

# **42” User’s Manual**

**FP4203-MED**

**GRN4212AMI**

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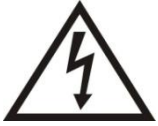
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# Important Safety Instructions

## Warning and Caution

### Warning



To prevent fire or shock hazards, do not expose this unit to rain or moisture. Also, do not use this unit's polarized plug with an extension cord receptacle or other outlets unless the prongs can be fully inserted.



Refrain from opening the cabinet as there are high voltage components inside. Refer servicing to qualified service personnel.

### Caution

- ◆ To prevent the risk of electric shock, make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the AC outlet. Do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.
- ◆ To avoid the risk of electric shock, this equipment must only be connected to a supply main with protective earth.

### Intended Use

- ◆ The intended use of the Medical Image Display Device produced by our company is to provide medical image display. The image displayed on this medical device, transmitted signal from general/medical data, is for reference purpose only, not for diagnostic purpose. It is a reusable medical device.
- ◆ Equipment connected to the analog or digital interfaces must comply with the respective IEC standards (e.g. IEC 60601-1 for medical equipment). Furthermore all configurations shall comply with the current version of the standard for SYSTEMS IEC 60601-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore responsible that the system complies with current version of the requirements of the system standard IEC 60601-1. If in doubt, consult the technical service department or your local representative."

### Caution

- ◆ Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".
- ◆ This device is intended to be used (1) outside the "patient vicinity" area or (2) within the "patient vicinity" to

the patient such as consulting rooms.

- ◆ That SIP/SOPs need to be connected properly and that any unused SIP/SOPs shall not be accessible for the patient to contact in the patient area after the LCD is integrated into a medical system.
- ◆ Suggested text for the notice indication complies with this standard: This Class A digital apparatus complies with Canadian ICES-003. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure.
- ◆ To prevent electric shock, please do not remove cover or any internal components. Refer to a qualified technician for service.
- ◆ Please follow the national guidelines for unit disposal.
- ◆ This product cannot be used for a life-support system.
- ◆ The unit is for exclusive interconnection with IEC 60XXX certified equipment outside of patient environment and IEC 60601-1 certified equipment inside the patient environment.
- ◆ This device complies with EN60601-1, To minimize the interference from other equipment, a minimum 0.5 m distance shall be kept from other potential electromagnetic sources, such as the Cell Phone
- ◆ The GRN42X2AMI series diagnostic displays with a maximum resolution of 1920 ×1080 pixels are intended for reviewing station imaging, or applications in the hospital or medical environment. Featuring an enclosed power supply, OSD menu system, and stand for orientation. The inputs include 15 pin VGA and DVI-D connectors for use with any Plug and Play graphics cards.
- ◆ “This monitor cannot be used in buildings shared by many residents or companies. It must have a distance of 30 m to the boundaries to the premises of the enterprise using this monitor”.

### **Warning**

- ◆ Do not touch a damaged LCD panel directly with bare hands. The liquid crystal which leaks from the panel is poisonous if it enters the eyes or mouth.
- ◆ Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.
- ◆ Do not push or scratch the LCD monitor’s screen. Do not place a heavy object on the LCD monitor’s screen. This may cause the screen to lose uniformity.
- ◆ If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- ◆ If a still picture is displayed for a long time, a residual image may appear. The residual image will eventually disappear.
- ◆ The screen and the cabinet become warm during operation. This is not a malfunction.
- ◆ Avoid keeping a static picture on this monitor, or it may cause a “burn in” image (image retention).

- ◆ “Burn in” image (image retention) is not covered under warranty.
- ◆ The LCD monitor become heat when it’s working, please do not touch the panel and plastic enclosure over 10 seconds, and do not touch the mental enclosure on the back of the LCD monitor over 1 second.
- ◆ This is class A products. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure.
- ◆ No modification of this equipment is allowed.

#### **Notice for this monitor**

- ◆ This product has been adjusted specifically for use in the region to which it was originally shipped. If the product is used outside the region, it may not operate as specified in the specifications.
- ◆ This product may not be covered by warranty for uses other than those described in this manual.
- ◆ The specifications noted in this manual are only applicable for power cords and signal cables specified by us.
- ◆ As it takes about 30 minutes for the performance of electrical parts to stabilize, adjust the monitor 30 minutes or more after the monitor power has been turned on.
- ◆ In order to suppress the luminosity change by long-term use and to maintain the stable luminosity, use of a monitor in lower brightness is recommended.
- ◆ 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.
- ◆ 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 LCD panel has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer.

## Explanation of Graphical Symbols



*This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.*



*This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.*



*Protective earth terminal marked.*



*Main switch ON.*



*Main switch OFF.*



*AC Input.*



*ATTENTION: Consult accompanying document*

When operating the Medical Display with a **240V** AC power source in Europe, use the power cord provided with the monitor. In the UK, a BS approved power cord with a moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cord is not supplied with this equipment please contact your supplier.

When operating the Medical Display with a **240V** AC power source in Australia, use the power cord provided with the monitor. If a power cord is not supplied with this equipment please contact your supplier.

For all other cases, use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

## Safety Logo



*The LCD monitor complies with the 93/42/EEC, EN60601-1, EN60601-2 of related European standards.*



*We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.*



*Authentication sign of Standard Inspection Bureau for U.S.A. Complies with cTÜ Vus ANSI/AAMI ES 60601-1 AND CAN/CSA C22.2 No. 60601-1*



## FCC Information

Use the attached specified cables with the Medical Display so as not to interfere with radio and television reception.

1. The power supply cord you use must have been approved by and comply with the safety standards of U.S.A., and meet the following condition.
  - ◆ Power supply cord : Non shield type, 3-conductor.
  - ◆ Length : 1.8m
  - ◆ Plug shape : U.S.A
2. Please use the supplied shielded video signal cable, VGA signal cable or DVI-D to DVI-D cable. Use of other cables and adapters may cause interference with radio and television reception.

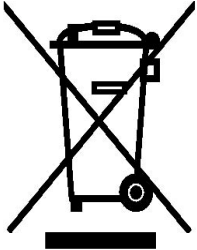
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult your dealer or an experienced radio/TV technician for help.

## Manufacturer's Recycling and Energy Information

### Disposing of your old product

- ◆ Within the European Union



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself.

The mark on electrical and electronic products only applies to the current European Union Member States.

- ◆ Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.

### Classification

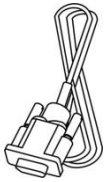
- ◆ Class I
- ◆ No Applied Part.
- ◆ Mode of operation: Continuous Operation

The equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide: Not AP or APG Category:

# Getting Started

## Package Contents

Included with your LCD display are the following items:



1pcs

DVI-D Cable



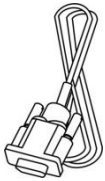
1pcs

Power Cord



1pcs

User's Manual



1pcs

VGA Cable

### **NOTE**

- Remember to save your original box and packing material to transport or ship the display.

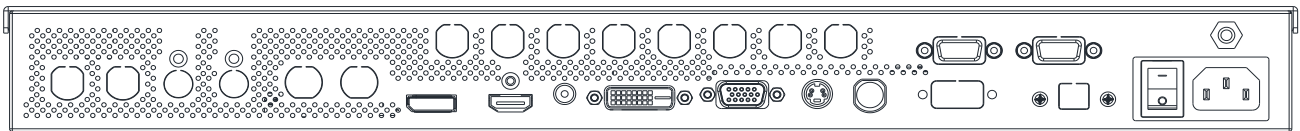
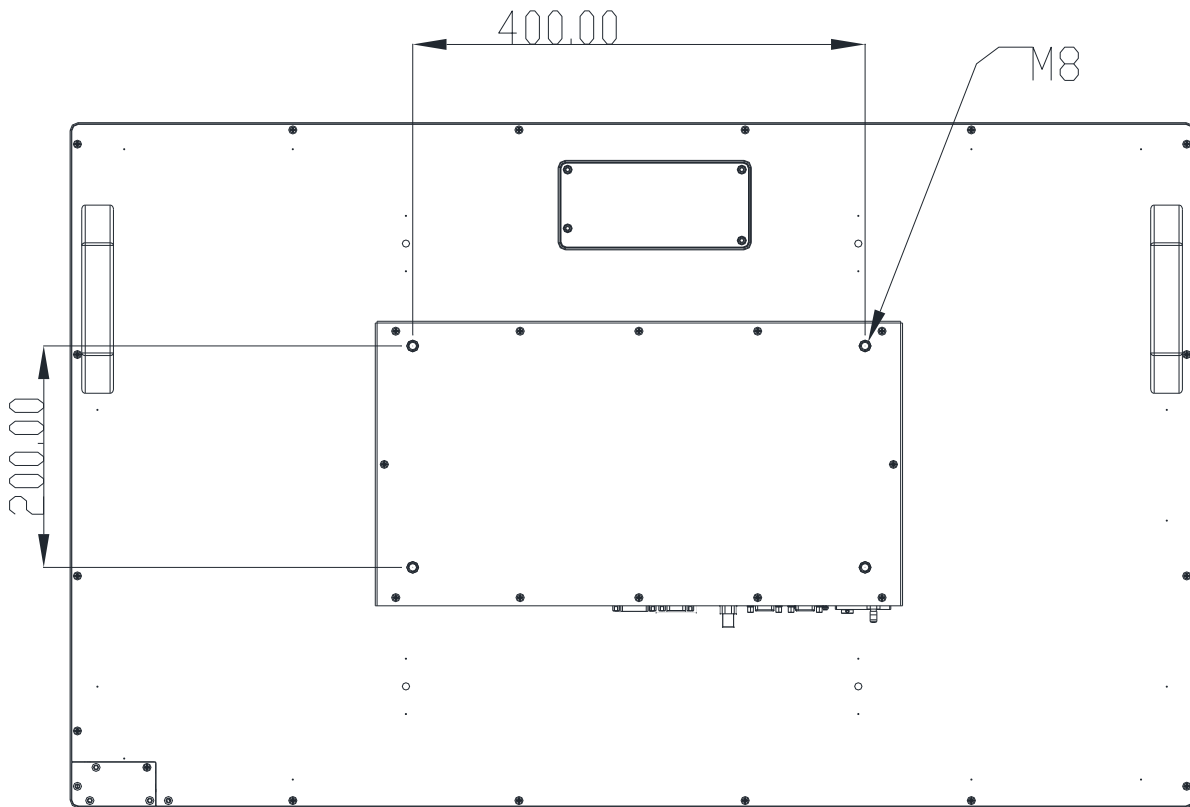
## Front View



