

HYUNDAI

DeluxScan® 2595

21" Color Monitor
(19.7"viewable)

MODEL : HT-2595C

USER'S GUIDE

U.S.A.

U.S. FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT
INFORMATION TO THE USER

NOTE: 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 of a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Connecting of peripherals requires the use of provided shielded signal cables.

DECLARATION OF CONFORMITY

WE HYUNDAI ELECTRONICS INDUSTRIES CO., LTD.
 Ami-ri Bubal-Eub Ichon-Si Kyungki-Do
 467-860 KOREA

declare under our sole responsibility that the product:

Kind of equipment : COLOR MONITOR

Type-Designation : HT-2595C

to which this declaration relates is in conformity with the
following standard(s) or other normative document(s)

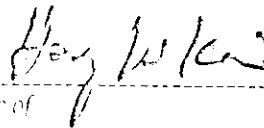
Safety : EN60950 : 1992 + A1, A2, A3
EMC : EN 55 022/1994, EN 50 082-1/1992
 IEC 801-2/1991, IEC 801-3/1984, IEC 801-4/1988

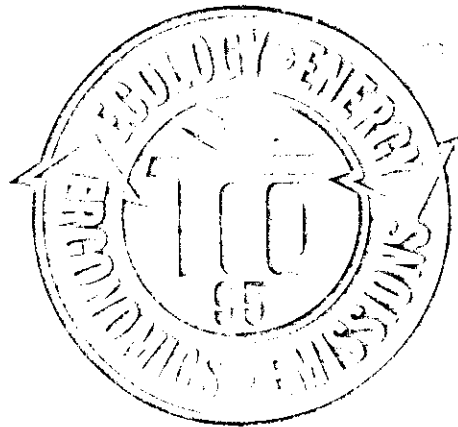
following the provisions of the Low Voltage Directive 72/23/EEC,
93/68/EEC and the EMC Directive 89/336/EEC.

Accredited testlaboratory:
TÜV Rheinland
Am Grauen Stein
51105 Köln

KOREA / JUN, 30, 1998
(Place and date of issue)

HONG KI KIM
(Name and signature of
authorized person)





Congratulations! You have just purchased a TCO '95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also, to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work/interior and natural/external environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.) it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

What does labelling involve?

This product meets the requirements for the TCO '95 scheme which provides for information and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsförbundet (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden). The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern restrictions on the presence and use of heavy metals, hexaminated and polybrominated flame retardants, PCB's, mineral oil and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

On the back page of this folder, you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit

S-114 94 Stockholm

Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tcose

Current information regarding TCO '95 approved and labelled products may also be obtained via the Internet, using the address:

<http://www.tco-info.com/>

TCO '95 is a co-operative project between TCO (The Swedish Confederation of Professional Employees), Naturskydds-föreningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

Environmental Requirements

Brominated flame retardants

Brominated flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. These are related to another group of environmental toxins, PCBs, which are suspected to give rise to similar harm, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

TCO '95 demand requires that plastic components weighing more than 25 grams must not contain organically bound chlorine and bromine.

Lead*

Lead can be found in picture tubes, display screens, solders and capacitors.

Lead damages the nervous system and in higher doses, causes lead poisoning.

TCO '95 requirement permits the inclusion of lead since no replacement has yet been developed.

- * *Bio-accumulative is defined as substances which accumulate within living organisms*
- * *Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.*

Cadmium*

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

TCO '95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The colour-generating layers of display screens must not contain any cadmium.

Mercury*

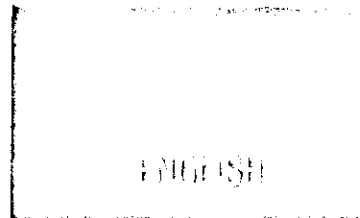
Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses.

TCO '95 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. It also demands that no mercury is present in any of the electrical or electronics components concerned with the display unit.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacturing of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

The relevant TCO '95 requirement: Neither CFCs nor HCFCs may be used during the manufacturing of the product or its packaging.



