

**EXHIBIT 7**

Draft of Operating

Instruction Manual

# Operating Instructions

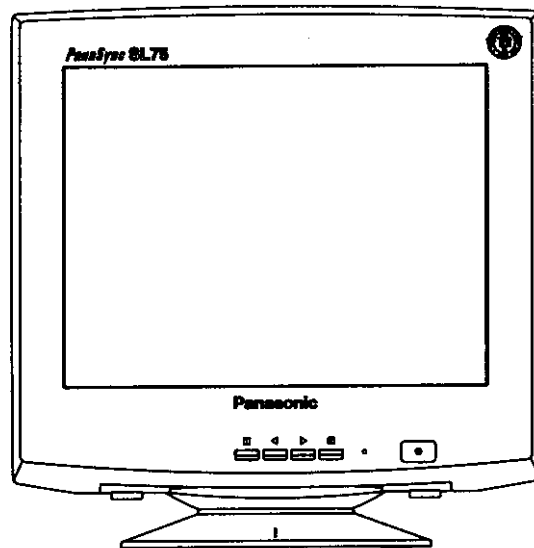
## Mode d'emploi

## Manual de Instrucciones

Multi-Scan Color Monitor

**PanaSync™ SL75**

MODEL TX-T7S37



# Panasonic®

These Operating Instructions are for units for sale and use in  
the United States of America and Canada only.  
Read these Instructions completely before operating this display monitor.

**IMPORTANT NOTICE CONCERNING POWER CORD SELECTION**

The power cord for this unit has been packed separately and has been selected according to the country of destination and must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set.

The female receptacle of the cord set must meet CEE-22 requirements and will look like Figure 1:

**For the United States and Canada:**

In the United States and Canada the male plug is a NEMA 5-15 style (Figure 2) and is UL listed and CSA labelled. For units which are mounted on a desk or table, type SVT or SJT cord sets may be used. For units which sit on the floor, only SJT type cord sets may be used. The cord set must be selected according to the current rating for your unit. Please consult Table A for the selection criteria for power cords used in the United States and Canada. (The cord set is marked with its Cord Type.)

**For European Countries:**

In Europe you must use a cord set which is appropriate for the receptacles in your country. The cord set is HAR-Certified, and the mark ◀HAR▶ will appear on the outer sheath, or on the insulation of one of the inner conductors.

If you have any questions concerning the proper power cord to use, please consult with the dealer from whom you have purchased your unit.

Table A

Cord Type	Size of Conductors In Cord	Maximum Current Rating of Unit
SJT	18AWG	10Amps
	16AWG	12Amps
	14AWG	12Amps
SVT	18AWG	10Amps
	17AWG	12Amps



Figure 1

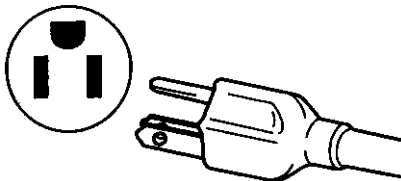


Figure 2

**Federal Communications Commission Requirements**

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and 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.

**FCC Warning:**

To assure continued FCC compliance, the user must use the provided grounded power supply cord and shielded interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to this monitor would void the user's authority to operate this device.

## CE Conformity

**CE** This device complies with the requirements of the EEC directive 89 / 336 / EEC as amended by 92 / 31 / EEC and 93 / 68 / EEC Art. 5 with regard to "Electromagnetic compatibility" and 73 / 23 / EEC as amended by 93 / 68 / EEC Art. 13 with regard to " Safety ".

Required item	Relative to Standard Value	Relative to those Exceeding Standard Value	Remarks
EM I	#1		#4
ESD	#2	#3	X
RADIATED RF	#1	#3	
TRANSIENT F / B	#1	#3	
LINE HARMONICS	#1		

- #1 : Satisfies standards with no problems in performance and reliability.  
 #2 : Effects may appear temporarily on the screen but there will be no problem in reliability.  
 #3 : There is fear of the product breaking down.  
 #4 : If a signal cable other than that specified is used, it may be the cause of electromagnetic wave interruption to peripheral devices.

To assure continued CE compliance the user must use the provided 1.5 m shielded video signal cable with bonded ferrite cores at both ends of the cable.

Handle correctly in accordance with the instruction manual.

EMI : Electromagnetic Interference      ESD : Electrostatic Discharge  
 RF : Radio Frequency                      F / B : Fast Burst

As an ENERGY STAR® Partner, Panasonic Document Imaging Company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

## Notice for Germany

**Note:**

- For ergonomic reasons, it is recommend not to use blue characters on a dark background. Doing so may produce insufficient contrast that could lead to eye strain.

**German**

**HINWEIS:**

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast wäre die Folge).

## Notice for Japan

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

**Japanese**

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。



## Danger

To avoid the risk of severe electrical shock, including death, do not remove covers (or back) of monitor. No user serviceable parts are inside. Refer servicing to qualified service personnel.



## Warnings

To prevent risk of electric shock and possible fire:

Never place any object on top of the monitor, AC Power cord, or cause the cords to make sharp bends, or otherwise do anything that can affect the integrity of the cords. Always remove the line cord from the socket by holding the plug, not the cord.

Do not place anything containing any liquid (even a wet or damp cloth) on top of the monitor as the introduction of fluids can create an electrical hazard. Do not expose the monitor to rain or moisture.

Do not place the monitor with less than the recommended clearance (see Precautions 1) Installation Page 4). Do not block the ventilation openings with anything. Do not insert any objects into the ventilation openings.

## Customer's Record

The serial number of this product is printed on its back cover label. Note this serial number in the space provided and retain this booklet as a permanent record of your purchase to aid in identification of the unit in the event of theft or loss.

Model number: TX-T7S37

Serial number: \_\_\_\_\_

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## **Precaution**

### **1) Installation**

- Install the monitor in a well ventilated place. Avoid exposing to direct sunlight, a heater, or any other heat source. Heat will adversely affect the cabinets and the parts inside.
- Position the display unit so that the holes in the cabinet will not be blocked during use.
- Keep the display unit away from the kitchen, bathroom, washing machine, or other sources of exposed to water, steam or moisture.
- In order to use the display unit safely, use only the supplied AC Power cord. The AC Power cord must be used with a properly grounded and polarized power supply socket. The AC Power cord supplied is for the USA (UL) and Canada (CSA) for use with the display unit. For use in other countries, make sure the AC Power cord meets the safety standards of the country.
- Place the AC Power cord where it will not be subject to stress.
- Use only Panasonic provided accessories or the exact equivalent.

