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## VS17 Display

VS17SXAD / VS15SXAD-TR

## Operations Manual

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August 2004	020-0318-00B
February 2004	020-0318-00A

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# Regulatory Compliance

This display has been tested and found to comply with IEC/EN 60601-1 and IEC/EN 60601-1-2 standards, and is certified to meet medical standard C22.2 No. 601.1-M1990 (C US Mark).

The medical display, in addition to meeting medical requirements, has been tested and found to comply with the limits for Federal Communications Commission (FCC) Class B computing devices in a typically configured system since many medical offices are located in residential areas. It is the system integrator's responsibility to test and ensure that the entire system complies with applicable electromagnetic compatibility (EMC) laws.

Planar Systems, Inc. has made great efforts to support the medical device industry, in particular, medical device manufacturers and medical device system integrators. We offer state-of-the-art color displays that are compliant with worldwide accepted medical device safety standards, and for the European market, CE-marked displays based on compliance with counsel directive 93/42/EEC—commonly referred to as the Medical Device Directive (MDD). The following summarizes our qualification of these displays as it relates to compliance with the MDD.

The European Medical Device Directive requires that the intended use of the device be defined. The intended use of these displays is “to display alphanumeric, graphic, and image data as inputted from any type of medical device.” These displays do not provide a measurement function in any way, and it is the device and systems manufacturer's responsibility to verify its function in the integrated device or system.

The display was classified as required by the MDD according to Annex IX of the directive and the medical device (MEDDEV) guidance available at the time of classification. Because the display uses electrical energy and has no direct patient connections and—by itself—no medical utility, the display is classified according to Rule 12 as an MDD Class I device, component, or accessory. The MDD states that manufacturers of Class I medical devices or accessories shall satisfy the requirements in regard to design and manufacturing controls, that is, the applicable assessment route to be used for CE-marking under the MDD, and it shall carry the CE mark according to Annex XII of the directive, with no notified body annotation.

The applicable safety standards for an MDD Class I display are IEC/EN 60601-1:1990 along with Amendments 1 and 2. To help the medical device designer evaluate the suitability of these displays, Planar has also conducted EMC testing to IEC 60601-1-2 as it can be applied. The display with its power supply alone does not represent a functional medical device. Hence, Planar configured a minimal operating system to exercise the display. The resulting data are made available to interested parties.

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This is informative data, not certification data. Certification data must be obtained by the device or system integrator according to Article 12 of the MDD titled “Particular procedure for systems and procedure packs.” Paragraph 2 clearly outlines the device or system integrator’s responsibility in this matter.

In summary, Planar Systems, Inc. is CE-marking these displays under the Medical Device Directive, which establishes compliance to the basic medical safety standards. However, EMC compliance can only be accomplished in the configured medical device or system and is the responsibility of the device or system manufacturer. Planar has the necessary documentation such as IEC 60601-1 notified body and other third-party test reports and certifications, a risk/hazard analysis, an essential requirements checklist, and the Planar International Electrotechnical Commission (IEC) declaration of conformity.

Planar Systems, Inc., located in Beaverton, Oregon, USA, is the manufacturer of these displays in the meaning of the directive. As required by the MDD in Article 14, Planar Systems, Inc., not residing in the European Economic Area (EEA), has a European representative, Planar Systems, Inc.—Olarinluoma 9, P.O. Box 46, FIN-02201 Espoo, Finland (phone + 358 9 420 01; fax +358 9 420 0200).

In the opinion of Planar Systems, Inc. registration required to put this device into commerce is the responsibility of the medical device/system manufacturer, and Planar supports this requirement by providing a European Commission (EC) declaration of conformity. If Planar supplies a display to an end user, rather than a device manufacturer, it is the end user’s responsibility to ensure continued compliance with the MDD of the system in which the display is integrated.

For vigilance reporting as required under Article 10 of the MDD, Planar Systems, Inc. will provide any information requested by competent authority to support any reported incident investigation by such an authority.

### **European Union Declaration of Conformity for Medical Applications**

A Declaration of Conformity has been filed for this product. For additional copies of the Declaration of Conformity document, contact Planar Systems, Inc.

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# FCC Compliance Statement

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 when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To comply with the limits for an FCC Class B computing device, always use the shielded signal cord and shielded power cord supplied with this unit.

The Federal Communications Commission warns that changes or modifications of the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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# Product Information

## Symbol explanations

These symbols appear on the display or power adapter.

Symbol	Description
	Proof of conformity to applicable European Economic Community Council directives.
	The product has been tested and certified by CSA to C22.2 No.601.1-M1990. If this mark appears with the indicators "C" and "US," the product is certified for the U.S. and Canadian markets, meeting the applicable U.S. and Canadian standards.
	The product has been tested to comply with FCC Class B standards.
	More information available in accompanying documents.
	Protective earth ground.
	Indoor use only.

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## Safety instructions

Store the display in its original shipping carton when it is not in operation for extended periods of time. Also use the original packing materials and carton when shipping the display.

