

Trinitron® Color Graphic Display

Operating Instructions _____	EN
Mode d'emploi _____	F
Manual de instrucciones _____	ES
使用说明书 _____	C

GDM-F500

Owner's Record

The model and serial numbers are located at the rear of the unit. Record these numbers in the spaces provided below. Refer to them whenever you call upon your dealer regarding this product.

Model No. _____

Serial No. _____

WARNING

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.
Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.**

FCC Notice

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

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

IMPORTADOR (Para Mexico unicamente/For Mexico only)

Sony Electronics de Mexico, S.A. de C.V.
Henry Ford No.29
Fraccionamiento San Nicolas, Tlalpan
Estado de Mexico, CP54030
Tel.: 321-1000
R.F.C. SEM-941001-BJA

IMPORTANTE

Para prevenir cualquier mal funcionamiento y evitar daños, por favor, lea detalladamente este manual de instrucciones antes de conectar y operar este equipo.

INFORMATION

This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPR II) for very low frequency (VLF) and extremely low frequency (ELF).

INFORMATION

Ce produit est conforme aux normes du Swedish National Council for Metrology de décembre 1990 (MPR II) en ce qui concerne les fréquences très basses (VLF) et extrêmement basses (ELF).

Hinweise

Dieses Gerät erfüllt bezüglich tieffrequenter (very low frequency) und tiefstfrequenter (extremely low frequency) Strahlung die Vorschriften des „Swedish National Council for Metrology (MPR)“ vom Dezember 1990 (MPR II).

INFORMACIÓN

Este producto cumple las normas del Consejo Nacional Sueco para Metrología (MPR) emitidas en diciembre de 1990 (MPR II) para frecuencias muy bajas (VLF) y frecuencias extremadamente bajas (ELF).

Dieses Gerät entspricht den folgenden europäischen EMV-Vorschriften für Betrieb in Wohngebieten, gewerblicher Gebieten und Leichtindustriengebieten.

EN55022/1994 Klasse B
EN50082-1/1992
EN61000-3-2/1995

Hinweise

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).
- Aus ergonomischen Gründen (flimmern) sollten nur Darstellungen bei Vertikalfrequenzen ab 70 Hz (ohne Zeilensprung) verwendet werden.
- Die Konvergenz des Bildes kann sich auf Grund des Magnetfeldes am Ort der Aufstellung aus der korrekten Grundeinstellung verändern. Zur Korrektur empfiehlt es sich deshalb, die Regler an der Frontseite für Konvergenz so einzustellen, daß die getrennt sichtbaren Farblinien für Rot, Grün und Blau bei z.B. der Darstellung eines Buchstabens zur Deckung (Konvergenz) gelangen.
Siehe hierzu auch die Erklärungen zu Konvergenz.

NOTICE

This notice is applicable for USA/Canada only.
If shipped to USA/Canada, install only a UL LISTED/CSA LABELLED power supply cord meeting the following specifications:

SPECIFICATIONS

Plug Type	Nema-Plug 5-15p
Cord	Type SVT or SJT, minimum 3 x 18 AWG
Length	Maximum 15 feet
Rating	Minimum 7 A, 125 V

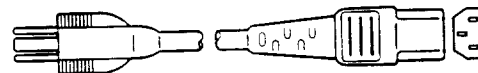
NOTICE

Cette notice s'applique aux Etats-Unis et au Canada uniquement.

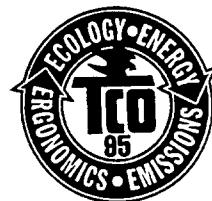
Si cet appareil est exporté aux Etats-Unis ou au Canada, utiliser le cordon d'alimentation portant la mention UL LISTED/CSA LABELLED et remplissant les conditions suivantes:

SPECIFICATIONS

Type de fiche	Fiche Nema 5-15 broches
Cordon	Type SVT ou SJT, minimum 3 x 18 AWG
Longueur	Maximum 15 pieds
Tension	Minimum 7 A, 125 V



As an ENERGY STAR Partner, Sony Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.



This monitor complies with the TCO'95 guidelines.

Declaration of Conformity

Trade Name: Sony
Model No.: GDM-F500
Responsible Party: Sony Electronics Inc.
Address: 1 Sony Drive, Park Ridge, NJ. 07656 USA
Telephone No.: 201-930-6970

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

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- Trinitron[®] is a registered trademark of Sony Corporation.
- Macintosh is a trademark licensed to Apple Computer, Inc., registered in the U.S.A. and other countries.
- Windows[®] and MS-DOS are registered trademarks of Microsoft Corporation in the United States and other countries.
- IBM PC/AT and VGA are registered trademarks of IBM Corporation of the U.S.A.
- VESA and DDC[™] are trademarks of the Video Electronics Standard Association.
- ENERGY STAR is a U.S. registered mark.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.
- Furthermore, "™" and "®" are not mentioned in each case in this manual.

Precautions

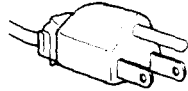
Warning on power connections

- Use the supplied power cord. If you use a different power cord, be sure that it is compatible with your local power supply.

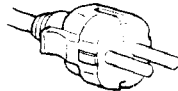
For the customers in the U.S.A.

If you do not use the appropriate cord, this monitor will not conform to mandatory FCC standards.

Example of plug types



for 100 to 120 V AC



for 200 to 240 V AC

- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the screen's surface to discharge.
- After the power is turned on, the screen is demagnetized (degaussed) for about 3 seconds. This generates a strong magnetic field around the screen which may affect data stored on magnetic tapes and disks placed near the monitor. Be sure to keep magnetic recording equipment, tapes, and disks away from the monitor.

The equipment should be installed near an easily accessible outlet.

