# Colour Monitor

USER GUIDE
BENUTZERHANDBUCH
MANUEL D'UTILISATION
GUIDA UTENTE
GUIA DEL USUARIO

MODEL : StudioWorks 28i

English

007B

## Introduction

Thank you for purchasing an GoldStar high resolution monitor. It will give you high resolution performance and convenient reliable operation in a variety of video operating modes.

**Features**
The StudioWorks 28i is a 21-inch (20 inches viewable ) intelligent, microprocessor based monitor compatible with most analog RGB (Red, Green, Blue) display standards, including IBM PC®, PS/2®, Apple®, Macintosh®, Centris®, Quadra®, and Macintosh II family. It can also be used with a Sun SPARC workstation as well as other sources using the 5 BNC connectors. The monitor provides crisp text and vivid color graphics with VGA, SVGA, XGA, and VESA Ergo modes (non-interlaced), and most Macintosh compatible color video cards when used with the appropriate adapter.

The monitor's wide compatibility makes it possible to upgrade video cards or software without purchasing a new monitor.

Digitally controlled auto-scanning is done with the microprocessor for horizontal scan frequencies between 30 and 85KHz, and vertical scan frequencies between 50 and 120Hz. The microprocessor-based intelligence allows the monitor to operate in each frequency mode with the precision of a fixed frequency monitor.

The microprocessor based digital controls allow you to conveniently adjust a variety of image controls by using the OSD (On Screen Display).

The monitor is shipped with 8 factory pre-programmed video modes that are permanently resident, and another 8 are set at the factory, but may be overwritten to make more room. In addition, there are 24 user storable modes, for a total of 40 memory modes.

This monitor is capable of producing a maximum horizontal resolution of 1600 dots and a maximum vertical resolution of 1280 lines. It is well suited for CAD work and sophisticated windowing environments.

For greater user health and safety, this monitor complies with the stringent Swedish Nutek MPR II requirements for low radiation emissions.

For low cost of monitor operation, this monitor is certified as meeting the EPA Energy Star requirements, and utilizes the VESA Display Power Management Signalling (DPMS) protocol for power saving during non-use periods.

## Monitor Registration

The model and serial numbers are found on the rear of this unit. These numbers are unique to this unit and not available to others. You should record requested information here and retain this guide as a permanent record of your purchase. Staple your receipt to this page.

Date of Purchase : _____
Dealer Purchased From : _____
Dealer Address : _____
Dealer Phone No. : _____
Model No. : _____
Serial No. : _____



**Trademark Acknowledgments**

**GoldStar** is a trademark of **LG Electronics Inc.**
**IBM** is a registered trademark and **VGA** is a trademark of International Business Machines Corporation.

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**WARNING :** To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

**AVERTISSEMENT :** Ne pas placer cet appareil dans un endroit humide. Cela peut entraîner un incendie ou une décharge électrique.

## Important Precautions

This unit has been engineered and manufactured to assure your personal safety, but improper use can result in potential electrical shock or fire hazard. In order not to defeat the safeguards incorporated in this monitor, observe the following basic rules for its installation, use, and servicing. Also follow all warnings and instructions marked directly on your monitor.

### On safety

1. Use only the power cord supplied with the unit. In case you use another power cord, make sure that it is certified by the applicable standards (UL/CSA or VDE) if not being provided by the supplier.

2. Operate the monitor only from a power source indicated in the specifications of this manual or listed on the monitor. If you are not sure what type of power supply you have in your home, consult your dealer.

3. Overloaded AC outlets and extension cords are dangerous. So are frayed power cords and broken plugs. They may result in a shock or fire hazard. Call your service technician for replacement.

4. **DO NOT OPEN THE MONITOR.** There are no user serviceable components inside. There are Dangerous High Voltages inside, even when the power is OFF. Contact your dealer if the monitor is not operating properly.

5. To avoid personal injury :
   - Do not place the monitor on a sloping shelf unless properly secured.
   - Use only a stand recommended by the manufacturer.
   - Do not try to roll a stand with small casters across thresholds or deep pile carpets.

6. To prevent Fire or Hazards:
   - Always turn the monitor OFF if you leave the room for more than a short period of time. Never leave the monitor ON when leaving the house.

- Keep children from dropping or pushing objects into the monitor's cabinet openings. Some internal parts carry hazardous voltages.
- Do not add accessories that have not been designed for this monitor.
- During a lightning storm or when the monitor is to be left unattended for an extended period of time, unplug it from the wall outlet.
- Do not bring magnetic devices such as magnets or motors near the picture tube.

**On installation**

1. Do not allow anything to rest upon or roll over the power cord, and do not place the monitor where the power cord is subject to damage.
2. Do not use this monitor near water such as near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
3. Monitors are provided with ventilation openings in the cabinet to allow the release of heat generated during operation. If these openings are blocked, built-up heat can cause failures which may result in a fire hazard. Therefore, NEVER:
   - Block the bottom ventilation slots by placing the monitor on a bed, sofa, rug, etc.
   - Place the monitor in a built-in enclosure unless proper ventilation is provided.
   - Cover the openings with cloth or other material.
   - Place the monitor near or over a radiator or heat source.

**On cleaning**

- Unplug the monitor before cleaning the face of the picture tube.
- Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the picture tube because overspray may cause electrical shock.

