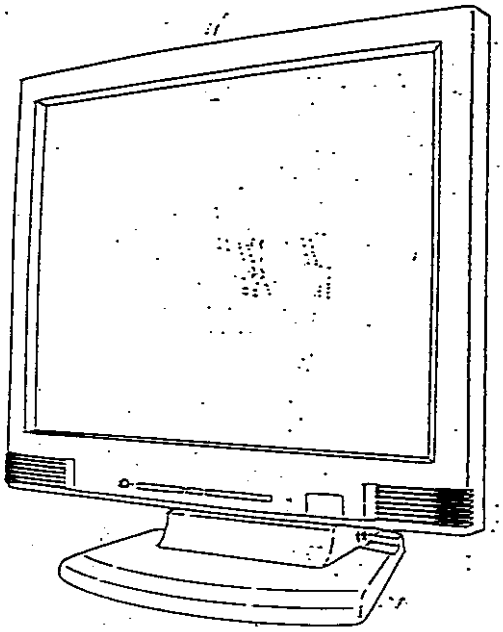
FACTORY CONTROL NO. : FVD-99-F012
FCC ID. : ACJ93312139

19.0" TFT LCD MONITOR

Operating Instructions
Mode d'emploi
Manual de Instrucciones
Bedienungsanleitun
Istruzioni d'uso

Model No. TX-D9L51NMF



Please read these instructions carefully before using this product and save this manual for future use.

ENGLISH

IMPORTANT NOTICE CONCERNING POWER CORD SELECTION

The power cord set for this unit has been enclosed 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, or if the cord set is not enclosed.

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 the dealer from whom you have purchased your unit.

Table A

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

Figure 1

Figure 2

Precautions:

- **AC PLUG CORD (FOR U.K.)**

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET THEN THE PLUG SHOULD BE CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRIC SHOCK IF THE CUT OFF PLUG IS INSERTED INTO AN APPROPRIATE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below:
If in any doubt, please consult a qualified electrician.

WARNING: THIS APPLIANCE MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

Green-and-Yellow: ..... Earth
Blue: ..... Neutral
Brown: ..... Live

If the coloured wires of the mains lead of this appliance do not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be conpected to the terminal in the plug which is marked by the letter E, by the Earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

ENGLISH

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
EMI	#1	–	#4
ESD	#2	#3	–
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 interference 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
RF : Radio Frequenc
ESD : Electrostatic Discharge
F / B : Fast Burst

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.

As an ENERGY STAR® partner, Display Monitor Division, AVC Company, Matsushita Electric Industrial Co., Ltd. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

NOTES:

- For ergonomic reasons, it is recommended not to use blue characters on a dark background. Doing so may produce insufficient contrast that could lead to eye strain.
- "Der Arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 beträgt 70 dB (A) oder weniger." (The sound pressure level at the operator's position according to IEC 704-1:1982 is equal or less than 70 dB (A).)

ENGLISH

Notice:

- This monitor cannot be used in the interlaced mode.
- When the Apple Power Macintosh© is used, use the "On The Fly" mode. Please refer to the operation manuals of your computer and video cards for further details.
- Be informed that dark spots (that do not shine) and bright spots(that remain lit) on the panel are not regarded as failures. The dark spots and bright spots can occur at a percentage of 0.005 to an effective picture element.

(1) Unauthorized modification of any part or the entire unit is prohibited.
(2) The contents of this manual may be modified without notice in the future.
(3) The contents of this manual may be changed for improvements but if there is any error or omission please contact your sales representative.
(4) Please be aware in advance that in spite of the contents described in item (3), our company is not responsible and will not assume any losses for bills for financial loss resulting from damage caused by use of this equipment.
(5) We will make exchanges for incorrect collating or missing pages in this manual. Please contact your sales representative.

- IBM and VGA are registered trademarks of the International Business Machines Corporation (U. S. A).
- Apple and Macintosh are registered trademarks of Apple Computer, Inc., (U.S.A. and other countries.)
- Windows is a registered trademark of the Microsoft Corporation (U. S. A).
- VESA is a registered trademark of the Video Electronics Standard Association.
- DPMS and DDC are trademarks of the Video Electronics Standard Association.

Customer's Record

■ The serial number (SERIAL No.) is important for quality control. Check the serial number (SERIAL No.) on the main unit of the product and the guarantee certificate. Read this manual carefully and use the monitor correctly. It is convenient if the serial number of the unit is indicated in the provided space.

Model number : TX-D9L51NMF

Serial number :

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The product names are registered trademarks of their respective companies.

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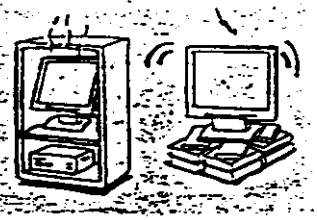
Precautions

Always observe the followig precautions and use this unit safety.

1) Installation location

- Avoid direct sunlight and heat sources such as heaters.
  Heat adversely affects the cabinet and the parts. Keep the power cord away from heat sources; failing to do so could cause fire or electrical shock.
- Do not place the display panel on an unstable location such as on a shaky table.



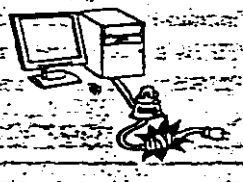
- Install in a well ventilated location.
  To prevent the temperature from rising inside the set, there are ventilation holes in the cabinet. Make sure that they are not obstructed. Install the unit at least 10cm from walls, and do not install it in a book cabinet or lying on its side, which could block the ventilation holes. Failure to observe this precaution could cause fire or equipment breakdown.

- Do not install in a location with a great deal of moisture or dust.
  Avoid wet locations such as a kitchen drainboard, bathroom or washing machine; also avoid locations with a great deal of steam, water vapor or dust. Failure to observe this precaution could cause fire, electrical shock or equipment breakdown.

- Do not apply force to the liquid crystal panel by touching or scratching it with hard objects.

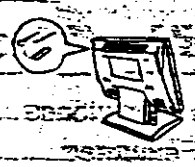
2) Precautions in use

- Handle the power cord carefully.
  Do not place any heavy objects on top of the power cord, add legs to it, tie knots in it or pull on the cord when unplugging it. If the power cord is damaged (for example if the wires are exposed or broken) there is danger of causing fire or electrical shock.
  Never remove or insert the plug when your hands are wet. This may cause an electric shock. Do not hold the power cord to remove the plug. Always hold the plug when removing it.

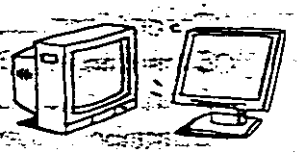


- Do not place anything on top of the main unit.
  Do not place any foreign object such as a container containing water or another liquid, or a solvent or cloth soaked in a solvent, or a metal object such as a paper clip, on the unit. If the object is knocked over the liquid can spill and enter the interior of the unit, causing fire, electrical shock or equipment breakdown.

- Handle the cabinet carefully.
  If a volatile solvent or adhesive comes into contact with the cabinet, the surface can be damaged or the paint might come off. If a rubber or vinyl object is in contact with the cabinet for a long time, the surface can be stained.



- Avoid magnetism.
  Use the unit at a distance from any object such as a speaker that uses a magnet or an object such as a motor or transformer that generates a strong magnetic field. The magnetism can distort the color or cause tearing of the image in the screen.
- Avoid disrupting reception.
  Use of this unit near a television or other display unit can result in both interfering with the other's reception, tearing of the images and noise. Keep them as far apart as possible.



