ 1pc
DP signal cable	■ 1pcs		Adapter	■ 1pc
BNC signal cable	□		Remote control	□
DVI signal cable	■ 1pcs		CD	■ 1pc
USB to serial port cable	□		User manual	□
Serial port to RJ11 cable	□		Packing list	□
Audio cable	□		Installation report	□
Professional video card	□			

VGA signal cable

DP signal cable

BNC signal cable

DVI signal cable

USB to serial port cable

Serial port to RJ11 cable

Audio cable

USB cable

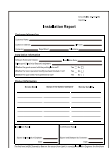Adapter

Remote control

CD

User manual

Packing list

Installation report

Special video card

* Please remember to save the original container and packing material to transport or ship the monitor.

2   Safety information

To ensure personal safety and proper maintenance, please read this section and the caution statements on the unit.

⚠ **WARNING**

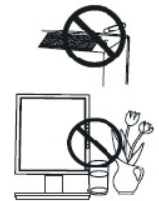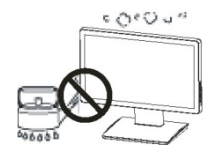| |
|---|
| **If the unit begins to emit smoke, smells like something is burning, or makes strange noises, disconnect all power connections immediately and contact your dealer for advice.**

Attempting to use a malfunctioning unit may result in fire, electric shock, or equipment damage. |
| **Do not open the cabinet or modify the unit.**

Opening the cabinet or modifying the unit may result in fire, electric shock, or burn. |
| **Refer all servicing to qualified service personnel.**

Do not attempt to service this product yourself as opening or removing covers may result in fire, electric shock, or equipment damage. |
| **Keep small objects or liquids away from the unit.**

Small objects accidentally falling through the ventilation slots into the cabinet or spillage into the cabinet may result in fire, electric shock, or equipment damage. If an object or liquid falls/spills into the cabinet, unplug the unit immediately. Have the unit checked by a qualified service engineer before using it again. |
| **The monitor can run for a long time, but its life span will reduce.** |
| **Place the device on a solid and stable surface.**

Placing the device on an inadequate surface may occur fall and result in personal injury or equipment damage. If the unit falls, disconnect the power immediately and consult the dealer for help. Please do not continue to use damaged equipment, that may result in fire or electric shock. |
| **Set up the unit in an appropriate location.**

Not doing so may result in fire, electric shock, or equipment damage.

- Do not place the unit outdoors.

- Do not install the unit in transportation systems (ship, aircraft, trains, automobiles, etc.)

- Do not place the unit in an inflammable gas environment.

- Do not place the unit in a dusty or humid environment.

- Do not place the unit in a location where the steam comes directly on the screen.

- Do not place the unit near heat generating devices or a humidifier. |
| **To avoid danger of suffocation, keep the plastic packing bags away from babies and children.** |

Use the enclosed power cord and connect to the standard power outlet of your country.

Be sure to remain within the rated voltage of the power cord. Not doing so may result in fire or electric shock.

If the power cord need be disconnected, please hold it tightly and unplug it.

Tugging on the power cord may damage and result in fire or electric shock.

The equipment must be connected to a grounded main outlet.

Not doing so may result in fire or electric shock.

Use the correct voltage.

- This equipment only applies to the power adapter provided in particular. If the device is connected to other power adapter that is not mentioned in this manual, that may result in fire, electric shock, or equipment damage.

- Do not overload the power circuit, as this may result in fire or electric shock.

Handle the power cord with care.

- Do not put the power cord under the unit or other heavy object.

- Do not pull up or twist the power cord.

If the power cord is broken, stop to use it immediately. Using broken power cord may result in fire or electric shock.

Never touch the plug and power cord if it begins to thunder.

Touching them may result in electric shock.

Do not touch a damaged LCD panel directly with bare hands.

The liquid crystal that may leak from the panel is poisonous if it enters the eyes or mouth. If any part of the skin or body comes in direct contact with the panel, please wash thoroughly. If some physical symptoms result, please consult your doctor.

Please follow the local laws and regulations to dispose the scrap safely.

⚠ **CAUTION**

Handle with care when carrying the unit.

Disconnect the power cord and signal cables and remove the optional unit. Moving the unit with the cord or the option attached is dangerous. It may result in injury.

When handling the unit, grip the bottom of the unit firmly with both hands ensuring the panel faces outward before lifting.