**On repacking**.

- Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it in its original material.

## Connecting the Monitor

On the back of the monitor are three plug-in connections; one for the AC power cord, and the others for the signal cable from the video card.

**1. AC Power Connection**
One end of the AC power cord is connected into the AC power connector on the back of the monitor. The other end is plugged into a properly grounded three-prong AC outlet. The monitor's auto-sensing power supply can automatically detect 100-120V AC or 200-240V AC, 50 or 60Hz.

**2. Signal Cable Connection**

The connectors for the signal cable are located on the back of the monitor. The BNC and 15 pin VGA connectors on the back of the monitor allow for a wide variety of video controllers to be connected to the monitor. Examples of signals that might be sent to the monitor include signals from IBM PC and compatibles, Apple Macintosh, Centris, Quadra, and SPARC workstations.

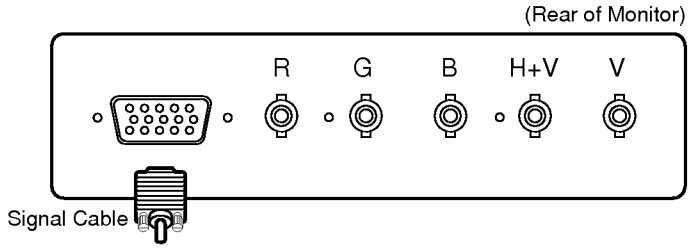
The supplied signal cable consists of 15 pin VGA connectors at both ends, suitable for connections to an IBM PC or compatible.

Other generic cables or adapters may be used for connections to your equipment, as long as they meet the compatible signal requirements to activate this monitor (see page 24 for input specifications). For Apple Macintosh use, a separate plug adapter is needed to change the 15 pin high density (3 row) D-sub VGA connector on the supplied cable to a 15 pin 2 row connector. Examples of typical connections are shown below. Select the connection example that fits your needs.

**A) Connection to any IBM VGA PC compatible system**

Figure 3 shows the signal cable connections from the monitor to the Video Graphics Array (VGA) port typical in an IBM PC or PC compatible. This also applies to any graphics video card for PC-CAD or workstation that has a 15 pin high density (3 row) D-Sub connector.

1. Power off both the monitor and PC.
2. Connect the 15 pin VGA connector of the supplied signal cable to the output VGA video connector on the PC and the matching input connector on the rear of the monitor. The connectors will mate only one way. If you cannot attach the cable easily, turn the connector upside down and try again. When mated, tighten the thumbscrews to secure the connection.




3. Power ON the PC, then the monitor.
4. If you see the **SELF DIAGNOSTICS** message, check the signal cable and connectors.
5. After using the system, power OFF the monitor, then the PC.

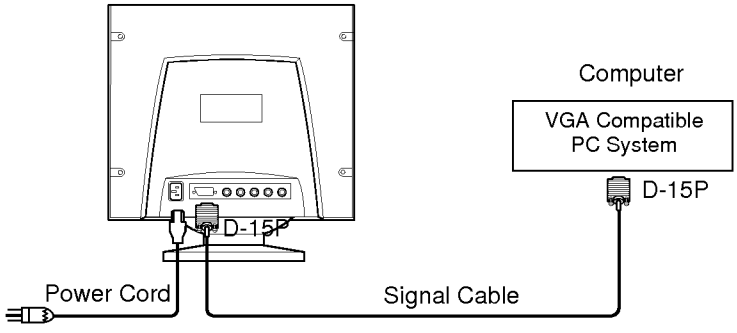
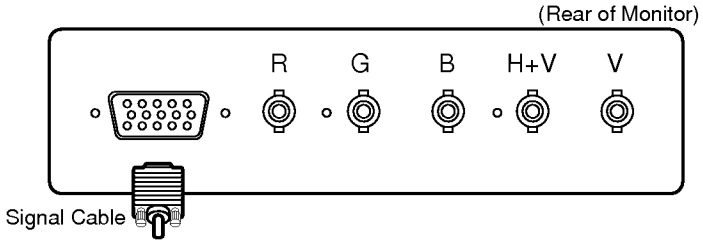



Figure 3.

**B) Connecting to an Apple Macintosh II, Centris, and Quadra**

Figure 4 shows the connection to an Apple Macintosh, using a separately purchased adapter.

1. Power OFF both the monitor and the PC.
2. Connect the 15 pin VGA connector of the supplied signal cable to the matching input on the back of the monitor. Tighten the thumbscrews to secure the connection.




3. Locate the appropriate MAC to VGA adapter block at your local computer store. This adapter changes the high density 3 row 15 pin VGA connector to the correct 15 pin 2 row connection to mate with your MAC. Attach the other end of the signal cable to the side of the adapter block with 3 rows.
4. Connect the attached adapter block/signal cable to the video output on your MAC.
5. Power ON the PC, then the monitor.
6. If you see the **SELF DIAGNOSTICS** message, check the signal cable and connectors.
7. After using the system, power OFF the monitor, then the PC.