- Do not place the display near a window. Exposing the display to rain, water, moisture, or constant direct sunlight can damage it.
- Do not place anything on top of the display-to-computer signal cord. Make sure the cord is clear of foot traffic.
- Do not apply excessive pressure to the screen.
- Do not operate the touch screen with sharp objects, such as a scalpel. Sharp objects can scratch or damage the touch screen. A damaged touch screen may pose a safety hazard.
- Refer all servicing to qualified personnel to maintain your warranty. The display and power supply units contain no user-serviceable parts.
- Do not cover or obstruct the venting holes on the back of the display.
- Store the display in an environment with a temperature range from -20° to 65° C (from -4° to 149° F). Storing your display outside the temperature range could result in permanent damage.
- Replace any cord or cable that is frayed or damaged with another of the same type and rating as supplied by Planar. (See [“Ordering Information” on page 30](#) for part numbers.) The safety and regulatory listings and certifications are based on the cable supplied by Planar.
- Do not expose the display to liquid or drop it. If the case has been damaged, the unit may pose a shock or fire hazard. Unplug the unit and call customer service for assistance.
- Use only the power adapter that has been tested and approved for use with this display product. (See [“Ordering Information” on page 30](#) for part numbers.) The power adapter must be plugged into a grounded power outlet.
- Use a cloth dampened with liquid cleaner to clean the power adapter. Wipe the outside of the enclosure and cable only. Do not immerse the adapter in liquid, or a safety hazard could arise during use.
- Do not use the power adapter near inflammable anesthetics.

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## Cleaning instructions

The VS17SXAD models will continue to operate while being cleaned in a fashion normal for a hospital environment. The display withstands nonabrasive cloths and cleaning solutions used on similar equipment.

Do not spray liquid cleaners directly onto the screen. Stand away from the display and apply the cleaning solution onto a clean nonabrasive cloth.

Use a damp cloth with the cleaning solution for all surfaces. (You can also use 70% isopropyl alcohol to clean the touchscreen surface.) Without applying excessive pressure, clean the screen with the slightly dampened cloth. Dry the screen with a clean nonabrasive cloth to remove any residue.

## Disposal Information

The VS17SXAD models contains cold cathode fluorescent lamps, which contain a maximum of 20 milligrams of mercury (5 milligrams per lamp). Follow local ordinances or regulations for its disposal.

## Possible cleaning solutions

- 70% isopropyl alcohol
- 1.6% aqueous ammonia
- Cidex® (2.4% glutaraldehyde solution)
- Sodium hypochlorite (bleach) 10%
- “Green soap” United States Pharmacopoeia (USP)
- 0.5% Chlorhexidine in 70% isopropyl alcohol
- Ovation®
- Formula 409®
- fantastik®
- WexCide®

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# About the VS17 Display

The architecture of the VS17 display incorporates an active matrix liquid-crystal display (AMLCD) panel that produces a bright, high-contrast image with low radiation emission. This technology greatly reduces the radiation-related health concerns associated with cathode-ray tube (CRT) monitors.

The VS17 is a high-resolution color display designed to be versatile and easy to use. The display accepts either analog or digital video (DVI) input and displays most video standards from 640 x 480 (VGA standard) to 1280 x 1024 (SXGA standard). The controls located on the front panel allow you to easily adjust the display parameters using onscreen display (OSD) menus.

Digital video input is a single-link, transition minimized differential signaling (TMDS) digital visual interface (DVI), and is in compliance with the Digital Display Working Group (DDWG) DVI standard. This interface produces the sharpest display image possible with little need for adjustment. The setup is Plug and Play. The display complies with the VESA DDC1 and DDC2B protocols for analog mode. For more information, refer to the VESA standard DDCC Interface.

This display has been designed, tested, and certified for use within the patient vicinity. It has lower electric discharge, thus reducing the likelihood of electric shock. The display is certified to UL-2601, IEC 60601-1, and other representatives of the most stringent electric discharge certifications available. In addition, the interface buttons on the front panel are sealed by a plastic membrane, allowing simpler and safer cleaning. The display also meets the liquid/particle ingress certifications, IPX1.

For more information, see the [display specification](#).

### Display features

Built-in platform that conforms to the VESA mounting standard. The display is mountable on the following devices:

- Articulated swing arm
- Desk stand
- Wall bracket

Rugged display housing that makes the unit ideal for hospital applications. The acrylic cover protects the display from bumps, falls, collisions, and even everyday cleaning.

Configuration management to ensure that you receive a consistent and predictable product.

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# Unpack the Display

Make sure you receive the following items. If any item is missing or damaged, see your dealer immediately.

- LCD screen
- Desk stand or VESA mounting plate
- Integrated VGA-VGA-audio cable
- Integrated DVI-DVI-audio cable
- Serial cables (VS17SXAD-TR only)
- AC power adapter with 1.5-meter (5-foot) cable
- Medical-grade power cord (U.S. or European)
- Documentation package, including EU Declaration of Conformity, quick setup guide, and CD with touchscreen driver and PDF file of this manual

### Selecting a workspace

Before you unpack the VS17 display, select a suitable workspace for the display and computer. You need a stable, level, and clean surface near a wall outlet.