- When moving this unit, be careful not to apply shock to it. Always unplug the power cord from the outlet and disconnect all other external cables and cords. Be especially careful with the LCD monitor.

3) Care of this unit

- Clean this unit with a soft, dry cloth.
  If it becomes very dirty, wipe it with a cloth that has been soaked in neutral detergent diluted with water and then wrung out thoroughly, then dry with a dry cloth.
  Use of a chemically treated cloth or gloss-producing cleaner can damage the surface or cause the paint to come off.
  Do not rub the surface of the LCD monitor with a hard object or strike it with anything. Doing so can scratch it.

ENGLISH

Features

High-quality liquid crystal panel

- The 19 inch (0.294 mm pixel pitch) panel and anti-glare hard coating enables low reflection, anti-static, high-resolution and high-contrast characteristics and equivalent of 16.77 million colors display (full-color) is also possible.
- Base-reflex type stereo speakers (1 W + 1 W) are used for bass reproduction.

Plug & Play Compatible

- This unit conforms to the VESA® (Video Electronics Standards Association) DDC™ (Display Data Channel) specified by Windows® 95 / 98.
- Any self-powered mode that conforms to USB (Universal Serial Bus) ver. 1.0 can be used.
- Up to four USB-compatible devices can easily be connected. *1
- A picture adjustment function makes it possible to adjust the image quality to match the input signal.

*1: Use is not possible in some cases, depending on the personal computer and OS used.
Before attempting to use the USB, read the Operating Instructions carefully.

Digital Multi-scan

- This unit has a horizontal frequency of 30 kHz to 82 kHz, vertical frequency 50 Hz to 77 Hz with automatic following and a maximum resolution of 1,280 (H) × 1,024 (V) (75 Hz refresh rate).
- This unit is compatible with both IBM® PC or compatible units and Apple Macintosh® (13" / 16" / 19" / 21" modes*2, and the Power Macintosh® "On the Fly" mode*2).
- Use of a pixel conversion method enables clear characters and graphic display in the full-screen*3 display.

*2: Only when the horizontal and vertical synchronization signals are input separately.
*3: The full-screen display may not be possible depending on the timing or the type of computer that is used.

An automatic size adjustment function is provided.

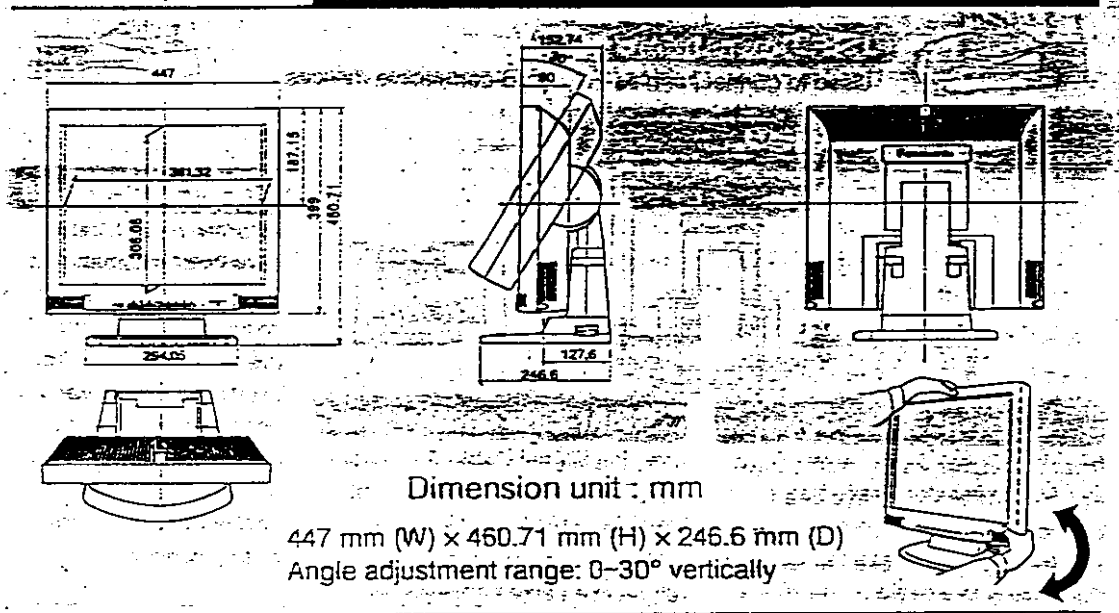
- The input signal is determined automatically and the adjustments for the "DOTCLOCK", "H. POSITION", "V. POSITION", and "PHASE" are performed automatically when the automatic size adjustment function is set.

Environmentally-friendly

- The LCD monitor power consumption can be reduced by using this unit in combination of a computer that conforms to the VESA® DPMS™ (Display Power Management Signaling) standard.
- This product conforms to the international ENERGY STAR® program standards.
- It conforms to Sweden's MPR II guidelines (low-frequency electro-magnetic field) and TCO'92 (emissions, power saving, safety) has been obtained.
- Desk space can be used effectively due to the 24.7 cm depth.

Dimensions

When adjusting the vertical angle of the LCD monitor, firmly grasp the top of the monitor with one hand and the bottom with the other. Then, slowly move the monitor to the desired angle.
Do not press on the upper part of the LCD as this may cause the unit to fall down.



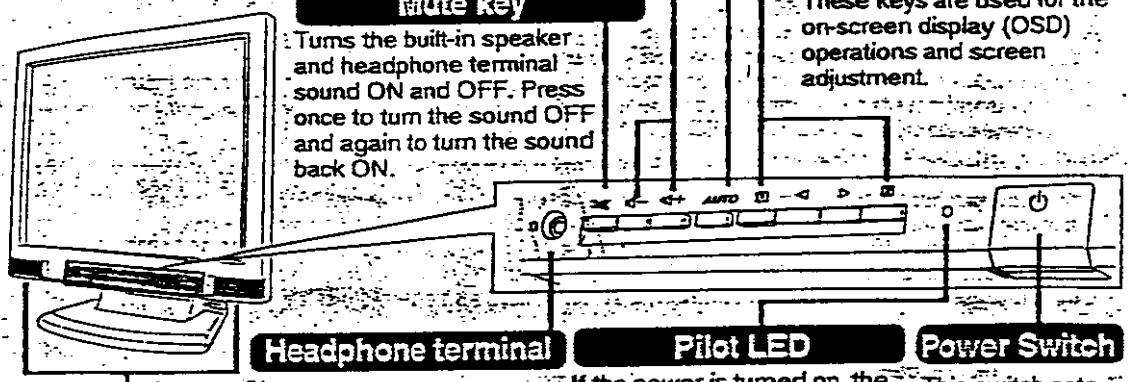
Dimension unit : mm

447 mm (W) × 460.71 mm (H) × 246.6 mm (D)
Angle adjustment range: 0–30° vertically

ENGLISH

Names and Functions

Front Operation Parts



Volume key

Adjusts the sound volume for the built-in speakers and the headphone terminals. The "-" key lowers the volume; the "+" key reises the volume.

AUTO key

The size and position of the screen is adjusted automatically.

Menu Operation keys

These keys are used for the on-screen display (OSD) operations and screen adjustment.

Mute key

Turns the built-in speaker and headphone terminal sound ON and OFF. Press once to turn the sound OFF and again to turn the sound back ON.