### **2) Usage**

- Pulling on the AC Power cord or VGA Signal Cable can damage the display unit (monitor) and can cause the unit to fall and possibly cause personal injury.
- Receiving trouble.  
If there is a television set or other display unit nearby, keep your display unit as far away from it as possible. Mutual interference can cause image distortion or noise.
- Long exposure to rubber or vinyl products can stain the cabinet.
- Keep the monitor from physical shock when moving. Be careful of the Cathode Ray Tube (CRT).
- Do not place anything on the monitor.
- Also take good care of the AC Power cord:  
Do not place any objects on the AC Power cord. Do not attempt to extend, shorten or tie it into a knot.

### **3) Product Care**

- Prior to cleaning your display unit, disconnect the AC Power cord and the VGA Signal Cable or BNC Cable from the display unit.
- Use a clean, soft, dry cloth to clean the outside of the monitor or the CRT surface. If the monitor or CRT surface is very dirty, wet a clean, soft cloth with neutral detergent (such as dishwashing detergent) and water, squeeze it tight until almost dry, wipe the monitor or CRT surface with it, and finish by wiping with a clean dry cloth. Do not use any solvents.
- Do not rub or strike the monitor with anything hard or harsh as this may scratch, mar or damage the monitor permanently.
- Do not use a chemical duster or polish-cleaner because it can adversely affect the unit and peel of the paint.

# Features

- 1) High Image Quality in a Shorter Length Package
  - Panasonic PanaSync SL75 with a Short-Neck CRT 17" (16.0" / 40.6 cm Viewable Image Size) with the depth of a fifteen-inch (15" / Various Viewable Image Sizes) monitor has image quality that has to be seen to be believed. It has a 0.27 mm (H: 0.236 mm × V: 0.137 mm) ultra fine dot pitch and up to 1280 × 1024 maximum resolution. The Short Length PanaSync SL75 produces sharp saturated color images with High Contrast and Brightness that can be viewed over a wide viewing angle.
  - Combined with optimized dynamic focusing circuitry, the Short-Neck CRT has improved beam landing accuracy, focus convergence and lower raster distortion than a typical 17-inch CRT. This gives the PanaSync SL75 a sharper, more uniform focus, especially in the corners of the screen, traditionally a focus problem area. Crystal Pigment Phosphors and Advanced Invar Mask provide increased Contrast and Brightness.
  - PanaSync digital multi-scan 30 kHz to 70 kHz Horizontal and 50 Hz to 180 Hz Vertical scanning frequencies can be automatically scanned. Eight timing selections have been preset at the factory and 13 user programmable selections are provided.
- 2) 100-Degree Deflection Yoke
  - The SL75 uses a 100-degree deflection yoke, versus a 90-degree deflection yoke found in typical 17" monitors. The 100-degree deflection yoke allows for the shorter length of the CRT used in the SL75.
- 3) Crystal Pigment Phosphors
  - Crystal Pigment Phosphors provide increased brightness and contrast for the SL75 creating crisp colorful images. Each grain of Crystal Pigment Phosphor is covered with a filter material of the same color to filter external light.
- 4) Advanced INVAR Shadow Mask and Super Dark Tint
  - The Short-Neck CRT also features an Advanced INVAR Shadow Mask, which is manufactured with an improved material and designed to be positioned closer to the screen glass. When combined with the Super Dark Tint of the screen, this results in a 10% overall increase in brightness, improved purity due to less environmental movement, and better overall color uniformity.
- 5) The DQ-DAF™ Electron Gun
  - The DQ-DAF (Double-Quadrupole Dynamic Astigmatism and Focus) improves the electron beam ellipticity by adding a pair of four pole lenses to the DAF electron gun. The new Short-Neck DQ-DAF gun for the SL75 allows for a shorter electron beam path and this creates even a smaller spot size contributing to sharper images.
- 6) Digital adjustment using on-screen Menu (OSM)
  - The On-Screen Menu is available in five (5) languages. English, French, German, Italian or Spanish can be selected. Custom adjustments can be made quickly and easily through the On-Screen Menu utilizing four buttons on the front panel. The On-Screen Menu may be position in one of six locations and color in one of six colors on the Display Screen. A Self-Test On-Screen display is provided with no signal input or an Error On-Screen Menu if the Horizontal or Vertical Scanning frequencies are outside the specified range.
- 7) The SL75 is Plug & Play
  - VESA® DDC™ 1/2B compatible (Video Electronics Standards Association Display Data Channel). This allows the SL75 to inform a compatible host of its capabilities that meet the Microsoft® / Intel® Plug & Play Definition used by Windows® 95.
- 8) Self-test menu
  - The display unit can be checked via the self-test menu displayed on the screen. This menu can be accessed without a computer.
- 9) Environmentally Friendly
  - The SL75 has a VESA® DPMS™ power management circuit. When used with a DPMS™ compatible graphics card, the power consumption of the SL75 can be reduced. This product conforms to the ENERGY STAR® program.
  - All plastic parts are recyclable.
  - Meets MPR II, TCO'92 and carries the CE mark.
- 10) Color Adjusting Function
  - The White Reference Color Temperature is 9300K + 8 MPCD, 7500K, 6500K, 5000K or User Color can be selected to adjust the red, green and blue signals of the monitor to match it's image to the output of a color printer.
- 11) Ergonomic Design
  - Tilt & Swivel base with 90-degree pan to right or left and tilt angle of 13 degrees up a 4 degrees down.
  - Advanced Anti-Glare, anti-Reflection, Anti-Static screen coating.