Even though this display uses little power, place it in a location that allows sufficient airflow to ensure proper ventilation.

Avoid setting up the display near a window where sunlight often comes in. You will have difficulty seeing the screen with glare reflecting off the display.

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# Identify the Components

The VS17 display provides easy access to all controls and peripheral ports. The following illustrations of the front and back panels identify the display controls and ports.

## Front panel



### Legend

- 1 LCD screen  
A 17-inch diagonal AMLCD. The screen supports a maximum resolution of 1280 x 1024 (SXGA).
- 2 Function UP and DOWN buttons  
Vertical arrows to navigate the onscreen display horizontally. Select the icons to the left or right.
- 3 Power ON indicator  
An LED indicator that stays lit when the power is on and the display is receiving a proper video signal. The LED blinks slowly when the display is in power-saving mode.
- 4 Power/Menu  
Dual function button for the power switch and onscreen display menu.
- 5 Adjust PLUS and MINUS buttons  
Controls to change the value of the selected icon.
- 6 Desk stand  
Flat-surface support for the display. The stand allows you to both rotate the screen to landscape or portrait and tilt the screen to various viewing angles.

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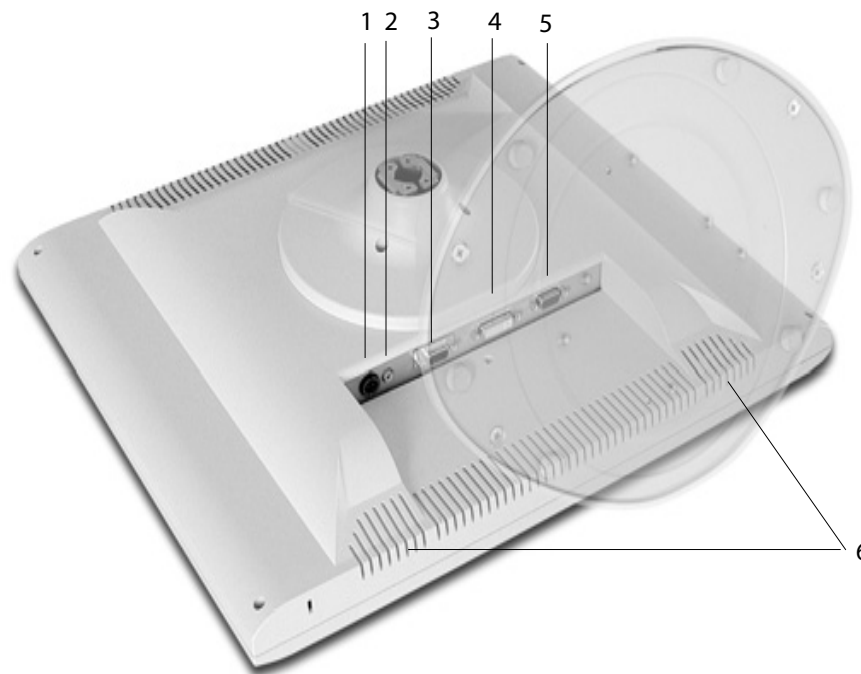
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## Back panel



### Legend

- 1 Power input (locking mini DIN connector)  
Port for the power connector.
- 2 Audio Line In  
Jack for the audio cable. (You can also connect the CD-ROM Line Out to this jack.)
- 3 Touchscreen port  
Port for the RS-232 cable; used to operate the optional touch screen. This cable is provided with the Optional Touch Screen package.
- 4 DVI connector  
Port for digital video cable.
- 5 VGA connector  
Port for a 1.5-meter cable with two 15-pin D-Sub VGA connectors.
- 6 Stereo speakers  
Two transmission channels for sound.

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## Adjust the Orientation/Viewing Angle

You can rotate your VS17 display from landscape to portrait and tilt it downward or upward to various viewing angles. The side view of the display shows the angle settings possible, ranging from -5 degrees downward to 25 degrees upward.



- 1 Gently pull the lower half of the display toward you. You must tilt the display upward before rotating it.
- 2 Use both hands to change the orientation of the display. Rotate the display 90° to the left (counterclockwise) until it stops in portrait mode.
- 3 Select, if necessary and/or available, the different option on the video card, or display settings on the control panel.
- 4 Refer to [www.portrait.com](http://www.portrait.com) for software that allows conversion from landscape to portrait mode.

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## Connect the AC Power

- 1 Plug the AC power cord into the power adapter.
- 2 Plug the power connector into the locking mini DIN port on the back panel. Push the connector in until the locking mechanism clicks.
- 3 Plug the power cord into a grounded wall outlet.



VS17 Display



### Installation tips

For displays mounted on a desk stand, rotate the screen from landscape to portrait for easy access to the ports. If you need to place your display face down, lower it carefully on a protective cloth.