Installation

Do not install the monitor in the following places:

- on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes
- near heat sources such as radiators or air ducts, or in a place subject to direct sunlight
- in a place subject to severe temperature changes
- in a place subject to mechanical vibration or shock
- on an unstable surface
- near equipment which generates magnetism, such as a transformer or high voltage power lines
- near or on an electrically charged metal surface

Maintenance

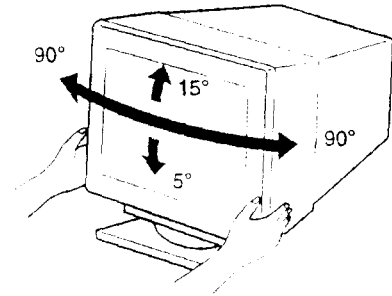
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the tilt-swivel

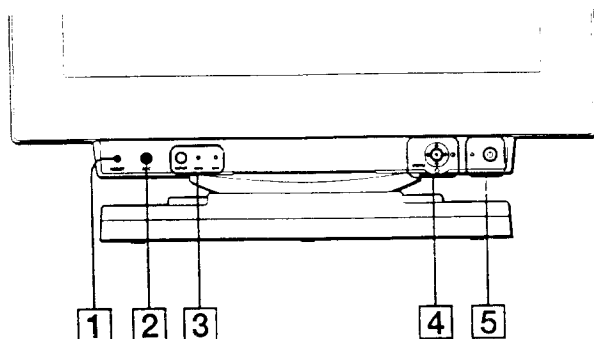
This monitor can be adjusted within the angles shown below. To turn the monitor vertically or horizontally, hold it at the bottom with both hands.



Identifying parts and controls

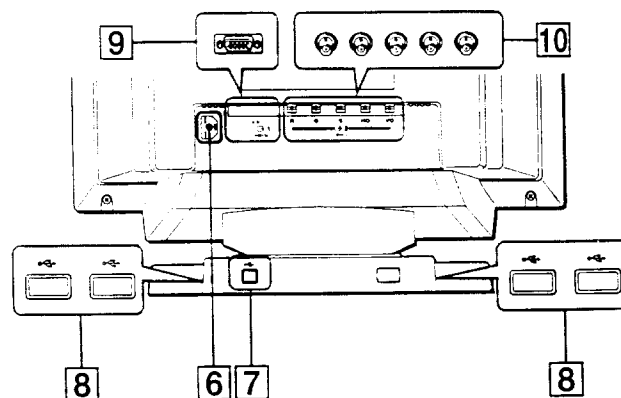
See the pages in parentheses for further details.

Front

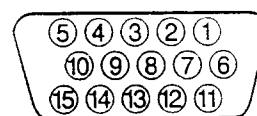


- 1 RESET button (page 14)**
This button resets the adjustments to the factory settings.
- 2 ASC (auto sizing and centering) button (page 9)**
This button automatically adjusts the size and centering of the picture.
- 3 INPUT button and HD 15/BNC Indicators (page 9)**
This button selects the HD15 or BNC video input signal. The input signal and corresponding input indicator change each time you press this button.
- 4 Joystick (page 11)**
The joystick is used to display the menu and make adjustments to the monitor, including brightness and contrast adjustments.
- 5 ⏻ (power) switch and Indicator (pages 7, 15, 18)**
This button turns the monitor on and off. The power indicator lights up in green when the monitor is turned on, and either flashes in green and orange, or lights up in orange when the monitor is in power saving mode.
- 6 AC IN connector (page 7)**
This connector provides AC power to the monitor.
- 7 USB (universal serial bus) upstream connector (page 8)**
Use this connector to link the monitor to a USB compliant computer.
- 8 USB (universal serial bus) downstream connectors (page 8)**
Use these connectors to link USB peripheral devices to the monitor.

Rear



- 9 Video input 1 connector (HD15) (page 6)**
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals.



Pin No.	Signal
1	Red
2	Green (Composite Sync on Green)
3	Blue
4	ID (Ground)
5	DDC Ground*
6	Red Ground
7	Green Ground
8	Blue Ground
9	DDC + 5V*
10	Ground
11	ID (Ground)
12	Bi-Directional Data (SDA)*
13	H. Sync
14	V. Sync
15	Data Clock (SCL)*

* DDC (Display Data Channel) is a standard of VESA.

- 10 Video input 2 connector (BNC) (page 6)**
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals.

EN

Setup

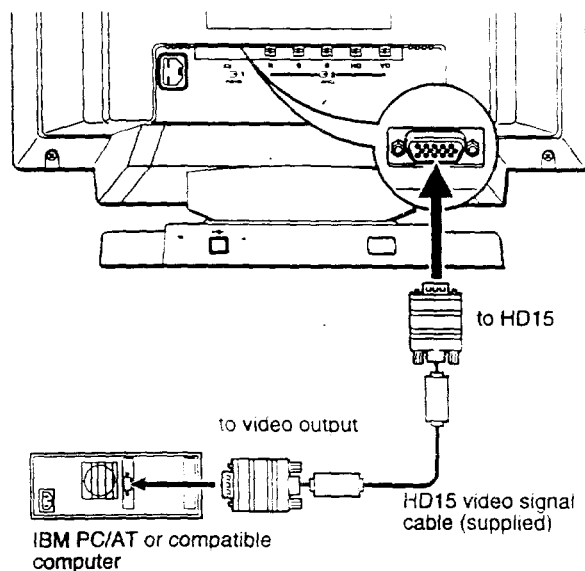
Before using your monitor, check that the following accessories are included in your carton:

- Power cord (1)
- HD15 video signal cable (1)
- USB cable (1)
- Macintosh adapter (1)
- Windows Monitor Information Disk (1)
- Warranty card (1)
- Notes on cleaning the screen's surface (1)
- This instruction manual (1)

Step 1: Connect your monitor to your computer

Turn off the monitor and computer before connecting.