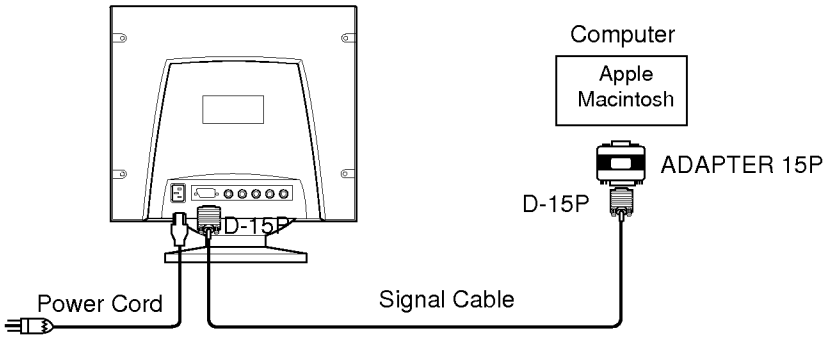
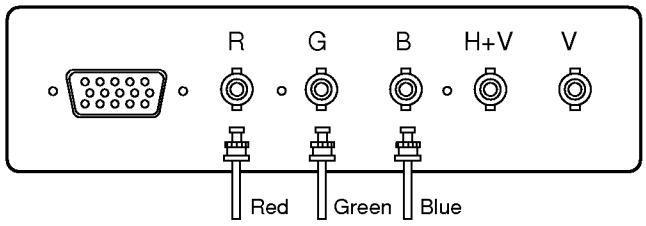


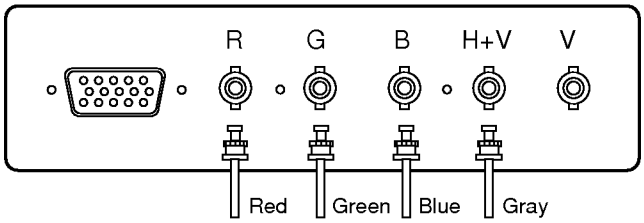

Figure 4.

**Notes on using the BNC connectors with other types of video cards. Follow the example that fits your needs. (BNC cables not included with Monitor.)**

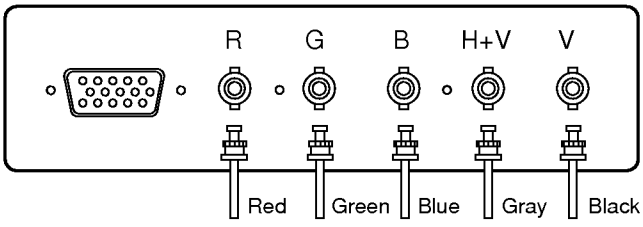
① IN CASE OF COMPOSITE SYNC ON GREEN VIDEO SIGNAL (SYNC ON GREEN):
Connect R,G and B video signals to BNC receptacles on the back of the monitor, respectively.




② IN CASE OF EXTERNAL COMPOSITE SYNC SIGNAL:
Connect R, G and B video signals and Composite sync signal to BNC receptacles on rear panel, respectively.

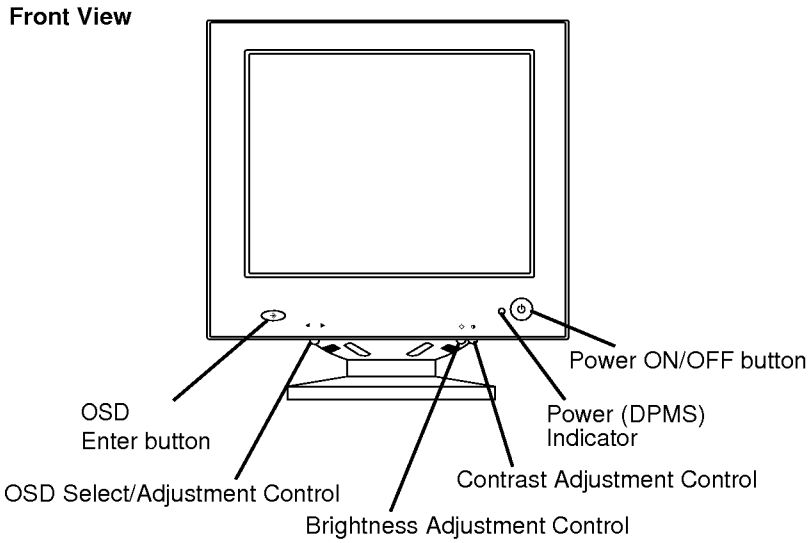



③ IN CASE OF SEPARATE HORIZONTAL AND VERTICAL SYNC SIGNALS:
Connect R, G and B video signals and horizontal and vertical sync signals to BNC receptacles on rear panel respectively.

