32inch Medical LCD Display

U320SE

User Manual

Thank you for purchasing our monitor. Before operating the monitor, please read this manual carefully and keep it properly for future reference.

WARNING

This is a Class A product. In a residential environment, this product may cause radio interference. In such cases, the user may be required to take practical measures to eliminate the interference.

1.Overview

This 32 inch 4K LCD Monitor is specially designed for modern endoscopic surgery. Utilizing advanced display calibration technology, it can intelligently adapt to and significantly enhance the image quality of various endoscope systems. While preserving the true color of tissues, it effectively solves common clinical issues such as blurred edges, cavity fogging, and insufficient depth of field. On the basis of accurately reproducing tissue colors, it greatly improves overall image clarity and detail levels. The monitor can also automatically enhance vascular contours to assist surgeons in precise intraoperative identification. Combined with high brightness, high contrast, and accurate color reproduction, it ensures stable, clear, and latency-free surgical imaging even under complex operating room lighting conditions.

The 32 inch 4K LCD Monitor adopts a fully laminated protective glass structure with anti-glare protection design, effectively preventing dust and water intrusion. The front panel protection level reaches IP65, preventing contamination from dust and liquids during surgical procedures. The display panel uses LED backlighting, offering safety, stable brightness performance, and ultra-long service life. The touch-button design enables users to switch functions more easily and conveniently.

Featuring advanced display calibration technology, the monitor supports Ultra HD 4K resolution (3840 × 2160) and 60Hz signal formats. The signal interfaces support connections with various types of external devices. Every unit undergoes strict quality inspection and testing before leaving

the factory, ensuring all performance parameters comply with national standards.

Before installing and using the product, please read this manual carefully and follow all instructions to ensure safe operation and prolong the service life of the monitor.

2. About This User Manual

This manual describes the functions and proper usage methods of this monitor. To ensure clarity and conciseness, it may not include every detailed piece of product information.

This manual contains important information necessary to ensure your personal safety and prevent damage to your property. Please carefully read all safety and product information to ensure safe and effective operation of the equipment.

For future reference and proper use, please keep this manual in a safe place.

Any updates or changes to the contents of this manual may be made without prior notice.

3. Important Statement

The company reserves the right to modify this manual and related materials. The manufacturer and its distributors shall not be held responsible for any malfunction, property damage, or personal injury caused by operations or maintenance procedures not specified in this manual, improper operation of the equipment, or failure to follow the

precautions stated herein.

Please keep all documents properly. If you have any questions, please contact our customer service department or your local distributor.

Product Features

- High Brightness and Contrast

This monitor adopts a high-brightness LCD panel to deliver clearer images. Even in brightly lit environments, users can clearly observe endoscopic images. The high contrast ratio provides better image depth, enabling quick localization of lesions while clearly displaying even tiny abnormalities.

- Accurate Color Reproduction

The monitor features a unique color reproduction technology that dynamically compares image color levels with internationally standardized color spaces and curves stored in display memory, ensuring optimal image consistency and highly accurate color reproduction.

- One-Touch Mode Switching

The monitor supports one-touch switching and includes more than ten built-in display modes matched to the display curves of major endoscope system brands. Users can switch to the most suitable color and brightness settings for the connected system with a single touch, without complicated parameter adjustments.

- Automatic Power-On Function

This monitor pioneers automatic power-on/off technology. When there is no signal input, the system automatically enters power-saving mode. Once a signal is detected, the system immediately powers on

automatically. Users no longer need to manually operate the monitor power switch, greatly simplifying operation and reducing energy consumption.

- Nano Antibacterial Coating

The monitor is equipped with a nano antibacterial coating that helps inhibit bacterial growth on the enclosure surface. This coating supports routine hygiene practices by helping maintain a cleaner surface and reducing the frequency of cleaning and disinfection.

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1.Overview Introduction

This LCD monitor is a new-generation stable Ultra HD medical endoscopic display designed as a terminal image output device. It features clear images with rich detail and excellent image depth. Accurate color reproduction ensures image authenticity, enabling users to make more precise diagnoses and judgments of lesions.