Headphone terminal

Commercially available audio stereo headphones or speakers can be connected here.

Pilot LED

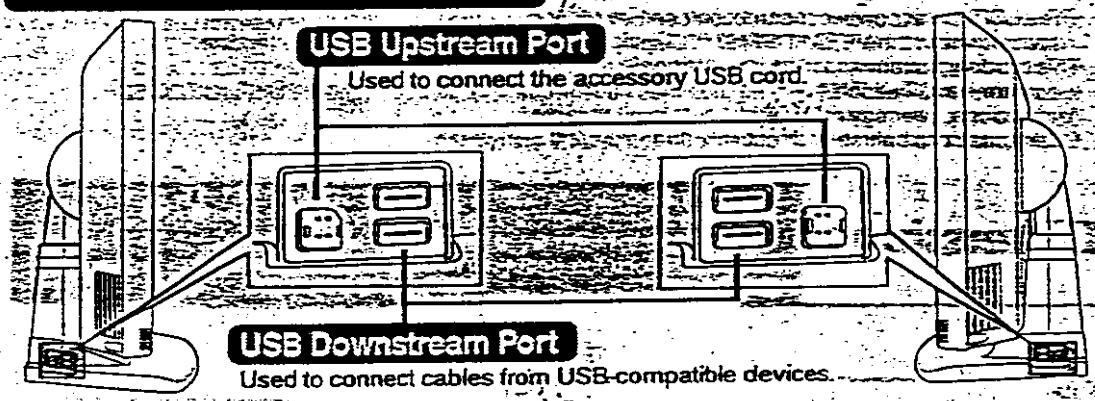
If the power is turned on, the green color lights and changes to a yellow color when the power management functionoperates.

Power Switch

This switch sets the power on and off.

Speaker

Side view



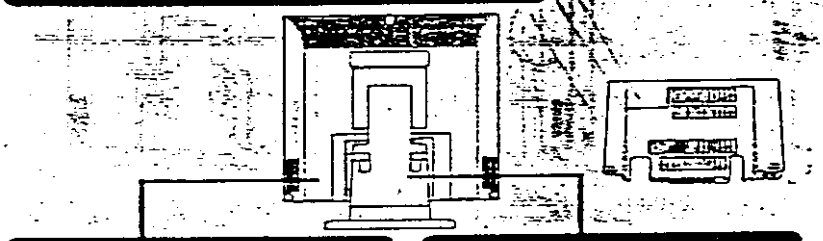
USB Upstream Port

Used to connect the accessory USB cord.

USB Downstream Port

Used to connect cables from USB-compatible devices.

Rear view



Back cable cover

After the related cables have been plugged into the their respective connectors located in the back of the monitor, the back cable cover is used to protect these cables and their rerespective cable connections in the rear of the monitor.

Left-side cable cover

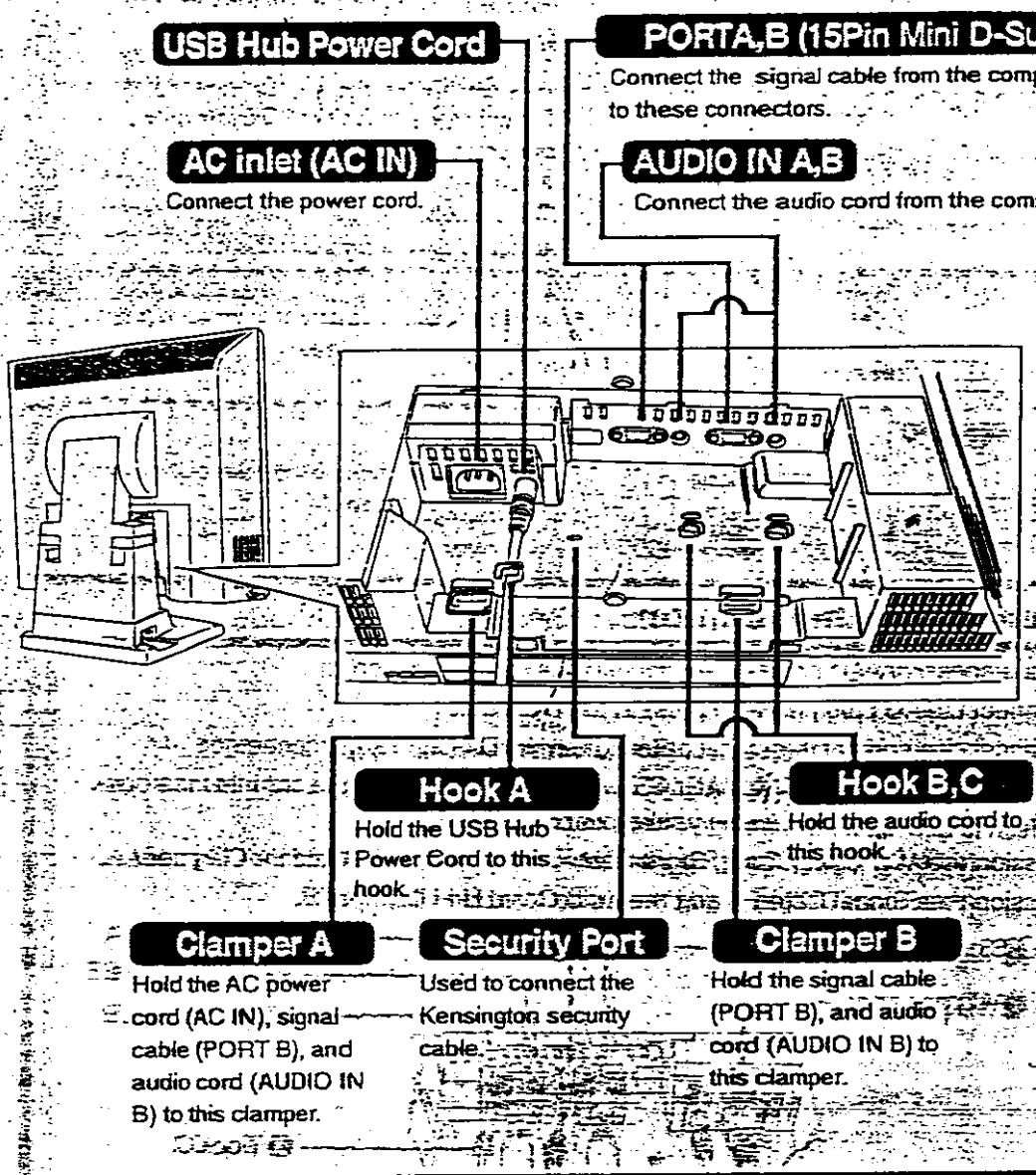
After the Signal Cable, Audio Cord and AC Power Cord have been connected, the left-side cable cover is used to protect these cables and their respective cable connections.

Right-side cable cover

After the Signal Cable and Audio Cord have been connected, the left-side cable cover is used to protect these cables and their respective cable connections.

Names and Functions (Continued)

Rear connection block



AC Power Cord

Always use the power supply cord that is enclosed with the unit.

If the enclosed power supply cord is not used, use a power cord that conforms to the following regional standards.

U.S.A	UL	Switzerland	SEV
Canada	CSA	Britain	BASEC / BS
Germany	VDE		

In other regions, for safety please use an AC plug cord that complies with each country's safety regulations.