### Avoiding power surges

Use a surge protector between the power adapter and the outlet to prevent sudden current variations from reaching the display.

### “Unlocking” the power cord

To detach the cord, press down on the plug housing and then pull out.

### IN OPERATION: No power

Check that the display and computer are both turned on.

Verify that the outlet is functioning. Plug a lamp into the same outlet to check.

Check the status of the LED indicator on the power supply. If the green light is off, call customer support.

Check the status of the LED indicator on the display. If the display is on but the green light is neither steady nor blinking, call customer support.

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## Connect the Video Cable

- 1 Turn off your computer and display before connecting the two units.
- 2 Plug the video cable into the DVI port for digital mode or into the D-sub VGA port for analog mode. (The illustration below shows the VGA connection. The DVI connector is to the immediate left.)
- 3 Plug the other end of the cable into the video port on the computer.



- 4 Make sure the cable are properly aligned, then tighten the connecting screws to ensure a secure connection.
- 5 Turn on the display first and then the computer.



### IN OPERATION: Blank screen

Check the LED indicator on the display. If it is steady green, but you have no image on the screen, check that all connections are secure and the power is on. If the problem still exists, call customer support.



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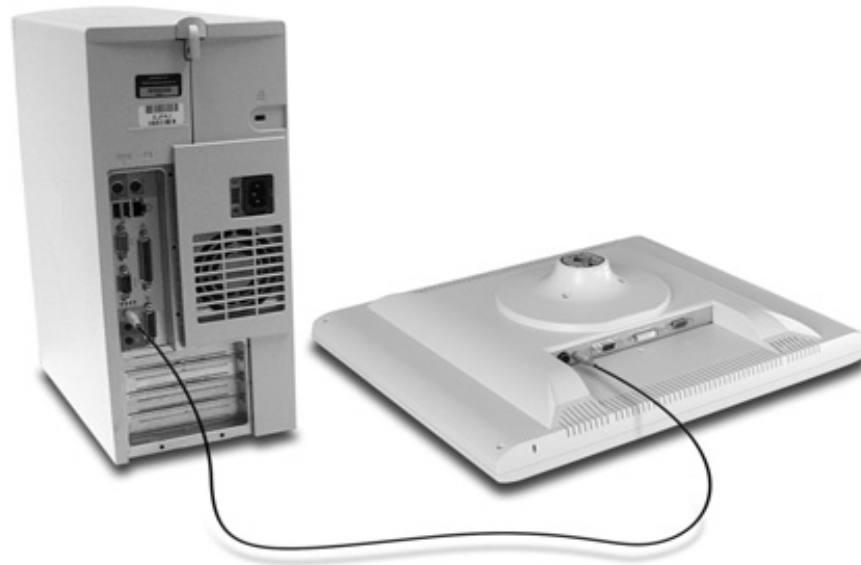
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## Connect the Audio

- 1 Plug the audio cable to the Line Out on the audio card in your computer.
- 2 Plug the other end of the audio cable to the Line In jack on the display.



- 3 Adjust the volume of the stereo speakers by using the volume control function on the onscreen display menu.



### On volume control

In some instances, the volume control function may be disabled. If so, the volume has been preset to the maximum.

Although the display speakers are adequate for most audio applications, Planar does not recommend using the display speakers as the exclusive audio source for medical alarms or applications critical for audio performance.

### IN OPERATION: No sound

Verify that your display unit has speakers. Try loading a CD or another audio program.

Check the volume setting on the display and the computer. Disable mute or increase the volume.

Check that the audio cable is plugged into the OUTPUT on the computer and INPUT on the display.

Plug headphones or speakers into your computer to see if they produce sound.

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## Connect the Optional Touch Screen

- 1 Plug the RS232 cable into the RS232 port on the display.
- 2 Plug the other end of the cable to the RS232 serial port on your computer.
- 3 Load the touchscreen driver from the CD enclosed.



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### IN OPERATION: No touch

The CD shipped with your display contains several touchscreen drivers. Be sure the proper touchscreen driver is installed on your computer.

If you have conflicts or any problems with the driver, try reinstalling it.

If you continue to have problems, then you need to determine the source—the display or the computer. Try using the display with another computer, or installing the driver on another display system.

If the problem still exists, contact customer support.

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# Power Management System

The VS17 display complies with the VESA Display Power Management Signaling standard. The four power-saving modes listed below are based on the display detecting the horizontal or vertical sync signal.

Mode	AC Input Power	LED Status
ON	60 watts maximum	Steady green
Standby	6 watts maximum	Blinking green
Suspend	6 watts maximum	Blinking green
OFF	6 watts maximum	OFF

When the display is in power-saving mode, or when it detects an incorrect timing, the display screen goes blank and the power LED indicator blinks.

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# Overview of Display Controls

The onscreen display (OSD) menu is the user interface for controlling various aspects of the VS17 display. Using the OSD menu, you can adjust functions such as brightness, image fine-tuning, and speaker volume.

