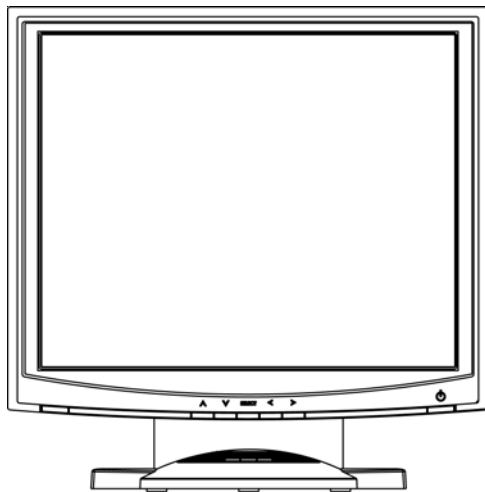# AMPRONIX™

**AUTO - SCANNING WITH DIGITAL CONTROL
LCD COLOR MEDICAL MONITOR**

AMVX1908

Operation Manual

For future reference, record the serial number of your display monitor in the space below :

Serial Number

The serial number is located on the back of the monitor

back of the monitor

WARNING
The title "WARNING" is used to inform the users of possible causes that could inflict the injury, death, or property damage to the patients.

CAUTION
The title "CAUTION" is used to inform the users of possible causes that could inflict the patients although it might not severe enough to cause deaths.

NOTE
The title "NOTE" is used to inform the users of items that are of importance in terms of installation, operation, or maintenance of the Equipment although the failure does not inflict the bodily harm to the patients.

Ampronix 2007
All other trademarks are the property of their reference owners.
This document is subject to change without notice.
Ampronix provides this information as reference only. Reference to other vendor's products
does not imply any recommendation or endorsement.

Revision Control

Date	Description
Rev. 01 121807	Document number

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Monitor Screen Adjustment and Resolution Setting Procedure for IBM/IBM Compatible Computers with Windows based OS system.

Before adjusting the monitor, all the necessary drivers should be installed to your System and resolution has to be set to manufacturer's recommended preset of 1280 x 1024 @ 60Hz, 70Hz, 72Hz or 75 Hz.

To check the resolution, press the "**UP**" button on the monitor and the "**Information**" will display under the OSD. Information will have Resolution, Horizontal and Vertical (Refresh rate) frequency information.

To change the resolution to its factory recommended preset.

1. On a Windows 95, 98, ME or 2000, press right button on a Mouse to execute the Pop-up menu.
2. Press "**Properties**" to execute the "**Display Properties**"
3. Press "**Setting**" and change the resolution to 1280 x 1024.
4. Press "**Apply** or **OK**" to select and press "**OK**" to keep the selected resolution.
5. Go back to "**Display Properties**" - "**Setting**" - "**Advanced properties**" - "**Adapter**"
6. On Adapter property, change the refresh rate to 60Hz, 70Hz, 72Hz or 75Hz. If you don't have these options, choose "**Adapter Default**". (60Hz recommended)

Screen Adjustment Procedure

1. Press the "**AUTO**" button.
2. If you still don't have a clear display monitor, please refer to step 3.
3. Start "**Shut Down**" in Windows 95/98/ME/2000 - It will display moire on screen
4. Press "**Up**" button then the OSD menu will pop-up.
5. Adjust the "**Frequency**" under the OSD to reduce or get rid of the vertical display noise (Jail bars).
6. Once the vertical display noise disappears, press adjust the "**Phase**" to reduce or get rid of the horizontal display noise (Snowy effect).

Quick Setup (IBM/IBM Compatible under Windows NT 4.0)
Please Read Carefully When Setting Up Your New Monitor

Monitor Screen Adjustment and Resolution Setting Procedure for IBM/IBM Compatible Computers with Windows based OS system.

Before adjusting the monitor, all the necessary drivers should be installed to your System and resolution has to be set to manufacture's recommended preset of 1280 x 1024 @ 60Hz, 70Hz, 72Hz or 75Hz.
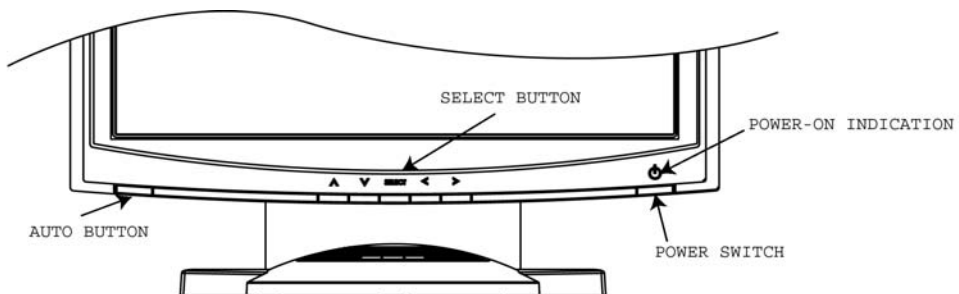
To check the resolution, press the "**UP**" button on the monitor and the "**Information**" will display under the OSD. Information will have Resolution, Horizontal and Vertical (Refresh rate) frequency information.

To change the resolution to its factory recommended preset.

1. On a Windows NT 4.0, press right button on a Mouse to execute the Pop-up menu.
2. Press "**Properties**" to execute the "**Display Properties**"
3. Press "**Setting**" and change the resolution to 1280 x 1024.
4. Change "**Refresh Frequency**" to 60Hz, 70Hz, 72Hz or 75Hz. (60Hz recommended)

Screen Adjustment Procedure

1. Press the "**AUTO**" button.
2. If you still don't have a clear display monitor, please refer to step 3.
3. Start "**Shut Down**" in Windows 95/98/ME/2000 - It will display moire on screen
4. Press "**Up**" button then the OSD menu will pop-up.
5. Adjust the "**Frequency**" under the OSD to reduce or get rid of the vertical display noise (Jail bars).
6. Once the vertical display noise disappears, press adjust the "**Phase**" to reduce or get rid of the horizontal display noise (Snowy effect).
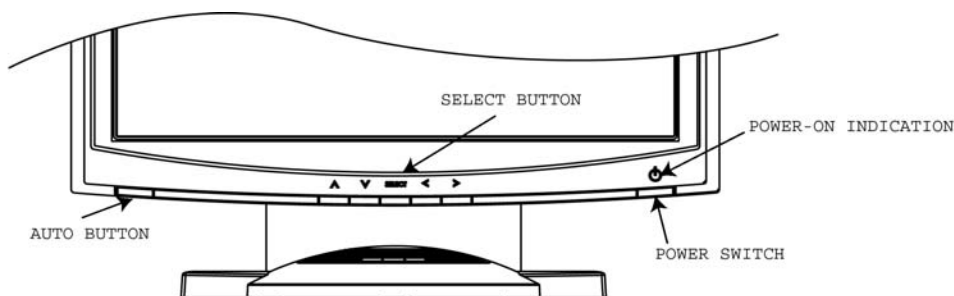
Quick Setup (Macintosh)
Please Read Carefully When Setting Up Your New Monitor

1. Set your Macintosh Adapter on pages 23 and 24.
2. Push the "**APPLE**" icon on the upper left corn and execute Control Panel->
   Monitors&Sound. Select "**Thousands**" for the Color Depth, Select **"1280X1024, 60Hz,
   70Hz, 72Hz or 75Hz"** for the Resolution. (60Hz recommended)
* On some Apple G3 or newer systems, you may not need to use the Macintosh Adapter.