Dropping the unit may result in injury or equipment damage.

Do not block the ventilation slots on the cabinet.

- Do not place any objects on the ventilation slots.

- Do not install the unit in a closed space.

- Do not use the unit laid down or upside down.

- Blocking the ventilation slots prevents proper airflow and may result in fire, electric shock, or equipment damage.

Do not touch the plug with wet hands. Doing so may result in electric shock.
Periodically clean the area around the plug. Dust, water, or oil on the plug may result in fire.
Unplug the unit before cleaning it. Cleaning the unit while it is plugged into a power outlet may result in electric shock.
If you plan to leave the unit unused for an extended period, disconnect the power cord from the wall socket after turning off the power switch for the safety and the power conservation.

LCD PANEL

| |
|---|
| When the monitor is cold and brought into a room or the room temperature goes up quickly, dew condensation may occur inside and outside the monitor. In that case, do not turn the monitor on and wait until dew condensation disappears, otherwise it may cause some damages to it. |
| In order to suppress the luminosity change by long-term use and to maintain the stable luminosity, please use the monitor with the lower brightness. |
| The screen may have defective pixels. These pixels may appear as slightly light or dark area on the screen. This is due to the characteristics of the panel itself, and not the product. |
| The backlight of the LED panel has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer. |
| Do not press on the panel or edge of the frame strongly, as this may result in damage to the screen. |
| Do not scratch or press on the panel with any sharp objects, such as a pencil or pen as this may result in damage to the panel. Do not attempt to brush with tissues as this may scratch the LED panel. |
| When the screen image is changed after displaying the same image for extended periods of time, an afterimage may appear. Use the screen saver or timer to avoid displaying the same image for extended periods of time. |

3 Parts, controls and connectors
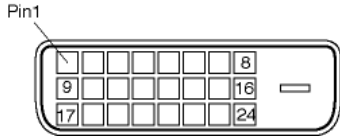
3.1 Control and Connection

3.1.1 Front view
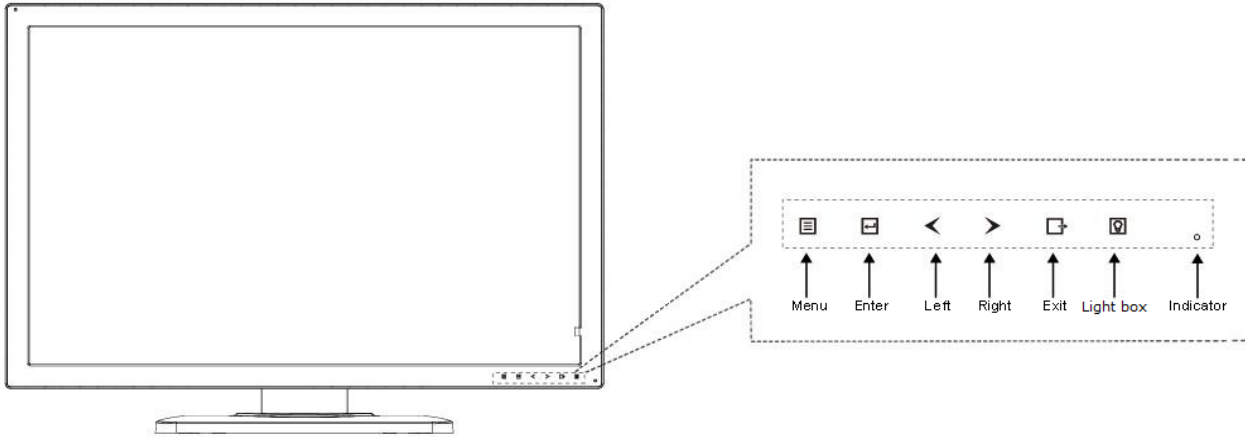
3.1.2 Back view
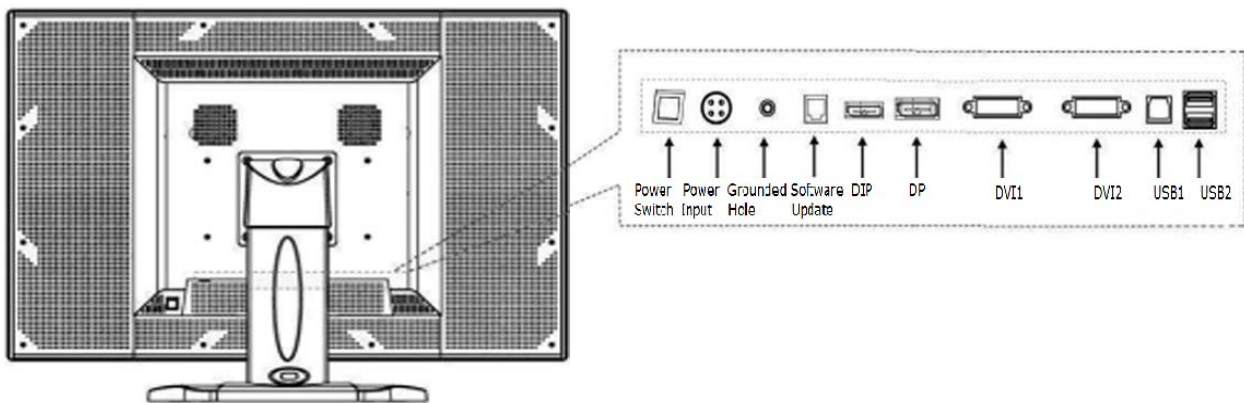
3.2 Connector pin assignments