■ Connecting to an IBM PC/AT or compatible computer



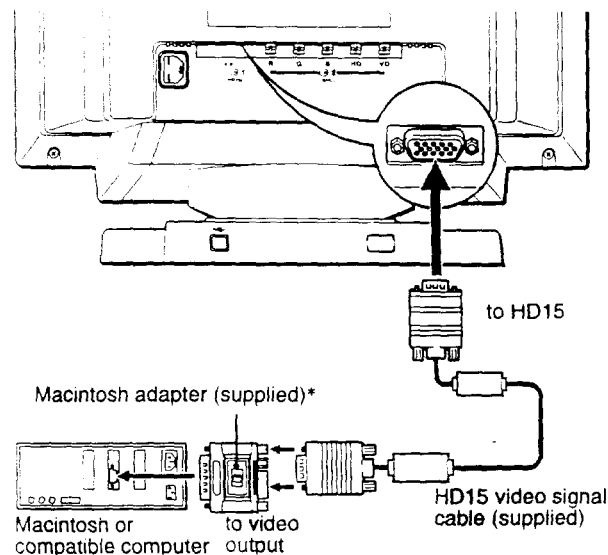
If your PC system is not compatible with Plug & Play (DDC2AB or DDC2B+)

This monitor uses the No.9 pin in the video signal connector for Plug & Play (DDC2AB or DDC2B+) compatibility. See page 5 for the location of the No.9 pin.

- If your computer accepts the No.9 pin, use the supplied HD15 video signal cable.
- If your computer does not accept the No.9 pin, please consult your dealer for advice on obtaining an HD15 adapter.

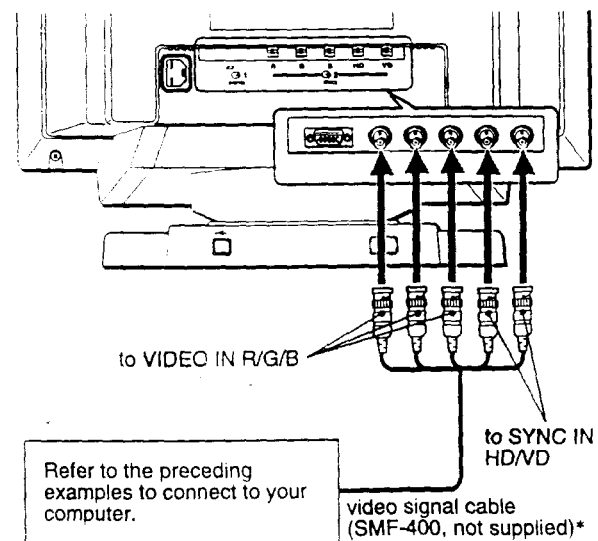
■ Connecting to a Macintosh or compatible computer

Use the supplied Macintosh adapter.



* Connect the supplied Macintosh adapter to the computer before connecting the cable. This adapter is compatible with Macintosh LC, Performa, Quadra, Power Macintosh and Power Macintosh G3 series computers. Macintosh II series and some older versions of PowerBook models may need an adapter with micro switches (not supplied).

■ Connecting to the five BNC connectors



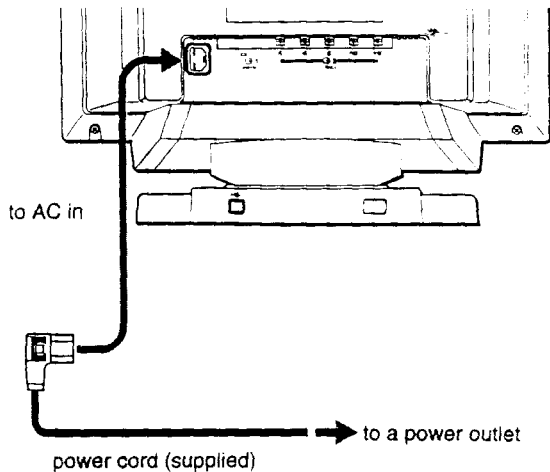
* Connect the cables from left to right in the following order: Red-Green-Blue-HD-VD.

Notes

- Do not touch the pins of the video cable connector as this might bend the pins.
- Plug & Play (DDC) does not apply to the five BNC connectors. If you want to use Plug & Play, connect your computer to the HD15 connector using the supplied video signal cable.

Step 2: Connect the power cord

With the monitor and computer switched off, first connect the power cord to the monitor, then connect it to a power outlet.



Step 3: Turn on the monitor and computer

First turn on the monitor, then turn on the computer.



The installation of your monitor is complete.

If necessary, use the monitor's controls to adjust the picture.

If no picture appears on your screen

- Check that the monitor is correctly connected to the computer.
- If NO INPUT SIGNAL appears on the screen, try changing the input signal (page 9), and confirm that your computer's graphic board is completely seated in the correct bus slot.
- If you are replacing an old monitor with this model and OUT OF SCAN RANGE appears on the screen, reconnect the old monitor. Then adjust the computer's graphic board so that the horizontal frequency is between 30 – 121 kHz, and the vertical frequency is between 48 – 160 Hz.

For more information about the on-screen messages, see "Trouble symptoms and remedies" on page 16.

EN

For customers using Windows 95/98

To maximize the potential of your monitor, install the new model information file from the supplied Windows Monitor Information Disk onto your PC.

This monitor complies with the "VESA DDC" Plug & Play standard. If your PC/graphics board complies with DDC, select "Plug & Play Monitor (VESA DDC)" or this monitor's model name as the monitor type in the "Control Panel" of Windows 95/98. If your PC/graphics board has difficulty communicating with this monitor, load the Windows Monitor Information Disk and select this monitor's model name as the monitor type.