Screen Adjustment Procedure

1. Press the "**AUTO**" button on the monitor.
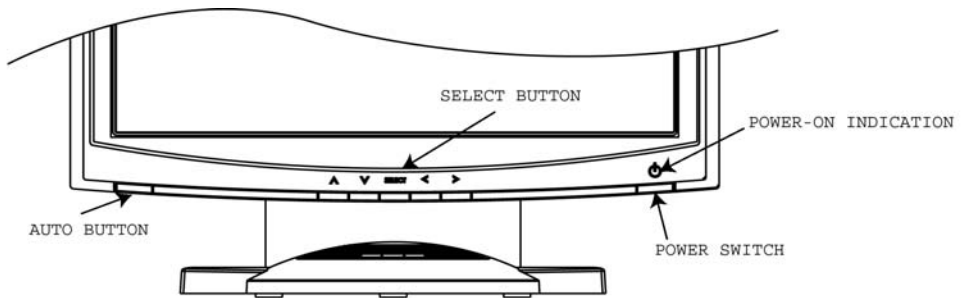
INTRODUCTION

Congratulations on your purchasing of the AMVX1908 high performance TFT LCD monitor.

Product Description and Intended Use

The AMVX1908 Monitor is an intelligent, microprocessor-based TFT-LCD monitor intended for use in medical applications. It has an ergonomically designed display and is compatible with most analog RGB (Red, Green, Blue) display standards.
The AMVX1908 Monitor has the following features:

- **Advanced Viewing Solution (AVS)**: Our sophisticated filter extends the viewing angle of the screen image, without sacrificing contrast ratio and brightness.

- **Advanced Timing Setup (ATS)**: A unique technology from the One Touch Auto Adjustment. Pressing the Auto Adjust button on the front panel, automatically optimizes position, phase, clock, contrast and color balance. This allows the user to maximize the perfect screen setting in the shortest amount of time.

- **Advanced Mounting Solution (AMS)**: Improve flat panel environment, utilizing numerous ergonomic mounting solutions to allow creative use in conjunction to product application.

- The monitor is able to properly function even in case of upgrade video cards or software because of the wide auto-scanning compatibility range without requiring to buy a new monitor.

- The internal microprocessor digitally controls auto-scanning. For horizontal scan frequencies between 24.8 KHz and 60.2 KHz, and vertical scan frequencies between 50.0 Hz and 85.1 Hz. In each frequency mode, the microprocessor-based circuitry allows the monitor to function at the precision-of a fixed frequency.

- The resident memory allows for storing factory default settings and also additional user adjustment parameters.

- The maximum resolution achievable is SXGA (1280 x 1024)

- The compact and sleek cabinet design saves lot of your desk space and makes your desk look neat and tidy.

- The monitor is compliant with VESA-DPMS power management standard. In order to save energy, the monitor must be connected to a system compliant with the standard.

The monitor is certified by UL International to medical standard UL60601-1, EN60601-1 and EN60601-1-2. It is also CE marked for sale into the European Community for integration or use with medical products.

Product Description

Please check the following items are present when you unpack the box, and save the packing materials in case you will need to ship or transport the monitor in future.
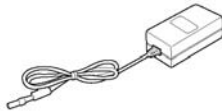
- AMVX1908 LCD Monitor and two video cable (1) VGA HDDB15 cable (1) DVI-D cable
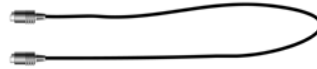
- AC Power cord

- AC-Adapter

CAUTION
Manufacturer : Ault Korea
⚠ Model No : MW116

- Composite Video BNC Jack Cable and Super Video Cable

- User Manual

Warnings and Cautions

Please read this manual and follow its instructions carefully. The words warning, caution, and note carry special meanings and should be carefully reviewed:

Warning ⚠	The personal safety of the patient or physician may be involved. Disregarding this information could result in injury to the patient or physician.
Caution	Special service procedures or precautions must be followed to avoid damaging the instrument.
Note	Special information to make maintenance easier or important information more clear.
⚠	An exclamation mark within a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the product.
⚡	A lightning bolt within a triangle is intended to warn of the presence of hazardous voltage. Refer all service to authorized personnel.
Warning ⚠	TO AVOID POTENTIAL SERIOUS INJURY TO THE USER AND THE PATIENT AND/OR DAMAGE TO THIS DEVICE, THE USER MUST:

Warranty is void if any of these warnings are disregarded.

Ampronix accepts full responsibility for the effects on safety, reliability, and performance of the equipment only if:
> • Re-adjustments, modifications, and/or repairs are carried out exclusively by Ampronix.
> • The electrical installation of the relevant operating room complies with the applicable IEC and CE requirements.

> **Warning   Federal law (United States of America) restricts this device to use by, or on order of a physician.**

The Ampronix AMVX1908 monitor has been tested under UL 60601-1 standard and UL listed for Medical application.

Ampronix reserves the right to make improvements in the product(s) described herein. Product(s), therefore, may not agree in detail to the published design or specifications. All specifications are subject to change without notice. Please contact Ampronix directly or phone your local Ampronix sales representative or agent for information on changes and new products.

Warnings

1. Read the operating manual thoroughly and be familiar with its contents prior to using this equipment.
2. Carefully unpack the unit and check if any damage occurred during shipment.
3. Should any solid object or liquid fall into the panel, unplug the unit and have it checked by qualified personnel before operating it any further.
4. Uplug the unit if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
5. Be a qualified physician, having complete knowledge of the use of this equipment.
6. Test this equipment prior to a medical procedure. This monitor was fully tested at the factory before shipment.
7. Avoid removing covers on control unit to avoid electric shock.
8. Attempt no internal repairs or adjustments not specifically detailed in this operating manual.
9. Pay close attention to the care, cleaning instructions in this manual. A deviation may cause damage (refer to the Cleaning section on page 14).
10. DO NOT STERILIZE MONITOR.
11. Read the entire instruction manual before assembling or connecting the camera.
12. Do not place the monitor or any other heavy object on the power cord. Damage to the cable can cause fire or electirc shock.
13. Monitor with power supply is suitable for use in patient environment.
14. DO NOT stack more than 8 boxes high

This equipment has been tested and found to comply with the limits for medical devices in IEC 601-1-2:2003. These limits are designed to provide reasonable protection against harmful interference in a typical medical 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 other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, 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:
- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

NOTICES TO USER

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING

This equipement generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

Cautions

1. The AC Adapter must be plugged into a Grounded power outlet.

2. Use only the proprietary AMVX1908 power supply for the AMVX1908 monitor. Make a proper connection by ensuring that the shrink tubing completely secures the connection between the DC power cord and the extension cord.