# Specifications

CRT	Size	17" CRT (16.0"/40.6 cm Viewable Image Size) Flat Square
	Dot-pitch	0.27 mm
	Phosphor / Glass	RGB medium short persistence (Hi-EU RED), Crystal Pigment / Dark Tint
	Surface treatment	Advanced AGRAS(Anti-Glare, anti-Reflective and Anti-Static) Coat
Input signals	Video signaling	RGB analog
	Signal level	0.7 Vp-p (without sync. signal), 1.0 Vp-p (with sync. signal)
	Sync. signal	H / V separation (TTL level), H / V composition (TTL level), Sync.-on-green
	Frequency Range	Horizontal Frequency : 30.0 kHz to 70.0 kHz Vertical Frequency : 50.0 Hz to 180.0 Hz
	Preset mode	1 preset and 7 reservation (See page 16)
Video	Maximum Pixel Clock	108 MHz (typ.)
Resolution		1280 dots(H) × 1024 lines (V) at 60 Hz*
Viewable Image Size (H × V, Diagonal)	Factory preset	12.20" × 9.13", 15.2" Diagonal **
	Full scan (Typical)	12.76" × 9.57", 16.0" Diagonal **
	Display Color	Analog input, unlimited number of colors ***
Connectors	Video Signal	15 pin mini D-Sub connector (female pins)
	Power supply	CEE 22 type 3-pin connector
Input power		100 to 240 V AC (50 or 60Hz)
Power consumption		105W typ. / < 15W stand-by, < 3W sleep mode (See page 15)
Controls	Front	Power ON / OFF, [1], [2], [3], [4] keys
	On screen display	Contrast, Brightness, Size & Pos (Zoom, H. Position, H. Size, V. Position, V. Size), Geometry (V. Pincushion, V. Pin. Corner, Side Pin. Bal., Trapezoid, Parallelogram), Rotation (Tilt), Color Temp. (9300K + 8 MPCD, 7500 K, 6500K, 5000K, User), Recall, Video Level (0.7V / 1.0V), H. Moire, V. Moire, Language, OSD Position, Degauss, Signal, Monitor Self Test
Tilt / swivel		13° up, 4° down, 90° each to right and left
Dimensions (W × H × D)		(16.1" × 16.3" × 15.0")
		409 mm × 413 mm × 381 mm
Weight (monitor only)		16.2 kg (35.7 lbs)
Approvals		UL1950, CSA 22.2 No.950, TÜV / GS, NORDIC, DHHS, HC, FCC Class B, IC-B, CE/CISPR 22-B(EN55022), VCCI Class B, MPR II, TCO '92, / NUTEK, ISO 9241-3 (Ergonomics) / -8 (Colors), ENERGY STAR®
Standard		1 detachable signal cable for VGA, SVGA. 1 detachable AC power supply cord. Tilt & Swivel base attached. Operating Instructions, Warranty card
Environmental conditions	Operating	Temperature Humidity Altitude
		5 to 35°C(41 to 95°F) 5 to 90% (no condensation) 10,000 ft
	Storage	Temperature Humidity Altitude
		-20 to +60°C (-4 to 140°F) 5 to 90% (no condensation) 40,000 ft
Windows® 95 Plug & Play		VESA® DDC™ 1/2B meets Windows® 95 Plug & Play Requirements

## Note:

- The on-screen image may flicker if the display is operated with the Vertical freq. under 60 Hz.
- This monitor may only be used in a commercial or industrial environment at resolutions above 1024 × 768 75Hz.
- \*\* Depends on signal timing used, see page 16.
- \*\*\* Number of colors depends on the Video Board used, memory installed, and RAMDAC (Random Access Memory Digital to Analog Converter).

Specifications and design are subject to change without notice.  
This product may be subject to export control regulations.  
Weight and dimensions shown are approximate.



# Installation

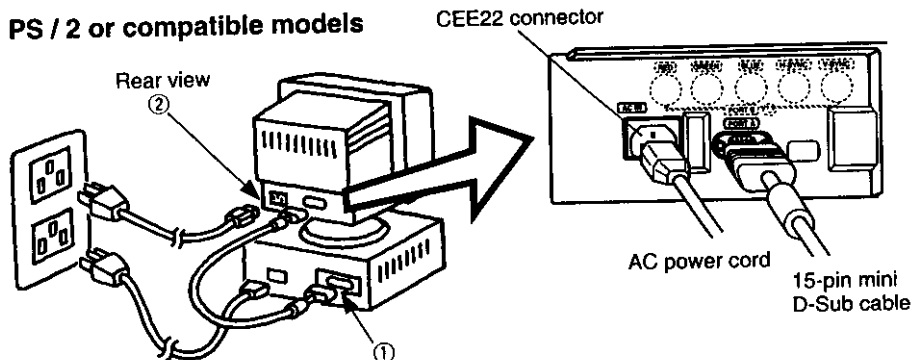
## ◆ Connecting Procedures

Turn off your computer.

Connect the signal and power connectors as shown below.

Turn the monitor on, then turn on the computer.

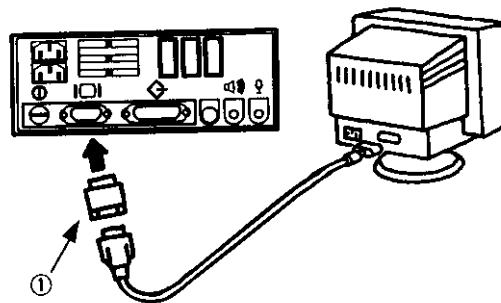
### A. IBM PS / 2 or compatible models



- ① Connect the supplied 15 pin mini D-Sub cable to the monitor's Port A. Then connect the other end of the supplied 15 pin mini D-Sub cable to the computer's corresponding 15 pin mini D-Sub video connector.
- ② First connect the supplied AC Power Cord to the CEE22 connector on the rear of the monitor. Then connect the other end of the AC power cord to a grounded power outlet.

### B. Apple computer

- ① Connect the supplied 15 pin mini D-Sub cable to the monitor's Port A. Then connect the other end of the supplied 15 pin mini D-Sub cable to a UNIMAC-82D MAC adapter and the other end of the MAC adapter to the computer's corresponding 15 pin mini D-Sub video connector.
- ② First connect the supplied AC Power Cord to the CEE22 connector on the rear of the monitor. Then connect the other end of the AC power cord to a grounded power outlet.



Panasonic MAC adapter

If you need an adapter and one is not provided by your dealer, call 1-800-726-2797.