The product provides multiple image modes for users to select from, supporting one-touch cyclic switching for simple and convenient operation. It is especially suitable for hospitals and medical environments with high requirements for display stability and image quality.

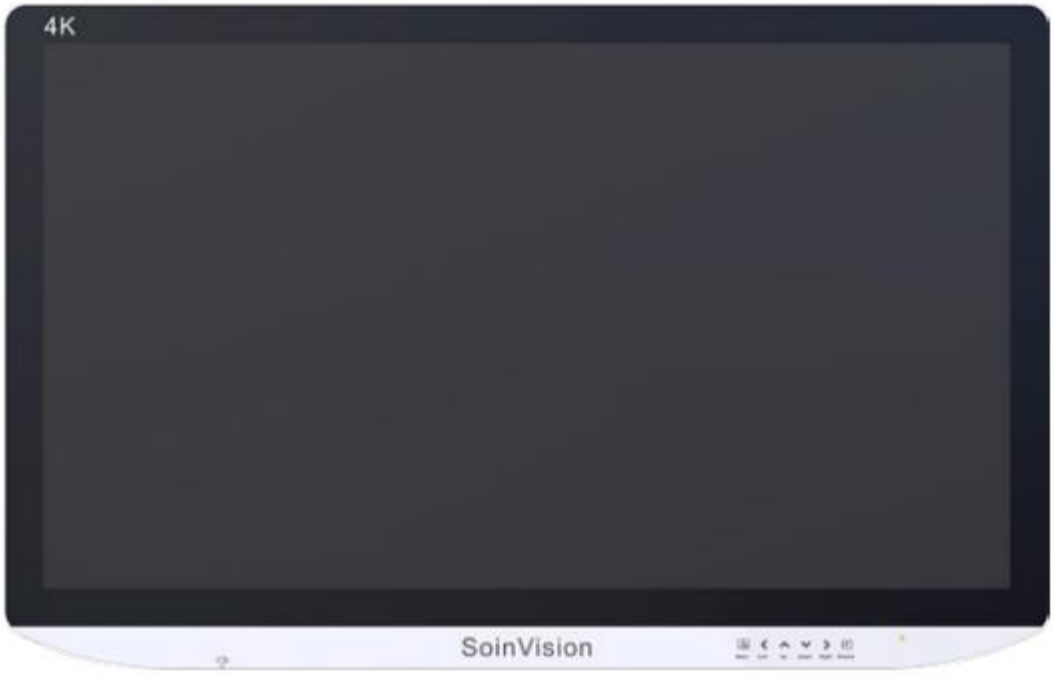


Fig 1 Front View

Fig 2　Rear View of the Product

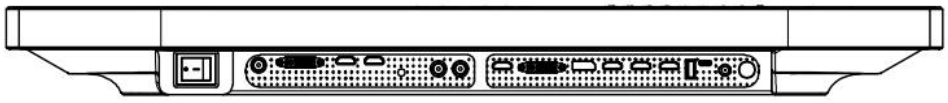
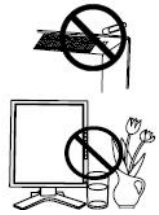


Fig 3 Product Interface Panel View

2.Safety Information

To ensure personal safety and proper maintenance, please carefully read this section and all warning labels on the equipment.

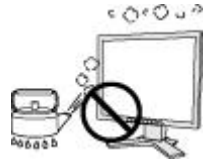
⚠ Warning

If the device starts to smoke, emits a burning smell, or produces unusual noise, immediately disconnect the power supply and contact your dealer for assistance. Using a malfunctioning device may result in fire, electric shock, or equipment damage.
Do not disassemble the cabinet or modify the equipment. Disassembling or modifying the equipment may result in fire, electric shock, or equipment damage.
All servicing must be carried out by qualified service personnel. Do not attempt to repair this monitor yourself. Disassembling or modifying the equipment may result in fire, electric shock, or equipment damage.
Keep small objects and liquids away from the equipment. If small objects accidentally enter the cabinet through ventilation openings, or if liquid spills into the cabinet, fire, electric shock, or equipment damage may occur. If any object or liquid enters the cabinet, immediately unplug the power cord. The equipment must be inspected by qualified service personnel before being used again. 
This monitor can remain powered on for extended periods, but prolonged operation may reduce its service life.