3. Turn power off when unit is not in use.

4. Never operate the unit right after having transported from a cold location directly to a warm location.

5. Do not expose the monitor to moisture or directly apply liquid cleaners directly to the screen. Spray the cleaning solution into a soft cloth and clean gently.

6. Handle the monitor with care. Do not strike or scratch the screen.

7. Do not block the monitor cooling vents. The monitor is cooled by natural convection and has no fan.

8. Do not force the monitor past 28 degrees of vertical when adjusting the screen position. (For monitors equipped with stands only.)

9. Remove the power module and connection when transporting the unit.

10. Save the original carton and associated packing material. They will be useful should you have to transport or ship the unit.

11. Allow adequate air circulation to prevent internal heat buildup.

12. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.

13. Do not install the unit near sunlight, excessive dust, mechanical vibration or shock.

14. The unit is designed for operation in a horizontal position. Never operate the unit in a vertical position.

15. Keep the unit away from equipment with strong magnets (i.e. a large loudspeaker.)

16. Do not expose the monitor to moisture or excessive dust.

17. Equipment with SIP/SOP connectors should either comply with IEC 60601-1 and/or IEC 60601-1-1 harmonized national standard or the combination should be evaluated. Do not touch the patient with signal input or output connectors.

18. Use only a hospital grade power supply cord.

19. This equipment generates, uses, and can radiate radio frequency energy. If not installed correctly and or not used in accordance with these instructions, it may cause harmful interference with other devices. This may be determined by turning the equipment off and on. The user is encouraged to try to correct the interference through one or more of the following measures:

• Reorient or relocate the receiving device.

• Increase the separation distance between the equipment.

• Connect the equipment to an outlet on a circuit different from that to which the other device(s) are connected.

• Consult the manufacturer or field service technican for help.

20. Grounding reliability can only be achieved when the equipment is connected to an equipment receptacle labeled "Hospital Only" or "Hospital Grade."

Note   To connect to an international power supply, use a an attachment plug appropriate for the power outlet.

Note   Refer to the "Electromagnetic Compatibility" (EMC) section of this manual to ensure EMC. The AMVX1908 must be installed and operated according to the EMC information provided in this manual.

Symbol Definitions

Dangerous: High Voltage

Direct Current

SN   Serial Number

Top - Bottom

Fragile

Do not get wet

Consult accompanying documents.

Indicates proof of conformity to applicable European Economic Community Council directives and to harmonized standards published in the official journal of the European Communities.

Indicates protective earth ground.

For indoor use only.

c(UL)us
51LJ
Medical Equipment
E215822

Medical Equipment is in accordance with UL 60601-1 and CAN/ CSA C22.2 No. 601.1 in regards to electric shock, fire hazards, and mechanical hazards.

Tested to comply with FCC Class B standards.

DC power control switch

Maximum Stacking

IPX1   Degrees of protection against the ingress of water.

EU Declaration of Conformity for Medical Applications

A Declaration of Conformity has been filed for this product. A sample of this document may be found in the addendum which accompanied this manual. For a copy of the Declaration of Conformity document, please contact Ampronix and request for AMVX1908 DOC.

Prepare for Unpack

Before you unpack your monitor, prepare a suitable workspace. You need a stable and level surface near a grounded wall outlet in an area which is relatively free of glare from sunlight or other sources of bright light. The monitor is cooled by natural convection (it has no fan).
For optimum performance, do not block the cooling vents.

While unpacking the monitor, inspect it and other package contents for shipping damage that could cause a fire or shock hazard. Immediately report any shipping damage to the carrier or transportation company and contact customer service for monitor in the future or in case of return.

After you unpack the monitor, make sure the following items are included

  • Monitor with 1.5 meter(5ft)monitor-to computer video cable

  • AC adapter with cable
  ⚠ CAUTION: AC Adapter must be plugged into Grounded a power outlet)

  ⚠ CAUTION : AC adapter
     Manufacturer: Ault korea
     Model No: MW116

  • This operations manual

  ⚠   Note: Your system provider may offer alternative cords or cables depending on the installation requirement and local geography issues.

SCREEN POSITION ADJUSTMENT

In order to optimize the best viewing position, you can adjust the tilt of the monitor by using both of your hands to hold the edges of the monitor as shown in the figure below. The monitor can be adjusted to 28 degrees up as indicated by arrow below.
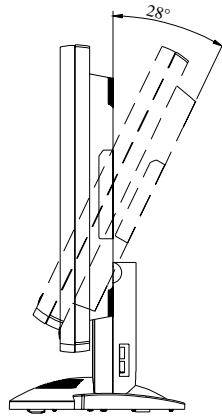
SAFETY PRECAUTION

- Avoid placing the monitor, or any other heavy object, on the power cord to prevent fire or electrical shock from damage to the power cord.

- Do not expose the monitor to rain, excessive moisture, or dust to avoid fire or shock hazard.

- Do not cover the slots or openings of the monitor for proper heat dissipation. Always put the monitor in a place where there is adequate ventilation.

- Avoid placing the monitor against a bright background or where sunlight or other light sources may reflect on the area of the monitor. Place the monitor just below eye level.

- Handle with care when transporting the monitor.

- Refrain from giving the shock or scratch to the screen, as screen is fragile.

CLEANING YOUR MONITOR

No specific liquid or chemical necessary when cleaning this LCD monitor
However, we suggest to clean the monitor with non-abrasive cloths and cleaning solutions used in hospitals to clean similar equipment. We recommend using 70% Isopropyl alcohol for the screen surface and warm water and a mild detergent for all other surfaces. Other acceptable cleaning agents are listed below:

- 70% isopropyl alcohol
- 6% aqueous ammonia
- Cidex (2.4% glutaraldehyde solution)
- Sodium Hypochlorite (bleach) 10%
- "Green soap" USP
- 0.5% Chlorhexidine in 70% isopropyl alcohol
- Ovation
- Formula 409
- Fantastic

- Wex Cide

To clean the screen, do not spray liquid cleaners directly on to the unit. Stand away Form the monitor and spray cleaning solution onto a cloth. Without applying excessive pressure, clean the screen with the slightly dampened rag.

PRESET MODES

To reduce the need for adjustment for different modes, the monitor has default setting modes that are most commonly used as given in the table below. If any of these display modes are detected, the monitor automatically adjusts the picture size and centering. When none of the mode is matched, the user can store their preferred modes in the user modes. The monitor is capable of storing up to 7 user modes. The only condition to store as a user mode is the new display information must have 1 KHz difference for horizontal frequency or 1 Hz for vertical frequency or the sync signal polarities are different from the default modes.