#### Caution:

To prevent the cable from coming loose, the cable connectors must be securely fastened with screws.

## ◆ Connection of AC Power Supply

If the AC power supply voltage is in the range 100 to 240V, either 50Hz or 60Hz frequency can be used. There is no AC100V / 240V selector switch as selection is automatic.

#### Precaution:

- In order to use the display unit safely, use a power cord that is properly grounded.
- AC plug cords for the following countries must be used as follows:

U.S.A ..... UL  
Canada ..... CSA

For use in other countries, make sure that the AC cord meets the safety standards of each country.

## Pin Assignment

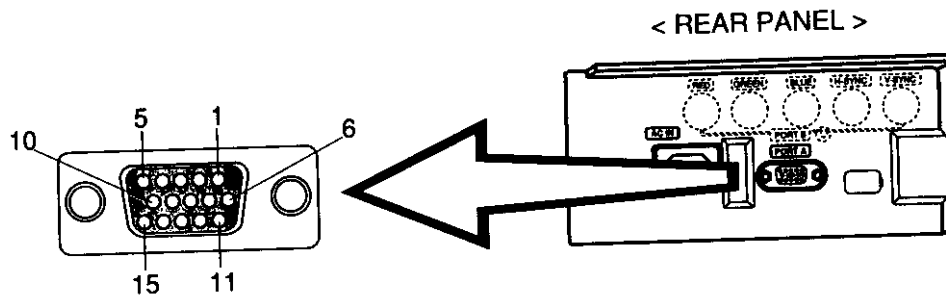
Follow the instructions below to connect the SL75 to a computer.

**A. Signal connector: 15 pin mini D-Sub (PS / 2 or PC / AT compatible model)**

Connect the signal cable to the 15 pin mini D-Sub connector on the display unit.

**B. Signal connector: 15 pin D-Sub (Apple computer)**

Convert a MAC 15 pin D-Sub connector to a 15 pin mini D-Sub connector using a Panasonic MAC adapter, and connect it to the 15 pin mini D-Sub connector on the display unit.



Pin assignments of 15 pin mini D-Sub connector

Pin number	Signal name
1	Red video signal
2	Green video signal
3	Blue video signal
4	Ground
5	Ground*
6	Ground for Red video signal
7	Ground for Green video signal
8	Ground for Blue video signal
9	Unused
10	Ground
11	Ground
12	SDA* (Bi-directional Data)
13	Horizontal sync. signal
14	Vertical sync. signal
15	SCL* (Data Clock)

\*: "VESA"s Display Data Channel (DDC) Standard.

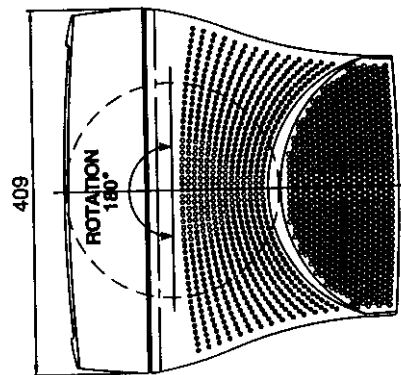
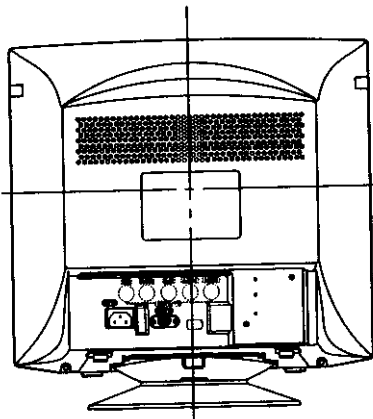
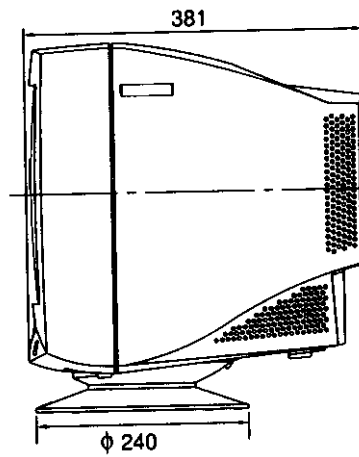
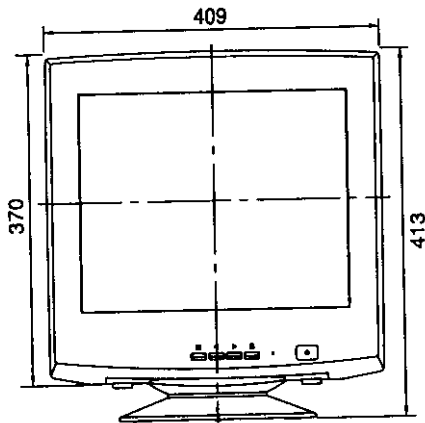
## External View

### Dimensions

Width : 409 mm (16.1")  
Height : 413 mm (16.3")  
Depth : 381 mm (15.0")  
Base diameter :  $\phi$  240 mm ( $\phi$  9.4")  
Height without stand : 370 mm (14.6")

### Pan/Tilt range

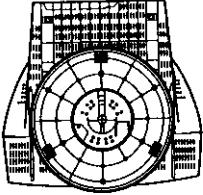
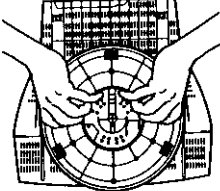
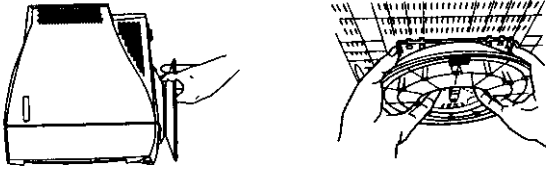
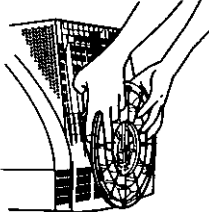
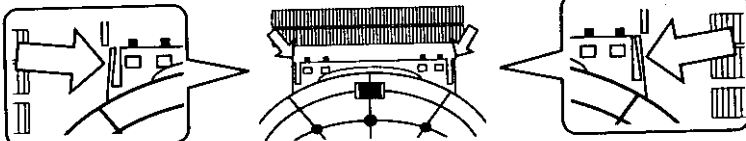
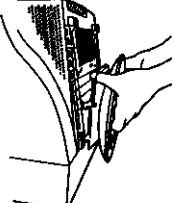