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1. How to get the most enjoyment with this monitor

This is a 21" (19.7" viewable) color monitor to display signals from personal or micro computers.

This manual has been prepared to assist you in becoming familiar with your new display monitor.

Color display tube

Dot Pitch 0.25mm

Notice

In order to prevent fire, shock hazards, do not expose this display to rain or moisture.

Features

- High contrast CRT for sharp and crisp images.
- 21" (19.7" viewable) Diagonal screen with non-glare direct etched surface.
- Unlimited Color Display.
- DPM (Display Power Management Signaling).
- OSD (On Screen Display) controls.
- Self Test Function
- DDC 1/2B

This monitor includes DDC 1/2B feature.

DDC 1/2B (Display Data Channel 1/2B) is a communication channel over which the monitor automatically informs the host system of its capabilities (e.g. each supported resolution with its corresponding timing).

DDC 1/2B uses a formerly unconnected signal pins in the 15-pin VGA connector.

The system will perform "Plug & Play" feature if both monitor and host system support DDC 1/2B protocol.

NOTE

Some computer systems are not compatible with the DDC standard. If your monitor displays a message indicating pin 13 on your computer system including a DDC compatible video card.

General safety precautions

This monitor has been engineered and manufactured to assure your safety, and you can prevent your safety from serious electrical shock and other hazards by keeping in mind the following attentions.

- Do not place anything heavy, wet or magnetic on the monitor or the power cord.
- Be sure to turn the monitor off before plugging the power cord into the socket of power source.

- Make sure that the power cord and the other cords are securely and rightly connected.
- Avoid operating the monitor in the place extremely heated, humid or affected by dust.
- Never cover the ventilation openings with any material and never touch them with metallic or inflammable materials.
- Overloaded AC outlets and extension cords are dangerous. So are frayed power cords and broken plugs. They may result in a shock or fire hazard. Call your service technician for replacement.
- Do not open the monitor. There are no user serviceable components inside. There is dangerous high voltages inside, even when the power is off. Contact your dealer if the monitor is not operating properly.
- Do not use an aerosol directly on the picture tube because overspray may cause electrical shock.

Precautions for using the video monitor

As with any electrical equipment, careless use and unprofessional maintenance are able to cause serious electrical shock and other hazards. In the interests of safety, the following suggestions should be followed at all time. Your monitor includes an appropriated plug for your area.

Power source precautions

Never remove the backcover of the monitor.