Mode	Resolution (H x V)	H. Freq. (KHz)	V. Freq. (Hz)
1	640 x 350	31.5	70
2	640 x 350	37.9	85
3	640 x 400	31.5	70
4	640 x 400	37.9	85
5	720 x 350	31.5	70
6	720 x 400	31.5	70
7	720 x 400	37.9	85
8	640 x 480	31.5	60
9	640 x 480	37.9	72
10	640 x 480	37.5	75
11	640 x 480	43.3	85
12	800 x 600	35.1	56
13	800 x 600	37.9	60
14	800 x 600	48.1	72
15	800 x 600	46.9	75
16	800 x 600	53.7	85
17	1024 x 768	35.5	43
18	1024 x 768	48.4	60
19	1024 x 768	56.5	70
20	1024 x 768	60	75
21	1024 x 768	68.7	85
22	1152 x 864	67.5	75
23	1280 x 960	60	60
24	1280x1024	63.9	60
25	1280x1024	79	75

POWER MANAGEMENT FUNCTION

The monitor is equipped with the power management function which automatically reduce the power consumption when not in use in three power level modes.

- **Stand-by Mode**

  The monitor goes into stand-by mode when the horizontal sync signal is off for about 10 seconds. In this mode, the screen goes off and the power LED blinks for 1 seconds On and 1 second Off. The screen is displayed after the horizontal sync signal is restored.

- **Suspend Mode**

  The monitor goes into suspend mode when the vertical sync signal is off for about 10 seconds. The power consumption during this is less than 8 W. In this mode, the screen goes off and the power LED blinks for 1 seconds On and 1 second Off. The screen is displayed after the vertical sync signal is restored.

- **Off Mode**

  The monitor goes into power-off mode when the vertical and horizontal sync signals are off for about 10 seconds. In this mode, the screen goes off and the power LED blinks for 1 seconds On and 1 second Off. The screen is displayed after the vertical and horizontal sync signals are restored.

Power Management System

The AMVX1908 Medical Monitor complies with the VESA DPMS power management proposal. The VESA DPMS proposal provides four phases of power-saving modes by detecting the horizontal sync signal as shown in the table blow.

Mode	DC Input Power (monitor only)	AC Input power (Incl. AC adapter)	LED Status
On	35 W max.	60 W max.	Steady Green
Standby	4.5 W max.	6 W max.	Blinking Green
Supend	4.5 W max.	6 W max.	Blinking Green
Off	4.5 W max.	6 W max.	Blinking Green

When the monitor is power saving mode or detects an incorrect timing, the screen will be blank and power LED indicator will blink.

DDC

To make your installation easier, the monitor is able to Plug and Play with your system if your system also supports DDC protocol. The DDC (Display Data Channel) is a communication protocol through which the monitor automatically informs the host system about its capabilities, for example, supported resolutions and corresponding timing. The monitor supports DDC1 and DDC2B standard.

INSTALLATION

To install the monitor to your host system, please follow the steps as given below:

Steps

1. Use the VGA cable that provides D-SUB 15-pin connector and connect to the 15-pin connector on the VGA controller card.
2. Connect the DC power to the DC power connector on the monitor.
3. Connect one end of AC power cord into the AC Adapter and the other end to AC power outlet.
4. Then turn the computer on and then the monitor.
5. If the monitor still does not function properly, please refer to the troubleshooting section to diagnose the problem.

CONNECTING the POWER CORD

* Check first to make sure that the power cord you use is the correct type required for your area.

* This monitor has an universal AC adapter that allows operation in either AC 100 - 240 Vac voltage area. No user-adjustment is required.

* Plug one end of the power cord to the AC adapter, plug another end to a proper AC outlet.

The cord set should have the appropriate safety approvals for the country in which the equipment will be installed and marked HAR.

For 120 volt Applications, use only UL Listed deachable power cord with NEMA configuration 5-15P type (parallel blades) plug cap. For 240 volt applications use only UL Listed Detachable power supply cord with NEMA configuration 6-15P type (tandem blades) plug cap.

Display for Video and Image Playback

Explains how to use our AMVX1908 to play VCR, view television, video game, or digital camera images. It also show you how to connect video and other types of video equipment to the display.

Connecting with Video Equipment

You can connect many types of video equipment to the display. The equipment must have either Super video (S-video) ports or Composite video ports. To install the monitor to your video equipment, please follow the steps as given below:

Steps

1. Make sure the video equipment has a Super video (S-video) or a Composite video connector.
2. Turn off the computer, display, and video equipment before any types of connection.
3. For composite video, plug one end of a BNC cable into the video out port on the video equipment then connect the other end to the monitor video input port.
4. For S-video, plug one end of the S-video cable into the video out port on the video equipment then connect the other end to the monitor S-video input port.
5. Connect the DC power to the DC power connector on the monitor.
6. Connect one end of AC power cord into the AC Adapter and the other end to AC power outlet.
7. Then turn the video equipment on and then the monitor.

Connecting to a Television Signal

The display doesn't have a tuner. To view television on the display, you need to use either the VCR or TV tuner card in your computer to change channels.

Video and Sound

This monitor doesn't have speakers for sound. If you're using the display to play a video or view television images, you need to connect the speakers to your television or video equipment for sound.
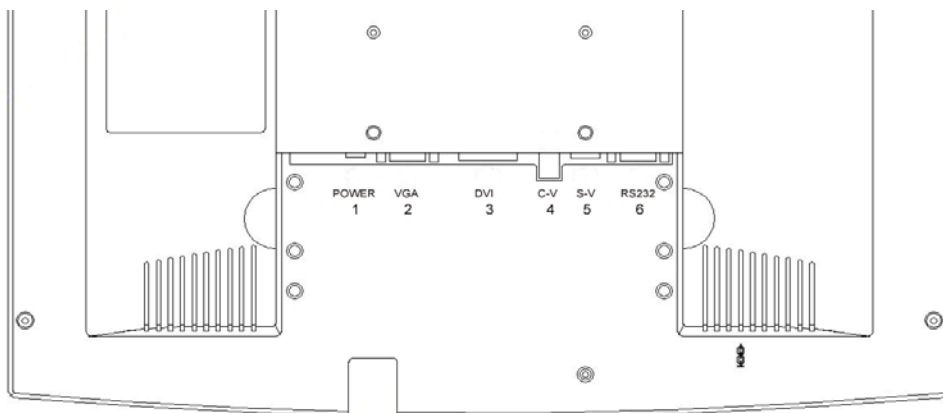
USER CONTROLS

Front Panel Controls

1. Power LED: Lights up to indicate the power is turned ON.
2. Power Switch: To turn ON or OFF the power.
3. Up: To enter OSD menu then can use as moving forward in the OSD menu.
4. Down: To move backward in the OSD menu.
5. Select: Switch PC display to Video display and vice versa by one touch when OSD menu is not activated.