3.2.1 DVI connector

（*NC：No Connection）

Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS Data 2-	9	TMDS Data 1-	17	TMDS Data 0-
2	TMDS Data 2+	10	TMDS Data 1+	18	TMDS Data 0+
3	TMDS Data 2/4 Shield	11	TMDS Data 1/3 Shield	19	TMDS Data 0/5 Shield
4	TMDS Data 4-	12	TMDS Data 3-	20	TMDS Data 5-
5	TMDS Data 4+	13	TMDS Data 3+	21	TMDS Data 5+
6	DDC Clock (SCL)	14	+5V Power	22	TMDS Clock shield
7	DDC Data (SDA)	15	Ground (For +5V)	23	TMDS Clock+
8	NC	16	Hot Plug Detect	24	TMDS Clock-

3.2.2 DIP Connector
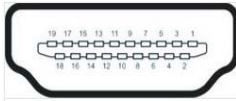
Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS Data 2+	9	TMDS Data 0-	17	DDC/CEC Ground
2	TMDS Data 2/4 Shield	10	TMDS Clock+	18	+5V Power
3	TMDS Data 2-	11	TMDS Clock- shield	19	Hot Plug Detect
4	TMDS Data 1+	12	TMDS Clock-		
5	TMDS Data 1/4 Shield	13	CEC		
6	TMDS Data 1-	14	Reserved		
7	TMDS Data 0+	15	SCL		
8	TMDS Data 0/4 Shield	16	SDA		

3.2.3 DP Connector
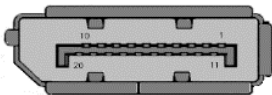
| Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	ML0(p)	6	ML1(n)	11	GND	16	GND
2	GND	7	ML2(p)	12	ML3(n)	17	AUX(n)
3	ML0(n)	8	GND	13	GND	18	HPD
4	ML1(p)	9	ML2(n)	14	GND	19	Re-PWR
5	GND	10	ML3(p)	15	AUX(p)	20	PWR

4 Connection and quick start

Note: Be sure that the power switches of both the computer and the monitor are OFF.