Please place the equipment on a firm and stable surface.
If the equipment is placed on an unstable surface, it may fall and cause personal injury or equipment damage. If the equipment falls, immediately disconnect the power supply and contact your dealer for assistance. Do not continue using a damaged device, as this may result in fire or electric shock.

Please place the equipment in an appropriate location. Otherwise, it may result in fire, electric shock, or equipment damage.

- Do not place the equipment outdoors.
- Do not place the equipment inside vehicles (ships, aircraft, trains, automobiles, etc.).
- Do not use the equipment in flammable atmospheres.
- Do not place the equipment in dusty or humid environments.
- Do not place the equipment where steam can directly contact the screen.
- Do not place the equipment near heating devices or humidifiers.



To avoid the risk of suffocation, keep plastic packaging bags away from babies and children.

Please use the supplied power cord and connect it to a standard power outlet.
Ensure that the monitor power plug is fully inserted into the socket. The power supply voltage must remain within the rated voltage range specified for the power cord; otherwise, fire or electric shock may occur.

When disconnecting the power cord, hold the plug firmly and pull it out.
Pulling the power cord itself may damage the cable and cause fire or electric shock.

The equipment must be connected to a properly grounded power outlet.
Failure to do so may result in fire or electric shock.

Handle the power cord carefully.

- ♦ Do not place the power cord under the equipment or other heavy objects.
- ♦ Do not pull, twist, or excessively bend the power cord.

If the power cord becomes damaged, stop using it immediately. Using a damaged power cord may result in fire or electric shock.

Handle the power cord carefully.

Do not place the power cord under the equipment or other heavy objects.
Do not pull, twist, or excessively bend the power cord.
If the power cord becomes damaged, stop using it immediately. Using a damaged power cord may result in fire or electric shock.

Never touch the plug or power cord during thunderstorms.

Touching the plug or power cord during lightning storms may result in electric shock.

Do not touch a damaged LCD panel with bare hands.

If liquid crystal leaks from the panel and comes into contact with the eyes or mouth, it may cause toxic effects. If the liquid crystal comes into contact with skin or any part of the body, wash thoroughly immediately. If any symptoms occur, consult a physician.

Please follow local regulations for safe disposal of waste materials.

Caution

Handle the equipment carefully during transportation.

Before moving the equipment, disconnect the power cord and all cables. Moving the equipment while cables remain connected is dangerous and may cause injury.

When carrying the equipment, hold the bottom of the monitor firmly with both hands and ensure the screen faces outward before lifting.

If the equipment falls, it may result in personal injury or equipment damage.

Do not block the ventilation openings on the cabinet. Do not place any objects over the ventilation openings. Do not install the equipment in an enclosed space. Do not use the equipment in a horizontal or upside-down position. Blocking the ventilation openings will prevent proper airflow and may result in fire, electric shock, or equipment damage.
Do not touch the power plug with wet hands. Doing so may result in electric shock
Clean the area around the power plug regularly. Dust, water stains, or oil accumulation on the plug may result in fire.
Disconnect the power plug before cleaning. Cleaning the equipment while it is connected to power may result in electric shock.
If the equipment will not be used for an extended period, turn off the power switch and unplug the power cord from the outlet to ensure safety and save energy.