                     Enter a sub menu or select a menu item.
6. Left: To increase the value of the parameter in the OSD you have selected for adjustment.
                     To increase the brightness directly when OSD menu is not activated.
7. Right: To decrease the value of the parameter in the OSD you have selected for adjustment.
                     To increase the brightness directly when OSD menu is not activated.
8. Auto Button: One touch Auto adjust (Hold 1 Sec.) or Exit OSD menu.
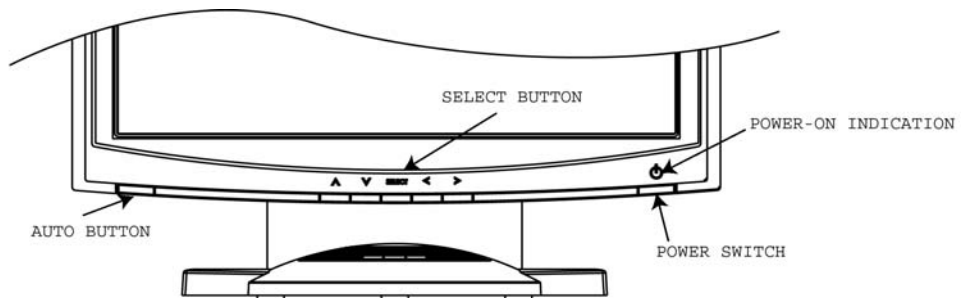
Standard OSD Operation

1. Press Up button to activate the OSD.

2. Use Select Up or Down keys to move up or down through the menu. The parameter will be highlighted wehn selected.

3. Then use + or - to increase or decrease the value of the parameter, or make selection between different options.

4. To quit the OSD screen at any time during the operation, press Auto button. If no keys are pressed for a time period, the OSD automatically disappears.
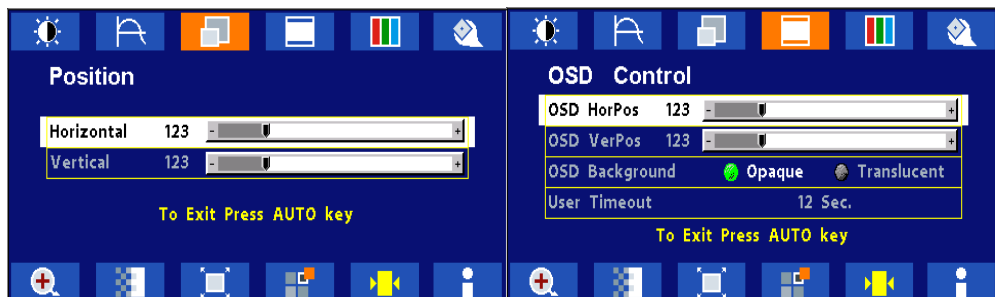
OSD Scren Basic Section (VGA)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"
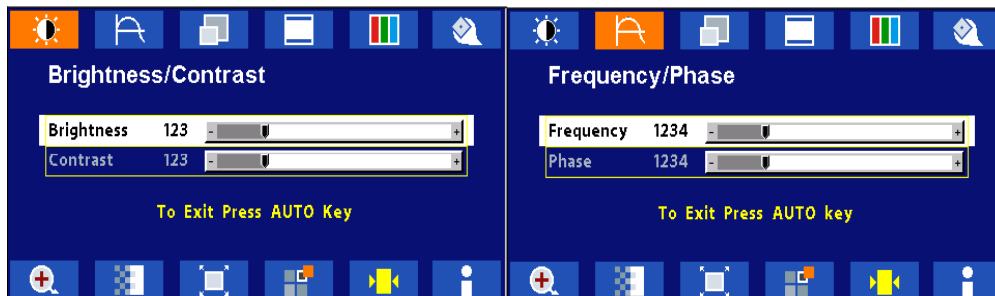
Push "Up" or "Down" button to select between "Brightness" or "Contrast" then push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "Frequency" or "Phase" then push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "Horizontal" or "Vertical" then push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "OSD Hor. Pos.", "OSD Ver. Pos.", "OSD Background", or "User Timeout" then push "Select"
Use "Left" or "Right" button to adjust

Push "Left" or "Right" to select Color Temp between "Default", "System 1", "System 2", "System 3", or "System 4" then push "Select"
If "System 1, 2, 3 or 4" were slected, push "Up" or "Down" button to select between "Red", "Green", or "Blue" then push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "DPMS", "Auto Source Select", or "Freeze Frame" then push "Select" Use "Left" or "Right" button to adjust

OSD Scren Basic Section (VGA)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"

Push the select button to execute the Zoom function

Push the select button
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "Analog RGB", "Digital RGB", "Composite Video" or "Super Video"
Use "Left" or "Right" to choose the correct mode then push "Select" button
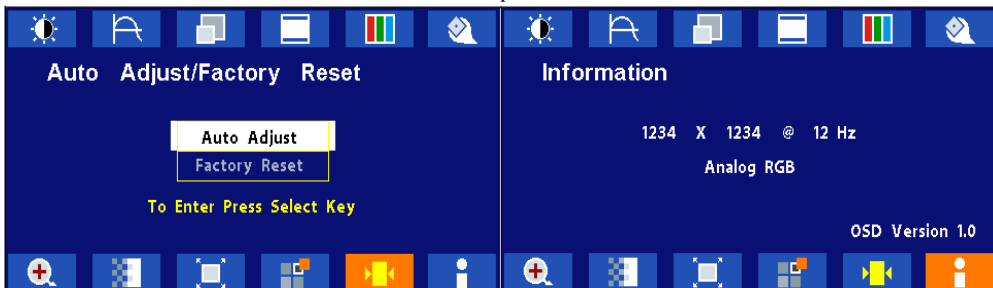
Push the select button to execute the Auto Setup function or Push the select button to execute Recall Factory Default

Push the select button to execute Information

OSD Scren Basic Section (DVI)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"
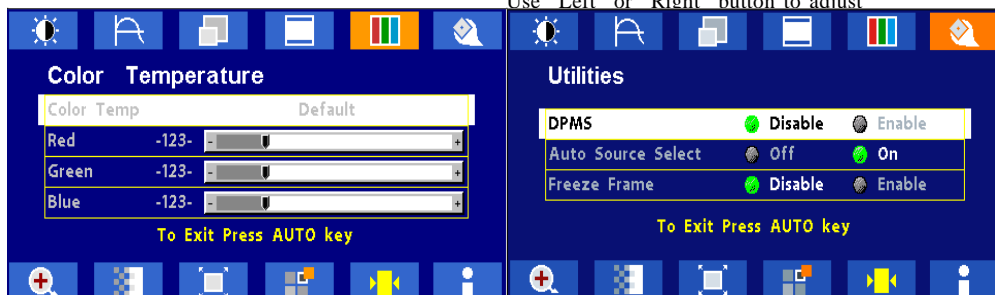