4.1 Connection

Connect all cables to the corresponding connectors as shown in the following figure.
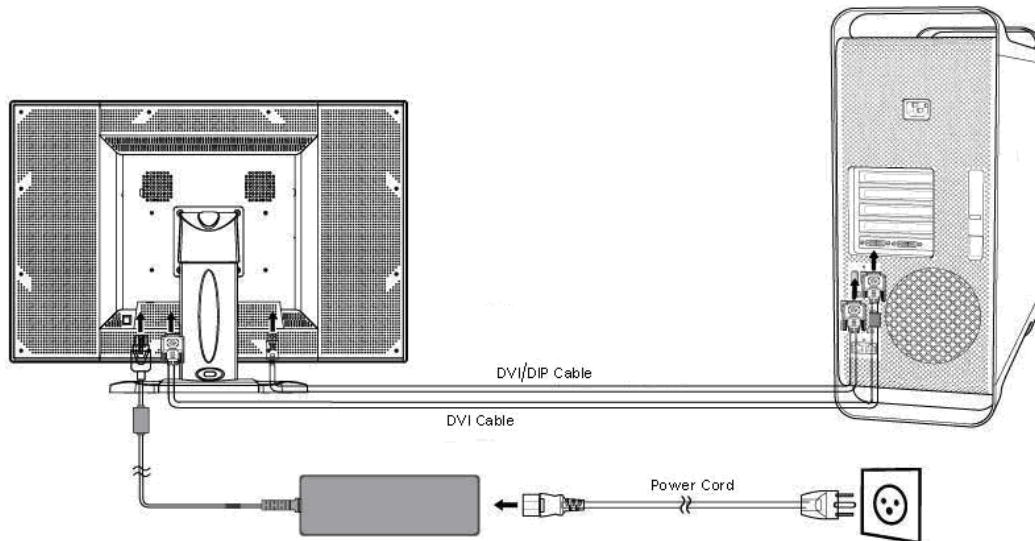
4.2 Adjust the height, position and angle of the monitor
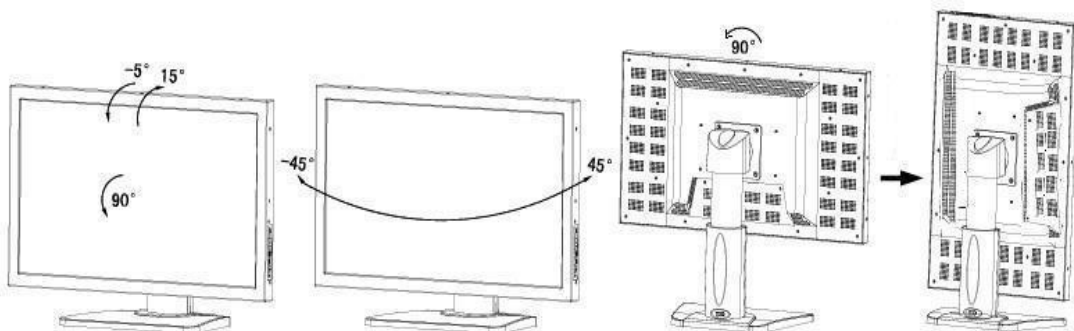
When adjusting, please hold the middles of both sides of this monitor and rotate slowly.

4.3 Quick start

Turn on the monitor, the power indication LED becomes green. Start the computer or the device, and set the display mode as below.
Resolution: 2560 x 1600, Refresh ratio: 60Hz
If no image is shown in the screen, please refer to the "troubleshooting" to get help.

⚠WARNING

| |
|---|
| **Please use the enclosed power cord to connect the standard power outlet.** Please ensure that the monitor's power plug can be fully inserted into the socket. Make sure the power cord is used within the rated voltage. Or it may result in fire or electric shock. |
| **Equipment must be connected to an outlet that is grounded well.** Or it may result in fire or electric shock. |
| **Adjust the height, position, angle of monitor.** When adjust the monitor, please grasp the middle of both sides of the monitor screen with your hands and move it slowly. |
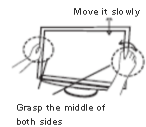
5   Operation
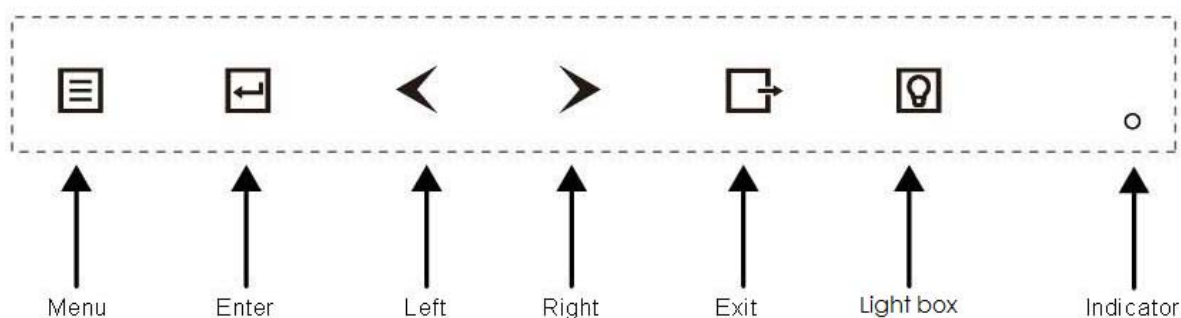
5.1   Power indicator

Color	Display mode
Green	Operating mode
Orange	Standby mode
None	Power off mode

5.2   Shortcuts

Keys	Function
❮ Left	Adjust the backlight.
❯ Right	Adjust the contrast.
💡 Light box	Enter the light box mode.