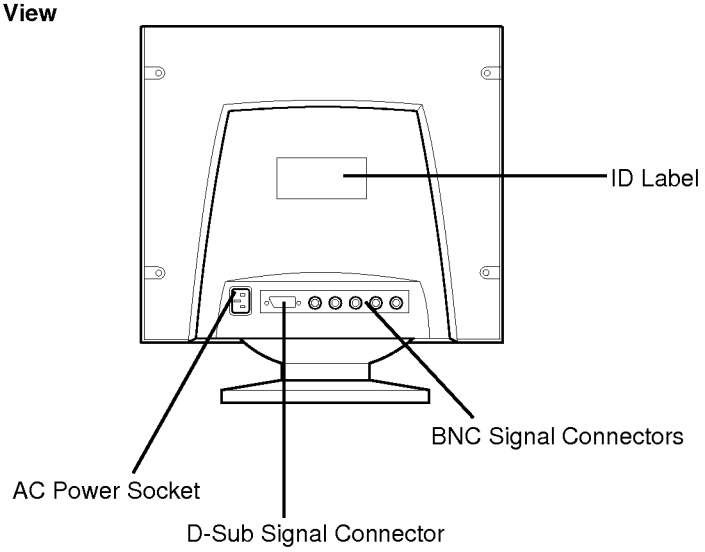


## Location and Function of Controls

**Front View**

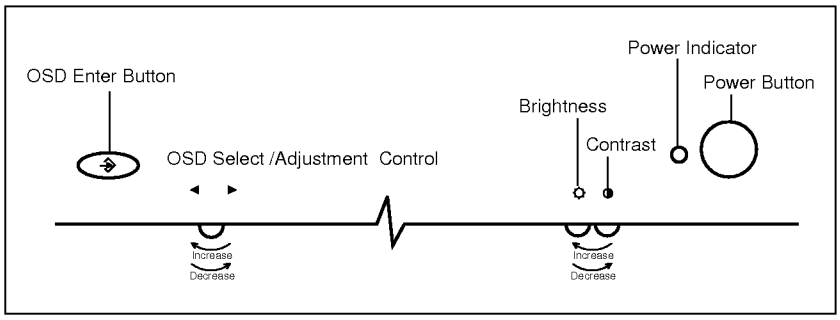



**Rear View**



## Control Panel Function

All functions are adjusted from the microprocessor-based digital controls.




Buttons on the front of the monitor allow you to adjust the image easily through an OSD menu. As you choose controls, the selected icon shows you what the chosen control will do. These pictures give you immediate understanding of the controls. The following is a description of use for each button.

**Power ON/OFF button**
This button is used to turn the monitor on and off.

**Power(DPMS) Indicator**
This Indicator lights up green when the monitor operates normally. If the monitor is in DPM (Energy Saving) mode (stand-by/suspend/ power off), this indicator color changes to amber.

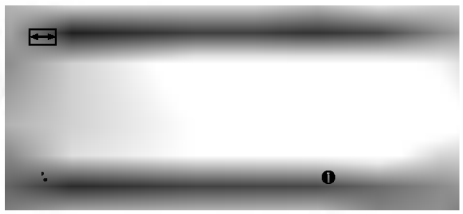
**OSD Enter button**
Use this button to start/enter and exit from the On Screen Display (OSD). If there is no OSD on the screen, One click (press) of this button will show the Main Menu. To remove the display, either wait 10 seconds. If you are in a submenu, a single click will back you out to the Main Menu display, and then will exit the menu.

**OSD Select/Adjustment Control**
Use this knob for selecting (highlighting) an OSD icon to be adjusted. It is also used for selecting the level of the selected item to be adjusted.

**On Screen Display (OSD) Control Adjustment**

Making adjustments to the image size, position and operating parameters of the monitor are quick and easy with the On Screen Display Control system, using only the Enter button and Adjustment Control knob. A quick example is given below to familiarize you with the use of the controls. Following this section is an outline of the available adjustments and selections you can make using the OSD.

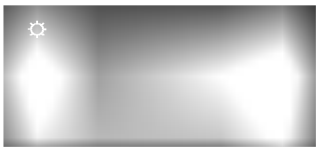
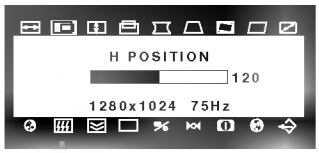
Example:
Note: (Monitor and PC should be ON, with an image or prompt on the screen.) Rotating the Adjustment Control knob clockwise one click will present you with the Main Menu of the On Screen Display system, with the first item **highlighted** (red color). The main picture area will also show the selected icon and a brief description (here H-SIZE). If you turned the control more than one click, a different icon may be **highlighted** (red color). Move the control until the icon is selected. The OSD system should look like :

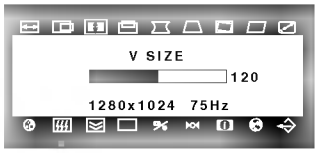
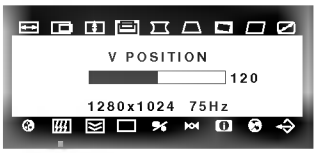
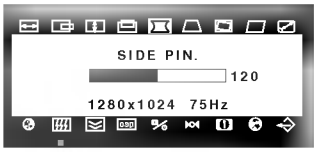
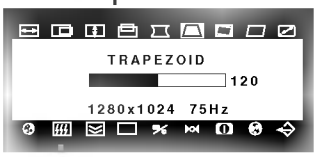
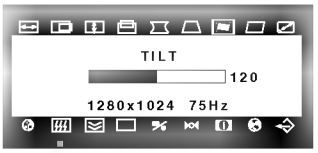
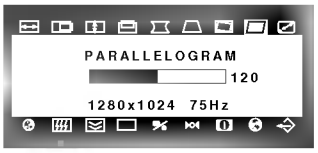


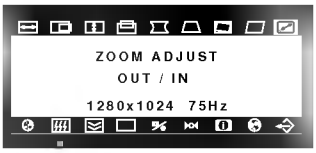
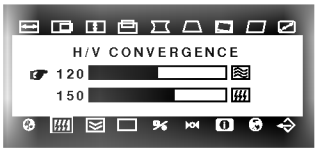
## OSD Adjustment and Selection Items