1. Power Indicator: The power indicator can be turned off in the Advanced Menu (LED Mode).

Indicator Status	Operation Description
Green	Normal operation
Orange (blinking)	No signal or Power Saving
Orange	DC Power off

## Rear View



1. Main Power: Connect the power cord to the POWER port. Press to turn on or off the display.
2. Connectors: Connect your computer or video devices.

## **Mounting**

The Monitor can be mounted onto the wall or stand.

If you intend to mount the monitor on the wall, we strongly recommend that you use wall mount kits with attached M8X15 screws and can load more than monitor weight, that you ensure it is securely and safely installed.

### **CAUTION**

When mounting the monitor, take care to tighten the retention screws or bolts until fully secure, but do not over tighten. Over tightening the retention screws or bolts may cause them to become stripped, rendering them useless.

## **Wall Mounting Installation**

The Monitor has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M8x15 set at 400 mm x 200 mm apart.

To mount the Monitor onto the wall or stand, please follow the steps below.

Step 1: Select the location on the wall for the wall-mounting bracket. (Listed VESA)

Step 2: Carefully mark the locations of the four screw holes in the bracket on the wall

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them.

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the rear panel of the LCD Monitor and tighten until the screw shank is secured against the rear panel.

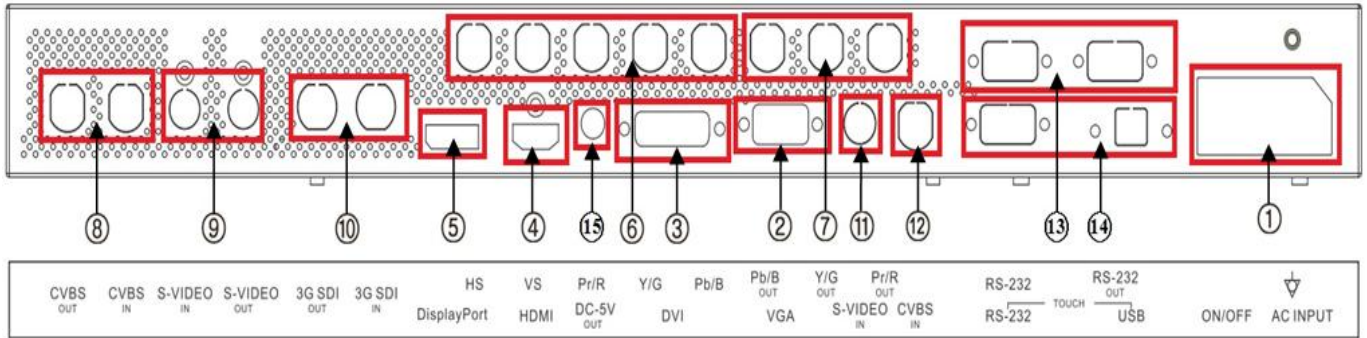
Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes. Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

Step 9: Secure the LCD Monitor by fastening the retention screw of the wall-mounting bracket.

Step 10: Secure the LCD Monitor by fastening the retention screw of the wall-mounting bracket.

## Connector View



No	Name	Connection Type	Remarks
1	Power Switch & AC Input	Power Vacation Switch AC Input	--
2	VGA (RGB) Input	D-Sub 15pin (x1)	Analog PC Connection
3	DVI Input	DVI-I (x1)	Digital Connection
4	HDMI Input	HDMI (x1)	Digital Connection
5	DP Input	DP (x1)	Digital Connection
6	YPbPr/RGBSync Input (Option)	BNC connector (x5)	YPbPr/RGBSync Input x 5
7	YPbPr/RGB Output (Option)	BNC connector (x3)	YPbPr/RGB Output x3
8	CVBS Input & Output (Option)	BNC connector (x2)	Analog composite connection
9	S-Video Input & Output (Option)	4pin Mini Din (x2)	S-Video signal in
10	3G-SDI Input & Output (Option)	BNC connector (x2)	3G-SDI Input x 1, Output x1
11	S-Video Input (Option)	4pin Mini Din (x1)	S-Video signal in
12	CVBS Input (Option)	BNC connector (x1)	Analog composite connection
13	RS-232 Input & Output	D-Sub 9 pin (x2)	Control & Service Connection (Used by third party devices)

14	RS-232 Input & USB I/O (Option)	D-Sub 9 pin (x1) USB Type B (x1)	Touch Panel Control & Service Connection (Used by third party devices)
15	DV 5V OUTPUT	DV 5V OUTPUT	DC 5V/500mA output for power supply of external device

## **NOTE**

- RGBS and Y/Pb/Pr signals may be applied via the BNC connector or the RGB Sync connectors.
- The configuration of the connectors of the display may vary from product to product.

## **Initial Installation**

To attach the LCD monitor to your system, follow these instructions :

1. Turn off the power of your computer.
2. For the PC : Connect the DVI or VGA signal cable to the connector of the display card in your system. Tighten all screws.

**For the PC with Analog output :** Connect the 15-pin VGA signal cable to the connector of the display card in your system.

**For the PC with Digital output :** Connect the DVI-D signal cable to the connector of the Display card in your system.

3. Connect the DVI or VGA signal cable to the connector on the back of the monitor.

**Note:** Incorrect cable connections may result in irregular operation, damage display quality / components of LCD module and/or shorten the module's life.

4. Connect one end of the power cord to the AC inlet on the power adapter of the monitor and the other end to the power outlet.

**Note:** Please refer to Caution section of this manual for proper selection of your AC power cord.

5. The Vacation Switch on the back of the monitor must be turned on. Then turn on the monitor with the front power button.

**Note:** The Vacation Switch is a real on/off switch. If this switch is on the OFF position, the monitor cannot be turned on by using the front button.

6. Turn on the computer. No-touch Auto Adjust automatically adjusts the monitor to optimal settings upon initial setup for most timing. For further adjustments, refer to the OSD section of this User's Manual.

**Note :** If you have any questions, please refer to the Troubleshooting section of this User's Manual.



# OSD Controls

## Using the OSD Menu

Your LCD monitor allows you to easily adjust the characteristics of the image being displayed. All of these adjustments are made using the control buttons on the front of the monitor. While you use these buttons to controls, an OSD shows you their change.