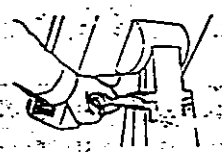
ENGLISH

Connections

Always turns off the power supply of the computer and the monitor before performing the connection procedures.

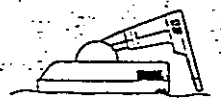
1: Connection Preparation

❶



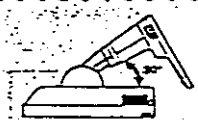
The right-side and left-side cable cover can be removed by grasping them firmly with your fingers.

❷



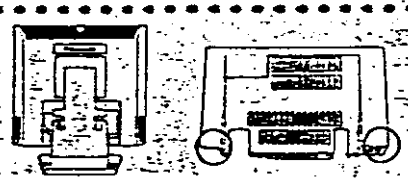
To protect the surface of LCD panel from being scratched, place a towel (or other suitable) on a solid, unobstructed flat surface. Then, carefully turn the monitor face-down and gently place it on top of the towl.

❸



To mark it sasier to connect, adjust the angle of the stand. (30 degree)

❹



The reat cable cover on the back of the cover labeled "Pull to open".

2. Connection the monitor

Use the accessory AC power cord, Signal cable, and Audio cord.

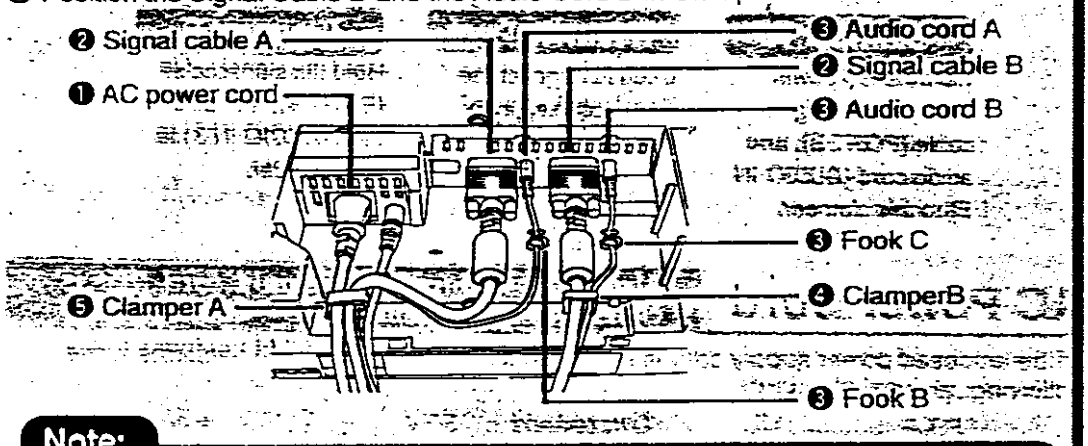
❶ Connect the AC plug (female pins) to the main unit.

❷ Connect one end of the signal cable to the mini D-Sub 15-pin connector.

❸ Plug the Audio Cord into the AUDIO-IN connector and hook the cord into the hook which is to keep it from being yanked out by accident.

❹ Position the AC Power Cord, Signal Cable A and the Audio Cord in A Clamper A.

❺ Position the Signal Cable B and the Audio Cord B in Clamper B.



Note:

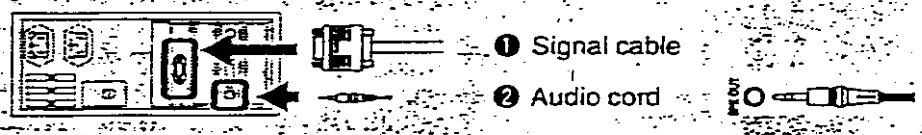
- Tighten the screws securing the plug tightly to prevent it from becoming disconnected.
- Do not unplugs the USB hub power cord. When plugging it in, align the plug correctly, using the arrow mark near the socket for reference, before plugging it in.

Connections (Continued)

3. Connection the computer

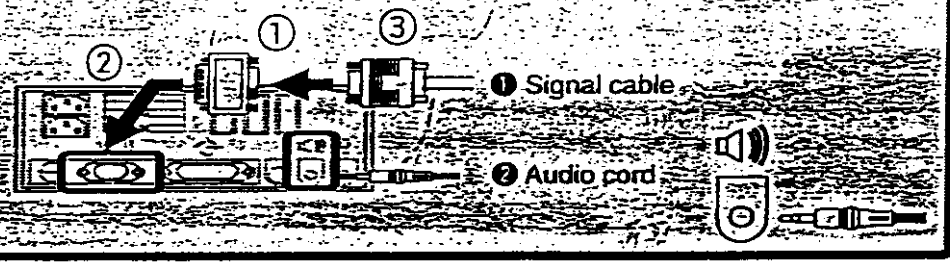
To an IBM PC or Compatible

❶ Connect the standard connector to the video output connector of the computer.
❷ Connect the audio cord to the AUDIO OUT terminal of the computer.



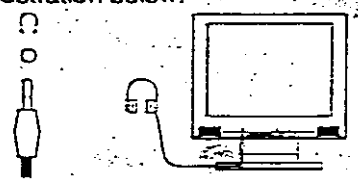
To a Macintosh

❶ Signal cable
① Use the adapter for the Macintosh.
② Connect the Macintosh adapter to the computer video output connector.
③ Connect the signal connector to the Macintosh adapter.
❷ Connect the audio cord to the SPEAKER terminal of the computer.



4. Usings Headphones

Prepare the headphones (commercially available) and connect as shown in the illustration below.



Caution:

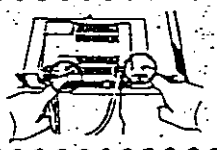
- The shape of the terminal of your computer may differ from that shown here. In case, read the instruction manual for your computer and connect as indicated.
- Lower the volume if howling occurs.
- If a filter or touch panel is attached to the screen, blocking the speakers, the sound quality and volume will be affected.
- Volume will vary depending on the headphones and microphone being used, so set the volume as appropriate.
- Interference may occur if the micro-cable and speaker cable are positioned close to the display monitor. If noise occurs in the speakers or headphones, move the cables away from the monitor.

Connections (Continued)

3. Attach the Cable covers

❶

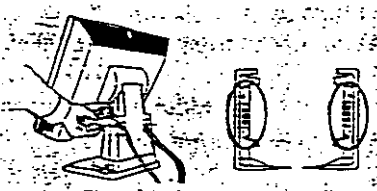
Leaving the monitor resting face-down, raise the stand up to an angle of 30%.

❷ 

Align the Rear Cable Cover with the top part of the monitor and press the part of the cover shown in the diagram to fit the cover into position.

❸

Carefully raise the face of the monitor to its normal vertical positioning and press the cable through the channel on the left side of the stand.

❹ 

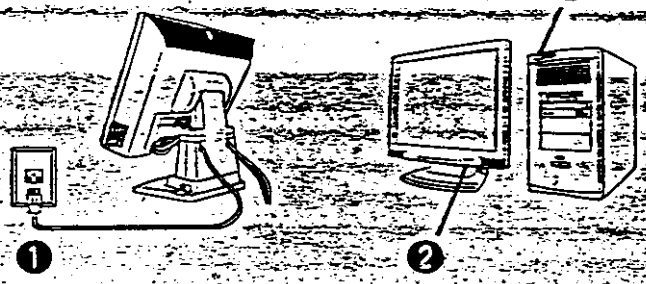
Attach the left and the right cable cover by positioning it so that the word "FRONT" is up and the arrow mark is pointing to the side the computer.