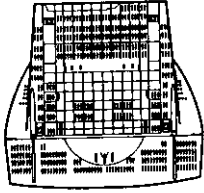
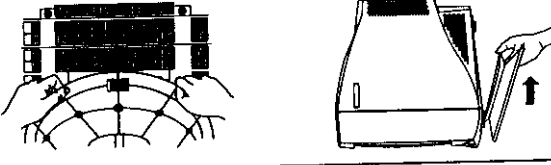
Up : 13 degrees  
Down : 4 degrees  
Left, right : 90 degrees each



## Pedestal removal

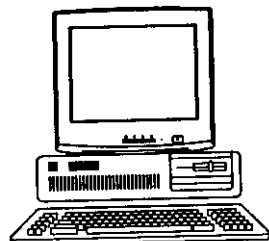
Observe the following instructions if the unit is to be used with the display stand removed. Repeat this procedure in the reverse order if the display stand is to be reattached.

### 1. Removing the monitor stand

	<p><b>1</b> Lay the screen down onto a soft object (cushion, etc.) to avoid scratching.</p>
	<p><b>2</b> Grasp the bottom of the display stand as indicated in the illustration.</p> 
	<p><b>3</b> Apply pressure with your fingers to the area shown in the illustration and lift the stand slightly in an upward direction. This will release the lock.</p> 
	<p><b>4</b> Once the lock has been released, remove your fingers and firmly lift upwards at an angle.</p> 
	<p><b>5</b> This will separate the stand from the main unit.</p> 

After the display stand has been removed, store it for future use.

### 2. Installation

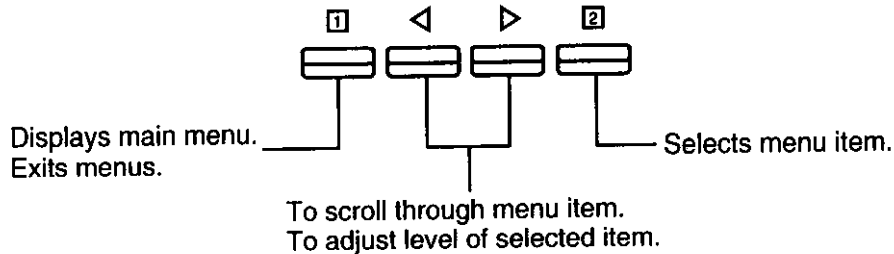


Place the unit on top of the computer to be used or on a tabletop.

Store the display stand for future use.

# Operation

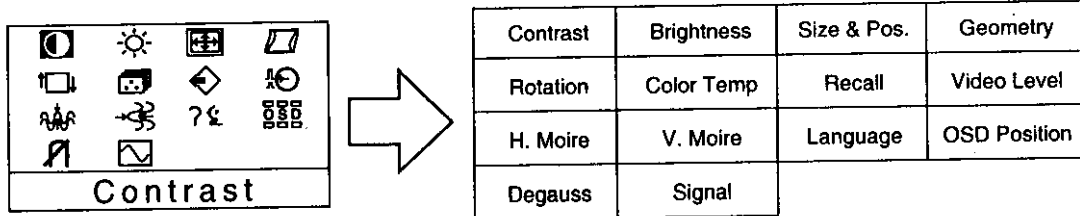
## Basic operation



## Menu screen

The functions that can be adjusted for this unit are displayed as icons.

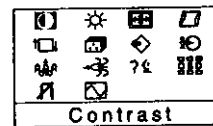
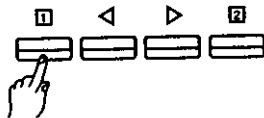
- 1) Press the 1 key to return to the menu screen.
- 2) This is modified by pressing the ◀ and ▶ keys at the front.
- 3) Press the 2 key to enter the adjustment screen.



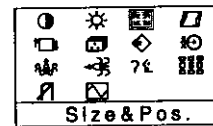
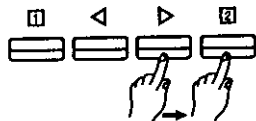
# Operation procedure

## Horizontal position adjustment

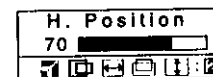
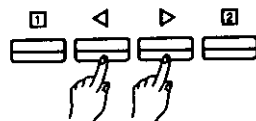
1. Press the 1 key to display the menu.



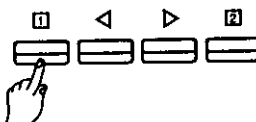
2. Press the ▶ key to select the Size & Pos. from the menu screen. Press the 2 key to display the menu.



3. Press the front ◀ or ▶ keys to reach the desired condition.



4. Press the 1 key to save the settings to memory and complete the adjustments. Press the 1 key once more to clear the menu screen.



# Adjustments

## Self-Test menu (No Signal screen)

This display indicates that the monitor is operating normally. When one of the following conditions occurs, press one of the 4 operation keys to call the appropriate display.

No Signal
fH ---kHz
fV --- Hz

No signal ( The computer is not connected or the mains power to the computer is disconnected.)



Error
fH 74.9kHz
fV 60.0 Hz

The horizontal or vertical sync. signal are outside of the permitted range (the value of the horizontal sync. signal will be displayed in red and the value of the vertical sync. signal will be displayed in white.)





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## Adjustment menu



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-  **Contrast** : Adjust the screen contrast to match the brightness level in the room. Pressing the  key toggles between brightness and contrast.




**Direct operation**




Even if the menu screen does not appear, the contrast can be adjusted by pressing the  or  key. If the  and  keys are pressed at the same time, the maximum level (100) will be set.




- 
-  **Brightness** : Adjust the brightness to match the brightness level in the room so that the image will be easy to see. Pressing the  key toggles between contrast and brightness.




Note: If the  and  keys are pressed at the same time on the Brightness adjustment screen, the standard level (50) will be set.