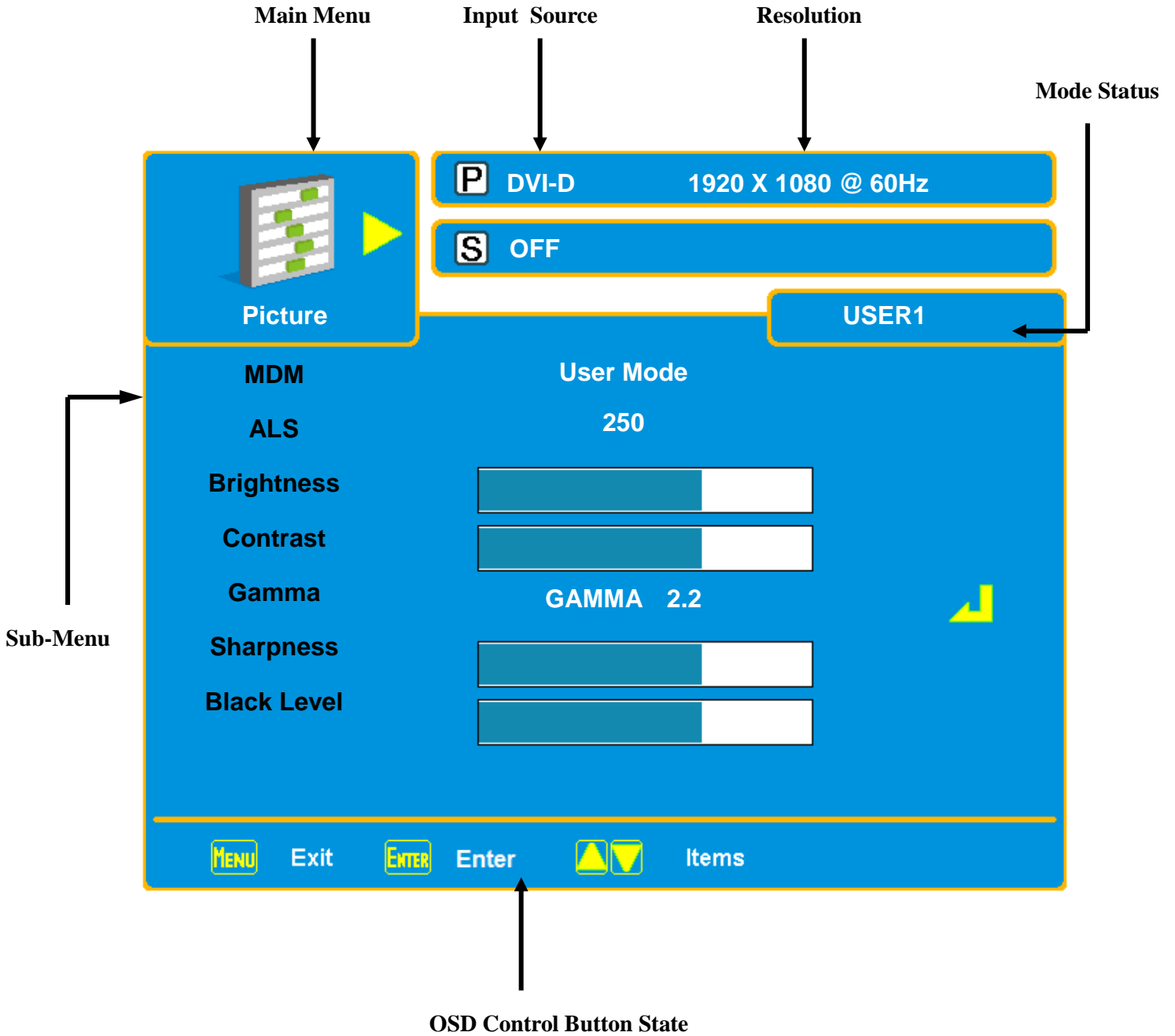


<b>POWER</b>	<ul style="list-style-type: none"> <li>Use the Power button to turn the monitor on and off.</li> </ul>
<b>MENU</b>	<ul style="list-style-type: none"> <li>Use the MENU button to launch the on-screen display (OSD).</li> </ul>
△	<ul style="list-style-type: none"> <li>Use the button to navigate and adjust the slider-bar controls in the OSD.</li> </ul>
▽	<ul style="list-style-type: none"> <li>Use the button to navigate and adjust the slider-bar controls in the OSD.</li> </ul>
<b>ENTER</b>	<ul style="list-style-type: none"> <li>Use the ENTER button to select the OSD function, or open Source Selection MENU.</li> </ul>
<b>VGA</b>	<ul style="list-style-type: none"> <li>Use the button to select the VGA input.</li> </ul>
<b>DVI-D/DVI-A</b>	<ul style="list-style-type: none"> <li>Use the button to select the DVI-D/DVI-A input.</li> </ul>
<b>HDMI/DP</b>	<ul style="list-style-type: none"> <li>Use the button to select the HDMI/DP input.</li> </ul>
<b>S-VIDEO</b>	<ul style="list-style-type: none"> <li>Use the button to select the S-VIDEO input.</li> </ul>
<b>CVBS</b>	<ul style="list-style-type: none"> <li>Use the button to select the CVBS input.</li> </ul>
<b>YPbPr/RGBS</b>	<ul style="list-style-type: none"> <li>Use the button to select the YPbPr/RGBS input.</li> </ul>
<b>SDI</b>	<ul style="list-style-type: none"> <li>Use the button to select the SDI input.</li> </ul>

**NOTE**

- Every source may take 2 or 3 seconds for the image to appear.

**Main Menu**



## To Make OSD Adjustments

1. Turn on the LCD Medical Display.
2. Press " **Menu** " button to start the OSD menu.
3. Press " **▲, ▼** " button to select the main-menu items.
4. Press " **ENTER** " button to enter the main-menu item
5. Press " **▲, ▼** " button to select the sub-menu items.
6. Press " **ENTER** " button to enter the sub-menu item.
7. Press " **▲, ▼** " button to modify the current setting of the function.
8. To exit the OSD menu or go back to the previous action by pressing the " **Menu** " button. It will save the change automatically.

## Source Selection Menu

This function brings up a window displaying all input sources at the same time. To switch to a different input source, press the "ENTER" button to open the source selection menu.

<b>P</b>	DVI-D	1920 X 1080 @ 60Hz
<b>S</b>	OFF	NO SINGAL
<b>PIP OFF</b>	PIP	PAP
Primary	Source	Secondary
<b>P</b>	DVI-D	<b>X</b>
	VGA	
	DVI-A	
	HDMI	<b>X</b>
	DP	<b>X</b>
	S-Video	<b>S</b>
	CVBS	
	YPbPr	
	RGBS	<b>X</b>
	3G-SDI	

The source selection menu shows the **P** for primary input in the left most column and the **S** for secondary

input in the column to the right of the cursor.

1. Press the “▲, ▼” button to select the PIP mode
2. Press the “ENTER” button to modify the PIP mode and enter the source select menu.
3. Press “▲, ▼” button to desired input.
4. Press “ENTER” to make it the primary input or the secondary input.

Inputs with the “X” in the secondary column may not be designated as the secondary input.

- PIP OFF: turn off the PIP mode.
- PIP: turn on the PIP mode (Picture in Picture).
- PAP: turn on the PAP mode (Picture and Picture).

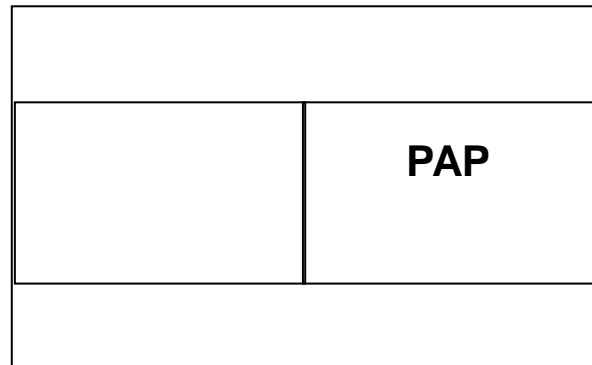
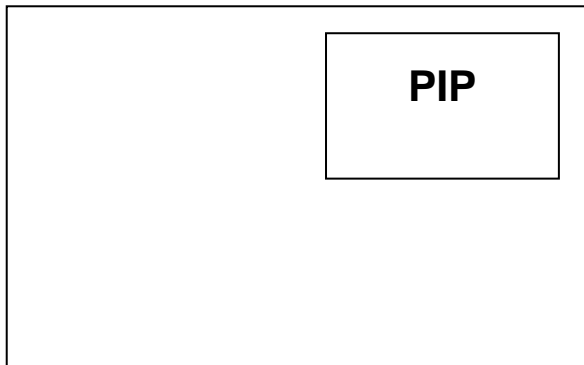
## PIP and PAP Functions

### ◆ PIP

Press “**PIP**” button on the remote control to select PIP and PAP functions, and press “**SOURCE**” to select PIP input sources.

### ◆ SWAP

Press “**SWAP**” button to swap the primary source and the secondary source.



◆ **Primary Source and Secondary Source Selection**

When the primary source is DVI-D, the secondary source can be VGA.

**Secondary Source**

Primary Source		DVI-D	DVI-A	VGA	HDMI	DP	CVBS	S-Video	YPbPr	RGB	3G-SDI
	DVI-D	---	---	●	---	●	●	●	●	●	●
	DVI-A	---	---	---	●	●	●	●	---	---	●
	VGA	●	---	---	●	●	●	●	---	---	●
	HDMI	---	●	●	---	●	●	●	●	●	●
	DP	●	●	●	●	---	●	●	●	●	●
	CVBS	●	●	●	●	●	---	---	●	●	●
	S-Video	●	●	●	●	●	---	---	●	●	●
	YPbPr	●	---	---	●	●	●	●	---	---	●
	RGB	●	---	---	●	●	●	●	---	---	●
	3G-SDI	●	●	●	●	●	●	●	●	●	---

**NOTE**

- “●” means enable, “---” means disable.
- If these two images are from the same source, this function will not work.
- When the vertical frequencies of the two images are different, you cannot acquire the dual screen capability (e.g. PAL and PAL-60, PAL (50 Hz) and NTSC (60 Hz)).