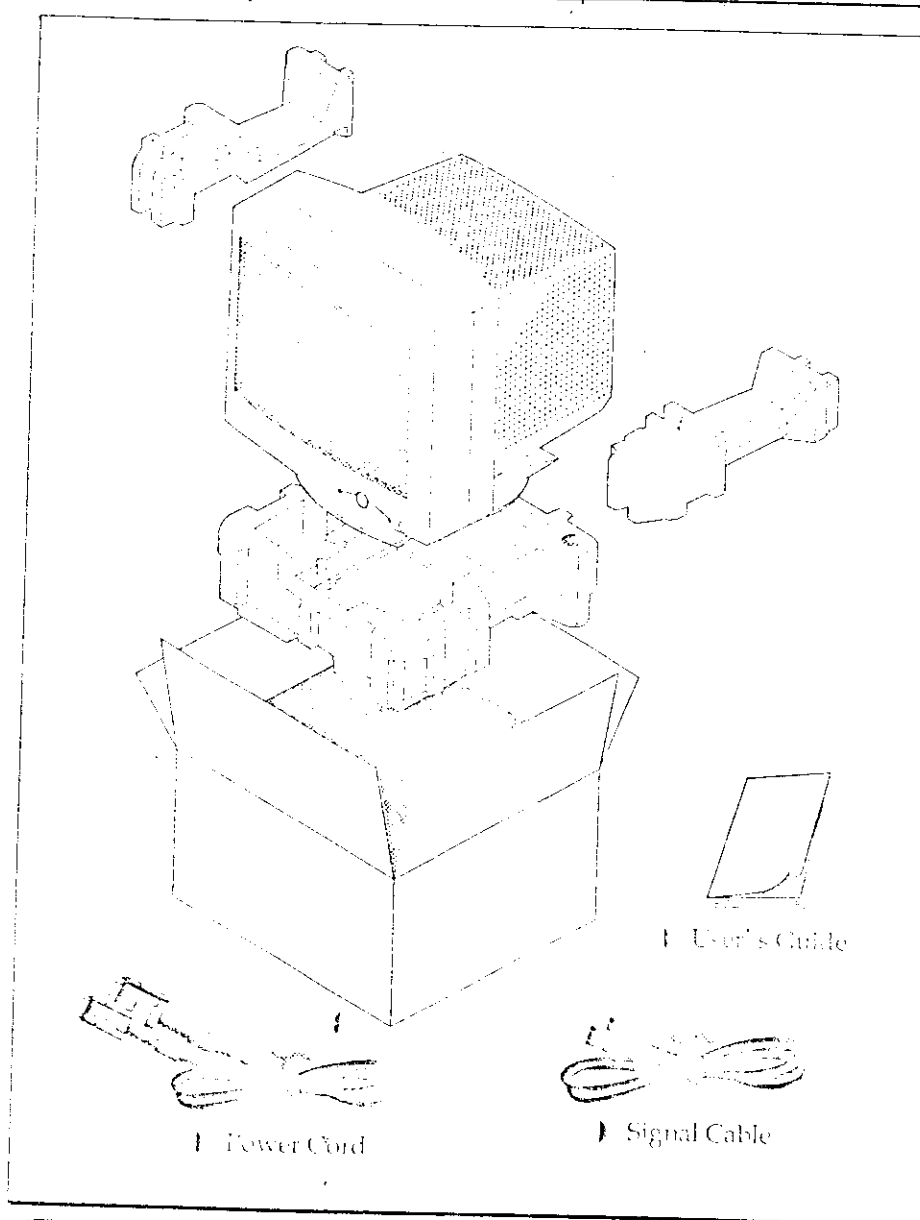
This will expose you to very high voltages and other hazards. If the display monitor does not operate properly, remove the power cord from the wall outlet, and contact your dealer. As a safety feature, this monitor is equipped with a polarized, alternating current line plug. (Grounded, 3 prong plug)

This plug will fit into the outlet only one way. If you are unable to insert the plug fully into the outlet, or if the plug simply does not fit, contact an electrician to replace the obsolete outlet.

Do not defeat the safety purpose of this polarized plug.

WARNING: When positioning this equipment, please ensure that the main plug and the socket are easily accessible.