- 
-  **Size & Pos.** : Press the  key to select the zoom / horizontal position / horizontal size / vertical position / vertical size adjustments. Press the  key to save the adjustment.

-  **Zoom** : Both the horizontal and vertical size of the image can be adjusted at the same time; however, the aspect ratio cannot be changed. Press the  key to make the image smaller, the  key to make it larger.


-  **H. Position** : The horizontal position of the image can be adjusted. Press the  key to move it to the left, the  key to move it to the right.


-  **H. Size** : The horizontal size of the image can be adjusted. Press the  key to make the image smaller, the  key to make it larger. Note: Setting the image in the center of the screen to start will make the adjustment easier.


-  **V. Position** : The vertical position of the image can be adjusted. Press the  key to make it downward, the  key to move it upward.


-  **V. Size** : The vertical size of the image can be adjusted. Press the  key to make the image smaller, the  key to make it larger. Note: Setting the image in the center of the screen to start will make the adjustment easier.


## Adjustment menu


 **Geometry** : Press the **[2]** key to select the vertical pincushion / vertical pincushion corner / side pincushion balance / trapezoid / parallelogram adjustments. Press the **[1]** key to save the adjustment.

 **V. Pincushion** : The image can be corrected for barrel distortion. Press the **[◀]** key to decrease the Pin / Barrel distortion of the image, the **[▶]** key to increase it.


 **V. Pin. Corner** : The image can be corrected for vertical pincushion distortion in the four corners. Press the **[◀]** key to decrease the V. Pin. Corner distortion, the **[▶]** key to increase it.

 **Side Pin. Bal.** : It is possible to adjust the side pincushion balance to the left and right. Press the **[◀]** key to expand to the left of the image, the **[▶]** key to expand it to the right.


 **Trapezoid** : The image can be corrected for trapezoidal distortion. Press the **[◀]** key to make the top edge narrower, the **[▶]** key to make the bottom edge narrower.

 **Parallelogram** : The image can be corrected for parallelogram distortion. Press the **[◀]** key to collapse the parallelogram to the left, the **[▶]** key to collapse it to the right.

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 **Rotation** : This control adjusts the evenness of the screen image relative to a horizontal line. Press the **[◀]** key to rotate the image slightly counterclockwise, the **[▶]** key to rotate the image slightly clockwise.  
Note: If the **[◀]** and **[▶]** keys are pressed at the same time, the standard level will be set.

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 **Color Temp** : It is possible to switch the whiteness of the image.


- 1) Press the **[◀]** and **[▶]** keys to select 1 (9300K + 8MPCD) / 2 (7500K) / 3 (6500K) / 4 (5000K) / 5 (User).
- 2) **[2]** will be displayed at the bottom right-hand side of the on-screen panel when 5 (User color) has been selected. Press the **[2]** key on the front operation area to enter the User color adjustment screen.

**User** : It is possible to adjust the whiteness of the image to suit personal preference.

- 1) Select R (red), G (green), B (blue) with the **[2]** key.
- 2) Adjust the color to match personal preference with **[◀]** and **[▶]** keys.

**\* As user colors cannot be recalled, take notes of the set values beforehand.**


---

 **Recall** : It is possible to return to the initial settings (the settings at the time of factory shipment).

- 1) When the **[1]** key (Yes) is pressed, the settings are recalled and the menu screen returns. (Recall = return to initial settings (settings at time of factory shipment))
- 2) When the **[2]** key (No) is pressed, the menu screen returns without the settings being recalled. (The settings return to what they were immediately before the recall.)

If there are no operations performed for about 30 seconds, the screen goes off without a recall.

---

 **Video Level** : The video input signal level can be matched to the computer being used. Either 0.7 V or 1.0 V can be selected with the **[2]** (0.7 V / 1.0 V) key. Use 0.7 V under normaly.


## Adjustment menu

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**Moire reduction :** Moire patterns are caused by interference of the CRT dot pitch and video signal due to the resolution of the input signal, video pattern, etc., producing patterns of horizontal stripes (Horizontal moire pattern) or vertical stripes (Vertical moire pattern).


**Caution:**

If the moire reduction is overcorrected, the picture quality (for example focus, vertical line stability, etc.) will sometimes be affected.  
Keep this adjustment within the range in which the picture quality is not affected.

 **H. Moire :**


- The moire correction circuit can be switched On and Off with the [2] key.
- When the moire correction circuit is switched On with the [2] (On / Off) key, the adjustment screen menu appears.
- Adjust with the [◀] and [▶] keys so that the striped moire pattern is in its optimum condition.

---


 **V. Moire :**

- The moire correction circuit can be switched On and Off with the [2] key.
- When the moire correction circuit is switched On with the [2] (On / Off) key, the adjustment screen menu appears.
- Adjust with the [◀] and [▶] keys so that the striped moire pattern is in its optimum condition.


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 **Language :** The language of the On-Screen Display can be selected from among German, French, English, Italian and Spanish.  
Select with the [◀] or [▶] keys.


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 **OSD Position :** It is possible to adjust the position and color that the on-screen panel is to be displayed.  
The panel will rotate in a counter-clockwise direction every time the [2] key is pressed.  
The screen color layout can be changed by holding down the [2] key and pressing the [◀] key. Six different color layouts are available.

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 **Degauss :** Use this function to reduce the irregular colors in the image. The degaussing operates for approximately five seconds after selection.  
Use this function when irregular colors occur in the image after moving the monitor or the changing the screen angle.  
**Note:** Be informed that a frequent use of this function is not recommended.  
(Try to keep an interval of about 30 minutes or so between operations.)

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 **Signal :** This displays the input synchronization signal frequency.  
Information on the input screen mode (resolution, horizontal and vertical synchronization frequency) will be displayed on the display monitor.  
There are occasions sometimes when some screen modes in use do not display any resolution.  
Direct displayed allow this to be displayed on screen by pressing the [2] key even when the menu screen is not displayed.



## Power Management System

This monitor conforms to the VESA® DPMS™ standard.

This function can suppress power consumption by the display unit.

The computer and video board being used must also conform to the VESA® DPMS™ standard.

\* Consult the Operation Manual for the hardware being used.

Modes change in response to input signals as indicated in the table below.