◆ **PIP Position**

The position of the secondary image is controlled by the below sequence.

1: in upper left corner.





3: in upper right corner.


7: in lower left corner.

9: in lower right corner.

1	2	3
4	5	6
7	8	9

## OSD Function

Main Menu	Sub-Menu	Description
 <b>Picture Menu</b>	<b>MDM</b>	Adjust the Mode of the screen. (Select items: User, Text, DICOM, DICOM CL, DICOM BL, Light Box)
	<b>Brightness</b>	Adjusts the luminance of the backlight.
	<b>Contrast</b>	Adjust the degree of difference between darkness and lightness on the monitor screen.
	<b>Gamma</b>	Adjust the Gamma value. (Select items: Native, 1.8, 2.0, 2.2, DICOM)
	<b>Sharpness</b>	Adjust the image look sharper or softer. This function displays only when video source is selected.
	<b>Black Level</b>	Adjust the black level of the screen. This function displays only when video source is selected.
 <b>Color Menu</b>	<b>Color Temp</b>	Change the color intensity of the selected temperature. (Select items: 6500K, 7500K, 8200K, 9300K, Natural, User)
	<b>User Color</b>	Adjust red/green/blue gain. This function can be use only when the set of <b>Color Temp</b> is User.
	<b>Hue</b>	Adjust color shift of video image to green or purple. This is used to adjust for desired flesh tone color.
	<b>Saturation</b>	Adjust the color saturation of the video image.
 <b>Image Menu</b>	<b>Auto Adjust</b>	Automatically adjust the Clock, Phase, H-Position, V-Position settings of the image.
	<b>Auto Balance</b>	Automatically adjusts the colors of the image.
	<b>Phase</b>	Adjust the focus of the image.
	<b>Clock</b>	Adjust the clock pulse of the image.
	<b>H-Position</b>	Move the image left and right on the screen.
	<b>V-Position</b>	Move the image up and down on the screen.
	<b>Scaling</b>	Select the proper picture ratio to match the image of the source. This function is enabled when the aspect ratio of the input source is 4:3.

<b>Misc. Menu</b>	<b>H. Overscan</b>	Adjust the image size left and right to fit on the screen without losing. The screen may have black bars left and right.
	<b>V. Overscan</b>	Adjust the image size up and down fit on the screen without losing. The screen may have black bars top and bottom.
	<b>PIP Mode</b>	This function brings up a window displaying image from another input source. Thus you can watch 2 images from different sources at the same time. (Select items: OFF, PIP, PAP)
	<b>PIP Position</b>	Adjust the position of the secondary image.
	<b>PIP H. Overscan</b>	Adjust the image size left and right to fit on the picture and picture screen by PIP mode. The picture and picture screen may have black bars left and right.
	<b>PIP V. Overscan</b>	Adjust the image size up and down to fit on the picture and picture screen by PIP mode. The picture and picture screen may have black bars left and right.
 <b>SetupMenu</b>	<b>All Reset</b>	Recall the default mode settings.
	<b>Lock Mode</b>	Lock the OSD function.
	<b>Language</b>	Choose the language of the display on the screen. (Select languages: English, Chinese, French, German, Italian, Spanish, Japanese)
	<b>User Settings</b>	Load and save the 5 image settings with the user name.
	<b>Information</b>	Shows firmware version, life time and serial number on the OSD screen.

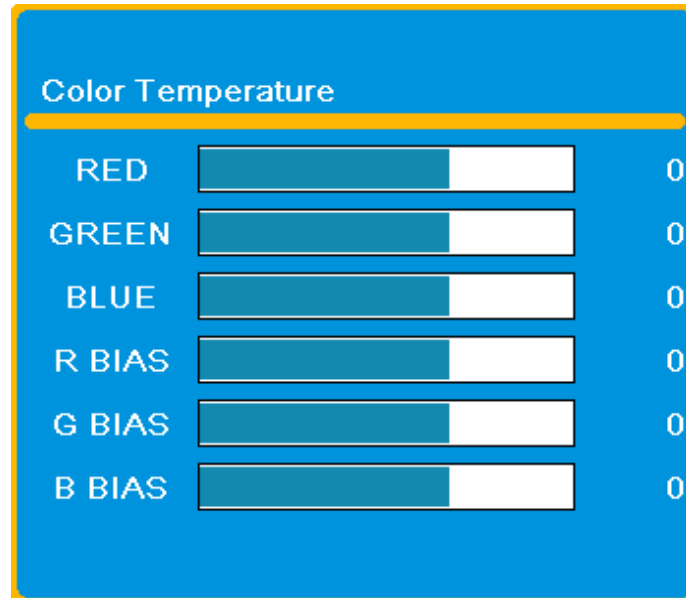
## NOTE

- Some menu items may not be displayed depending on the selected input source.
- The **Image Menu** only can be show when input source is analog.
- AUTO ADJUST function is only available when you are using the analog (VGA) connector.
- Due to the inspection on the factory, the usage time may not be “0 hour” at shipping.
- The Menu can be operated with the remote control unit (Option).
- The RS-232 port allows you to connect the monitor to an external control device (such as a computer) to control its functions externally. The ID function is intended to be used with RS-232 control hardware and software from third parties.



## User Color Function

If you set the Color Temp. to User Color, you can adjust the individual adjustments for red (R), green (G), and blue (B).



Sub-Function	Description
<b>RED, GREEN, BLUE</b>	Adjust the gain of a color multiplies the proportion of that color in the image.
<b>R BIAS, G BIAS, B BIAS</b>	Adjust the bias of a color increases the proportion of that color in the image.

## Multi-Diagnostic Mode

Independent adjustments, settings and saving of the color adjustment are available for each mode.

### ◆ Adjustment items in each mode

According to the mode selected, the adjustable function differs.

Menu	Function	Multi-Diagnostic Mode					
		USER	Text	DICOM	DICOM CL	DICOM BL	LIGHT BOX
Picture Menu	Brightness	●	●	●	●	●	—
	Contrast	●	●	—	—	—	—
	Sharpness	●	●	—	—	—	—
	Gamma	●	●	—	—	—	—
	BlackLevel	●	●	—	—	—	—
Color Menu	Hue	●	—	—	—	—	—
	Saturation	●	—	—	—	—	—
	Color Temp.	●	—	—	—	—	—
	User Color	●	—	—	—	—	—

“●”:Enable “—”:Disable

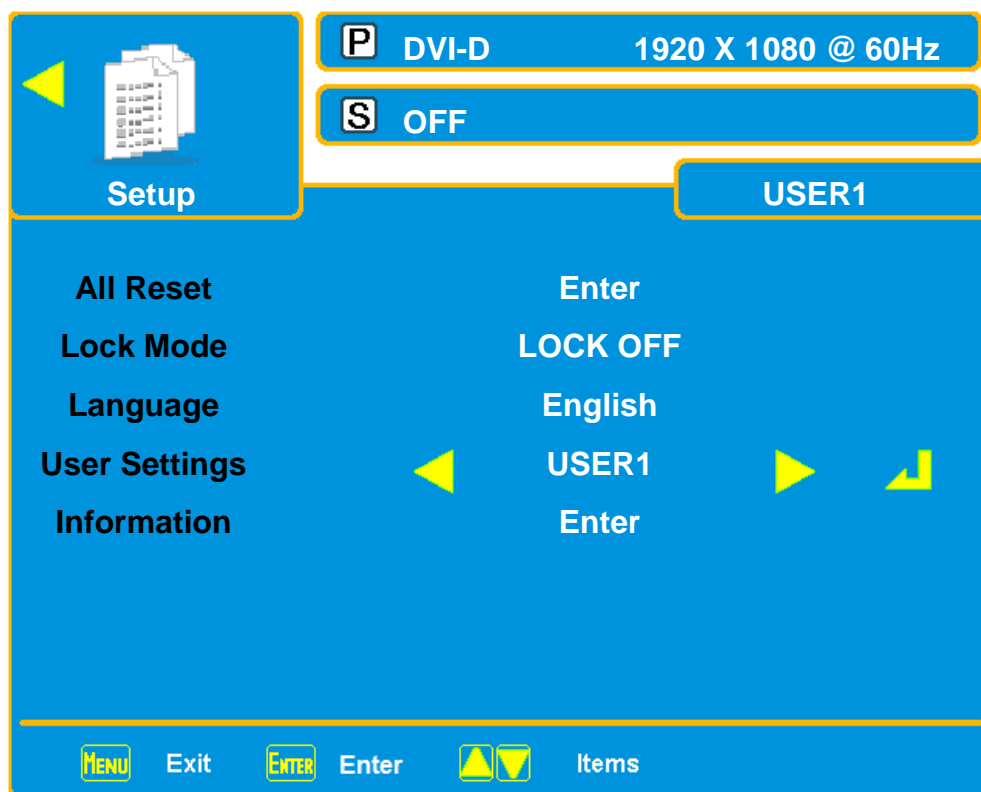
## User Settings

The default value of the monitor is " USER1 ".