Push "Up" or "Down" button to select between "Brightness" or "Contrast" then push "Select" Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "OSD Hor. Pos.", "OSD Ver. Pos.", "OSD Background", or "User Timeout" then push "Select" Use "Left" or "Right" button to adjust

Push "Left" or "Right" to select Color Temp between "Default", "System 1", "System 2", "System 3", or "System 4" then push "Select"
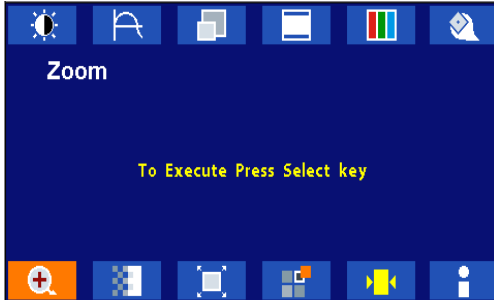If "System 1, 2, 3 or 4" were slected, push "Up" or "Down" button to select between "Red", "Green", or "Blue" then push "Select"
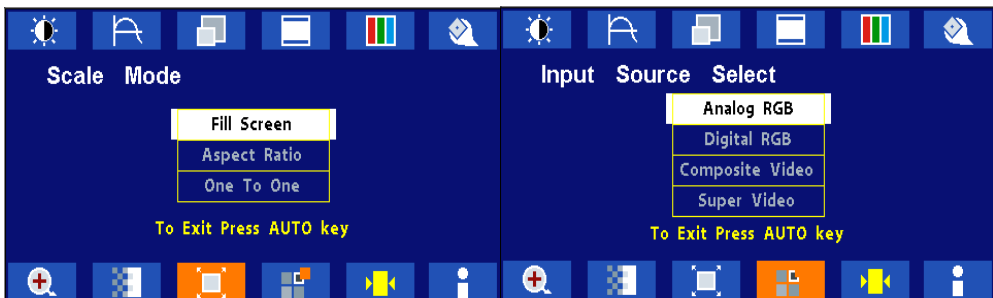Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "DPMS", "Auto Source Select", or "Freeze Frame" then push "Select" Use "Left" or "Right" button to adjust

Push the select button to execute the Zoom function

OSD Scren Basic Section (DVI)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"

Push the select button
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "Analog RGB", "Digital RGB", "Composite Video" or "Super Video"
Use "Left" or "Right" to choose the correct mode then push "Select" button

Push the select button to execute Recall Factory Default

Push the select button to execute Information

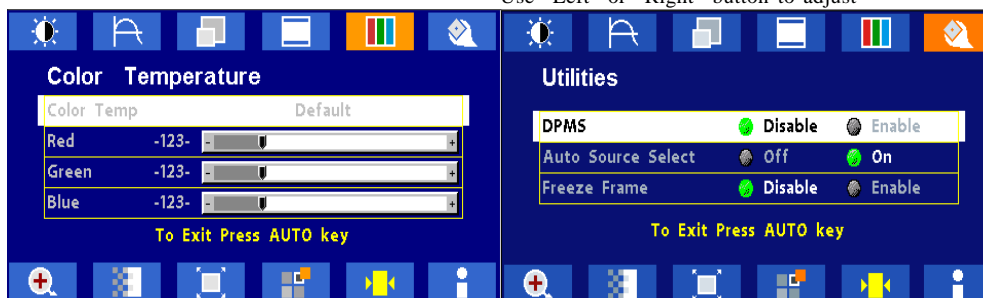# OSD Screen Basic Section (C-Video or S-Video)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"

Push "Select" button then "Up" or "Down"
Push "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between
"Brightness" or "Contrast" then push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between
"Horizontal" or "Vertical" then push "Select"
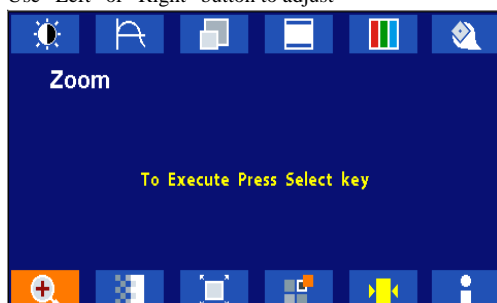Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between "OSD
Hor. Pos.", "OSD Ver. Pos.", "OSD Background", or
"User Timeout" then push "Select"
Use "Left" or "Right" button to adjust
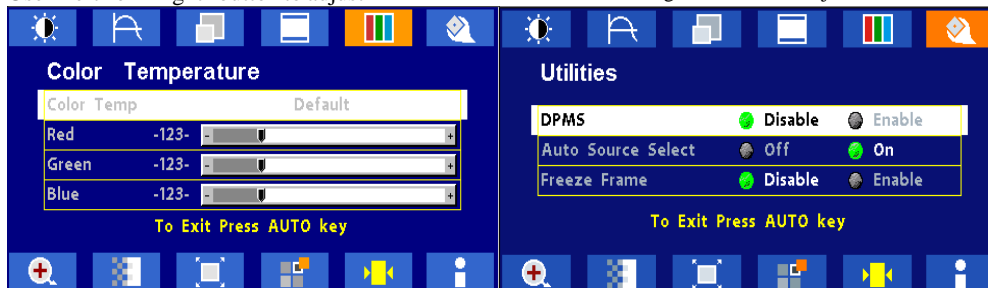
Push "Left" or "Right" to select Color Temp
between "5000", "6500", 7300", "9500", or "User"
then push "Select"
If "User" were slected, push "Up" or "Down" button
to select between "Red", "Green", or "Blue" then
push "Select"
Use "Left" or "Right" button to adjust

Push "Up" or "Down" button to select between
"DPMS", "Auto Source Select", "Freeze Frame", or
"ADC Calibration" then push "Select"
Use "Left" or "Right" button to adjust

OSD Scren Basic Section (C-Video or S-Video)

For OSD display, push "Up". For selecting Icon, push "Up" or "Down"

Push the select button
Use "Left" or "Right" button to adjust

Push the select button
Use "Left" or "Right" button to adjust
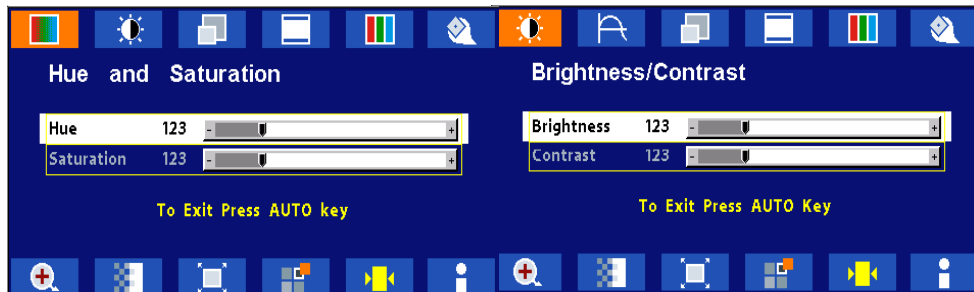