2. Packing list

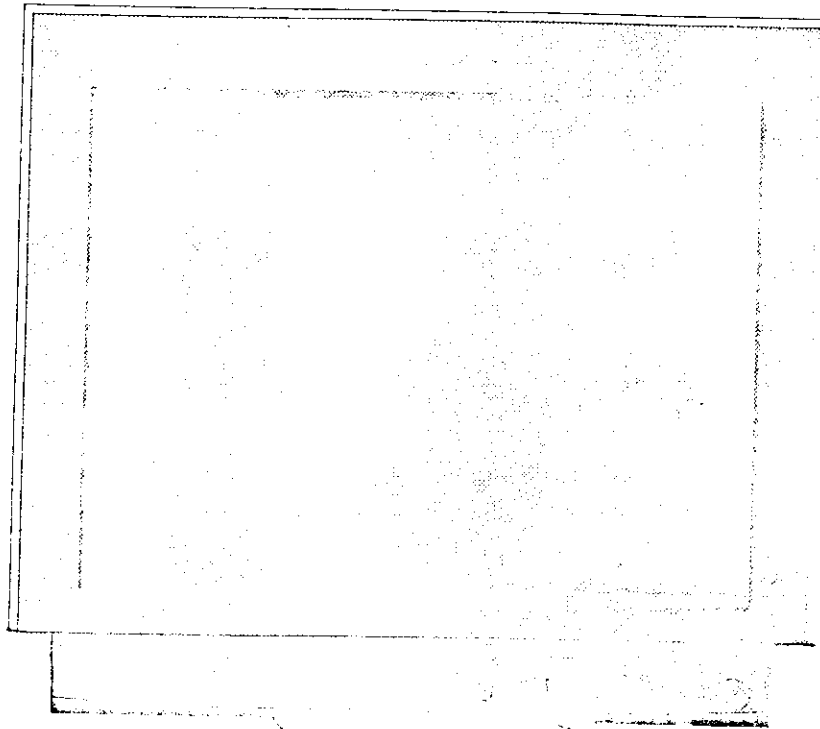


Notice

Above power cord can be changed upon different voltage areas.

3. Control description

Front view



Recall Button

Function Button

Function Knob

Power LED

Power Switch

4. Microcontroller features

The microcontroller automatically detects the video board installed in your system. When you turn on the monitor, the microcontroller first checks the display mode memory stored in the user setting area and the factory presetting area.

Display modes memory

The microcontroller has the memory capacity to store 31 different display modes including timing formats and display settings. This memory capacity is divided into two parts. One is the user setting area, the other is the factory presetting area.

- **User setting area**

The user can add nonstandard modes. If you adjust display image, the image is saved automatically. Then the microcontroller always detects and displays the mode stored in the user setting area when the monitor is turned on. The user setting area maintains the 15 display modes set by the user in its memory.

- **Factory presetting area**

There are 16 display modes stored in this area. These display modes are preset at the factory and include most of the display modes currently available (see TIMING CHART of this manual). You can also retrieve the factory preset mode by selecting the RECALL menu.

- **Automatic save**

The monitor automatically saves the new setting after 1 second inactivity.

5. Power management

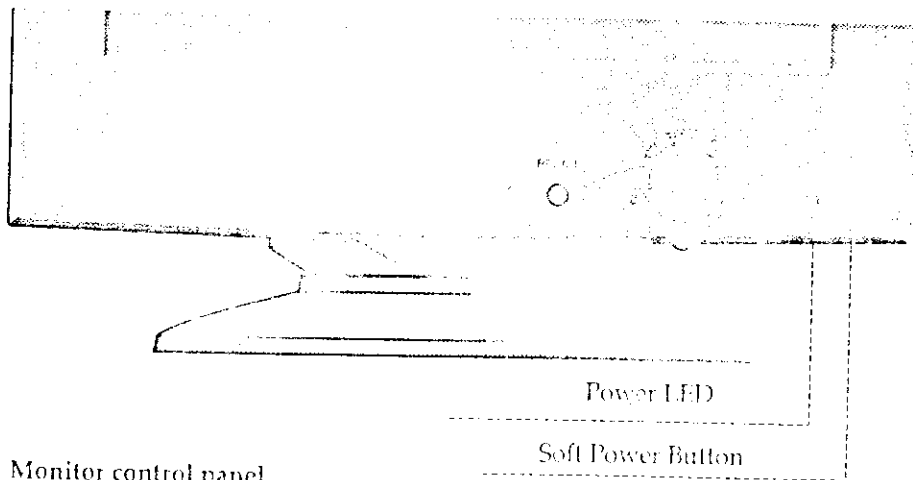
This monitor is equipped with DPMS (Display Power Management Signaling) function which automatically leads the monitor to the state of power saving that consumes just a little power less than 5W, when the computer is left unattended. Although the monitor can be left in power-saving mode for longer periods, we recommend that you turn it off after your daily work, because degaussing helps maintain faultless color purity, every time you turn the power on.

Operation

The DPMS function requires support from the computer system or any software DPMS function applied, currently being used. If the keyboard (or mouse) is left unattended for a certain period, the program or system will set the sync signals to DPMS modes. The DPMS function has three states. The recommended signals, power consumption and recovery times are shown in the table below.