For customers using Windows NT4.0

Monitor setup in Windows NT4.0 is different from Windows 95/98 and does not involve the selection of monitor type. Refer to the Windows NT4.0 instruction manual for further details on adjusting the resolution, refresh rate, and number of colors.

Adjusting the monitor's resolution and color number

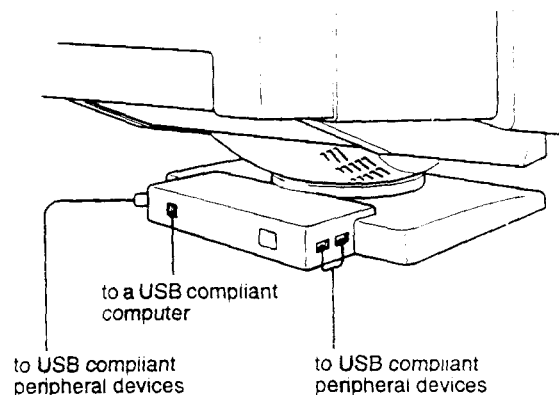
Adjust the monitor's resolution and color number by referring to your computer's instruction manual. The color number may vary according to your computer or video board. The color palette setting and the actual number of colors are as follows:

- High Color (16 bit) → 65,536 colors
- True Color (24 bit) → about 16.77 million colors

In true color mode (24 bit), speed may be slower.

Connecting Universal Serial Bus (USB) compliant peripherals

Your monitor has one upstream and four downstream USB connectors. They provide a fast and easy way to connect USB compliant peripheral devices (such as keyboards, mice, printers and scanners) to your computer using a standardized USB cable. To use your monitor as a hub for your peripheral devices, connect the USBs as illustrated below.



- 1 Turn on the monitor and computer.
- 2 Connect your computer to the square upstream connector using the supplied USB cable.

For customers using Windows

If a message appears on your screen, follow the on-screen instructions and select Generic USB Hub as the default setting.

- 3 Connect your USB compliant peripheral devices to the rectangular downstream USB connectors.

Notes

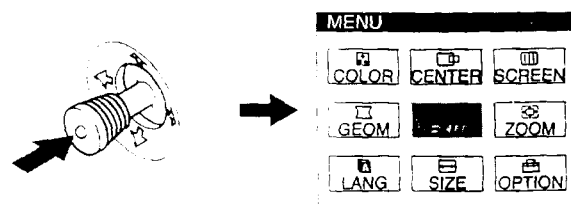
- Not all computers and /or operating systems support USB configurations. Check your computer's instruction manual to see if you can connect USB devices.
- In most cases, USB driver software needs to be installed on the host computer. Refer to the peripheral device's instruction manual for further details.
- The monitor functions as a USB hub as long as the monitor is either "on" or in power saving mode.
- If you connect a keyboard or mouse to the USB connectors and then boot your computer for the first time, the peripheral devices may not function. First connect the keyboard and mouse directly to the computer and set up the USB compliant devices. Then connect them to this monitor.
- Do not lean on the monitor when plugging in the USB cables. The monitor may suddenly shift and cause injury.

Selecting the on-screen menu language (LANG)

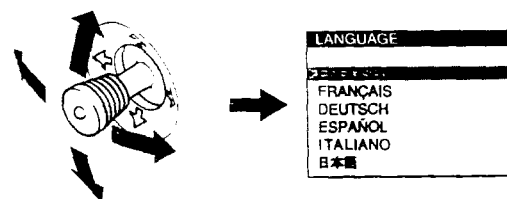
English, French, German, Spanish, Italian, and Japanese versions of the on-screen menus are available. The default setting is English.

1 Press the joystick

See page 11 for more information on using the joystick.



- 2 Move the joystick to highlight **LANG** and press the joystick again.



- 3 Move the joystick up or down to select a language and press the joystick again.

- ENGLISH
- FRANÇAIS: French
- DEUTSCH: German
- ESPAÑOL: Spanish
- ITALIANO: Italian
- 日本語: Japanese

To close the menu

Press the joystick once to return to the main menu, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.

To reset to English

Press the RESET button while the LANGUAGE menu is displayed on the screen.

Selecting the input signal

You can connect two computers to this monitor using the HD15 and BNC connectors. To switch between the two computers, use the **INPUT** button.

Press the INPUT button.

The input signal and corresponding input indicator change each time you press this button.



Notes

- If no signal is input to the selected connector, the monitor automatically switches to the other connector.
- If you restart the computer you want to view, or that computer is in power saving mode, the monitor may automatically switch to the other connector's signal. If this happens, manually select the desired signal using the **INPUT** button.

Automatically sizing and centering the picture

You can easily adjust the picture to fill the screen by pressing the **ASC** (auto sizing and centering) button.

Press the ASC button.

The picture automatically fills the screen.



Notes

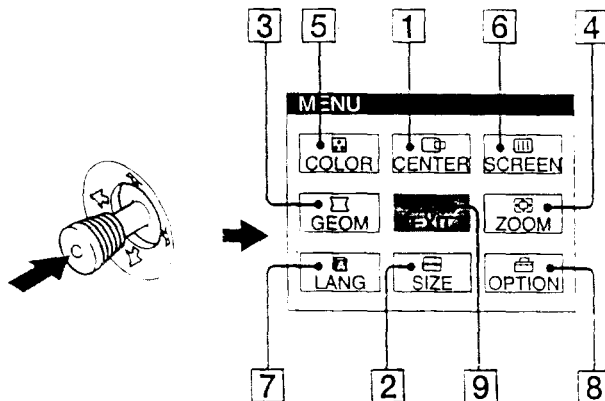
- This function is intended for use with a computer running Windows or similar graphic user interface software that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges (such as an MS-DOS prompt).
- Pictures with an aspect ratio of 5:4 (resolution: 1280 × 1024, 1800 × 1440) are displayed at their actual resolution and do not fill the screen to the edges.
- The screen may go blank for a few seconds when the **ASC** button is pressed. This is not a malfunction.