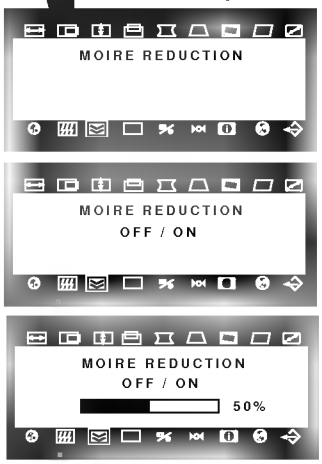
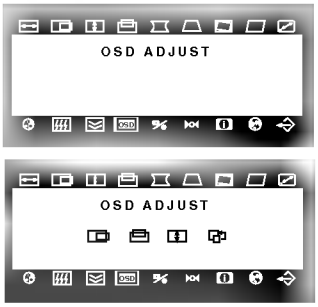
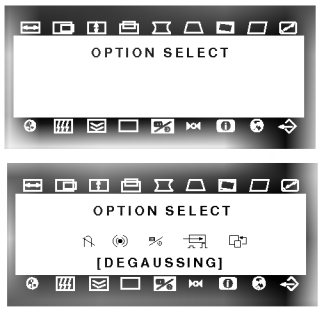
You were introduced to the procedure of selection and adjusting an item using the OSD system.

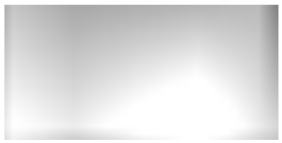
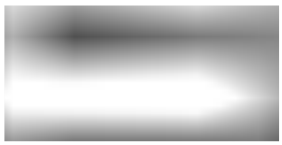
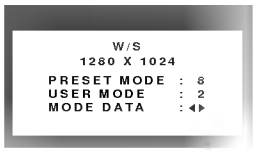
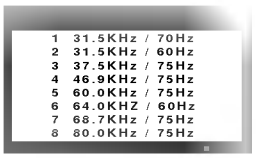
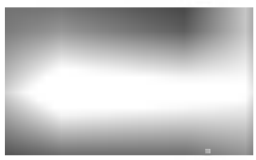
Listed below are the icons, icon names, and icon descriptions of the items that are shown on the Menu.

| OSD Adjust | Description |
|---|---|
| Brightness Control  | Used to adjust the brightness of the screen. Move the thumbwheel located beneath this indicator to increase or decrease the display brightness. |
| Contrast Control  | Adjust the display to the contrast desired. Move the thumbwheel located beneath this indicator to increase or decrease the display contrast. |
| Horizontal Size   | To adjust image width.<br>◀ Decreases the size of the screen image.<br>▶ Increases the size of the screen image. |
| Horizontal Position   | To move picture image left and right.<br>◀ Moves the screen image left.<br>▶ Moves the screen image right. |

| OSD Adjust | Description |
|---|---|
| **Vertical Size**<br>  | To adjust image height.<br>◀ Decreases the size of the screen image.<br>▶ Increases the size of the screen image. |
| **Vertical Position**<br>  | To move image up and down.<br>◀ Moves the screen image up.<br>▶ Moves the screen image down. |
| **Side Pincushion**<br>  | To correct the bowing in and out of the image.<br>◀ Curves the image's edges inwards.<br>▶ Curves the image's edges outwards. |
| **Trapezoid**<br>  | To correct geometric distortion.<br>◀ Makes the screen image narrower at the top.<br>▶ Moves the screen image wider at the top. |
| **Tilt**<br>  | To correct image rotation.<br>◀ Tilts the screen image left.<br>▶ Tilts the screen image right. |
| **Parallelogram**<br>  | This control adjusts for a skewing of the screen image.<br>◀ Tilts the screen image rightward.<br>▶ Tilts the screen image leftward. |

| OSD Adjust | Description |
|---|---|
| **Zoom Adjust**<br>  | To adjust Horizontal and Vertical image size simultaneously.<br>◀ Smaller the image size.<br>▶ Bigger the image size. |
| **Color Select**<br>  <br>  <br>  | To select color temperature, 9300°K/ 7200°K/ user.<br>◀ Decreases the amount of color in the image.<br>▶ Increases the amount of color in the image. |
| **H/V Convergence**<br>  <br>  | This item allows you to adjust the **MISCONVERGENCE**. Selecting ≋, you'll control the horizontal static convergence. Selecting ⫼, you'll control the vertical static convergence. |