Caution:

- Do not damage to the cable when attempting to plug it in.
- When attaching the cable covers, be sure that cable has not become caught between the cover and the computer.

4. Turn on the Power

❶ Connect the AC plug (male pins) to the electrical outlet.
Caution: Always connect the ground wire.
❷ Turn on the power switch of the monitor.
❸ Turn on the power switch of the computer.



Note:

- Use a power source that supplies AC 100 V - 240 V at 50 Hz / 60 Hz.

Connecting USB Devices

Always use the USB cord that is enclosed with the unit.

(1). Prepare the accessory USB cord provided.

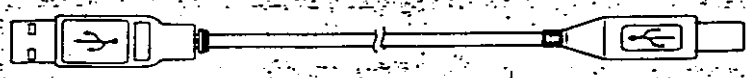
(2). Connect the USB connector (Series A) to the computer A or B.

(3). Connect the USB connector (Series B) to the USB Upstream port of the main unit.

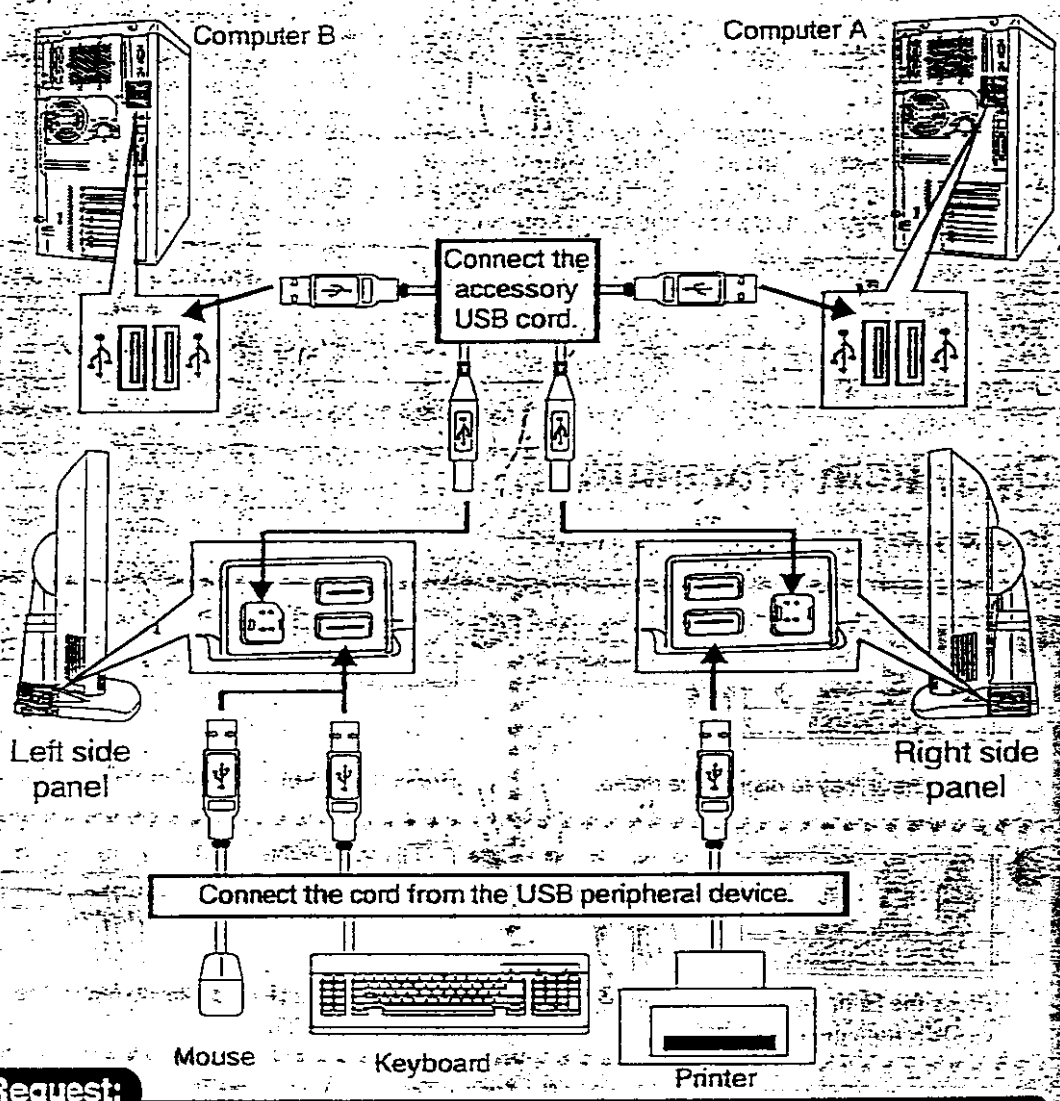
(4). Connect the cord of the USB device being used to the USB Downstream port of the main unit.

Notice: Before attempting to use the USB, read the Operating Instructions carefully.

■ USB Cord



■ Typical Connections



Request:

- Enumerate the USB hub or USB device.
- Install toe driver software of the USB divice.
- Whenever the USB cord has been uplugged and then later plugged in, or when switching the USB Upstream, check to make sure that the enumeration routine has been successfully completed. If the enumeration routine has not executed successfully, the USB and / or the computer may not function correctly.

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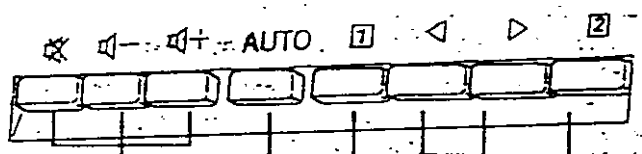
Operation

Basic operation



Mute and Volume key
Adjusts the sound volume for the built-in speakers and the headphone terminals.

1 key
Displays main menu.
Exits menus.

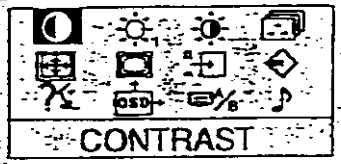
2 key
Selects menu item.

AUTO key
Performs the screen display auto size adjustment and adjusts the size, position and video level automatically.

◀ and ▶ keys
To move cursor in menu item.
To adjust level of selected item.