⚠ About this monitor

If the monitor is moved from a cold environment into a warm room, or if the room temperature rises rapidly, condensation may form inside or outside the monitor. In such cases, do not turn on the monitor until the condensation has completely disappeared, otherwise damage to the monitor may occur.
To avoid brightness changes caused by prolonged use and to maintain stable brightness performance, it is recommended to operate the monitor at a slightly lower brightness setting.
The screen may contain defective pixels that appear slightly brighter or darker than surrounding pixels. This is an inherent characteristic of display panels and is not related to product quality.
The LCD panel backlight has a limited service life. If the screen becomes dim or starts flickering, please contact your dealer.

Do not press forcefully on the display panel or the edges of the frame, as this may damage the screen.
Do not scratch or press the display panel with sharp objects such as pencils or pens, as this may damage the screen. Do not wipe the display panel with tissue paper, as this may cause scratches.
After displaying the same image for an extended period, an afterimage may remain when switching to another image. Use a screen saver or timer function to avoid displaying the same image continuously for long periods.
This product is not supplied with a wall mount bracket. Users may purchase a compatible wall mount separately if required. The compatible wall mount should support VESA mounting hole patterns of 100 × 100 mm or 100 × 200 mm and use four M4 screws for installation. For safe installation and operation, the wall-mounted height should not exceed 2 meters.

3.Interface Connections and User Adjustment

3.1 Display Interfaces

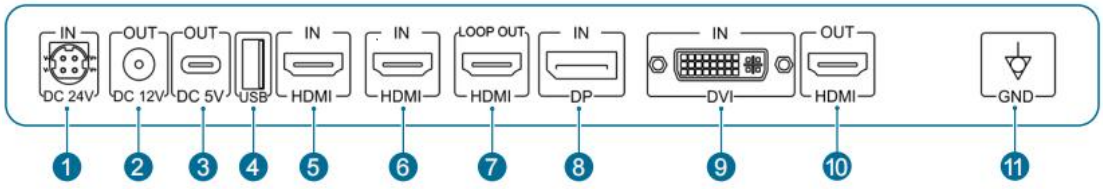


Fig 4 Front View of Display Interface Panel

①DC24V IN

②DC12V OUT

③DC 5V OUT

④USB-A

⑤ HDMI IN

⑥ HDMI IN

⑦ HDMI OUT(LOOP OUT)

⑧DP IN

⑨DVI-IN

⑩HDMI OUT(Clone OUT)

⑪ EQP GND

⚠ **NOTE：**

The DC input power is 24V. Please connect the supplied power adapter according to the interface labeling on the device.

3.2 User Adjustment

3.2.1Button Function Description

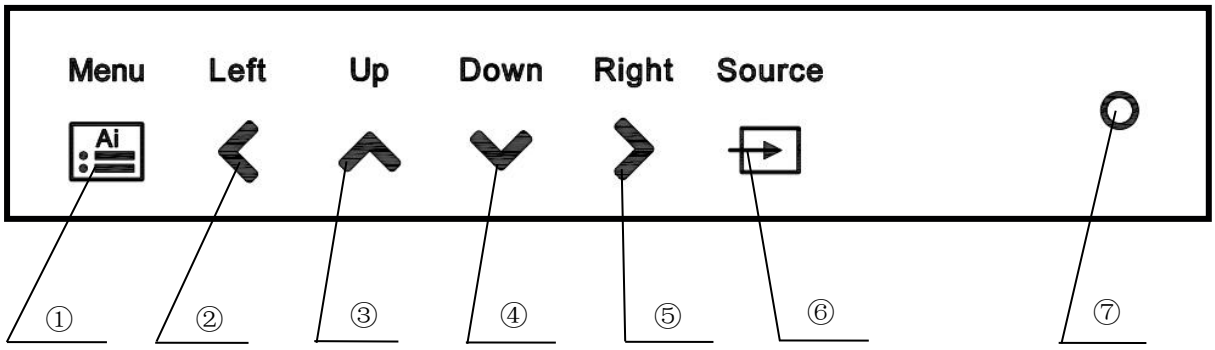


Fig 5 Function Button Layout

① Menu button;

② Left / Exit button;

③ Up / “+” button;

④ Down / “–” button;