Use the push buttons on the front of the display to operate the controls. Access the OSD menu by quickly pressing the Power/Menu button when the display is powered-up. If your computer is in power-saving mode, or is powered-down, the OSD menu is inaccessible.



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### Legend

- 1 Function UP and DOWN buttons  
Select the icons to the left or right.
- 2 LED power indicator  
Is lit when the power is on and the display is receiving a proper video signal; blinks when the display is in power-saving mode.
- 3 Power/Menu button  
Turns the display ON or OFF (press for a minimum of 2 seconds).  
Activates the OSD main menu with a quick press.
- 4 Adjust PLUS and MINUS buttons  
Change the value of the selected icon or select a menu item.

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# Hot Key Functions

Three Hot Key functions allow you to make quick adjustments to the display setting, volume, and contrast.



**Auto Adjust.** Press the Function DOWN button to apply a display setting automatically. A small Auto Adjust OSD is also displayed. (Analog mode only)



**Audio-Volume.** Press the Adjust PLUS button to change the audio volume directly. A small Audio-Volume OSD is also displayed.



**Contrast.** Press the Adjust MINUS button to change the contrast of the display directly. A small contrast OSD is also displayed.

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# Onscreen Display Main Menu

This screen appears when you access the OSD main menu. The top row of icons represents the main menus. When a menu item is highlighted, its submenu and a description of the submenu item appear below the main menu bar.



### IN OPERATION: Image quality

To correct poor image quality, try the following:

- Bring up the OSD menu and set the display to its native resolution, refresh rate, and maximum color depth.
- Auto adjust the display.
- Go to the Windows shutdown screen and set phase.
- Verify that the computer settings are compatible with the display. Check the information on the OSD menu. (See MISC-Control menu.)
- If the problem still exists, call customer support.

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# Function Menus

## Analog Mode

### Monitor-Control Menu



**Monitor-Control.** Allows you to adjust the display characteristics such as the horizontal or vertical position, display phase, display clock, and factory reset. Adjusting these settings is necessary if the results from the Auto Adjust function are not satisfactory.

Pressing the Adjust PLUS or MINUS button displays the Monitor-Control submenu. Use the Function UP or DOWN button to select a submenu item.

**Auto-Adjust.** Select Auto-Adjust to set the display parameters to optimum values.



**H-Position.** Press the Adjust PLUS or MINUS button to move the display image left or right on a horizontal plane.



**V-Position.** Press the Adjust PLUS or MINUS button to move the display image up or down on a vertical plane.



**Phase.** Press the Adjust PLUS or MINUS button to fine-tune the display image.



**Clock.** Press the Adjust PLUS or MINUS button to adjust the display pixel number alignment.



**Reset.** Press the Adjust PLUS or MINUS button to reset all the Monitor-Control submenu settings.



**Graph/Text.** Press the Function Enter button to switch between the text and graphic options.



**Port-Select.** Switch between analog and digital mode; if no signal comes the Auto-Detection function is activated.



**Exit.** Press the Adjust PLUS or MINUS button to exit the Monitor-Control submenu.



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### OSD-Control Menu



**OSD-Control.** Allows you to adjust the position of the onscreen display.

Pressing the Adjust PLUS or MINUS button displays the OSD-Control submenu. Use the Function UP or DOWN button to select a submenu item.



**OSD-H-Position.** Press the Adjust PLUS or MINUS button to change the position of the OSD on a horizontal plane.



**OSD-V-Position.** Press the Adjust PLUS or MINUS button to change the position of the OSD on a vertical plane.



**OSD-Timer.** Use the Adjust PLUS or MINUS button to change the OSD display time



**Exit.** Press the Adjust PLUS or MINUS button to exit the OSD-Control submenu.



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### Graphic-Control Menu



**Graphic-Control.** Allows you to adjust the display contrast, brightness, sharpness, and color settings.

Pressing the Adjust PLUS or MINUS button displays the Graphic-Control submenu. Use the Function UP or DOWN button to select a submenu item.



**Contrast.** Press the Adjust PLUS or MINUS button to adjust the difference between the lightest and darkest areas of the display screen. You can set the contrast level from 0 to 31.



**Brightness.** Press the Adjust PLUS or MINUS button to adjust the light level on the display screen. Make this adjustment in conjunction with the Contrast parameter.



**Color.** Press the Adjust PLUS or MINUS button to select the display color. The available options are 9300, 6500, and User. The 9300 and 6500 options allow you to set the Color Temperature to CIE coordinate value 9300 and 6500 degrees respectively. Selecting the User option allows you to customize the Red, Green, and Blue coordinates.



**R, G, B.** Press the Adjust PLUS or MINUS button to make individual adjustments to the Red, Green, and Blue coordinates for the customized color temperature. There are 128 levels of adjustments (0 to 127) available. Before adjusting these fields, select the User option in the Color submenu.