Customizing Your Monitor

You can make numerous adjustments to your monitor using the on-screen menu.

Navigating the menu

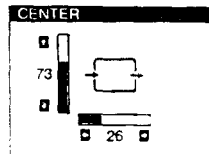
Press the joystick to display the main MENU on your screen. See page 11 for more information on using the joystick.



Use the joystick to select one of the following menus.

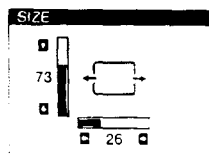
1 CENTER (page 11)

Select the CENTER menu to adjust the picture's centering.



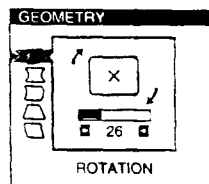
2 SIZE (page 11)

Select the SIZE menu to adjust the picture's horizontal and vertical size.



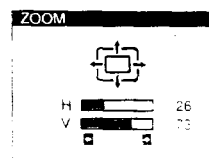
3 GEOM (page 12)

Select the GEOM menu to adjust the picture's rotation and shape.



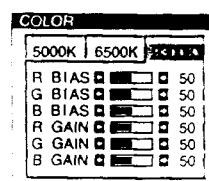
4 ZOOM (page 12)

Select the ZOOM menu to enlarge or reduce the picture.



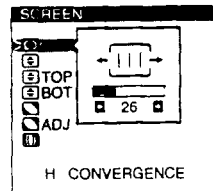
5 COLOR (page 12)

Select the COLOR menu to adjust the picture's color temperature. You can use this to match the monitor's colors to a printed picture's colors.



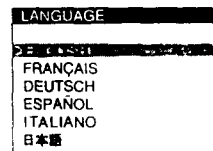
6 SCREEN (page 13)

Select the SCREEN menu to adjust the picture's quality. You can adjust the vertical and horizontal convergence, landing, and moire cancellation effect.



7 LANG (page 8)

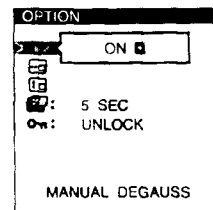
Select LANG to choose the on-screen menu's language.



8 OPTION (page 14)

Select OPTION to adjust the monitor's options. The options include:

- degaussing the screen
- changing the on-screen menu position
- changing the power saving delay time
- locking the controls

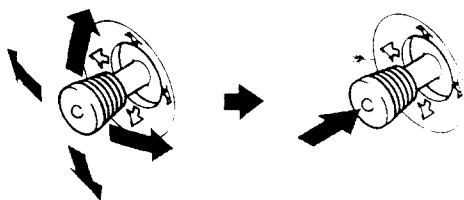


9 EXIT

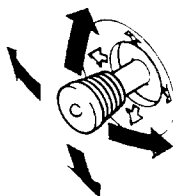
Select EXIT to close the menu.

■ Using the joystick

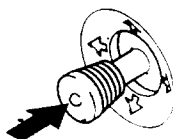
- 1 **Select the menu you want to adjust.**
Move the joystick up, down, left, or right to highlight the desired menu. Press the joystick to select the menu item.



- 2 **Adjust the menu.**
Move the joystick up, down, left, or right to make the adjustment.



- 3 **Close the menu.**
Press the joystick once to return to the main menu, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.



■ Resetting the adjustments

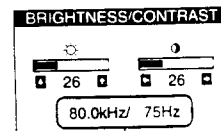
Press the RESET button. See page 14 for more information on resetting the adjustments.



Adjusting the brightness and contrast

Brightness and contrast adjustments are made using a separate BRIGHTNESS/CONTRAST menu. These settings are stored in memory for all input signals.

- 1 **Move the joystick in any direction.**
The BRIGHTNESS/CONTRAST menu appears on the screen.




the horizontal and vertical frequencies of the current input signal

- 2 **Move the joystick up or down to adjust the brightness (☀), and left or right to adjust the contrast (⦿).**
The menu automatically disappears after about 3 seconds.


Adjusting the centering of the picture (CENTER)

This setting is stored in memory for the current input signal.

- 1 **Press the joystick.**
The main MENU appears on the screen.
- 2 **Move the joystick to highlight  CENTER and press the joystick again.**
The CENTER menu appears on the screen.
- 3 **Move the joystick up or down to adjust the vertical centering, and left or right to adjust the horizontal centering.**

Adjusting the size of the picture (SIZE)


This setting is stored in memory for the current input signal.






- 1 **Press the joystick.**
The main MENU appears on the screen.
- 2 **Move the joystick to highlight  SIZE and press the joystick again.**
The SIZE menu appears on the screen.
- 3 **Move the joystick up or down to adjust the vertical size, and left or right to adjust the horizontal size.**

Adjusting the shape of the picture (GEOM)

The GEOM settings allow you to adjust the rotation and shape of the picture.


The rotation setting is stored in memory for all input signals. All other settings are stored in memory for the current input signal.

- 1 Press the joystick.**
The main MENU appears on the screen.
- 2 Move the joystick to highlight  GEOM and press the joystick again.**
The GEOMETRY menu appears on the screen.
- 3 First move the joystick up or down to select the desired adjustment item. Then move the joystick left or right to make the adjustment.**

Select	To
 ROTATION	rotate the picture
 PINCUSHION	expand or contract the picture sides
 PIN BALANCE	shift the picture sides to the left or right
 KEYSTONE	adjust the picture width at the top of the screen
 KEY BALANCE	shift the picture to the left or right at the top of the screen

Enlarging or reducing the picture (ZOOM)

This setting is stored in memory for the current input signal.