⑤ Right / Confirm button;

⑥ Input Source button;

⑦ Indicator light;

3.2.2 Button Function Description

NO	Button	Function
1	Menu	Menu key, used to display the main menu.
2	Left	Left / Exit key. When the menu interface is displayed, press this key once to exit the menu.
3	Up	Up key, used to move the selection upward.
4	Down	Down key, used to move the selection downward.
5	Right	Right / Confirm key. When the menu is displayed, after selecting an option, press this key to enter the next submenu or confirm the selection.
6	Signal Input Selection	Shortcut key for signal input selection and exit function. Press once to display the signal source list; use the Up/Down keys to select a channel, then press the Right key to confirm.
7	Indicator Light	Status indicator: green light indicates normal operation with signal input; red light indicates no input signal.

3.2.3 Display Button Operation and Adjustment Interface

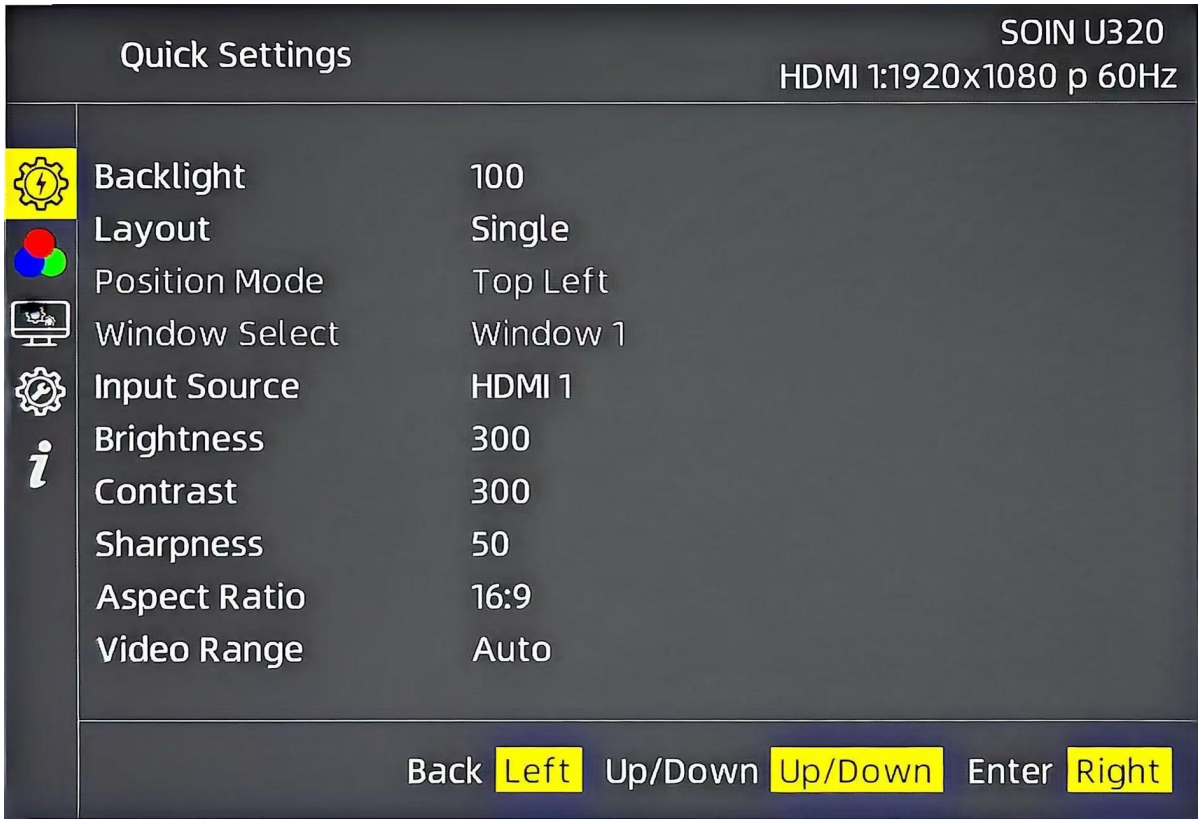


Fig 6 Quick Settings Menu Interface Diagram

3.2.4 Menu Function Description

Quick Settings	Backlight	0–100 (Factory default: 50)
	Layout	Single / Quad / Side 3-split / Bottom 3-split / PIP / PBP
	Position Mode	Top-left / Top-right / Bottom-left / Bottom-right
	Window Selection	Window 1 / Window 2 / Window 3 / Window 4
	Input Source	HDMI1/HDMI2/DP/DVI
	Digital Brightness	0-600 (Factory default: 300)
	Contrast	0-600 (Factory default: 300)
	Sharpness	0-100 (Factory default: 50)
	Aspect Ratio	1:1/16:9/4:3/5:4
	Video Range	Auto / Full / Limited
Color Settings	Window Selection	Window 1 / Window 2 / Window 3 / Window 4
	Color Mode	Standard / BT.709 / BT.2020 / DICOM / PQ_BT.2100 / HLG_BT.2100 / User 1 / User 2 / User 3
	Color Space	ITU-R BT.709/DCI-P3/ITU-R BT.2020
	Gamma	Gamma1.8/Gamma1.9/Gamma2.0/Gamma2.1/Gamma 2.2/Gamma2.3/Gamma2.4/Gamma2.5/Gamma2.6/LIN EAR/DICOM/SMPTEST2084(PQ)/ITU-R BT.2100(HLG)
	Color Temperature	9300K/8500K/6500K/User

	Red Gain	Adjustment Range: 0–600 (Factory Default Setting: 300) Note: This setting is available only when the Color Temperature is set to User Mode.