5.3   Keys function

Keys	Function
▤ Menu	Activate the menu and move to the next column.
↵ Enter	Confirm the choice.
❮ Left	Decrease values.
❯ Right	Increase values.
🡒 Exit	Exit from menu.
💡 Light box	Enter the light box mode.

5.4 OSD Menu

All adjustments and settings for OSD menu are listed in the following table.

Menu	The Second Level Menu	The Third Level Menu	Description
Input	Main input	DVI1, DP	Select the main input. (The specific situation, please according to what you get.)
	PIP Mode	On(PIP input: DIP, DP, DVI2) Off	Select Dual screen/ Single screen display
	PIP Input	DVI1,DVI2,DIP,DP	Select the PIP input(Valid when PIP mode is On)
Image	Brightness	0-100	Adjust the brightness.
	Contrast	0-100	Adjust the contrast.
	Saturation	0-100	Adjust the saturation(Valid for video input only)
	Gamma	DICOM 350 DICOM 400 DICOM 450 DICOM 500 DICOM 550 DICOM 600 DICOM 650 DICOM 700 CAL,Native,1.8, 2.0, 2.2, CIE, User1, User2	Select the gamma(CURVE).
	Color Temp	5500K 6500K 7500K 8500K 9300K 10000K User	Select the color temperature.
	Aspect Ratio Aspect Ratio(L)	Full screen Native Mode	Select the width height ratio for the main input.
	Aspect Ratio(R)	Full screen Native Mode	Select the width height ratio for the subsidiary input.
Setup	Language	English 中　文 Español Português	Select OSD language.
	OSD Position	Center Bottom-Right	Select the position of OSD.
	LightBox Option	Full Left	Select the option of Lightbox

		Right	
	Auto Scan Input	Off On	On-If the current selection signal is not input, the monitor will automatically identify other signal input. Off-If the current selection is not input, the monitor will not automatically identify other signal input.
	Amb Light Ctrl	Off On	Select the environmental brightness control switch.
	2Hour reminder	Off On	If the option is on, the monitor will remind user in two hours.
	Factory reset	>>>	Restore the factory settings.
Status	FW version Main input Main format PIP input PIP format	The information of firmware version, main input, main format and subsidiary input is shown.	

6 Technical specification

Monitor characteristics:	
Screen technology	TFT, color, LED screen, anti-glare, hard coating
Active screen size (diagonal)	30″
Active area (H x V)	641.28(H) x 400.80(V) (Typ.)
Aspect ratio (H:V)	16:10
Pixel spacing	0.2505mm (H) x 0.2505mm (V)
Pixel arrangement	10-bit, RGB stripe arrangement
Resolution	2560 x 1600 Pixes
Contrast ratio	700:1 (min.), 1000:1 (typ.)
Viewing angle (CR > 10)	Horizontal: 178° (typ.)
	Vertical: 178° (typ.)
Screen Luminance	700 cd/m^2 (typ.)
Refresh rate	60 Hz
Backlight	LED
Lifetime of backlight	50000 hours
Response time (gray to gray)	12ms (typ.)
Color imaging	Yes
Color support	1,073,741,824 color
Power supply:	
Power connection	C42W+ Power cord connector with Adapter
voltage	DC 24V
Current	<7 A
Power consumption	160W (Max.)
Power saving mode	< 15W
Inputs/outputs:	
input	DVI1: Dual link DVI; DVI2: single link DVI; DP, DIP, USB1,USB2
RJ45	Service of software update

Dimension:	
Without packing (W x H x D)	699.3 mm (W) x 512.9 mm (H) x 251.4 mm (D)
With packing (W x H x D)	814 mm (W) x 591 mm (H) x 304 mm(D)
Weight:	
Wet weight	14±0.5 kg
Gross weight	18±0.5 kg
Safety regulations:	
Safety standards	IEC/EN 60601-1:2005
Protection class	Protection class I
Degree of protection	IP20
Conformity	CE according to MDD 93/42/EEC (Class I)
Electromagnetic compatibility:	
Noise immunity/interference emissions	IEC/EN 60601-1-2:2007