Menu screen

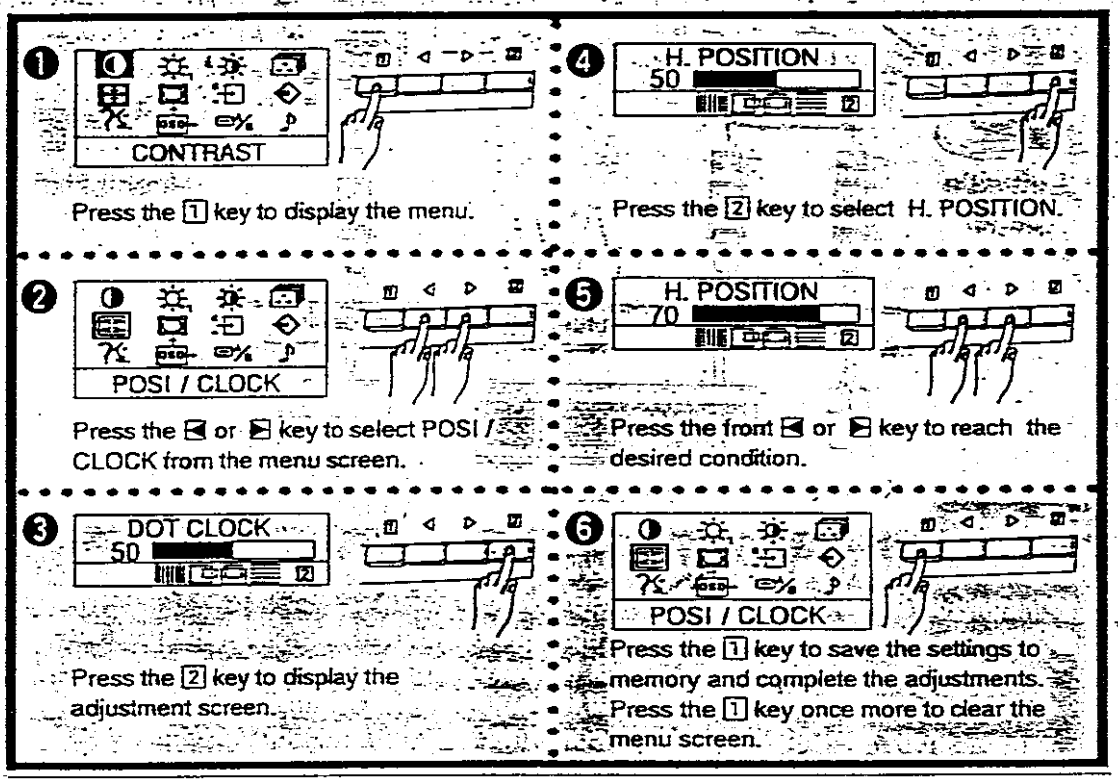
The functions that can be adjusted for this unit are displayed as icons.
1) Press the 1 key to return to the menu screen.
2) This is modified by pressing the "◀" and "▶" keys at the front.
3) Press the 2 key to enter the adjustment screen.



CONTRAST	BRIGHTNESS	PICTURE	COLOR TEMP
POSI / CLOCK	SCREEN MODE	VIDEO LEVEL	RECALL
LANGUAGE	OSD POSITION	INPUT SELECT	SOUND MENU

Operation Procedures

Horizontal position adjustment



Adjustments

Direct Adjustment

Even if the menu screen does not appear, the following adjustment can be perfpmed from the front panel operation key.

Direct Adjustment item name	Function
AUTO SIZE	The following adjustment items are automatically performed for the signal input from the computer by pressing the AUTO key. The horizontal position adjustment, horizontal size adjustment, vertical position adjustment, vertical size adjustment, vertical fine adjustment (CLOCK), horizontal fine adjustment (PHASE) and video level adjustment. Effective adjustment can be performed if this function is used. • Always operate the unit after the computer has started. • Perform the adjustment after the Windows screen or other similar screen is displayed in the entire screen. • Do not use this function when the VGA350 mode and DOS prompt mode are used because the function will not operate correctly. Perform the adjustment manually. • When some types of signal input (and / or input timing) occur, the AUTO adjust function may not work correctly. If this situation occurs, make the necessary adjustments by referring to Page I - 15 in the Operating Instructions. • While the AUTO adjust routine is running if a mouse or other input device is used, or if the screen is activated by another routine or program, the AUTO adjust function will not work properly. Therefore, make sure that the image on the screen remains still (does not change) and that the screen will not be activated or used by another program while AUTO adjustment is taking place.
VOLUME	This adjustment is performed directly from the front panel operation key. [◁−] key is pressed, the volume is lowered. [◁+] key is pressed, the volume is raised. [🔇] key is pressed, the volume is muted.
SIGNAL ERROR and NO SIGNAL (Monitor Self-Test)	This function displays if the main unit is operating correctly. Figure A or B is displayed if any of the four menu operation keys ([1], [◁], [▷], [2]) are pressed. 1) Figure A is displayed when the input synchronization signal exceeds the specified range. - The frequency is displayed in red when fH or fV exceed the specified range. 2) Figure B is displayed when the power save mode is set. (This figure is only displayed in the off state.) 3) Figure B is displayed when there is no input signal. For example, this occurs when the computer is not connected or the computer power is off. Figure A SIGNAL ERROR – × – DOT fH: 98.4 kHz fV: 60.1 Hz PORT A B 2 Figure B NO SIGNAL – × – DOT fH: – –kHz fV: – –Hz PORT A B 2

Adjustments (Continued)

Adjustment Item Screen

Icon	Ajustment item name	Function
	CONTRAST	Adjust the screen contrast. Pressing the 2 key toggles between BRIGHTNESS, BACKLIGHT, and CONTRAST. Note: If the "◀" and "▶" keys are pressed at the same time, the maximum level (100) will be set.
	BRIGHTNESS (Black level)	Adjust the brightness (low gradation part; black level). Pressing the 2 key toggles between CONTRAST, BACKLIGHT, and BRIGHTNESS. Note: If the "◀" and "▶" keys are pressed at the same time, the standard level (50) will be set.
	BACKLIGHT	Adjust the brightness of the backlight. Pressing the 2 key toggles between CONTRAST, BRIGHTNESS and BACKLIGHT. Direct operation: Even if the menu screen does not appear, the contrast can be adjusted by pressing the "◀" or "▶" keys. Note: If the "◀" and "▶" keys are pressed at the same time, the standard level (100) will be set.
	PICTURE	Image quality can be set to four different modes to match the type of input. 1) Press the "◀" and "▶" keys to select 1 (PICTURE1: text), 2 (PICTURE2: standard), 3 (PICTURE3: graphic) and 4 (USER). 2) 2 will be displayed at the bottom right-hand side of the on-screen panel when 4 (USER) has been selected. Press the 2 key on the front operation area to enter the USER adjustment screen.
	USER	It is possible to adjust the gamma correction and edge enhancement of the image to suit personal preference. 1) Select GAMMA or SHARPNESS with the 2 key. 2) Adjust the image quality to match personal preference with "◀" and "▶" keys.
	COLOR TEMP	It is possible to switch the whiteness of the image. 1) Press the "◀" and "▶" keys to select 1 (Normal color), 2 (6500K), 3 (9300K), and 4 (USER). 2) 2 will be displayed at the bottom right-hand side of the on-screen panel when 4 (USER) has been selected. Press the 2 key on the front operation area to enter the User color adjustment screen.
	USER COLOR	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. Note: Make a note of the setting values before performing the adjustment because the recall operation cannot be performed for the user color adjustment. The initial value is set to normal color.