Push the select button
Use "Left" or "Right" button to adjust

Push the select button to execute Recall Factory Default

Push the select button to execute Information

OSD Function Description (Under Analog Display)

Item	Function Description
Brightness	To increase or decrease the brightness.
Contrast	To increase or decrease the contrast.
Frequency	To adjust frequency (dot clock).
Phase	To adjust phase (clock-phase).
Horizontal	To move the screen left or right.
Vertical	To move the screen upward or downward.
OSD Hor Pos	To move OSD menu left or right.
OSD Ver Pos	To move OSD menu upward or downward.
OSD Background	Choose between Opaque or Translucent.
User Timeout	Set OSD screen appearing time.
Color Temp	Choose between Defuault, System 1, System 2, System 3 or System 4 color temp.
Red	Balance Red.
Green	Balance Green.
Blue	Balance Blue.
DPMS	Enable or Disable DPMS.
Auto Source Select	Enable or disable auto source selection
Freeze Frame	Enable or Disable freeze frame
Zoom	Enable zoom-in function
Scale Mode	Choose scale mode between fill screen, aspect ratio, or one to one
Input Source Select	Choose input source between analog RGB, digital RGB, composite video, or super video
Auto Adjust	The Auto-Adjust will automatically adjust V-Position, H-Position, Clock, Clock-Phase, and Contrast, the whole process takes about 5 seconds. (Please use the test pattern file in the attached LCD monitor utility disk for Auto Adjust).
Recall Factory Default	Set to factory default.
Infomation	Display information on resolution, refresh rate, and input mode.

OSD Function Description (Under Digital Display)

Item	Function Description
Brightness	To increase or decrease the brightness.
Contrast	To increase or decrease the contrast.
Horizontal	To move the screen left or right.
Vertical	To move the screen upward or downward.
OSD Hor Pos	To move OSD menu left or right.
OSD Ver Pos	To move OSD menu upward or downward.
OSD Background	Choose between Opaque or Translucent.
User Timeout	Set OSD screen appearing time.
Color Temp	Choose between Defuault, System 1, System 2, System 3 or System 4 color temp.
Red	Balance Red.
Green	Balance Green.
Blue	Balance Blue.
DPMS	Enable or Disable DPMS.
Auto Source Select	Enable or disable auto source selection
Freeze Frame	Enable or Disable freeze frame
Zoom	Enable zoom-in function
Scale Mode	Choose scale mode between fill screen, aspect ratio, or one to one
Input Source Select	Choose input source between analog RGB, digital RGB, composite video, or super video
Recall Factory Default	Set to factory default.
Infomation	Display information on resolution, refresh rate, and input mode.

OSD Function Description (Under C-Video or S-Video Display)

Item	Function Description
Hue	To increase or decrease the hue level.
Saturation	To increase or decrease the saturation level.
Brightness	To increase or decrease the brightness.
Contrast	To increase or decrease the contrast.
Horizontal	To move the screen left or right.
Vertical	To move the screen upward or downward.
OSD Hor Pos	To move OSD menu left or right.
OSD Ver Pos	To move OSD menu upward or downward.
OSD Background	Choose between Opaque or Translucent.
User Timeout	Set OSD screen appearing time.
Color Temp	Choose between Defuault, System 1, System 2, System 3 or System 4 color temp.
Red	Balance Red.
Green	Balance Green.
Blue	Balance Blue.
DPMS	Enable or Disable DPMS.
Auto Source Select	Enable or disable auto source selection
Freeze Frame	Enable or Disable freeze frame.
Zoom	Enable zoom-in function.
Video Scale Mode	Choose video scale mode between normal, 4:3 scale mode, or 16:9 scale mode.
Video Sharpness	To increase or decrease the video sharpness.
Input Source Select	Choose input source between analog RGB, digital RGB, composite video, or super video
Recall Factory Default	Set to factory default.
Infomation	Display information on resolution, refresh rate, and input mode.

TROUBLESHOOTING

Before sending your LCD monitor for servicing, please check the troubleshooting list below to see if you can self-diagnose the problem.

Problems	Current Status	Remedy
No Picture	LED ON	• Using OSD, adjust brightness and contrast to maximum or reset to their default settings.
	LED OFF	• Check the power switch.
		• Check if AC power cord is properly connected to the AC adapter.
	LED Blinking	• Check if video signal cable is properly connected at the back of monitor.
		• Check if the power to computer system is ON.
Abnormal Picture	Unstable Picture	• Check if the specification of graphics adapter and monitor is in compliance which may be causing the input signal frequency mismatch.
	Display is missing, center shift, or too small or too large in display size	• Using Auto Setup button, if still display abnormal picture then adjust CLOCK, CLOCK-PHASE, H-POSITION and V-POSITION with non-standard signals.
		• Using OSD, in case of missing full-screen image, please select other resolution in your Operating System (Windows 95/98, NT) or other vertical refresh timing.
		• Must wait for a few seconds after adjusting the size of the image before changing or disconnecting the signal or powering OFF the monitor.

SPECIFICATION

AMVX1908	
LCD Panel	48cm/19-inch Color TFT Pane
Type	Active Matrix
Resolution	1280 dots x 1024 lines (Recommended)
Pixel Pitch	0.294mm
Display Color	16 million colors
Response Time	12ms avg. 8ms max
Color Tone	Up to 256 tone
Color Filter	RGB vertical stripe type
Face Finishing	Anti-Glare Hard Coated
Viewing Angle	178°H 178°V (CR>=10)
Video	0.7Vp-p analog RGB & TMDS (PanelLink) Digital 165 MHz x 1
Input Signal	
Sync	2.5~5.0Vp-p separated sync
Input Impedance (Analog)	Video - 75 Ohm Sync - 1k Ohm
Composite Sync	C-Video, S-Video
Digital	3 channel TMDS receiver, single pixel 24 bit MSB-aligned RGB TFT
Scanning Frequency	
Horizontal	31.47~79.8kHz
Vertical	50~85Hz (UP to 85Hz at 1024 x 768 mode and up to 75Hz at 1280 x 1024)
Display Size	
H x V	14.8" x 11.9" (376mm x 301mm)
Brightness, Contrast Radtio, Gray Scales	
Brightness	450 cd/m2, Max
Contrast Ratio	900:1 Typ.
Gray Scales	Up to 256 steps
Signal Input Connector	
Video	HD15-15pin, Digital DVI, NTSC, S-Video
Serial port	RS-232 DB-9
Temperature Environment	
Operating Temperature	50° ~ 104°F (10° - 40°C)
Operating Humidity	30 ~ 75%RH (without condensation)
Operating Atmospheric Pressure	700 ~ 1060 hPa
Power Source	
Display Monitor	DC 15V
AC-Adapter	AC100~240V
Regulations	
Safety and EMC	UL60601-1, EN60601-1, EN60601-1-2, CE, IPX1 (The monitor is compliance with IPX1, none touch model only)
Cabinet	
Desktop Stand	17.5inch (W) x 17.8inch (H) x 9.5inch (D)
Free Mount	17.5inch (W) x 14.25inch (H) x 3inch (D)
Weight	
Desktop Stand	19 lb. (8.6Kg)
Free Mount	16 lb. (7.3Kg)
Tilt Base	
	0° Down 28° Up

* All contents are subject to change without notice.