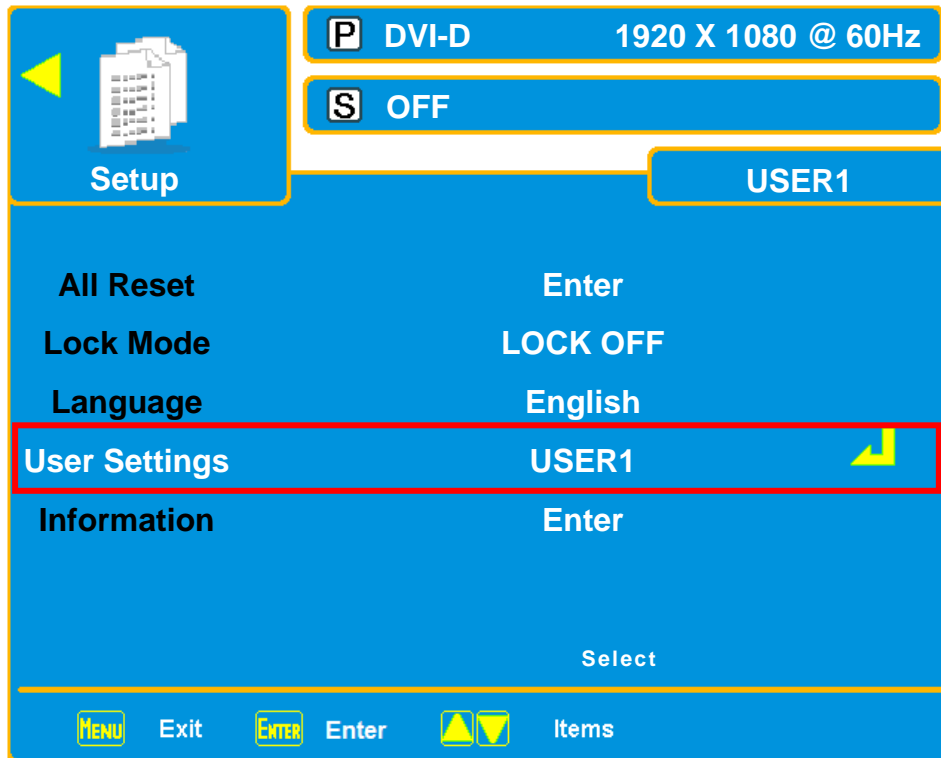
### Operation

#### ◆ How to add new user

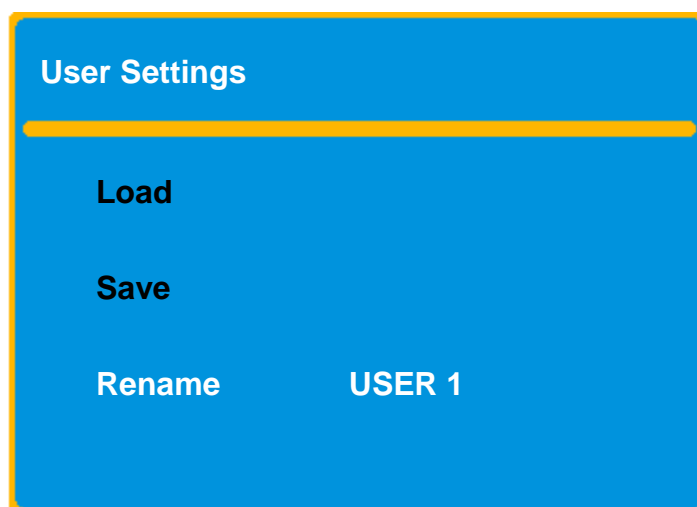
1. Press " **Menu** " key to start the OSD menu.
2. Select 「 **Setup Menu** 」 and press " **Enter** ".



3. Press **▲**, **▼** button to select the sub-menu items. Select **“User Settings”** and press **“Enter”** to enter **“User Settings”**. Press **“Enter”** to enter **“User Settings”** sub-menu.

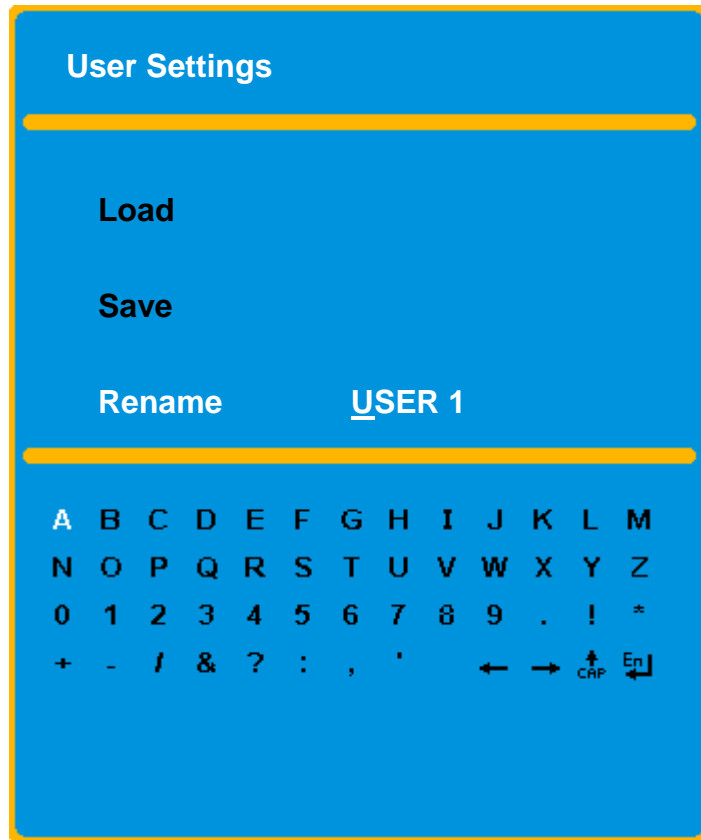


4. Press **▲**, **▼** button to select the sub-menu items. Select **“Rename”** and press **“Enter”**.

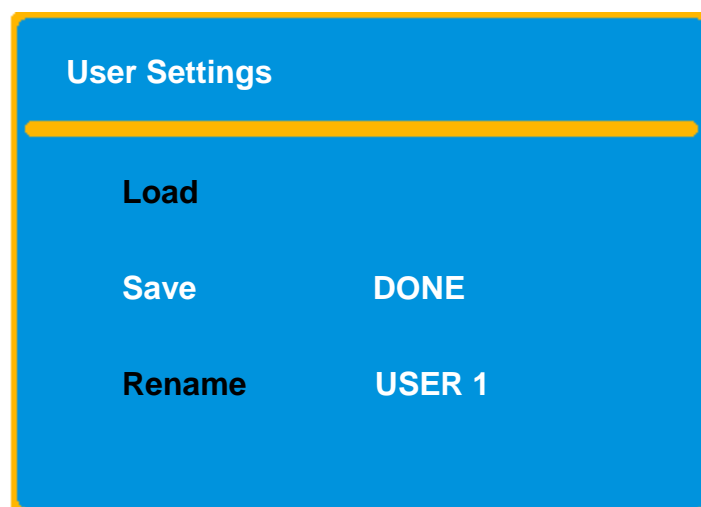


5. Press **▲**, **▼** button to move the cursor to the character position to be changed.

6. Press **Enter** button to change the character, the character is confirmed and the cursor moves to the following character.