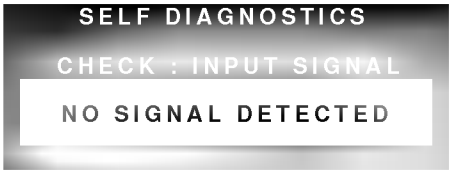
| OSD Adjust | Description |
| --- | --- |
| **Moire Reduction**<br>  | This item allows you to reduce the moire (Moire is caused by interference Horizontal Scan Line with the periodical dot screen). It is normally **OFF**. If you want to adjust it, select **ON** using the adjustment control and push the Enter Button. |
| **OSD Adjust**<br>  | This item lets you adjust the **OSD** position and size. After selecting the **OSD** icon using the Adjustment Control, push the Enter button. The **OSD** will be displayed as shown left. Select an icon using the Enter button. Rotate the Adjustment Control to modify existing position or size. When you have finished, use the exit ( ) icon to retun to main menu to take another selection. |
| **Option Select**<br>  | This item gives access 5 elements; manual degaussing, beep ON/OFF, signal input selection, and Video level (0.7V or 1.0V) and exit. Press the Enter button to select the desired item to change. Rotate the adjustment control either to perform the function highlighted or to select the desired item. When you have finished, use the exit ( ) icon to retun to main menu to take another selection. |

| OSD Adjust | Description |
| --- | --- |
| **Mode Recall**<br>  <br>  <br>  | If the monitor is operating in a factory preset mode, this control will reset the image to the factory preset mode.<br>If the monitor is operating in a user mode, this control has no effect. |
| **Mode Information**<br>  <br>  <br>  <br>  | To inform users of preset and user mode data.<br>This item provides information about the stored video modes. After highlighting (red color) the mode information icon, press Enter. Rotate the Adjustment Control to see the desired video mode information.<br>The mode information screens give you some information regarding industry resolution terminology, resolution, and memory mode number. |

| OSD Adjust | Description |
| --- | --- |
| **Language Select**<br>  <br><br>  <br> | To choose the language in which the control names are displayed. |
| **OSD Turn off**<br>  <br> | To disappear of the OSD on the screen. |

### Self Diagnostics

The Studioworks 28i has a **SELF DIAGNOSTICS** OSD feature that pops up when there may be possible causes of non-operation. The OSD would highlight a possible reason the display is not showing an image. An example of this may be when you turn on the monitor with no signal cable attached. The monitor will display the **SELF DIAGNOSTICS** OSD with the **CHECK INPUT SIGNAL**. This would be a clue for you to check the signal connections.




### DDC (Display Data Channel)

DDC is a communication channel over which the monitor automatically informs the host system (PC) about its capabilities. This monitor has three DDC function; DDC1, DDC2B, and DDC2AB. DDC1 and DDC2B carry out uni-directional communication between the PC and the monitor. Under these situations, the PC sends display data to the monitor but not commands to control the monitor settings. DDC2AB has the function of bi-directional communication. For example, the PC can fetch screen data from monitor and adjust the screen with the PC keyboard.
NOTE : PC must support DDC functions to do this.

### Low Radiation Compliance (MPR II)

This monitor meets one of the strictest guidelines available today for low radiation emissions, offering the user extra shielding and an antistatic screen coating. These guidelines, set forth by a government agency in Sweden, limit the amount of emission allowed in the Extremely Low Frequency (ELF) and Very Low Frequency (VLF) electromagnetic range.

## Video Memory Modes

This multi-synchronous auto-scanning monitor can automatically detect and display several video modes.
For convenience, the monitor has a 40 mode memory, of which 8 modes come from the factory preset to popular video modes as described below.

| Resolution | Hori. Freq. | Verti. Freq. | Hor. Sync pol | Verti. Sync pol | Mode |
|---|---|---|---|---|---|
| 640 x 400 | 31.47KHz | 70.08Hz | - | + | 1 |
| 640 x 480 | 31.47KHz | 59.94Hz | - | - | 2 |
| 640 x 480 | 37.50KHz | 75.00Hz | - | - | 3 |
| 800 x 600 | 46.88KHz | 75.00Hz | + | + | 4 |
| 1024 x 768 | 60.02KHz | 75.03Hz | + | + | 5 |
| 1280 x 1024 | 63.98KHz | 60.02Hz | + | + | 6 |
| 1152 x 870 | 68.68KHz | 75.06Hz | - | - | 7 |
| 1280 x 1024 | 79.98KHz | 75.03Hz | + | + | 8 |

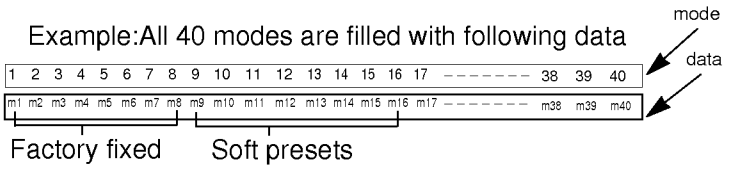
Modes 17-40 are empty and can accept new video data.

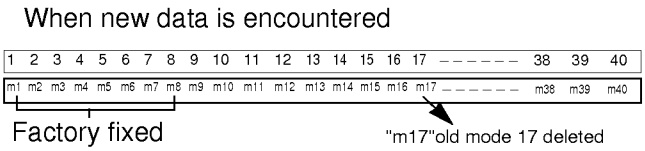
If the monitor detects one of the signals above from your computer's video card, it will recall that mode and any stored image adjustments you may have made before. If the monitor detects a new video mode that had not been present before or not one of the above listed factory presets, it will store a new mode automatically in one of the blank (empty) memory modes (in this example, mode 17). When you now adjust the digital controls to your preference, these image settings will also be stored in mode 17. Whenever your video card or PC switches to the mode that the monitor recognizes as mode 17, your personal image settings will also be recalled.