- 1 Press the joystick.**
The main MENU appears on the screen.
- 2 Move the joystick to highlight  ZOOM and press the joystick again.**
The ZOOM menu appears on the screen.
- 3 Move the joystick left or right to enlarge or reduce the picture.**


Note

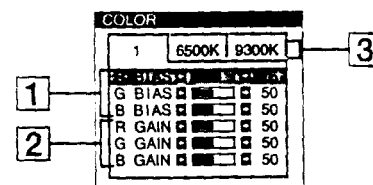
Adjustment stops when either the horizontal or vertical size reaches its maximum or minimum value.

Adjusting the color of the picture (COLOR)

The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's colors to a printed picture's colors.

This setting is stored in memory for all input signals.

- 1 Press the joystick.**
The main MENU appears on the screen.
- 2 Move the joystick to highlight  COLOR and press the joystick again.**
The COLOR menu appears on the screen.
- 3 Move the joystick left or right to select a color temperature.**
The preset color temperatures are 5000K, 6500K, and 9300K. Since the default setting is 9300K, the whites will change from a bluish hue to a reddish hue as the temperature is lowered to 6500K and 5000K.
- 4 If necessary, fine tune the color temperature.**
First move the joystick up or down to select the desired adjustment item. Then move the joystick left or right to make the adjustment.



- 1 Adjusting the BIAS (black level)**
This changes the brightness of both the dark and light areas of an image.
- 2 Adjusting the GAIN (white level)**
This changes the contrast of just the light areas of an image.

You can adjust the R(Red), G(Green), and B(Blue) component of the input signal when making changes to item **1** and **2**.

If you fine tune the color temperature, the new color settings are stored in memory for each of the three color temperatures and item **3** of the on-screen menu changes as follows:

- [5000K] → [1]
- [6500K] → [2]
- [9300K] → [3]

Adjusting the quality of the picture (SCREEN)

The SCREEN settings allow you to adjust the quality of the picture by controlling the convergence, moire, and landing.

- If you see red or blue shadows around letters or lines, adjust the convergence.
- If elliptical or wavy patterns appear on the screen, cancel the moire.
- If the color is irregular at the corners of the screen, adjust the landing.

The CANCEL MOIRE and MOIRE ADJUST settings are stored in memory for the current input signal. All other settings are stored in memory for all input signals.







1 Press the joystick.




The main MENU appears on the screen.

2 Move the joystick to highlight SCREEN and press the joystick again.

The SCREEN menu appears on the screen.

3 First move the joystick up or down to select the desired adjustment item. Then move the joystick left or right to make the adjustment.

Select	To
 H CONVERGENCE	horizontally shift red or blue shadows
 V CONVERGENCE	vertically shift red or blue shadows
 TOP V CONVER TOP	vertically shift red or blue shadows at the top of the screen
 BOT V CONVER BOT	vertically shift red or blue shadows at the bottom of the screen
 LANDING	select one of the four corners of the screen <input type="checkbox"/> :top left <input type="checkbox"/> :top right <input type="checkbox"/> :bottom left <input type="checkbox"/> :bottom right
 ADJ LANDING ADJUST	reduce any irregularities in the color of the corner selected in LANDING to a minimum

Select	To
 CANCEL MOIRE*	turn the moire cancellation function ON or OFF  ADJ (MOIRE ADJUST) appears in the menu when you select ON
 ADJ MOIRE ADJUST	adjust the degree of moire cancellation until the moire is at a minimum

- * Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire



Note

The picture may become fuzzy when CANCEL MOIRE is set to ON.

Additional settings (OPTION)

You can manually degauss (demagnetize) the monitor, change the menu position, set the power saving delay time, and lock the controls.

1 Press the joystick.

The main MENU appears on the screen.

2 Move the joystick to highlight OPTION and press the joystick again.


The OPTION menu appears on the screen.

3 Move the joystick to highlight the desired adjustment item.

Adjust the selected item according to the following instructions.

Degaussing the screen



The monitor is automatically demagnetized when the power is turned on.

To manually degauss the monitor, first move the joystick up or down to select  (MANUAL DEGAUSS). Then move the joystick to the right.


The screen is degaussed for about 3 seconds. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

Changing the menu's position.

Change the menu's position if it is blocking an image on the screen.


To change the menu's on-screen position, first move the joystick up or down to select  (OSD H POSITION) for horizontal adjustment, or  (OSD V POSITION) for vertical adjustment. Then move the joystick to the left or right to shift the on-screen menu.





Changing the power saving delay time.

To adjust the time it takes to enter the power saving mode, first move the joystick up or down to select  (PWR SAVE DELAY). Then move the joystick to the left or right to select the desired time.


If you select OFF, the monitor does not enter power saving mode. See page 15 for more information about the monitor's power saving capabilities.

Locking the controls.

To protect adjustment data by locking the controls, first move the joystick up or down to select  (CONTROL LOCK). Then move the joystick to the right to select LOCK.

Only the  (power) switch, EXIT, and  (CONTROL LOCK) of the  OPTION menu will operate. If any other items are selected, the  mark appears on the screen.

To cancel the control lock

Repeat the procedure above and set  (CONTROL LOCK) to UNLOCK.

Resetting the adjustments

This monitor has the following three reset methods. Use the RESET button to reset the adjustments.



Resetting a single adjustment item

Use the joystick to select the adjustment item you want to reset and press the RESET button.