	Green Gain	Adjustment Range: 0–600 (Factory Default Setting: 300) **Note: This setting is available only when the Color Temperature is set to User Mode.**
	Blue Gain	Adjustment Range: 0–600 (Factory Default Setting: 300) **Note: This setting is available only when the Color Temperature is set to User Mode.**
Advanced Settings	Freeze	Off / On
	Flip Mode	Off / Horizontal Flip / Vertical Flip / Both
	Loop-out Selection	HDMI
	AI Function	Off / On **Note: This function is not available on this model.**
	AI Level	0-10 **Note: This function is not available on this model.**
General Settings	OSD Lock	Off / Full Lock
	Menu Language	English，Chinese
	Menu Position	Top-left / Top-right / Center / Left / Right / Bottom-left / Bottom-right
	Menu Timer	10s / 30s / 60s
	Power Indicator	On / Off
	USB Upgrade	No / Yes
	Factory Reset	No / Yes
Information	Software Version	XX.X.X-XXXXXX
	Hardware Version	XX.X-X
	Serial Number	XXXXXXXXXXXXXX
	Window Resolution	Displays current input channel resolution

3.2.5 Display Button Shortcut Function Adjustment

Shortcut Key	Shortcut Menu Function	Factory Default
Left	Backlight brightness pop-up adjustment; use UP/DOWN keys to adjust value	50
Right	Gamma quick switch; adjust using UP/DOWN keys	Gamma2.2
Source	Input source selection pop-up; use UP/DOWN keys to switch signal channel	HDMI1

4.Power Supply and Signal Connection

4.1 Signal Cable Connection

Insert one end of the corresponding signal cable into the matching signal interface of the monitor (for example, connect the HDMI cable as shown in Figure 1) and secure it properly. Then connect the other end of the signal cable to the signal source output, such as a PC computer or other medical equipment.

4.2 DC Power Connection

Connect the Mini DIN plug of the power adapter to the power input port of the monitor. Please ensure that the DC voltage of the adapter matches the input voltage specified on the monitor label, and make sure the plug is inserted in the correct direction; otherwise, the equipment may be damaged. Then connect one end of the AC power cord to the adapter's AC input socket, and plug the other end into a power outlet.