Adjustments (Continued)

Adjustment Item Screen

Icon	Ajustment item name	Function
	POSI / CLOCK	Press the 2 key to select the DOT CLOCK / H.POSITION / V.POSITION / PHASE adjustments.
	DOT CLOCK	Vertical stripes may be observed depending on the desktop patterns or applications. If this occurs, perform the following adjustments. Display a screen which has vertical stripes and align the right side of the screen by the horizontal position adjustment, then change to the vertical stripe adjustment (DOT CLOCK) and perform the adjustment using the "◀" or "▶" key.
	H. POSITION	The horizontal position of the image can be adjusted.
	V. POSITION	The vertical position of the image can be adjusted.
	PHASE	Characters may flicker or horizontal stripes may appear depending on the desktop patterns or applications. If this occurs, perform the following adjustments. Display a screen which has horizontal stripes and align the bottom of the screen by the vertical position adjustment, then change to the horizontal stripe adjustment (PHASE) and perform the adjustment using the "◀" or "▶" key.
		Note) There are more than two optimal points. One dot on the right or left may disappear depending on the optimal point. If this occurs, shift to the other optimal point and perform the horizontal position adjustment and the DOT CLOCK adjustment again.
	SCREEN MODE	The screen display ratio of input signals can be adjusted. F I N E (High image quality mode): Input signal resolution is displayed just as it is. (A microcomputer automatically selects the display resolution of a life-size, 1.5 times, and 2 times.) Z O O M (Magnifying 1 mode): A maximum-sized image can be displayed in the panel display area without changing the aspect ratio (circularity) of input signals. F U L L (Magnifying 2 mode): Input signals can be displayed on the entire panel display area.
	VIDEO LEVEL	The video input signal level can be matched to the computer being used. 1) Press the "◀" or "▶" key to select 0.7 V / 1.0 V / AUTO. 2) 2 will be displayed at the bottom right-hand side of the on-screen panel when AUTO has been selected. Press the 2 key on the front operation area to perform the AUTO adjustment screen. Adjustment time is about 2 – 3 sec.
		Note) For this function to operate correctly, a white area about the size of the mouse cursor is necessary. Correct adjustment is not possible without such a white area.

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Adjustments (Continued)

Adjustment Item Screen

Icon	Ajustment item name	Function
	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.
	LANGUAGE	Select one of the languages (German, French, English, Italian or Spanish) for the on-screen display. DEU: German FRA: French ENG: English ITA: Italian ESP: Spanish
	OSD POSITION	It is possible to adjust the position that the on-screen panel is to be displayed. Select the position 1 to 5 with "◀" and "▶" key is pressed.
	INPUT SELECT	This displays the screen mode input on the LCD monitor and the input signal port, USB port, and audio input port can be switched over among them. The horizontal and vertical synchronization frequency are displayed. The values for horizontal and vertical synchronization frequency of the video signal that is currently input for the computer are displayed. fH: There is an error of approximately 0.2 kHz max. for 30 kHz and 0.4 kHz max. for 82 kHz. 1) Select (PORT), (USB), (AUDIO) with the 2 key. 2) Select the port with "◁" and "▷" keys. Direct operation: Even if the menu screen does not appear, the input select can be adjusted by pressing the 2 key.
	SOUND MENU	It is possible to adjust the sound quality. 1) Select (TREBLE), (BASS), (SURROUND) with the 2 key. 2) Adjust the tone to match personal preference with "◁" and "▷" keys.

Power Management System

This monitor conforms to the VESA® DPMS™ standard.
This function can suppress power consumption for the display unit.
The computer and video board being used must also conform to the VESA® DPMS™ standard.
Note: Regarding operation, please consult the Operation Manuals for the hardware being used.
Modes change in response to input signals as indicated in the table below.

APM state	Screen status	LED color	Power consumption	Returntime	Input signals		
					Video	Horizontal	Vertical
ON STATE	Active	Green	Normal	—	ON	ON	ON
STAND-BY	Black out	Yellow	< 15 Watts	< 4 sec.	OFF	OFF	ON
SUSPEND	Black out	Yellow	< 15 Watts	< 4 sec.	OFF	ON	OFF
OFF STATE	Black out	Yellow	< 5 Watts	< 5 sec.	OFF	OFF	OFF

Note: No USB peripherals connected
APM : Advanced Power Management

Caution

Turn the monitor off when it is not to be used for a long time.
How to release the system from the power management function.
1) Read the Operation Manuals for the hardware you are using.
2) Press one of the [1], [◀], [▶], [2] keys on the front panel.
The No Signal screen appears, and the monitor side power management function is released (only in OFF STATE).
Approximately 5 seconds is required to return to ON from the OFF state.

Display Modes Memory

- Up to 16 modes can be newly registered as user's preset modes.
- If the new adjustment data differ from any of the following 4, they can be registered as new data.

Horizontal frequency	Horizontal sync. polarity	Total number of vertical lines	Vertical sync. polarity

* It is necessary, however, that the horizontal frequency be 30 kHz ± 0.2 kHz to 82 kHz ± 0.4 kHz and that the difference in the number of vertical lines be ± 4 lines or more.

- The data that can be registered are those in the following table.

Horizontal frequency	Horizontal synchronization polarity	DOT CLOCK	Horizontal position
Total number of vertical lines	Vertical synchronization polarity	PHASE	Vertical position
Video signal level	PICTURE		

- How to register adjustment data

1) Input the computer signal to be registered to the display unit.
2) Select the item to be adjusted from the OSD screen and then adjust it.
3) When the [1] key is pressed, the adjusted value is registered.
If a front panel key is not operated for about 20 seconds, the adjustment is registered.

- There are 16 modes that can be preset by the user; if all 16 modes have already been registered, when the one that has been registered the oldest is deleted a new mode can be registered.
- If the timing of the new registration differs little in frequency from the previously registered timing and in addition the signal polarity is the same, they will be judged to be the same and the new timing cannot be registered.

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If Trouble Occurs

If problems continue even after the inspections described below are performed, always remove the power plug and contact our dealer.

Please observe the following points to ensure safety.

Symptom	Check	Remedy	Reference Page
The pilot LED does not light.	Power cord / plug Power switch Signal cable	Plug the power cord into the outlet correctly. Press the power switch. Connect the signal cable correctly.	I-7 I-10 I-9
There is no image.	Computer (The power saving function might have operated. If this occurred, the pilot LED will be light yellow.)	Release the power saving function. (Operate the mouse or keyboard. For additional details please read the operation manual of the hardware that is used.)	I-17
	Contrast, brightness and backlight adjustment	Adjust the contrast, brightness and backlight correctly.	I-14
The pilot LED does not go off.	Power switch	Press the power switch one more time.	I-10
The image is too large or too small. It is displaced from the correct position. Part of the screen is missing. The color of part of the screen is changed.	Is the display mode registered? Is the display mode guaranteed?	Use an on-screen function to perform the desired settings. Read the computer operation manual and change the display mode to obtain the specified mode.	I-15 I-17
There is an after-image in the screen.	Liquid Crystal panel	If the same screen is displayed on the LCD display panel for a long period of time, a phenomenon called "burn-in" may occur where slight traces of the burned-in screen pattern can still be observed when other screen patterns are displayed. Do not operate the display for approximately one day and do not turn the power on.	
Characters cannot be seen clearly even after an adjustment is performed.	Is the PHASE (Horizontal stripe) adjusted? Does the video clock frequency of the image signal exceed the standard level (135 MHz)? Has the PICTURE1(text) mode been set?	Perform the necessary adjustments until the characters displayed on the screen do not flicker. Lower the vertical frequency of the image signal to set the video clock frequency to a level below the standard level (135 MHz). Set the PICTURE2(standard) mode.	I-15 I-14
The outlines of text are sharp.	Is the video level correctly adjusted? Is the brightness or contrast adjustment turned all the way down? Has the Dynamic or Entertainment mode been set?	Check the video signal level from the computer and adjust it in the correct direction. Adjust the BRIGHTNESS, BACKLIGHT and CONTRAST. (Refer to the computer operation manual of the computer that is used for further details.) Set the Standard mode.	I-15 I-14 I-14
The image is too dark. The image scrolls continuously.	SELF-TEST function	Press the Menu operation keys to check the Self-Test screen. Is either one of the numeric values for fH or fV displayed in red? The input signal frequency exceeds the range of the security range of this unit. Read the operation manual of the computer and change the display mode.	I-13 I-20
The display color is abnormal.	Signal cable	Connect the signal cable correctly.	I-8 - 9