**Auto-Level.** Select Auto-Level to automatically set the white balance display.



**Reset.** Press the Adjust PLUS or MINUS button to reset Color, Brightness, and Color parameters.



**Exit.** Press the Adjust PLUS or MINUS button to exit the Graphic-Control submenu.

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### Miscellaneous–Control Menu



**MISC–Control.** Allows you to select the display language, adjust the volume setting, and view system information.

Pressing the Adjust PLUS or MINUS button displays the MISC–Control submenu. Use the Function UP or DOWN button to select a submenu item.



**Language.** Press the Adjust PLUS or MINUS button to select a OSD display language. Languages supported: English, German, French, Spanish, and Italian.



**Audio Volume.** Press the Adjust PLUS or MINUS button to decrease or increase the volume of the stereo speakers.



**Information.** Select this item to see the current display mode and firmware version.



**Exit.** Press the Adjust PLUS button to exit the MISC–Control submenu.

### Exit Menu



**Exit.** Closes the onscreen display program.

Pressing the Adjust PLUS or MINUS button, when the OSD Exit item is selected, exits the OSD menu. The OSD menu exits automatically when left inactive.

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## Digital Mode

### Monitor-Control Menu



**Monitor-Control.** Allows you to adjust the display characteristics.

Pressing the Adjust PLUS or MINUS button displays the Monitor-Control submenu. Use the Function UP or DOWN button to select a submenu item.



**Port-Select.** Switch between analog and digital mode; if no signal comes the Auto-Detection function is activated.



**Exit.** Press the Adjust PLUS or MINUS button to exit the Monitor-Control submenu.

### OSD-Control Menu



**OSD-Control.** Allows you to adjust the position of the onscreen display.

Pressing the Adjust PLUS or MINUS button displays the OSD-Control submenu. Use the Function UP or DOWN button to select a submenu item.



**OSD-H-Position.** Press the Adjust PLUS or MINUS button to change the position of the OSD on a horizontal plane.



**OSD-V-Position.** Press the Adjust PLUS or MINUS button to change the position of the OSD on a vertical plane.



**OSD-Timer.** Use the Adjust PLUS or MINUS button to change the OSD display time.



**Exit.** Press the Adjust PLUS or MINUS button to exit the OSD-Control submenu.

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### Graphic-Control Menu



**Graphic-Control.** Allows you to adjust the display contrast, brightness, sharpness, and color settings.

Pressing the Adjust PLUS or MINUS button displays the Graphic-Control submenu. Use the Function UP or DOWN button to select a submenu item.



**Contrast.** Press the Adjust PLUS or MINUS button to adjust the difference between the lightest and darkest areas of the display screen. You can set the contrast level from 0 to 31.



**Brightness.** Press the Adjust PLUS or MINUS button to adjust the light level on the display screen. Make this adjustment in conjunction with the Contrast parameter.



**Reset.** Press the Adjust PLUS or MINUS button to reset Color, Brightness, and Color parameters.



**Exit.** Press the Adjust PLUS or MINUS button to exit the Graphic-Control submenu.

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**MISC–Control.** Allows you to select the display language, adjust the volume setting, and view system information.

Pressing the Adjust PLUS or MINUS button displays the MISC–Control submenu. Use the Function UP or DOWN button to select a submenu item.



**Language.** Press the Adjust PLUS or MINUS button to select a OSD display language. Languages supported: English, German, French, Spanish, and Italian.



**Audio Volume.** Press the Adjust PLUS or MINUS button to decrease or increase the volume of the stereo speakers.



**Information.** Select this item to see the current display mode and firmware version.



**Exit.** Press the Adjust PLUS button to exit the MISC–Control submenu.

### Exit Menu



**Exit.** Closes the onscreen display program.

Pressing the Adjust PLUS or MINUS button, when the OSD Exit item is selected, exits the OSD menu. The OSD menu exits automatically when left inactive.

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# Onscreen Display Lockout

The VS17 display incorporates an OSD lockout function that you toggle active or inactive. Pressing three controls simultaneously—Function DOWN, Adjust PLUS, and Adjust MINUS—keeps the onscreen display from being enabled by the power control. The message Key Lock briefly appears onscreen. During lockout, the OSD menu does not appear. To unlock the onscreen display, press the same three controls again simultaneously. The message Key Unlock appears briefly.