4.3 Signal Interface Switching and Connection

If the monitor is connected using an HDMI signal cable, after powering on, the monitor will automatically detect the current signal interface and display the corresponding signal image. If the monitor is switched to another input port that does not correspond to the connected signal source, a "No Signal" message will appear.

4.4 Common Function Adjustments

Common functions are as follows:

1. Signal Source Selection

Press the Source button to display the input source menu, then select the desired input source.

2.Brightness Adjustment

Press the Left button to display the backlight adjustment menu. Use the Up and Down buttons to increase or decrease the display brightness.

3.Gamma Switching

Press the Right button to open the Gamma shortcut menu. Use the UP/DOWN button to select the desired Gamma mode.

4.Signal Source Switching

Press the Source button to open the signal source menu. Use the UP/DOWN button to select the corresponding input interface.

5.User Maintenance

Please keep the display device clean and ensure proper ventilation. High voltage components are contained inside the equipment. Non-professionals should not open the enclosure without authorization. An anti-tamper label is attached to the bottom of the enclosure. If the label is damaged, free repair or replacement service will not be provided.

5.1 Troubleshooting

Problem	Possible Solutions
No image displayed	a. Check whether the power plug is properly connected. b. Check whether the signal source is operating normally. c. Check whether the signal cable is intact and properly connected.
Abnormal image display	a. Check whether the signal source format

	is correct. b. Adjust settings through the OSD menu.

5.2 Cleaning Requirements

Regular cleaning is recommended to maintain the monitor's appearance and extend its service life.

5.2.1 Cleaning Precautions

1.Clean the product in an environment with sufficient natural light to clearly identify dust and contaminants.

2.Before cleaning, please turn off the product power switch; otherwise, there is a risk of electric shock or fire.

3.When cleaning the outer casing of the monitor or the LCD screen surface, use a soft damp cloth. Do not spray cleaning agents or water directly onto the product surface, as this may cause discoloration or structural deformation.

4.Avoid spraying cleaning agents directly onto the LCD screen surface. Since the LCD surface contains a polarizing film, liquid may penetrate and damage it.

5.Do not use non-specialized cleaning agents, as some solvents may corrode the polarizing film.

6.When cleaning the power plug pins, use a clean and dry cloth; otherwise, it may cause electric leakage or fire.

7.Do not use benzene, alcohol, thinners, mosquito repellents, lubricants, or other chemical agents when cleaning the monitor, as they may damage the surface appearance and quality.

5.2.2 Cleaning Supplies

1.Use an air blower (such as a rubber dust blower or ear syringe) to remove dust and loose particles from the LCD screen surface.

2.Clean the screen with absorbent cotton, a soft, lint-free cloth, or a cloth specifically designed for LCD screens.

3.Slightly dampen the cleaning cloth with clean water or an LCD screen cleaning solution, then gently wipe the screen. Do not spray any liquid directly onto the LCD screen.

4.Some LCD cleaning solutions may require dilution before use. Please follow the manufacturer's instructions for the cleaning solution.

5.2.3 Cleaning Method

1)Use an air blower to remove dust from the LCD surface to ensure no coarse particles remain.

2)Wipe from the center of the screen outward using a slightly damp cloth. For stubborn stains, use a cloth dampened with LCD-specific cleaning solution.

5.3 Disclaimer

The following situations are not covered by the warranty:

(1)Product malfunction caused by incorrect or improper operation;

(2)Modification or replacement of product structure or design;

(3)Scratches, damage, or breakage of the LCD screen during secondary transportation, installation, or use;

(4)Damage to the outer surface of the display terminal during secondary transportation, installation, or use;

(5)Unauthorized disassembly of the display terminal by the user.

5.4 Repackaging for Transportation

When repackaging for transportation, please follow the instructions below:

1.The returned equipment must be labeled, including the user organization or individual name, address, telephone number, device model, serial number, and fault description.

2.Whenever possible, use the original packaging box. If the original packaging is not available, please package the device properly to avoid damage or loss during transportation.