If Trouble Occurs (Continued)

Symptom	Check	Remedy	Reference Page
The screen size and position do not change.	Is the input synchronization signal within the operating range?	Check the video output mode from the computer and select a mode within the LCD monitor operating range. (For details, read the operation manual of the hardware you are using.)	I-20
The front panel keys fail to operate.	Are two or more keys being operated at the same time?	Operate only one key at a time.	
The sound is not correct.	AUDIO cable Computer sound level	Connect the AUDIO cable correctly. Is the sound level from the computer restricted ? Please refer to the operation manual for the hardware you are using for the details.	I-8 - 9
The headphones do not operate.	Headphone jack	Connect the headphone cord to headphone jack correctly.	I-9
The USB device does not operate.	USB cable USB hub power cable	Connect the USB cable correctly. Enumerated the USB hub or USB device. Install the driver software of the USB device.For details, read the Operating Instructions attached to the USB device.	I-11

Specifications

Specifications are subject to change without notice for the purpose of improvement.

LCD	Size	19 inch (19.0 inches / 48.3 cm viewable)
	Type	Color TFT active matrix Liquid Crystal
	Pixel pitch	0.294 mm
	Response	Fast (50 ms (typ.)) Suitable for monitor pictures
	Contrast Ratio	200 : 1 (typ.)
	Surface treatments	Anti-glare, anti-static (Anti-glare hard coat)
	Angle of Visibility	R / L: + / – 80°, Up: 80°, Down: 80° (typ.)
Input signal	Video signal	RGB analog
	Signal level	0.7 Vp-p – 1.0 Vp-p
	Synch ronization	H / V separate (TTL level), H / V composite (TTL level), Sync-on-green
	Operating Range	Horizontal Frequency Range: 30.0 kHz to 82.0 kHz
		Vertical Frequency Range: 50.0 Hz to 77.0 Hz
Connectors	Signal	15 pin mini D-Sub connector (female pins) x 2
	Headphone terminals	3.5 mm diameter stereo mini jack
	Audio input terminals	3.5 mm diameter stereo mini jack x 2
	USB terminals	Up stream port x 2
		Down stream port x 4
	Power supply	CEE22 type 3 pin connector
Controls	Operation Keys	Power ON / OFF, AUTO, 1, ◁, ▷, 2 Key, VOLUME+, –, MUTE key
	On-Screen Display	CONTRAST, BRIGHTNESS, BACKLIGHT, H. POSITION, H. SIZE, V. FINETUNE, V. POSITION, V. SIZE, H. FINETUNE, COLOR TEMP. (Normal color / 6500K / 9300K / User color), VIDEO LEVEL ADJ (0.7 V – 1.0 V), DISP. FREQ., LANGUAGE, AUTO SIZE, RECALL, OSD POSITION, PICTURE
Maximum pixel clock		135 MHz (max.)
Maximum resolution		1,280 dots (H) x 1,024 lines (V) / 75 Hz
Display area		376 x 301 mm (1,280 x 1,024)
Speakers		100 Hz to 20 kHz (typ)
	Frequency response	0.9 W + 0.9 W (typ)
Operating conditions	Practical audio output	Temperature: 0 to 35°C (32 to 95°F) Humidity: 5 to 90% (No condensation)
Input power		AC 100 – 240 V (50 / 60 Hz)
Power consumption		75 W (typ.) / < 3 W (during power saving operation)
Dimensions: width x height x depth		447 x 460.71 x 246.6 mm
Weight (main unit only)		12.0 kg
Screen angle adjustment		0 - 30° (Up), 360° (Left and Right)

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Preset Mode

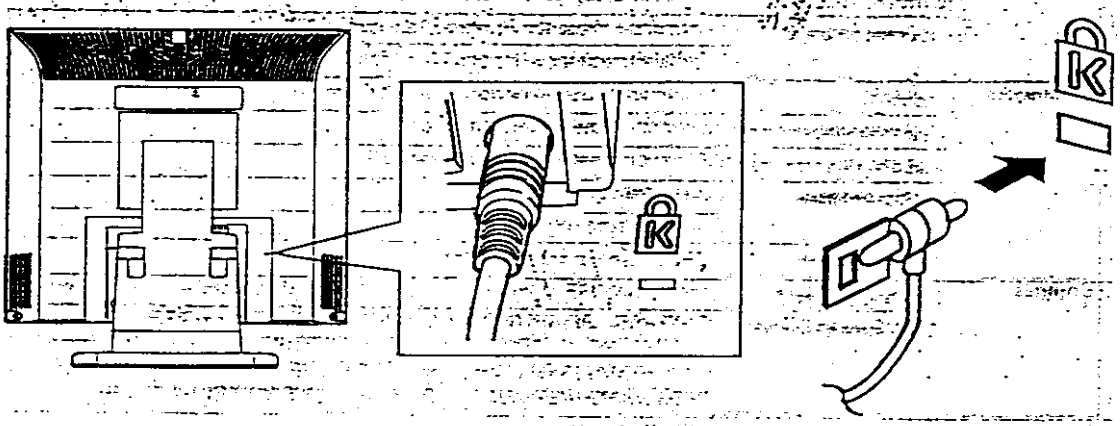
The 16 timings in the following table have been preset.

Mode	Resolution	Horizontal frequency (kHz)	Vertical frequency (Hz)	Synchronization signal polarity	
				Horizontal	Vertical
640× 480 at 60 Hz	640× 480	31.47	59.94	–	–
640× 400 at 70 Hz	640× 400	31.47	70.09	–	+
640× 480 at 67 Hz	640× 480	35.00	66.67	–	–
640× 480 at 75 Hz	640× 480	37.50	75.00	–	–
800× 600 at 56 Hz	800× 600	35.16	56.25	+	+
800× 600 at 60 Hz	800× 600	37.88	60.32	+	+
800× 600 at 75 Hz	800× 600	46.88	75.00	+	+
832× 624 at 75 Hz	832× 624	49.73	74.55	–	–
1,024× 768 at 60 Hz	1,024× 768	48.36	60.00	–	–
1,024× 768 at 75 Hz	1,024× 768	56.48	70.07	–	–
1,024× 768 at 72 Hz	1,024× 768	57.87	71.80	–	–
1,024× 768 at 75 Hz	1,024× 768	60.02	75.03	+	+
1,024× 768 at 75 Hz	1,024× 768	60.24	74.93	–	–
1,152× 870 at 75 Hz	1,152× 870	68.68	75.06	–	–
1,280×1,024 at 60 Hz	1,280×1,024	63.98	60.02	+	+
1,280×1,024 at 75 Hz	1,280×1,024	79.98	75.03	+	+

Security Port

A security port can be installed to prevent theft of the LCD monitor base.

A wire cable manufactured by Kensington can be connected to the security port on the rear panel of the main unit.



For details, please refer to the Kensington instruction manual.

< Inquiries>
Kensington
2855 Campus Drive
San Mateo, CA USA 94403
800-535-4242, x3348
Intrl: 415-572-2700, x3348
Fax: 415-572-9675