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# Technical Information

VS17SXAD/VS17SXAD-TR	Specification	
Color TFT AMLCD flat-panel unit	17-inch SXGA (1280 x 1024)	
Control Functions Power	Software Power switch with LED indicator (Press to turn OFF, over 1 (one) sec. to turn ON)	
Onscreen display (OSD)	Main Menu	Submenu
	Monitor-Control	Auto-Adjust/H-Position/V-Position/Phase/Clock/ Reset/(Graph/Text)/Port-Select/Exit
	OSD-Control	OSD-H-Position/OSD-V-Position/OSD Timer/Exit
	Graphic-Control	Contrast/Brightness/Color/RGB/Auto-Level/Reset/Exit
	MISC-Control	Language/Audio Volume/Information/Exit
	Exit	
Display area (mm)	337.92 (W) x 270.34 (H), 17-inch diagonal	
Response (Rise/Fall) Time	15+10=25 ms typical; 30+25=55 ms maximum (at 25 °C)	
Contrast ratio	500:1 typical, 350:1 minimum	
Brightness	Non-touch: 250 cd/m <sup>2</sup> typical, 200 cd/m <sup>2</sup> minimum; resistive touch: 200 cd/m <sup>2</sup> typical, 160 cd/m <sup>2</sup> minimum	
Viewing angle (degrees)	±85 horizontal and vertical	
Pixel pitch (mm)	0.264 (H) x 0.264 (W)	
Display color	16M colors	
Video interface	Analog and digital	
Scanning frequency	24–80 kHz, horizontal; 55–75 Hz, vertical	
Number of factory, preset mode	22	
Power management	Meets VESA DPMS proposal	
Power consumption (ON/OFF)	60/6.0 Watts max	
Dimensions W x H x D (mm)	404 x 401 x 234	
Weight	4.8 kg with VESA plate, 8.8 kg with desk stand	
Power adapter, Ault	12 volts, 6.67 amps, 80 watts	
Options	VESA-compatible mounting plate, desk stand, touch screen	
Environment	Operating Temperature: 0 (zero) to 40 °C; Relative Humidity: 10% to 90%, noncondensing	
Audio	Two 2-Watt per channel speakers with amplifier	
Regulatory	See <a href="#">Regulatory Compliance</a>	

 Only items appearing on the menu when the display is in digital mode

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# Supported Timing

Item	Standard	Resolution	Dot Clock (MHz)	Vertical Scanning Frequency (Hz)	Horizontal Scanning Frequency (kHz)	Sync Polarity or Composite Sync (H/V)	Operating Mode
1	NEC PC98	640x400	25.20	70.15	31.50	-/-	A/D/G
2	NEC PC98	640x400	21.05	56.42	24.83	-/-	A/G
3	MAC 13-inch mode	640x480	30.24	66.67	35.00	-/-	A/D/G
4	MAC 16-inch mode	832x624	57.28	74.55	49.73	-/-	A/D/G
5	MAC 17-inch mode	1024x768	80.00	75.02	60.24	-/-	A/D/G
6	VGA	640x350	25.18	70.09	31.47	+/-	A/D/G
7	VGA	640x400	25.18	70.09	31.47	-/+	A/G
8	VGA	640x480	25.18	59.94	31.47	-/-	A/D/G
9	VESA	640x480	31.50	72.81	37.86	-/-	A/D/G
10	VESA	640x480	31.50	75.00	37.50	-/-	A/D/G
11	VESA	800x600	36.00	56.25	35.16	+/+	A/D/G
12	SVGA	800x600	40.00	60.32	37.88	+/+	A/D/G
13	VESA	800x600	50.00	72.19	48.08	+/+	A/D/G
14	VESA	800x600	49.50	75.00	46.88	+/+	A/D/G
15	VGA	720x400	28.32	70.09	31.47	-/+	A/G
16	XGA	1024x768	65.00	60.00	48.36	-/-	A/D/G
17	VESA	1024x768	75.00	70.07	56.48	-/-	A/D/G
18	VESA	1024x768	78.75	75.03	60.02	+/+	A/D/G
19		1024x768	71.64	66.13	53.96	+/+	A/D/G
20	VESA	1152x864	108.00	75.00	67.50	+/+	A/D/G
21		1152x870	100	75.06	68.68	-/-	A/D/G
22	VESA	1280x960	108.0	60.0	60.0	+/+	A/D/G
23	VESA	1280x1024	108.0	60.02	63.98	+/+	A/D/G
24	VESA	1280x1024	127.0	69.85	74.88	+/+	A/D/G
25	VESA	1280x1024	135.0	75.03	79.98	+/+	A/D/G
26	SUN	1024x768	64.13	59.98	48.29	H+V	A
27	SUN	1024x768	74.25	70.04	56.59	H+V	A



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## ▶ Troubleshooting

# Troubleshooting

### Problem

### Solution

Display indicates “Over Range”

The frequency range is out of display specifications, or the incoming resolution is higher than 1280 x 1024. The video data turns off and this warning message appears.

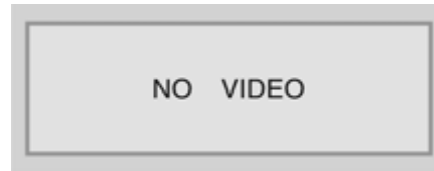


In analog mode, check that the scanning frequency is in a horizontal range of 24 to 80 kHz and a vertical range from 50 to 75 Hz. Or, check that the display resolution is set to 1280 x 1024 or lower.

In digital mode, check that the scanning frequency is in a horizontal range of 30 to 80 kHz and a vertical range from 50 to 75 Hz. Or check that the display resolution is set to 1280 x 1024 or lower.