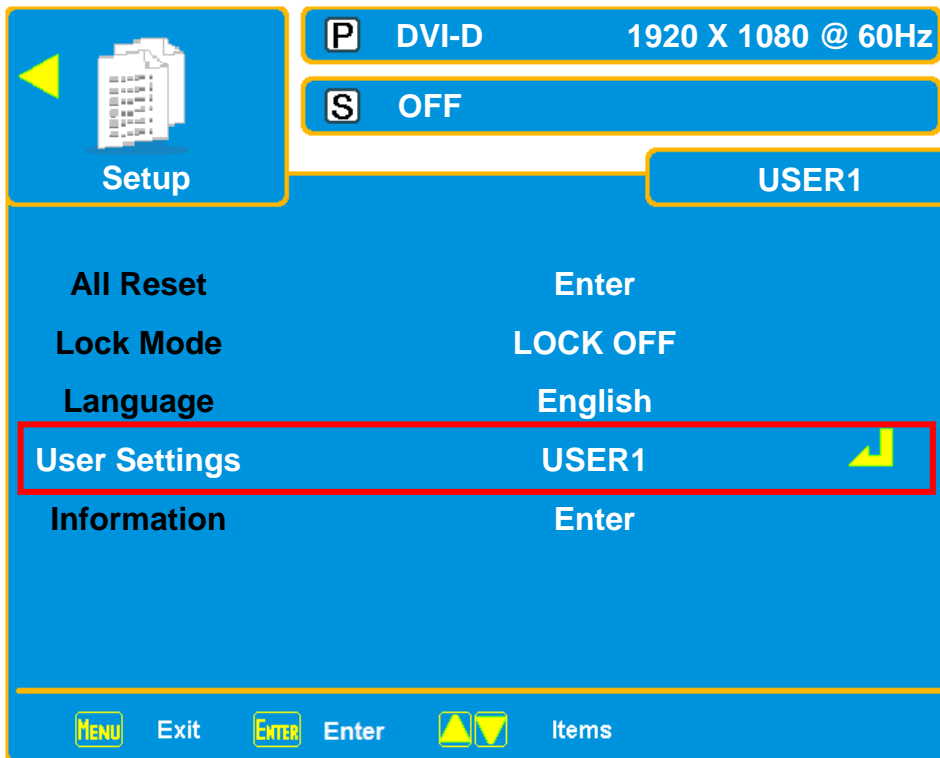


7. Press the **Save** button. The user setting is saved and the "DONE" appears on the menu.



◆ **How to load user**

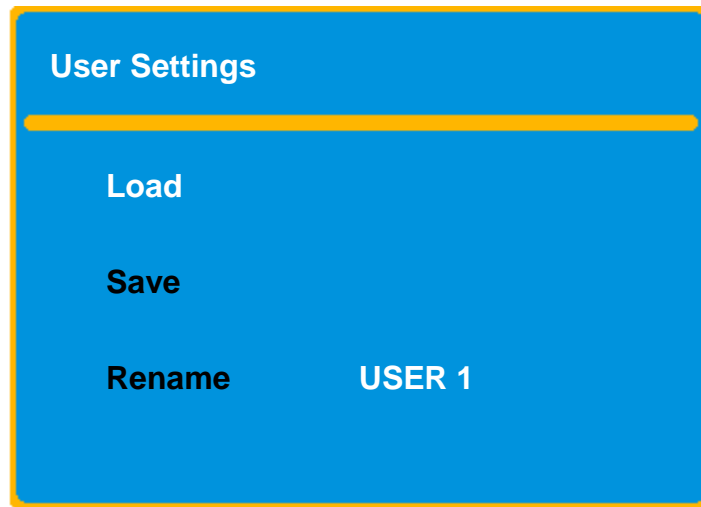
1. Press” **Menu**” key to start the OSD menu.
2. Select” **Setup Menu**” and press” **Enter**”.
3. Press” **▲, ▼**” button to select the sub-menu items. Select” **User Settings**” and press” **Enter**” to enter “**User Settings**”.



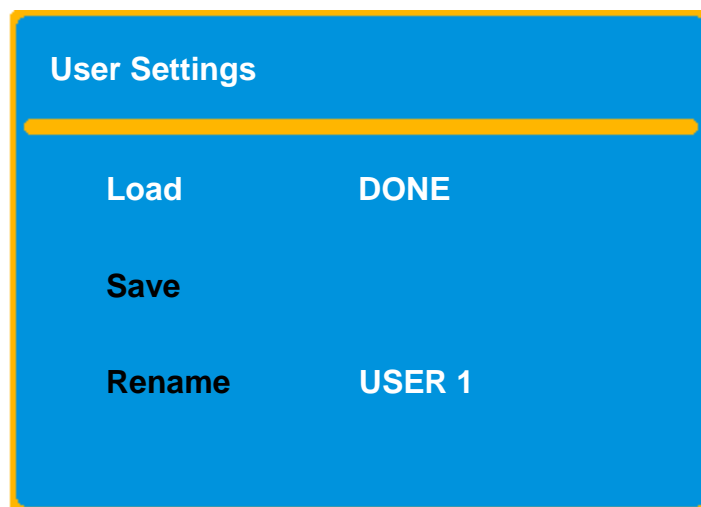
4. Press” **▲, ▼**” button to select the sub-menu items. Select USER, Press” **Enter**”.



5. Press **▲**, **▼** button to select the sub-menu items. Select **Load**.



6. Press **Enter** button to load user.



## Lock Mode Explanation

The default value of the Medical Display is “Off”.

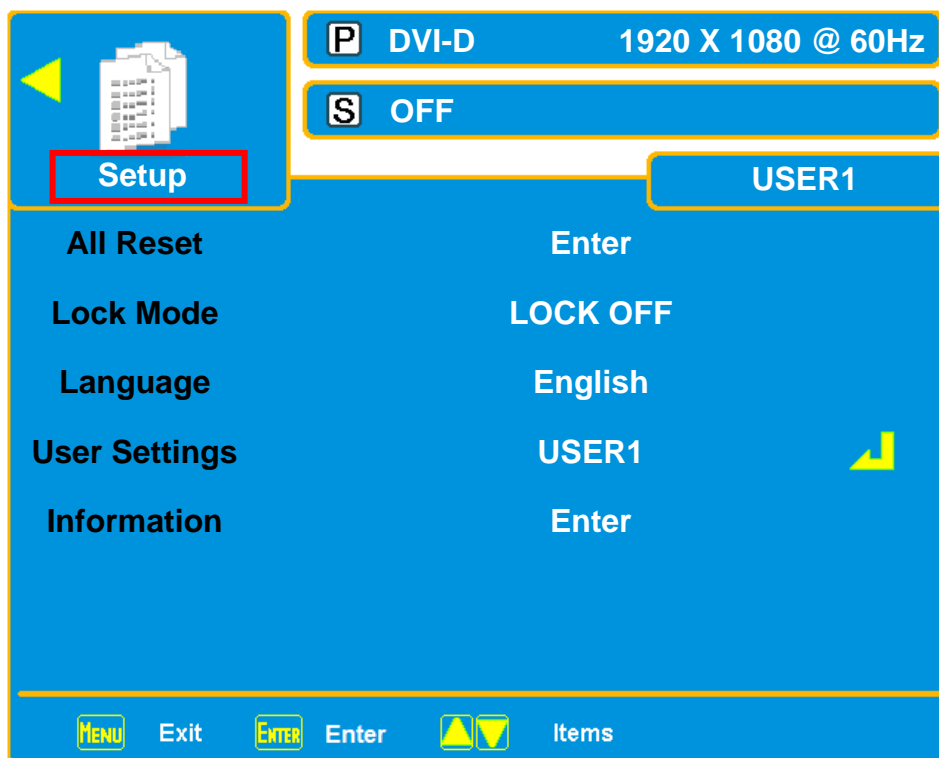
### Lock Mode

1. Off: Function keys are unlocked. Press” **Menu**” key to start the OSD menu and you can adjust any functions.
2. Mode 1: All function keys are locked.
3. Mode 2: All function keys are locked except for the “**Brightness**” control. Press” **Menu**” key to start the brightness control menu.