7 Timing

DP/DVI input signal format

Video Formats	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)
720 x 400	31.5	70.1	28.3
640 x 480	31.5	59.9	25.2
800 x 600	37.9	60.3	40.0
1024 x 768	48.4	60.0	65.0
1280 x 1024	64.0	60.0	108.0
1600 x 1200	75.0	60.0	162.0
1920 x 1080(RB)	67.5	60.0	148.50
1920 x 1200(RB)	74.0	60.0	154.0
2048 x 1536(RB)	94.7	60.0	209.25
1280 x 1600(RB)	98.7	60.0	134.25
2560 x 1600(RB)	98.7	60.0	268.5

8 Cleaning and Disinfection

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

 Note:
Be sure to unplug the power cable from the machine when cleaning your LCD monitor.
Take care not to use any hard or abrasive material to scratch the screen.
Use a soft damp microfiber cloth with a small amount of recommended cleaning agent to remove the dust, fingerprint and grease etc. from screen or housing parts.
Make sure that liquids do not permeate the machine, if so, that may result in an electric shock or fault in the device.
The screen is extremely sensitive to mechanical influences, so any scratches, shocks, etc. should be avoided.
Tested disinfectants is only used.
If a cleaning agent is sprayed directly onto the screen surface, use a microfiber cloth to remove drops which run down before they reach the edge of the panel.
Wipe off liquid drop immediately. Discoloration can be caused or calcium deposits can be formed on the surface due to contact with liquids over a longer period.

Cabinet
To remove stains, use a soft cloth lightly moistened with a mild detergent solution.
Do not spray wax or cleaner directly into the cabinet. (For details, refer to the manual of the PC.)

LCD Panel
The LCD surface can be cleaned with a soft cloth, such as cotton or lens paper.
If necessary, use part of damp cloth (to improve its cleaning ability) to remove Stubborn stains.

9 Troubleshooting

If a problem persists even after applying the suggested remedies, contact a dealer.

Problems	Points to Check With Possible Solutions
1. No picture Indicator status: Off	Check that the power cord is correctly connected. If the problem persists, turn off the monitor power for a few minutes, then turn it back on and try again.
Indicator status: Green	Check the <Backlight> shortcut key setting.
Indicator status: Orange	Try pressing the keys on the computer keyboard or clicking the mouse。
2. The screen is too bright or too dark.	Adjust <Backlight>shortcut key (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer.)
3. After image phenomena appear	- Make sure that whether you have used the screen saver or timer when displaying the same image for extended periods of time or not. - Afterimages are particular to LCD monitors. Avoid displaying the same image for extended periods of time.
4. The screen has defective pixels.	This is due to the characteristics of the panel itself, and not the LCD product.
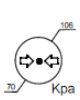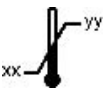
10 Appendix

10.1 Markings and symbols

The markings and symbols on the monitor, power supply and packing have the following meanings (nonrestrictive list).

⚡	Alert electrical hazard
🚫	Indicates a prohibited action.
(WEEE symbol)	Indicates this device must not be thrown in the trash but must be recycled, according to the European WEEE (Waste Electrical and Electronic Equipment) directive
FC	Symbol means complied with Federal Communications Commission.
c(UL)us	Indicates the device is approved according to the UL Recognition regulations
(CCC S&E)	Indicates the device is approved according to the CCC regulations
(BSMI)	Indicates the device is approved according to the BSMI regulations
CE	CE marking (EU conformity mark).
(CCC)	CCC marking, in accordance with for Chinese national regulations.

	Marking according to ACPEIP (China-RoHS) (name plate).
	Indicates the device is approved according to the UL Demko regulations
	Indicates the device is approved according to the VCC regulations
	Indicates the device is approved according to the KC regulations
	Indicates the USB connectors on the device
	Indicates the Display Port connectors on the device
	Warning: dangerous voltage
	Indicates Direct Current (DC)
	Indicates Alternating Current (AC)
	Stand-by
	Symbol for "Caution, observe accompanying documents". (name plate)
	"On" symbol (voltage) (power switch)
	"Off" symbol (voltage) (power switch)

	Input for service calls (PS2 socket)
	Symbol for "Authorized service personnel only"
	Symbol for date of production for medical products.
SN	Indicates the device serial no.
	Consult the operating instructions
	Symbol means refer to instruction manual.
	This end up.
	Keep dry.
	Fragile, handle with care
3	The Max. stack quantity is 3.
	Transport air pressure: 70 – 106 kPa
	Transport humidity: 5 - 95% (non - condensing)
	Indicates the temperature limitations[1] for the device to safely operate within specs.