___	: Direct Current
CLASSIFIED c(UL)us US 51LJ Medical Equipment E215822	MEDICAL EQUIPMENT WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 2601-1, AND CAN/CSA C22.2 NO. 601.1	: UL approval mark according to the safety standard for Medical equipment

This monitor is intended for use in Health Care Facilities model AMVX1908

Equipment is not suitable for use in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide.

No user serviceable parts inside, ask qualified personnel when accessing inside.

For disposal of waste product, follow the requirement of local code.

Electrical input rating: 15V DC 6A

Classification

Type of protection against electric shock: Class I Equipment.

Degree of protection against the ingress of water: IPX1

Mode of operation: Continuous

This monitor has been tested to comply with IEC/EN 60601-1, IEC/EN60601-1-2 and is certified by UL to medical standard UL60601-1(UL/cUL Mark).

Because many medical offices are located in residential areas, this monitor, in addition to the medical requirements, has also been tested and found to comply with the limits for FCC Class B computing devices in a typically configured system. It is the system integrator or configurer's responsibility to test and ensure that the entire system complies with applicable EMC laws.

Environmental conditions for transport and storage:
- Temperature range within -4° to 140° F (-20° to 60° C)
- Relative humidity range within 10% to 90%
- Atmospheric pressure range within 500 to 1060 hPa.

Electromagnetic Compatibility

Like other electrical medical equipment, the AMVX1908 requires special precautions to ensure electromagnetic compatibility with other electrical medical devices. To ensure electromagnetic compatibility (EMC), the AMVX1908 must be installed and operated according to the EMC information provided in this manual.

Note   The AMVX1908 has been designed and tested to comply with IEC 60601-1-2:2001 requirements for EMC with other devices.

⚠️**Caution**   Portable and mobile RF communications equipment may affect the normal function of the AMVX1908.

⚠️ *Warning Do not use cables or accessories other than those provided with the AMVX1908, as this may result in increased electromagnetic emissions or decreased immunity to such emissions.*

⚠️ *Warning   If the AMVX1908 is used adjacent to or stacked with other equipment, observe and verify normal operation of the AMVX1908 in the configuration in which it will be used prior to using it in a surgical procedure. Consult the tables below for guidance in placing the AMVX1908.*

Guidance and Manufacturer's Declaration: Electromagnetic Emissions		
AMVX1908 is intended for use in the electromagnetic environment specified below. The customer or the user of AMVX1908 should ensure that it is used in such an environment.		
RF emissions CISPR 11	Group 1	AMVX1908 uses RF energy only for its internal function; therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	AMVX1908 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes
Harmonic emissions IEC61000-3-2	Class A	
Voltage Fluctuations/flicker emissions IEC61000-3-3	Complies	

Guidance and Manufacturer's Declaration: Electromagnetic Immunity			
AMVX1908 is intended for use in the electromagnetic environment specified below. The customer or the user of AMVX1908 should ensure that it is used in such an environment.			
Immunity Test	**IEC 60601 Test Level**	**Compliance Level**	**Electromagnetic**
Electrostatic Discharge (ESD) IEC61000-4-2	±6kV contact ±8kV air	±2,4,6kV contact ±2,4,8kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient! burst IEC61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV line to ground ±1kV line to line	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	±1kV differential mode ±2kV common mode	±0.5, 1kV differential mode ±0.5, 1, 2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	<5% Ut (>95% dip in Ut) for 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec.	<5% Ut (>95% dip in Ut) for 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec.	Mains power quaility should be that of a typical commercial or hospital environment. If the user of AMVX1908 requires continued operation during power mains interruptions, it is recommended that AMVX1908 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	N/A	Power-frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 KHz to 80 MHz 3 V/m 80MHz to 2.5 GHz	3V 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the AMVX1908 system, including its cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended Separation Distance** $d = 1.17, p$ $d=1.17, p$ 80MHz to 800MHz $d=2.33, p$ 800MHz to 2.5GHz where P is the maximum oputput power rating of the transmitter in watts(W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey(a), should be less than the compliance level in each frequency range(b). Interferency may occur in the vicinity of equipment marked with the follwing symbol:
NOTE 1: At 80MHz and 800MHz, the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			
NOTE 3: Ut is the a.c. mains voltag prior to application of the test level.			
(a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast, and TV broadcast, connot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the AMVX1908 system is used exceeds the applicable RF compliance level above, the AMVX1908 system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as recrienting or relocating the AMVX1908 unit. (b) Over the frequency range 150kHz to 80MHz, field strengths should be less than 3 V/m.			

Recommended Separation Distances Between Portable and Mobile RF Communications Equipement and the AMVX1908 System			
The AMVX1908 system is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of the AMVX1908 system can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the AMVX1908 system as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power (W) of transmitter	**Separation distance (m) according to frequency of transmitter**		
	150kHz to 80MHz d=1.17, p	80MHz to 800MHz d=1.17, p	800MHz to 2.5GHz d=2.33, p
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.70	3.70	7.37
100	11.70	11.70	23.30
For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

Connectors

DC Input
Connector Jack Power Input
The SCD-014-1-A (SHIUA CHYUAN) or equivalent.

Pin Description
1   +15V DC
2   GND

Video Input

15 pin D-subminiature connector.
The vedor P/N is DHSB-15 FRF7(LEOCO) or equivalent.

Description	Pin	Description	Pin
Red Video	1	NC	9
Green Video	2	VGA Con	10
Blue Video	3	NC	11
NC	4	SDA (DDC1/2)	12
Logic Ground	5	H-sync	13
Red Video Ground	6	V-sync	14
Green Video Ground	7	SCL (DDC2B)	15
Blue Video Ground	8		

24 pin DVI-D connector.
DDWG or equivalent connector.

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2/4 Shield	11	T.M.D.S. Data1/3 Shield	19	T.M.D.S. Data0/5 Shield
4	T.M.D.S. Data4-	12	T.M.D.S. Data3-	20	T.M.D.S. Data5-
5	T.M.D.S. Data4+	13	T.M.D.S. Data3+	22	T.M.D.S. Data5+
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock-

Serial Port

9Pin D-subminiature connector.

Description	Pin	Description	Pin
DCD	1	DSR	6
RXD	2	RTS	7
TXD	3	CTS	8
DTR	4	RINC	9
Logic Ground	5		