**A note about the video memory modes:**

There is a total of 40 video memory modes, generally more modes than you will use at any one time. Of these 40 modes, 8 are permanent, factory fixed modes that cannot be changed, and another 8 are set at the factory, but may be overwritten to make more room. The remaining 24 modes are left blank (empty). If you use up the 24 blank modes and still have more new video modes, the monitor will store information in the other 8 soft preset modes for the new mode storage. If additional new modes are encountered, the monitor will delete the lowest memory mode and add the new mode.
If you use a video card that has a number of resolutions and frequencies that do not correspond to any of the monitor video modes set at the factory, here's what will happen:

1) As the monitor encounters new video data, if you adjust the image control icons, the monitor will save the new information in the next available empty mode (mode 17 if this is the first new data encountered).
2) If you have used up modes 17-40 with 24 new video modes, and the monitor encounters another mode (41th mode), it will store the new data in mode 17 and the old data of mode 17 is deleted.
   In addition, If the monitor encounters 42th new video data, the old data of mode 18 is deleted and 42th data will replace the mode 18, with above method, when this monitor encounters new mode, it can update from mode 17 to mode 40 sequentially and continuously.




Because the monitor is designed this way, you will always have the most recent 32 video modes generated by your graphics card available with your own image settings recalled automatically.

## Energy Saving Design

This monitor complies with the EPA's Energy Star program, which is a program designed to have manufacturers of computer equipment build circuitry into their products to reduce power consumption during time of non-use.

This monitor also goes into its energy saving mode if you exceed the monitor's operating limits, such as the maximum resolution of 1600x 1280 or the frequency refresh rates of 30-85KHz horizontal or 50-120Hz vertical. When this monitor is used with a Green or EPA Energy Star PC, or a PC with a screen blanking software following the VESA Display Power Management Signalling (DPMS) protocol, this monitor can conserve significant energy by reducing power consumption during periods of non-use. When the PC goes into the energy saving mode, the monitor will go into a suspended operation state, indicated by the Power LED light changing from a green color to an amber color. After an exteded period in the suspended mode, the monitor will then enter a semi-OFF mode to conserve more energy. In the semi-OFF mode or DPMS OFF mode as we call it in our specifications, the Power LED will still show an amber color. When you awaken your PC by hitting a key or moving the mouse, the monitor will also awaken to its normal operating mode, indicated by the green Power LED light. By following these conventions, the power consumption can be reduced to the following levels:

**Power Consumption**

| MODE | H. Sync | V. Sync | Power Consumption | LED Color |
|---|---|---|---|---|
| Normal (Max.) | On | On | $\leq$140W | Green |
| Stand-by | Off | On | $\leq$ 15W | Amber |
| Suspend | On | Off | $\leq$ 15W | Amber |
| Off | Off | Off | $\leq$ 7W | Amber |

## Troubleshooting

**Symptom:** Self diagnostics message on back raster appear.

**Possible causes:**

- The signal cable is not connected.

**Symptom:** The power led is illuminated amber.

**Possible causes:**

- Display power management mode. (Move mouse to awaken PC.)
- Check the computer power and graphics adapters configuration.
- The frequency of the sync input is outside the operating range of the monitor.

Monitor Input Limits
HORZ: 30KHz-85KHz
VERT: 50Hz-120Hz

The signal cable is incorrectly configured or connected Refer to the page *Signal Connector Pin Assignment* , for reference.

**Symptom:** Image is not correctly shaped

**Possible causes:**

- A new mode is selected.
- User control has not yet been adjusted. Use the controls to adjust image. Refer to *Location and Function of controls*.

## Service

1. Unplug the monitor from the wall outlet and refer servicing to qualified service personnel when:
   - The power cord or plug is damaged or frayed.
   - Liquid has been spilled into the monitor.
   - The monitor has been exposed to rain or water.
   - The monitor does not operate normally following the operating instructions. Adjust only those controls that are covered in the operating instructions. An improper adjustment of other controls may result in damage and often requires extensive work by a qualified technician to restore the monitor to normal operation.
   - The monitor has been dropped or the cabinet has been damaged.
   - The monitor exhibits a distinct change in performance.
   - Snapping or popping from the monitor is continuous or frequent while the monitor is operating. It is normal for some monitors to make occasional sounds when being turned on or off, or when changing video modes.

2. Do not attempt to service the monitor yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

3. When replacement parts are required, have the service technician verify in writing that the replacements used have the same safety characteristics as the original parts. Use of manufacturer specified replacements can prevent fire, shock, and other hazards.

4. Upon completion of any service or repairs to the monitor, ask the service technician to perform the safety check described in the manufacturer's service manual.

5. When a video monitor reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the monitor.

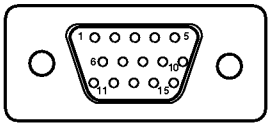
## Specifications

### Sync signal types

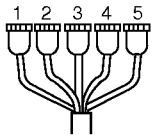
| Priority | Type | H. Sync | V. Sync |
|---|---|---|---|
| 1 | Separate sync | H. Sync | V. Sync |
| 2 | Composite sync | H/V Sync | N.C |
| 3 | Sync. On Green | N.C | N.C |

(N.C : no connection)

### Signal connector pin assignment




| Pin | Signal (D-Sub) |
|---|---|
| 1 | Red |
| 2 | Green |
| 3 | Blue |
| 4 | Ground |
| 5 | Self-Test |
| 6 | Red Ground |
| 7 | Green ground |
| 8 | Blue Ground |
| 9 | +5V Supply |
| 10 | Ground |
| 11 | Ground |
| 12 | SDA |
| 13 | H. Sync |
| 14 | V. Sync |
| 15 | SCL |




| Pin | Signal (5 BNC) | Color |
|---|---|---|
| 1 | Red | Red |
| 2 | Green | Green |
| 3 | Blue | Blue |
| 4 | H. Sync (H or H+V) | Gray |
| 5 | V.sync | Black |

007B

## Specification

**Picture tube**
21 inch (20 inches viewable ), 90 degree deflection, Dark face, 0.28mm dot pitch High contrast AR-ASC(Anti-Reflection & Anti-Static) Coating.