### Operation

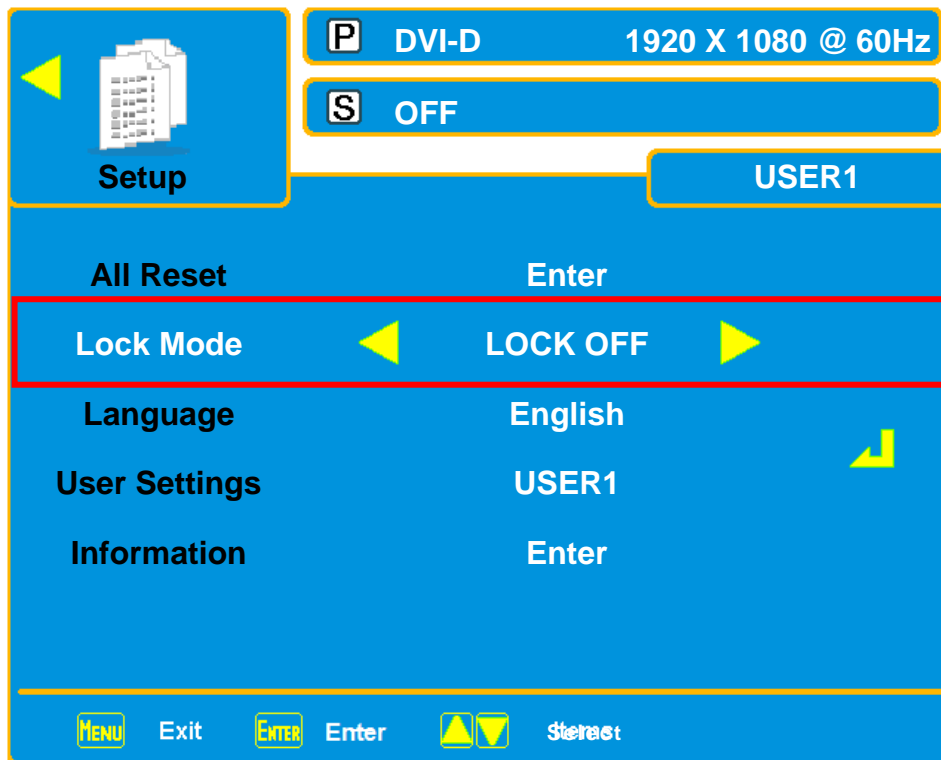
#### ◆ How to Lock

1. Press” **Menu**” key to start the OSD menu.
2. Select 「**Setup Menu**」 and press” **Enter** ”.

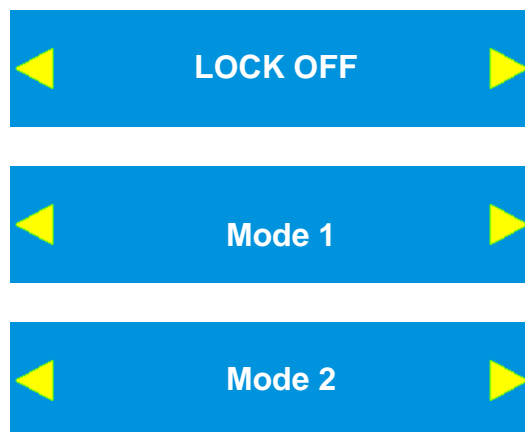




3. Press” ▲, ▼” button to select the sub-menu items. Select 「Lock Mode 」 and press ” Enter ”.

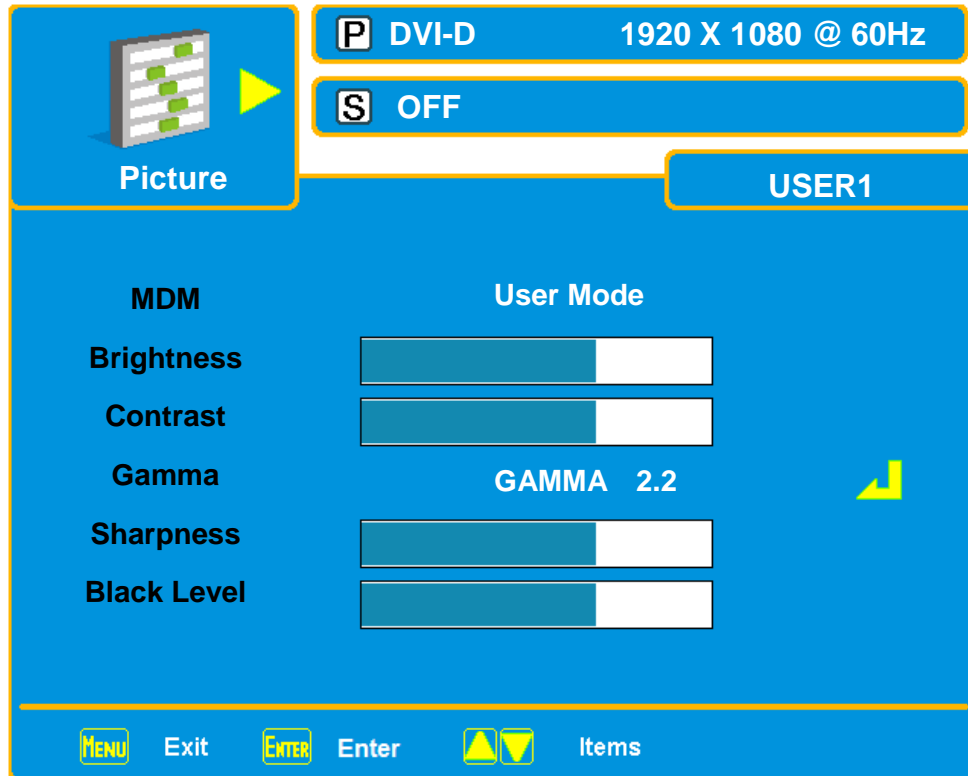


4. Press” ▲, ▼” button to select on the Lock Mode.

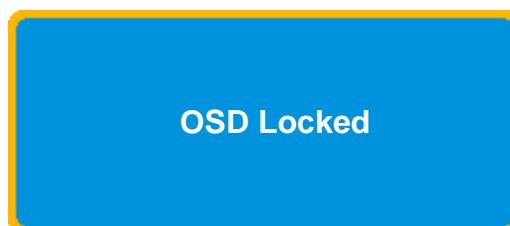


5. Press "Menu" button to exit the OSD menu.

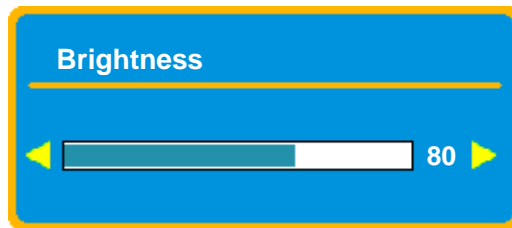
- If your setting is 「Off」 mode, pressing "Menu" button will shows the image:



- If your setting is "Mode 1" mode, pressing "Menu" button will shows the image:

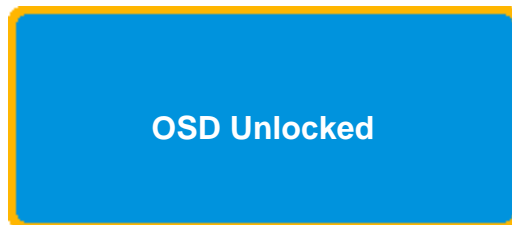


- If your setting is " **Mode 2** " mode, pressing " **Menu** " button will shows the image:



#### ◆ **How to Unlock**

If you setting in " **Mode 1** " or " **Mode 2** " and you want to unlock, please hold the " ▲ " key (the button on back of the monitor) until shows message " **OSD Unlocked** " on the screen, lock function will be removed.



#### **NOTE**

- After you cancel the lock function by the above method, the OSD will be locked again if you do not operate any OSD functions for 15 minutes.
- You could select the " **Off** " mode to cancel the lock function thoroughly so that the OSD will not be locked again automatically.

## Recommended Use

**For optimum performance, please note the following when setting up and using the multi-sync LCD monitor:**

- ◆ Do not open the monitor. There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- ◆ Do not spill any liquids into the cabinet or use your monitor near water.
- ◆ Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- ◆ Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- ◆ Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- ◆ Do not place any objects onto the monitor and do not use the monitor outdoors.

**Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:**

- ◆ When the power supply cord or plug is damaged.
- ◆ If liquid has been spilled, or objects have fallen into the monitor.
- ◆ If the monitor has been exposed to rain or water.
- ◆ If the monitor has been dropped or the cabinet damaged.
- ◆ If the monitor does not operate normally by following operating instructions.
- ◆ Do not bend power cord.
- ◆ Do not use monitor in high temperature, humid, dusty, or oily areas.
- ◆ Do not cover vent on monitor.
  
- ◆ If monitor or glass is broken, do not come in contact with the liquid crystal and handle with care.



## Caution

- ◆ Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- ◆ The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet, which is easily accessible.
- ◆ Handle with care when transporting. Save packaging for transporting.
- ◆ Image persistence is when a residual or “ghost” image of a previous image remains visible on the screen. Constant images being displayed for a long period of time should be avoided. Sometimes an image persistence issue can be made less prevalent by turning the monitor off for at least as long as it was turned on in the stuck image position.
- ◆ AC power inlet is considered as Disconnect Device.

**Correct placement and adjustment of the monitor can reduce eye, shoulder and neck fatiguent. Check the following when you position the monitor:**

- ◆ For optimum performance, allow 30 minutes for warm-up.
- ◆ Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- ◆ Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance is 50 cm.
- ◆ Rest your eyes periodically by focusing on an object at least 50 cm away.
- ◆ If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- ◆ Adjust the monitor’s brightness and contrast controls to enhance readability.
- ◆ Use a document holder placed close to the screen.
- ◆ Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after-image effects).
- ◆ Get regular eye checkups.

## **Ergonomics**

To realize the maximum ergonomics benefits, we recommend the following:

- ◆ Adjust the backlight to best state.
- ◆ Do not position the Contrast control to its maximum setting.
- ◆ Use the preset Size and Position controls with standard signals.
- ◆ Use the preset Color Setting.
  
- ◆ Do not use primary color blue on a dark background, as it is difficult to see and may produce eye fatigue to insufficient contrast.

# Cleaning



## WARNING

If you dropped any material or liquid such as water onto the monitor when cleaning, unplug the power cord immediately and contact your dealer or the nearest service center. Always make sure your hands are dry when unplugging the power cord.



## CAUTION

- ◆ For safety reasons, turn-off the power switch and unplug the monitor before cleaning.
- ◆ Do not scratch or rub the screen with a hard object.
- ◆ Never use any of the following solvents on the Medical Display. Harsh chemicals may cause damage to the cabinet and the touch sensor.

**Thinner Spray-type cleaner, Benzene, Wax, Abrasive cleaner, Acid or Alkaline solvent**

## CABINET

- ◆ Remove dirt with a lightly moistened cloth and a mild solvent detergent. Then wipe the cabinet with a soft dry cloth.