Resetting all of the adjustment data for the current input signal


Press the RESET button when no menu is displayed on the screen. Note that the following items are not reset by this method:

- on-screen menu language (page 8)
- on-screen menu position (page 14)
- power saving delay time (page 14)
- control lock (page 14)

Resetting all of the adjustment data for all inputs

Press and hold the reset button for more than two seconds.

Note

The RESET button does not function when  (CONTROL LOCK) is set to LOCK.

Technical Features

Preset and user modes

When the monitor receives an input signal, it automatically matches the signal to one of the factory preset modes stored in the monitor's memory to provide a high quality picture at the center of the screen. (See page i for a list of the factory preset modes.) For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor ensures that a clear picture appears on the screen for any timing in the monitor's frequency range (horizontal: 30 – 121 kHz, vertical: 48 – 160 Hz). If the picture is adjusted, the adjustment data is stored as a user mode and automatically recalled whenever the same input signal is received.

Note for Windows users

For Windows users, check your video board manual or the utility program which comes with your graphic board and select the highest available refresh rate to maximize monitor performance.

Power saving function

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

Power mode	Power consumption*	⏻ (power) indicator
normal operation	≤ 160 W	green
1 standby	≤ 100 W	green and orange alternate
2 suspend	≤ 15 W	green and orange alternate
3 active off**	≤ 1 W	orange
power off	0 W	off

* Figures reflect power consumption when no USB compatible peripherals are connected to the monitor.

**When your computer enters the "active off" mode, the input signal is cut and NO INPUT SIGNAL appears on the screen. After the time set in "Changing the power saving delay time." (page 14) has elapsed, the monitor enters the power saving mode.

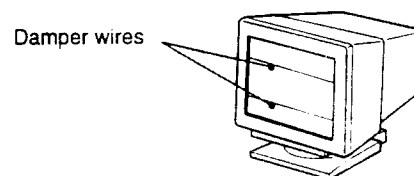
To change the power saving delay time
See page 14.

Troubleshooting

Before contacting technical support, refer to this section.

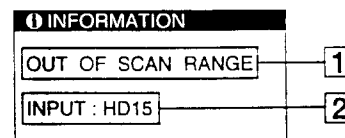
If thin lines appear on your screen (damper wires)

The lines you are experiencing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white). The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.



On-screen messages

If there is something wrong with the input signal, one of the following messages appears on the screen. To solve the problem, see "Trouble symptoms and remedies" on page 16.



1 The input signal condition OUT OF SCAN RANGE

indicates that the input signal is not supported by the monitor's specifications.

NO INPUT SIGNAL





indicates that no signal is input, or that no signal is input from the selected connector (HD15 or BNC).


2 The connector indicator

This message indicates which connector is receiving the wrong signal. If there is something wrong with the signal from both connectors, HD15 and BNC are displayed alternately.

Trouble symptoms and remedies

If the problem is caused by the connected computer or other equipment, please refer to the connected equipment's instruction manual. Use the self-diagnosis function (page 18) if the following recommendations do not resolve the problem.

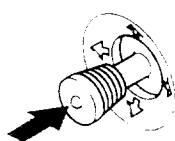
Symptom	Check these items
No picture	
If the  (power) indicator is not lit	<ul style="list-style-type: none"> • Check that the power cord is properly connected. • Check that the  (power) switch is in the "on" position.
If the NO INPUT SIGNAL message appears on the screen, or if the  (power) indicator is either orange or alternating between green and orange	<ul style="list-style-type: none"> • Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets. If you are using the five BNC connectors, connect them in the correct order (from left to right: Red-Green-Blue-HD-VD) (page 6). • Check that the input select setting is correct (page 9). • Check that the HD15 video input connector's pins are not bent or pushed in. <p>■ Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> • The computer is in power saving mode. Try pressing any key on the computer keyboard. • Check that the computer's power is "on." • Check that the graphic board is completely seated in the proper bus slot.
If the OUT OF SCAN RANGE message appears on the screen	<p>■ Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> • Check that the video frequency range is within that specified for the monitor. If you replaced an old monitor with this monitor, reconnect the old monitor and adjust the frequency range to the following. Horizontal: 30~121 kHz Vertical: 48~160 Hz
If no message is displayed and the  (power) indicator is green or flashing orange	<ul style="list-style-type: none"> • Use the Self-diagnosis function (page 18).
If using Windows 95/98	<ul style="list-style-type: none"> • If you replaced an old monitor with this monitor, reconnect the old monitor and do the following. Install the Windows Monitor Information Disk (page 7) and select "GDM-F500" from among the Sony monitors in the Windows 95/98 monitor selection screen. If you choose to select "Plug and Play," connect the monitor to the computer with the HD15 video signal. You cannot use the five BNC connectors.
If using a Macintosh system	<ul style="list-style-type: none"> • Check that the Macintosh adapter and the video signal cable are properly connected (page 6).
Picture flickers, bounces, oscillates, or is scrambled	<ul style="list-style-type: none"> • Isolate and eliminate any potential sources of electric or magnetic fields such as other monitors, laser printers, electric fans, fluorescent lighting, or televisions. • Move the monitor away from power lines or place a magnetic shield near the monitor. • Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try turning the monitor 90° to the left or right. <p>■ Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> • Check your graphics board manual for the proper monitor setting. • Confirm that the graphics mode (VESA, Macintosh 21" Color, etc.) and the frequency of the input signal are supported by this monitor (page 1). Even if the frequency is within the proper range, some video boards may have a sync pulse that is too narrow for the monitor to sync correctly. • Adjust the computer's refresh rate (vertical frequency) to obtain the best possible picture.
Picture is fuzzy	<ul style="list-style-type: none"> • Adjust the brightness and contrast (page 11). • Degauss the monitor* (page 14). • If CANCEL MOIRE is ON, the picture may become fuzzy. Decrease the moire cancellation effect or set CANCEL MOIRE to OFF (page 13).