Display indicates “No Video”

There is no video-input signal from the source video port. The onscreen display shows this message.



Check that the video cable is connected securely to the computer and the display.

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# Overview of Standard Warranty

## Summary

- Standard 1-year “repair and return” warranty on all VS17 displays
- Typical repair turnaround time of 10 business days
- Repair facilities and technical support in the United States and in Europe

## Standard Warranty Return Procedure

As a Planar Standard Warranty customer, you must follow the procedure below if you have a non-functioning display. Planar customer service staff will attempt to correct any minor issues that may be causing the problem. Once Planar has determined that you have a non-functioning product, Planar will arrange for return and repair of the non-functioning product.

- 1** Contact Planar via the web at <http://www.planar.com/support>. In North America, call (866) PLANAR1 (866.752.6271). In Europe, call +358 9 420 01 or send your info by fax to +358 9 420 0200. You must have the model number, serial number, and proof-of-purchase available.
- 2** Planar customer service staff will attempt to correct any minor issues that may be causing the problem. If we are unable to correct the problem to your satisfaction, we will issue a Return Material Authorization (RMA).
- 3** You must return the product, as specified, to Planar Systems. Do not return the battery cell or cart to planar Systems unless directed by Planar customer service.
- 4** Planar will validate the defect, repair the unit, and return the unit to you. The typical turnaround time is 10 business days.

At its sole discretion, Planar may charge you the customer for returned units deemed functional or for returned units with only customer-caused damage. It is the responsibility of the customer to properly package the hardware, include all appropriate materials, and return it to the location specified by Planar customer service.

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## Summary Limitations and Exclusions of VS17 Displays

- 1 Warranty is valid only for the first consumer purchaser (non-transferable).
- 2 Warranty does not cover the battery cell(s), mouse, or keyboard.
- 3 The customer must provide original proofs of purchase for the hardware.
- 4 Warranty is void on any product with a defaced, modified, or removed serial number.
- 5 Warranty is void on any product with damage, deterioration, or malfunction resulting from the following:
  - a) Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - b) Repair or attempted repair by anyone not authorized by Planar.
  - c) Any damage of the product due to shipment.
  - d) Removal or installation of the product.
  - e) Causes external to the product, such as electric power fluctuations or failure.
  - f) Use of supplies or parts not meeting Planar specifications.
  - g) Normal wear and tear, including backlights dimming over time.
  - h) Any other cause which does not relate to a product defect.
- 6 Warranty excludes removal, installation, and setup service charges.

## Limitation of Implied Warranties

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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## Exclusion of Damages

THE LIABILITY OF PLANAR IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. PLANAR SHALL NOT BE LIABLE FOR THE FOLLOWING:

- 1** DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THEIR POSSIBILITY OF SUCH DAMAGES.
- 2** ANY OTHER DAMAGES, WHETHER INCIDENTAL, INDIRECT, CONSEQUENTIAL, OR OTHERWISE.
- 3** ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

## Effect of Local Law

This warranty gives you specific legal rights, and you may have other rights, which vary from locality to locality. Some localities do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

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## Non-touch display

VS17SXAD Display	Part Number
VS 17SXAD 17-inch SXGA Medically Certified Display with desk stand and US power cord	997-2860-00
VS 17SXAD 17-inch SXGA Medically Certified Display with desk stand and European power cord	997-2860-01
VS 17SXAD 17-inch SXGA Medically Certified Display with VESA mounting plate and US power cord	997-2860-02
VS 17SXAD 17-inch SXGA Medically Certified Display with VESA mounting plate and European power cord	997-2860-03

VS17SXAD Part	Part Number
US power cord	903-0169-00
European power cord	903-0251-00
DVI-DVI-audio cable (integrated), 2 m	903-0292-00
VGA-VGA-audio cable (integrated), 2 m	903-0293-00
Desk stand	501-0380-00
Universal plate	501-0415-00
Power adapter, Ault	902-0038-01

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## Resistive-touch display

### VS17SXAD-TR Display

### Part Number

VS 17SXAD-TR 17-inch SXGA Medically Certified Display with desk stand and US power cord	997-2862-00
VS 17SXAD-TR 17-inch SXGA Medically Certified Display with desk stand and European power cord	997-2862-01
VS 17SXAD-TR 17-inch SXGA Medically Certified Display with VESA mounting plate and US power cord	997-2862-02
VS 17SXAD-TR 17-inch SXGA Medically Certified Display with VESA mounting plate and European power cord	997-2862-03

### VS17SXAD-TR Part

### Part Number

US power cord	903-0169-00
European power cord	903-0251-00
DVI-DVI-audio cable (integrated), 2 m	903-0292-00
VGA-VGA-audio cable (integrated), 2 m	90309293-00
Desk stand	501-0380-00
Universal plate	501-0415-00
Serial cable, F/M	903-0233-00
Serial cable, M/M	903-0233-01
Power adapter, Ault	902-0038-01