# Product Specifications

## Specification

Specifications		GRN4212AMI	GRN4222AMI
<b>Panel Characteristics</b>	LCD Display:	TFT color, active matrix	
	Active screen size:	42.02 inches diagonal	
	Pixel Pitch:	0.4845 (H) x 0.4845 (W)	
	Pixel Format:	1920 x1080	
	Viewing Angle (Horizontal):	178degrees@CR>=10	
	Viewing Angle (Vertical):	178degrees@CR>=10	
	Display Colors:	1073M	
	Touch:	NA	10 point
Luminance Calibration:	Software		
Default Gamma:	Native, 1.8, 2.0, 2.2, DICOM part 14		
<b>Analog / Digital Input</b>	DVI	DVI-I 29 pin x 1 (DVI-A/DVI-D)	
	HDMI	HDMI x1	
	DP	DP x1	
	VGA	D-Sub 15-pin mini x 1 (RGB analog)	
	Composite (Option)	BNC x1	
	S-Video (Option)	4-pin mini-din x1	
	RGBS/YPbPr (Option)	BNC x5	
	3G-SDI (Option)	BNC x1	
<b>Analog / Digital Output</b>	Composite (Option)	BNC x1	
	S-Video (Option)	4-pin mini-din x1	
	RGBS/YPbPr (Option)	BNC x3	
	3G-SDI (Option)	BNC x1	
<b>Control Input</b>	Serial Remote	Monitor RS-232, D-Sub 9-pin mini x1	
	Serial Remote (Option)	Touch RS-232, D-Sub 9-pin mini x1	



	USB Remote (Option)	Touch USB, USB Type B x1
<b>Control Output</b>	Serial Remote	RS-232, D-Sub 9-pin mini x1
<b>Power Supply</b>	Input Rating:	AC 100–240V, 50-60 Hz, 2.0-1.0A
	Power Consumption:	110 Watts
<b>Environment Conditions</b>	Operating Temperature:	10° to 40° C (50° to 104° F)
	Storage/Transportation Temperature:	-20° to 60° C (-4° to 140° F)
	Operation Relative Humidity:	30% to 75% non-condensing
	Storage/Transportation Relative Humidity:	30% to 75% non-condensing
	Operating Atmospheric Pressure	700hPa to 1060hPa
	Transport & Storage Atmospheric Pressure	500hPa to 1060hPa
<b>Dimensions (W x H x D)</b>	Without Stand	993.9 x 618.8 x 82.5 (mm)
<b>Net Weight</b>	Without Stand	26.5 kg
<b>Packaging</b>	Packaging Specification:	The “Top Level Assembly” shall meet the packaging specification.
	Multiple Trips:	The carton shall withstand 10 trips by any combination of air, rail, land, or sea transportation.
	Shipping Carton Type:	Two piece construction

**NOTE**

- The specifications shown above may be changed without prior notice for quality improvement.

## Default Settings

Main Menu	Function	Value
Picture	Multi-Diagnostic Mode (MDM)	USER
	Brightness	60
	Contrast	50
	Gamma	2.2
	Sharpness	50
	Black Level	50
Color	Color Temp.	9300K
	Hue	50
	Saturation	50
Misc.	Scaling	Full
Setup	Lock Mode	Off
	Language	English

## Display Mode

Resolution	Dot Clock (MHZ)	Vertical Scanning Frequency (Hz)	Horizontal Scanning Frequency (kHz)
720 x 400	28.32	70	31.5
640 x 480	25.17	60	31.5
	31.50	72	37.9
	31.50	75	37.5
	36.00	85	43.27
800 x 600	36.00	56	35.1
	40.00	60	37.9
	50.00	72	48.1
	49.50	75	46.9
	56.25	85	53.7
832 x 624	55.00	75	49.1
1024 x 768	65.00	60	48.4
	75.00	70	56.5
	78.75	75	60.0
	94.50	85	68.67
1152 x 870	100.00	75	68.7
1280 x 1024	108.00	60	64.0
	135.00	75	80.0
	157.50	85	91.1
1360 x 768	84.75	60	47.72
1600 x 1200	162.00	60	75.0
1920 x 1080	148.50	60	67.4

### **NOTE**

- Modes not listed in the table may not be supported. For optimal resolution, we recommend you to choose a mode listed in the above table.

## Available Signal Formats

Resolution	Composite	S-Video	YPbPr	HDMI	3G-SDI
PAL	●	●	●		●
NTSC	●	●	●		●
480p			●	●	
576p			●	●	
720/60p			●	●	●
1080/60i				●	●
1080/30P				●	●
1080/60P				●	●

# Features

## ◆ DVI

The integrated interface ratified by the Digital Display Working Group (DDWG) that allows both digital and analog connectors off of one port. The “I” stands for integration for both digital and analog. The digital portion is DVI based.

## ◆ 3G-SDI

High Definition Serial Digital Interface (3G-SDI) supports all digital High Definition SMPTE 425-M standards and is widely used in broadcasting and video production. 3G-SDI has higher data rate at 2.970 Gbit/s.

## ◆ HDMI

HDMI (High-Definition Multimedia Interface) is a compact audio/video interface for transmitting uncompressed digital data.

## ◆ DFP (Digital Flat Panel)

An all-digital interface for flat panel monitors which is signal compatible with DVI. As a DVI-based digital only connection, only a simple adapter is necessary for compatibility between DFP and other DVI-based digital connectors such as DVI and P&D.

## ◆ P&D (Plug and Display)

The VESA standard for digital flat panel monitor interfaces. It is more robust than DFP since it allows for other options off a signal connector (options like USB, analog video and IEEE-1394-995). The VESA committee has recognized that DFP is a subset of P&D. As a DVI-based connector (for the digital input pins), only a simple adapter is necessary for compatibility between P&D and other DVI-based digital connector such as DVI and DFP.

## ◆ Pivoting Stand

Allow users to adjust the monitor to the orientation that best fits their application, either Landscape orientation for wide documents, or portrait orientation for the ability to preview a full page on one screen at one time. The Portrait orientation is also perfect for full screen video conferencing.

## ◆ OSD (On-Screen Display) Controls

The OSD controls allow you to quickly and easily adjust all elements of your screen image via a simple to use OSD.

## ◆ Ergo Design Features

The Ergo design features enhance human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSD controls for quick and easy image adjustments, tilt base for preferred angle of vision.

◆ **Intelligent Power Manager System**

The intelligent power manager system provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

◆ **Multiple Frequency Technology**

The multiple frequency technology automatically adjusts the monitor to the display card's scanning frequency, thus displaying the required resolution.

◆ **Full Screen Capability**

The full screen capability allows you to use the entire screen area in most resolutions, significantly expanding the image size.

◆ **Wide Viewing Angle Technology**

The wide viewing angle technology allows the user to be able to see the monitor from any angles and any orientations — Portrait or Landscape. Provides the same viewing angles either up, down, left or right.

◆ **Gamma**

The internal circuitry automatically converts 8-bit data from the PC to 10-bit and back to 8-bit, producing smooth. Gamma can be set by using preset values or creating a custom setting.

# Troubleshooting

If the Medical Display fails to function correctly, please follow these steps for a possible solution.

1. Perform the adjustments according to **Initial Installation** section.
2. Refer to the following troubleshooting chart if you cannot resolve the problem from other sections of this User's Manual.
3. If the problem is not described below or you cannot correct the problem, stop using the monitor and contact your dealer or the nearest service center for further assistance.

Problem	Check to see
No picture	The signal cable should be completely connected to the display card/computer.
	The display card should be completely seated in its slot.
	Check the Vacation Switch should be in the ON position.
	Front Power Switch and computer power switch should be in the ON position.
	Check to make sure that a supported mode has been selected on the display card or system being used.(Please consult display card or system manual to change graphics mode.)
	Check the monitor and your display card with respect to compatibility and recommended settings.
	Check the signal cable connector for bent or pushed-in pins.
Image persistence (Image Sticking)	Image persistence is when a residual or “ghost” image of a previous image remains visible on the screen. To alleviate image persistence, turn off the monitor for as long as the previous image was displayed.
	Try not to operate the LCD with a “fixed” image on the screen for more than thirty minutes.
The screen has defective pixels	The screen has defective pixels (e.g. slightly light or dark). This is due to the characteristics of the panel itself and not the LCD product.

Image is unstable, unfocused or swimming is apparent	Signal cable should be completely attached to the computer.
	Check the monitor and your display card with respect to compatibility and recommended signal timings.
	If your text is garbled, change the video mode to non-interlace and use 60Hz refresh rate.
OSD is not sized properly	Use the OSD Image Adjust controls to increase or decrease the Coarse total.
	Check to make sure that a supported mode has been selected on the display card or system being used.
No signal	Signal cable should be completely attached to the computer.
	Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).
	If no video is present on the screen, turn the Power button off and on again.
LED on monitor is not lit (no green or amber color can be seen)	Power Switch should be in the ON position and power cord should be connected.
	Check the power cable should be connected surely.



## **Notes for the User's Manual**

- ◆ The content of this manual is subject to change without notice.
- ◆ Although this manual has been prepared carefully, please let us know if you find any errors, omissions, or ambiguous explanations.

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User's manual

FP4203-MED

GRN4212AMI