APM state	Screen status	Power Indicator color	Power consumption	Return time	Input signals		
					Video	Horizontal sync.	Vertical sync.
ON STATE	with display	Green	Normal	–	ON	ON	ON
STAND-BY	without display	Yellow	< 15Watts	< 3sec.	OFF	OFF	ON
SUSPEND	without display	Yellow	< 15Watts	< 3sec.	OFF	ON	OFF
OFF STATE	without display	Yellow	< 3Watts	< 20sec.	OFF	OFF	OFF

### Caution

How to release the system from the power management function.

1) Read the Operation Manual for the hardware you are using.

2) Press one of the [1], [2], [3], [4] keys on the front panel.

The No Signal screen appears, and the monitor side power management function is released (only in OFF STATE).

## Memories

This display has two types of memory to store the data sets that control the on-screen image. The first type of memory is the Preset Memory which is set by the factory. The second type is the User Memory which is set by the user. Both memories store the Horizontal Size, Vertical Size, Horizontal Position, Vertical Position, Vertical Pincushion, Side Pincushion Balance, Trapezoid and Parallelogram adjustments of the displayed image.

### Preset Memory

There are 1 preset (7 reservation) timings that are set by the factory. The preset timing will automatically size and center the image with video boards which use these timings. Please see page 16 for Timing Specifications.

### User Memory

- There are 13 memory locations that allow for user timing. The image size, position, geometric distortion are adjusted by the user. Please see page 16 for recommended timings that the display supports.
- If the User Memory is completely full, and a new set of data is saved, the oldest data set in the User Memory will be deleted.
- The User Memory has priority over the Preset Memory.
- When the user timing is input, the Vertical, Horizontal frequencies and sync polarities of the signal are compared with the previous data stored in memory. The input signal will be stored as a new data set if one of its parameters is different from the previous stored one.
- The new input signal must have a frequency difference greater than that shown in the table below or a different sync. polarity from that already stored. If the new timing data includes frequency changes greater than those shown in the table below or sync. polarity changes, a new user memory setting will be stored. If the frequency difference is smaller than that of the chart and the sync. polarities are the same, the existing settings will be retained.

Horizontal frequency	Vertical frequency
Low 30 kHz ± 0.4 kHz	Low 50 Hz ± 0.6 Hz
to	to
Hi 70 kHz ± 1.0 kHz	Hi 180 Hz ± 1.8 Hz

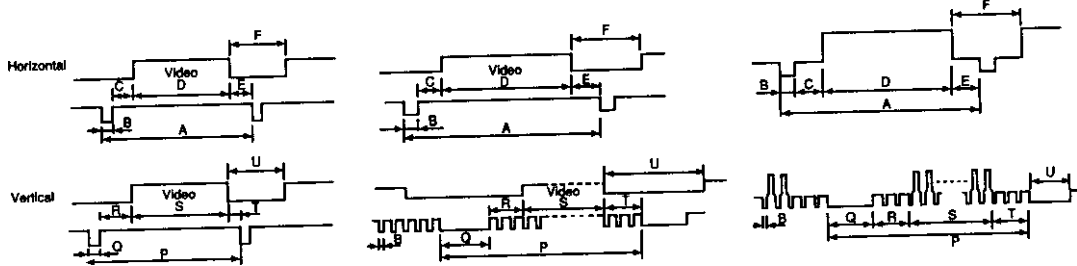
Please note if the timing does not meet the display specifications, the size and position adjustment may not appear as desired. Be sure the horizontal and vertical timing are within the monitor specification range. See page 16 for Timing Specifications, preset and reservation timing.

# Timing Specifications

Separate Sync.

H/V Composite Sync.

Sync. on Green



		Preset timing*	Reservation timing**		
		VESA1024x768 @85Hz	VGA640x480 @60Hz	VESA640x480 @85Hz	SVGA800x600 @85Hz
Dot clock		94.5000 MHz	25.1745 MHz	36.0000 MHz	56.2500 MHz
fH		68.67 kHz	31.468 kHz	43.269 kHz	53.674 kHz
Horizontal	A H-Period	14.561 us (1376 dots)	31.778 us (800 dots)	23.111 us (832 dots)	18.631 us (1048 dots)
	F H-Blanking	3.725 us (352 dots)	6.356 us (160 dots)	5.333 us (192 dots)	4.409 us (248 dots)
	B H-Sync. width	1.016 us (96 dots)	3.813 us (96 dots)	1.556 us (56 dots)	1.138 us (64 dots)
	C H-Back porch	2.201 us (208 dots)	1.907 us (48 dots)	2.222 us (80 dots)	2.702 us (152 dots)
	D H-Active	10.836 us (1024 dots)	25.423 us (640 dots)	17.778 us (640 dots)	14.222 us (800 dots)
E H-Front porch	0.508 us (48 dots)	0.636 us (16 dots)	1.556 us (56 dots)	0.569 us (32 dots)	
fV		84.997 Hz	59.939 Hz	85.008 Hz	85.061 Hz
Vertical	P V-Period	11.765 ms (808 lines)	16.684 ms (525 lines)	11.764 ms (509 lines)	11.756 ms (631 lines)
	U V-Blanking	0.582 ms (40 lines)	1.430 ms (45 lines)	0.670 ms (29 lines)	0.578 ms (31 lines)
	Q V-Sync. width	0.044 ms (3 lines)	0.064 ms (2 lines)	0.069 ms (3 lines)	0.056 ms (3 lines)
	R V-Back porch	0.524 ms (36 lines)	1.049 ms (33 lines)	0.578 ms (25 lines)	0.503 ms (27 lines)
	S V-Active	11.183 ms (768 lines)	15.254 ms (480 lines)	11.093 ms (480 lines)	11.179 ms (600 lines)
T V-Front porch	0.015 ms (1 line)	0.318 ms (10 lines)	0.023 ms (1 line)	0.019 ms (1 line)	
Sync polarity (H / V)		Positive / Positive	Negative / Negative	Negative / Negative	Positive / Positive
		Reservation timing**			
		MAC(16"832x624 @75Hz***	VESA1024x768 @70Hz	MAC(19"1024x768 @75Hz***	VESA1280x1024 @60Hz
Dot clock		57.2832 MHz	75.0000 MHz	80.0000 MHz	108.0000 MHz
fH		49.725 kHz	56.476 kHz	60.241 kHz	63.981 kHz
Horizontal	A H-Period	20.111 us (1152 dots)	17.707 us (1328 dots)	16.600 us (1328 dots)	15.630 us (1688 dots)
	F H-Blanking	5.586 us (320 dots)	4.053 us (304 dots)	3.800 us (304 dots)	3.778 us (408 dots)
	B H-Sync. width	1.117 us (64 dots)	1.813 us (136 dots)	1.200 us (96 dots)	1.037 us (112 dots)
	C H-Back porch	3.910 us (224 dots)	1.920 us (144 dots)	2.200 us (176 dots)	2.296 us (248 dots)
	D H-Active	14.524 us (832 dots)	13.653 us (1024 dots)	12.800 us (1024 dots)	11.852 us (1280 dots)
E H-Front porch	0.559 us (32 dots)	0.320 us (24 dots)	0.400 us (32 dots)	0.444 us (48 dots)	
fV		74.550 Hz	70.069 Hz	74.927 Hz	60.020 Hz
Vertical	P V-Period	13.414 ms (667 lines)	14.272 ms (806 lines)	13.346 ms (804 lines)	16.661 ms (1066 lines)
	U V-Blanking	0.865 ms (43 lines)	0.673 ms (38 lines)	0.598 ms (36 lines)	0.656 ms (42 lines)
	Q V-Sync. width	0.060 ms (3 lines)	0.106 ms (6 lines)	0.050 ms (3 lines)	0.047 ms (3 lines)
	R V-Back porch	0.784 ms (39 lines)	0.513 ms (29 lines)	0.498 ms (30 lines)	0.594 ms (38 lines)
	S V-Active	12.549 ms (624 lines)	13.599 ms (768 lines)	12.749 ms (768 lines)	16.005 ms (1024 lines)
T V-Front porch	0.020 ms (1 line)	0.053 ms (3 lines)	0.050 ms (3 lines)	0.016 ms (1 line)	
Sync polarity (H / V)		Negative / Negative	Negative / Negative	Negative / Negative	Positive / Positive