10.2 Conformity declaration

This equipment is in conformity with the provisions of the CCC standard.

This equipment satisfies the following two conditions:

(1) The device will not bring dangerous interference;

(2) The device will not be influenced by outer interference and cause unpredictable results.

1. To avoid interference with radio or TV receiving, please use the power adapter and cable matched; Use other cable and power adapter may interfere the other electronic equipment;

2. This equipment has passed the standards of CCC; the device will have a wireless electromagnetic wave, incorrect installation and using will cause interference with wireless communication systems.

3. We don't guarantee that the equipment will never produce interference when it is installed. You can judge whether the equipment can disturb radio or the television reception by the way to switch this equipment power source. Please do the following steps if there is interference to the other devices when running this equipment:

● Adjust the angle and position of the radio or the television reception antenna;
● Increase the distance between this equipment and the radio or the television reception antenna;
● This equipment doesn't share the same the power input circuit with the radio or the television reception antenna;
● Please consult the professional person if any problem;

Other ancillary equipment is connected to our monitor must also be passed CCC standards. When configures a medical system, any device is connected to the input or output of the equipment must comply with medical equipment standards IEC 60601-1. If you are unsure, please ask professional technician for help.

10.3　RoHS information

根据 SJ/T11364-2006《电子信息产品污染控制标识要求》，特提供以下关于污染控制方面的信息。
The following product pollution control information is provided according to SJ/T11364-2006
Marking for Control of Pollution caused by Electronic Information Products.

电子信息产品污染控制标志说明
Explanation of Pollution Control Label

该标志表明本产品含有超过中国标准SJ/T11363-2006《电子信息产品中有毒有害物质的限量要求》中限量的有毒有害物质。标志中的数字为本产品的环保使用期限，表明该产品在正常使用条件下，有毒有害物质不会发生外泄或突变，用户使用该产品不会对环境造成严重污染或对其人身、财产造成严重损害。单位为年。

为保证所申明的环保使用期限，应按照产品手册中所规定的环境条件和方法进行正常使用，并严格遵守所规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard SJ/T11363-2006 Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products. The number in the symbol is the Environment-friendly Use Period(EFUP), which indicates the period during which the toxic or hazardous substances or elements contained in electronic information products will not leak or mutate under normal operating conditions so that the use of such electronic information products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is "Year". In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures. This prodcut must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

部件名称 Component part	有毒有害物质或元素 Hazardous substances'name					
	铅 （Pb）	汞 （Hg）	镉 （Cd）	六价铬 [Cr(VI)]	多溴联苯 （PBB）	多溴二苯醚 （PBDE）
外壳 Outer Shell	○	○	○	○	○	○
液晶显示屏/灯管 LCD Screen/Fluorescent Tube	X	○	○	○	○	○
电路板组件* Circuit Board Assembly	X	○	○	○	○	○
机架、底盘 Housing, Chassis	○	○	○	○	○	○
电源线/连接线 Power Cord/Signal Cable etc.	X	○	○	○	○	○

*：电路板组件包括印刷电路板及其构成的零部件，如电阻、电容、集成电路、连接器等。

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。

X：表示该有毒物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。但是上表打"X"的部件，符合欧盟RoHS法规要求（属于豁免的部分）。此表所列数据为发布时所能获得的最佳信息。

由于缺少经济上或技术上合理可行的替代物质或方案，此医疗设备运用以上一些有毒有害物质来实现设备的预期临床功能，或给人员或环境提供更好的保护效果。

*：Circuit board assembly includes PCB, components and parts that it consists of, such as resistors, capacitors, ICs and connectors etc.

○：Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X：Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006

. Data listed in the table represents best information available at the time of publication.

. Applications of hazardous substances in this medical device are required to achieve its intended clinical uses, and/or to provide better protection to human beings and /or to environment, due to lack of reasonably (economically or technically) available substitutes.