**Sync Input**
Horizontal Freq. : 30KHz-85KHz (Automatic)
Vertical Freq. : 50Hz-120Hz (Automatic)
Input Form : Separate TTL, positive/negative
Composite TTL, positive/negative
Signal input : 15pin D-Sub connector/5 BNC connector

**Video Input**
Display Area : 406.4 x 304.8 mm/16 x12 inches (HxV)
Input Form : Separate, RGB Analog, 0.7Vp-p/75 ohm, positive

**Power Consumption** : 140 Watts max.
15 Watts suspend mode, stand-by mode
7 Watts DPMS-Off mode.

**Power Input**
AC 100-120/200-240V 60/50Hz 2.0/1.0A

**Dimensions (WxHxD)**
19.6 x 20.0 x 20.3 inches (with tilt/swivel stand)

**Weight (net)**
33.0 kg (72.8 lbs)

Information in this document is subject to change without notice and does not represent a commitment on the part of LG Electronics Inc.

English

# Table of Contents

# DECLARATION OF CONFORMITY

**We** **LG Electronics Inc.**
184 Kongdan-dong, Kumi-city
Kyoungbuk, Korea

declare under our sole responsibility that the product

The model name of color monitor : **StudioWorks 28i**
Trade name : **LG**

to which this declaration relates is in conformity with the following standard or other normative documents:

EN 50082-1/1992, EN 55022/1987, EN 60555-2 and 3/1987

following the provisions of the EMC Directives
89/336/EEC, 92/31/EEC and 93/68/EEC.

EN 60950 : 1992 Safety of Information Technology Equipment, including electrical business equipment
+A1 : 1993
+A2 : 1993

following the provisions of the Low Voltage Directives
73/23/EEC & 93/68/EEC 97

Monitor OBU, Kumi Plant
LG Electronics Inc.
Kumi, Korea

February 24, 1997

(Place and date of issue)

Daehyo Jeong, Manager
(Name and signature of authorized person)

## 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 in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by using 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 on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution:** Changes or modifications not expressly approved by LG Electronics Inc. for compliance could void the user's (or your) authority to operate the equipment. Only peripherals (digital input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this monitor. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Only shielded signal cables may be used with this System.

**Canadian D. O. C. Notice**

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

# MONITOR LIMITED WARRANTY
# FOR THE UNITED STATES AND CANADA

LG Electronics U.S.A., Inc. will repair or at its option replace, without charge, your product which proves to be defective in material or workmanship under normal use, during the warranty period listed below from the date of original purchase. **This warranty is good only to the original purchaser of the product during the warranty period as long as it is in the U.S. including Alaska, Hawaii and U.S. Territories**

**WARRANTY PERIOD**

| MODEL # | LABOR | PARTS | HOW SERVICE IS HANDLED |
|---|---|---|---|
| | 3 YEARS | 3 YEARS | Call 1-800-243-0000, 24 hrs. a day, 7 days per week, please have your product type (Monitor, TV, VCR) and ZIP code ready. |
| | | CRT | |
| | | 3 YEARS | |

No other express warranty is applicable to this product. **THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. LG ELECTRONICS U.S.A., INC. SHALL NOT BE LIABLE FOR THE LOSS OF THE USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT OR FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY APPLICABLE TO THIS PRODUCT.**

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

## THE ABOVE WARRANTY DOES NOT APPLY:

- To damages or problems which result from delivery or improper installation.
- To damages or problems which result from misuse, abuse, accident, alteration, or incorrect electrical current or voltage.
- To service calls, which do not involve defective workmanship or material, such as head cleaning and expaining the operation of the unit.

**Therefore these costs are paid by the consumer.**

## CUSTOMER ASSISTANCE NUMBERS:

| | | |
|---|---|---|
| **To Prove Warranty Coverage:** | → | **Retain your Sales Receipt to prove date of purchase.** |
| | → | Copy of your Sales Receipt must be submitted at the time warranty service is provided. |
| **To Obtain Product or Customer Assistance:** | → | Call 1-800-243-0000 (Mon-Fri 8am-5pm CST) Push Appropriate Menu Code. |
| **For Your Nearest Authorized Service Center:** ready. | → | Call 1-800-243-0000, 24 hrs a day, 7 days per week, please have your product type (Monitor, TV, VCR) and ZIP code |
| **All Customers In Canada Please Call** | → | (905)-670-0650 |

# COLOR MONITOR

**USER GUIDE**
**MANUEL D'UTILISATION**

**MODEL : StudioWorks 28i**

# 28i

P/NO : 3828TUL007B (S-9703)