Symptom	Check these items
Picture is ghosting	<ul style="list-style-type: none"> Eliminate the use of video cable extensions and/or video switch boxes. Check that all plugs are firmly seated in their sockets.
Picture is not centered or sized properly	<ul style="list-style-type: none"> Press the ASC button (page 9). Adjust the size (page 11) or centering (page 11). Note that some video modes do not fill the screen to the edges.
Edges of the image are curved	<ul style="list-style-type: none"> * Adjust the geometry (page 12).
Wavy or elliptical pattern (moire) is visible	<ul style="list-style-type: none"> Cancel the moire (page 13). <p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> Change your desktop pattern.
Color is not uniform	<ul style="list-style-type: none"> Degauss the monitor* (page 14). If you place equipment that generates a magnetic field, such as a speaker, near the monitor, or if you change the direction the monitor faces, color may lose uniformity. Adjust the landing (page 13).
White does not look white	<ul style="list-style-type: none"> Adjust the color temperature (page 12). Check that the five BNC connectors are connected in the correct order (from left to right: Red-Green-Blue-HD-VD) (page 6).
Letters and lines show red or blue shadows at the edges	<ul style="list-style-type: none"> Adjust the convergence (page 13).
Monitor buttons do not operate	<ul style="list-style-type: none"> If the control lock is set to LOCK, set it to UNLOCK (page 14).
USB peripherals do not function	<ul style="list-style-type: none"> Check that the appropriate USB connectors are securely connected (page 8). Check that the  (power) switch is in the "on" position. <p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> Check that the power of any self-powered USB compliant peripheral devices is "on." Install the latest version of the device driver on your computer. Contact your device's manufacturer for information about the appropriate device driver. If your USB compliant keyboard or mouse does not function, connect them directly to your computer, reboot your computer, and make any necessary adjustments to the USB settings. Then reconnect the keyboard or mouse to the monitor. For customers using Windows 95 <ol style="list-style-type: none"> Right-click on My Computer and select Properties. Click on the Device Manager tab. Scroll down and select Universal Serial Bus Controller. <ul style="list-style-type: none"> ➔If Universal Serial Bus Controller does not appear, you need to load a USB supplement disk. Contact your computer's manufacturer for more information about obtaining a USB supplement disk. Select Generic USB Device from the USB controller list and click on Properties. If there is a check in the box next to "Disable in this hardware profile," remove the check. Click on Refresh.
A hum is heard right after the power is turned on	<ul style="list-style-type: none"> This is the sound of the auto-degauss cycle. When the power is turned on, the monitor is automatically degaussed for three seconds.

* If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. A humming noise may be heard, but this is not a malfunction.

Displaying this monitor's name, serial number, and date of manufacture.

While the monitor is receiving a video signal, press and hold the joystick for more than three seconds to display this monitor's information box.



Example



ⓘ INFORMATION
MODEL : GDM-F500
SER NO : 1234567
MANUFACTURED : 1998-52

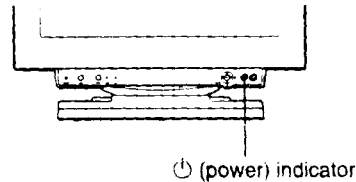
If the problem persists, call your authorized Sony dealer and give the following information.

- Model name: GDM-F500
- Serial number
- Name and specifications of your computer and graphics board.


EN

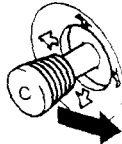
Self-diagnosis function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer(s), the screen will go blank and the  (power) indicator will either light up green or flash orange. If the  (power) indicator is lit in orange, the computer is in power saving mode. Try pressing any key on the keyboard.



If the (power) indicator is green

- 1 Remove any plugs from the video input 1 and 2 connectors, or turn off the connected computer(s).
- 2 Press the  (power) button to turn the monitor off and on.
- 3 Move the joystick to the right for 2 seconds before the monitor enters power saving mode.






If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cables and check the condition of your computer(s).

If the color bars do not appear, there is a potential monitor failure. Inform your authorized Sony dealer of the monitor's condition.

If the (power) indicator is flashing orange

Press the  (power) button to turn the monitor off and on.

If the  (power) indicator lights up green, the monitor is working properly.

If the  (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the  (power) indicator and inform your authorized Sony dealer of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

Specifications

CRT	0.22 mm aperture grille pitch 21 inches measured diagonally 90-degree deflection FD Trinitron
Viewable image size	Approx. 403.8 × 302.2 mm (w/h) (16 × 12 inches) 19.8" viewing image
Resolution	Horizontal: Max. 1800 dots Vertical: Max. 1440 lines
Standard image area	Approx. 388 × 291 mm (w/h) (15 3/8 × 11 1/2 inches) or Approx. 364 × 291 mm (w/h) (14 3/8 × 11 1/2 inches)
Deflection frequency*	Horizontal: 30 to 121 kHz Vertical: 48 to 160 Hz
AC input voltage/current	100 to 240 V, 50 – 60 Hz, 2.0 – 1.5 A
Power consumption	Max. 160 W (with no USB device connected)
Dimensions	Approx. 502 × 511 × 486.3 mm (w/h/d) (19 7/8 × 20 1/8 × 19 1/4 inches)
Mass	Approx. 34 kg (74 lb 15 oz)
Plug and Play	DDC1/DDC2B/DDC2AB/DDC2B
Supplied accessories	See page 6

* Recommended horizontal and vertical timing condition

- Horizontal sync width duty should be more than 4.8% of total horizontal time or 0.8 μs, whichever is larger.
- Horizontal blanking width should be more than 2.5 μsec.
- Vertical blanking width should be more than 450 μsec.

Design and specifications are subject to change without notice.