Note: All modes are Non-Interlaced.

\* Factory Presets have exact size & centering.

\*\* Factory Reservation have approximate size & centering.

\*\*\* Requires the use of Optional Mac Adapter UNIMAC-82D.

# Trouble Shooting

For safety, please observe the following points.

- **When trouble occurs, turn the power OFF immediately and contact your dealer.**

If smoke comes out of this unit or a bad odor or strange noise is emitted, continuing to use the unit can cause a fire or electrical shock. Turn the power OFF immediately, unplug the power cord from the outlet and contact your dealer.

- **Do not remove the rear cover.**






There are parts at high voltage inside, so touching them can cause an electrical shock. Leave inspection, adjustment and cleaning of the interior to your dealer.

- **Do not put anything inside the casing.**

If liquid or a foreign object should get inside accidentally, immediately turn the power OFF, unplug the power cord from the outlet and contact your dealer. Continuing to use the unit can cause a fire, electrical shock or breakdown of the unit.



**If trouble occurs with the display unit, perform the following checks and take the indicated action; if the trouble persists, please consult with your dealer.**

Symptom	Check	Action
<p>There is no display.</p> 	<p>AC power cord / plug power switch signal cable</p> <p>The power saving function might have acted (if so the pilot LED will be yellow).</p>	<p>Plug the power cord into the outlet correctly. Press the power switch. Connect the signal cable correctly. Release the power saving function by operating the mouse or keyboard. For additional details please read the Operation Manual of the hardware you are using.</p>
<p>The image is too large or too small, or it is displaced from the correct position.</p> 	<p>The mode is not registered.</p>	<p>Perform the desired settings and then save them by waiting 20 seconds or pressing the [1] "Exit" key.</p>
<p>The display color is abnormal. (Example) The color is uneven or off-color. The image distortion and or tilt is large.</p> 	<p>Is there something that produces a magnetic field nearby? (Examples) Television monitor, another computer display unit, speaker, etc.; was the orientation of the monitor perhaps changed while it was in use?</p>	<p>Remove the source of the magnetic field. Perform degaussing (See page 14). Make sure your cable is correct. Connect the signal connector correctly. Try a different orientation.</p>
<p>The background of the image is bright. The background of the image is colored. The character gets partially distorted. The image is dark.</p> 	<p>The computer in use is Macintosh. The signal output of the computer in use is improper.</p>	<p>Press the operating keys [1] and [2] together at the same time. You can then adjust this unit with the signal output of the computer. One more pressing or execution of recall can cancel this function. *This function is effective for a specified computer. If there is no problem in normal use, avoid the use of this function.</p>
<p>Characters cannot be seen clearly; the image is too dark.</p> 	<p>Is the image signal level correctly adjusted? Is the brightness or contrast adjustment turned all the way down?</p>	<p>Check the video signal level from the computer and adjust it in the correct direction. Adjust the brightness and contrast.</p>
<p>The screen size and position do not change.</p>	<p>Is the input synchronization signal within the operating range?</p>	<p>Check the video output mode from the computer, and select a mode within the display unit operating range. For details, please read the Operation Manual of the hardware you are using.</p>
<p>The front panel keys fail to operate.</p>	<p>Are 2 or more keys being operated at the same time?</p>	<p>Operate only one key at a time.</p>

## Technical Support (USA Only)

If you have read the Operating Instructions and tried the troubleshooting procedures and are still having difficulty, please contact the dealer from whom the unit was purchased. You may also call the end user Technical Support telephone number which is operational twenty four (24) hours a day seven days a week.

To contact the Technical Support Group call:  
1-800-726-2797 (24 Hours a day)

To locate the Nearest Authorized Panasonic Service Center call:  
1-800-726-2797 (24 Hours a day )

To obtain Operating Instructions and Service Manuals call:  
Phone : 1-800-833-9626  
Fax : 1-800-237-9080  
(6:00 AM to 4:30 PM Pacific Time )

To locate the Nearest Sales Dealer call:  
1-800-742-8086 (24 Hours a day )

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<http://www.panasonic.com/alive>

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