Mode	Power LED Color	Power Consumption	Horizontal and Vertical Sync	CRT Heater
On	Green	150W	On	On
Stand-by	Orange	15W	Hori. Off Vert. On	On
Suspend	Orange	15W	Hori. On Vert. Off	On
Off	Blinking Orange	5W	Off	Off
Off (Soft Power Switch Off)	Blinking Orange	5W	Off	Off
Signal Cable Unattached	Blinking Orange	5W	Off	Off

6. On screen controls & LED indicator



Monitor control panel

The monitor's Control panel consists of one switch, one dial, two buttons and two LEDs. The control panel contains the soft power switch, contrast dial (select and adjust dial), function button, recall button, power LED.

Soft Power Switch

The soft power switch is used to put the monitor directly into Power-Saving (Off) mode. To enter Power Saving mode, press the Soft Power Switch for one second. To return the monitor to normal operation, press the Soft Power Switch for two seconds.

Contrast Dial (OSD function off)

The contrast dial adjusts the brightness of the screen's foreground. To increase the screen's contrast, rotate the dial clockwise; rotate counterclockwise to decrease.

Select and Adjust Dial

The adjust dial is used to select an OSD control from the OSD control menu and to tune the OSD control selected if it has intermediate values.

Function Button

Horizontal, vertical, distortion, and color adjustment are made by involving the On Screen Display(OSD). Pressing the function button will cause the five menus of adjustments options contained in the OSD to be displayed one page at a time.

The OSD allows many adjustments to be made on the monitor by using only the select and adjust dial and the function button on the control panel.

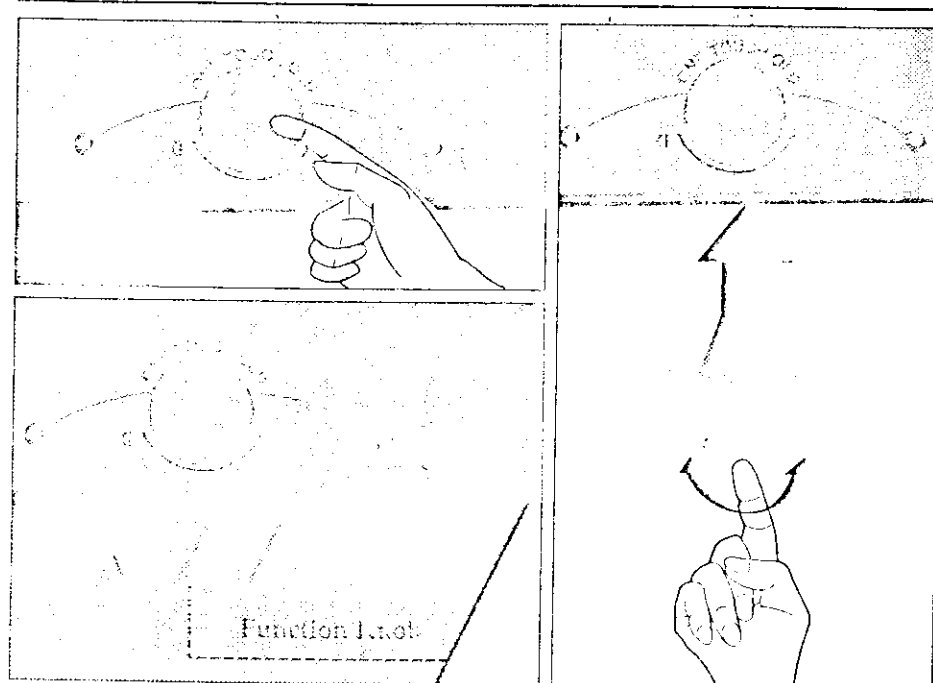
Recall Button

The recall button adjusts the video mode to one of the factory-preset modes for horizontal and vertical sync rate. If none of the 20 factory-preset modes matches the computer's video card sync rates, then the Save User menu will appear for selection of a user mode already created, or to create a new user mode, see "Save User".

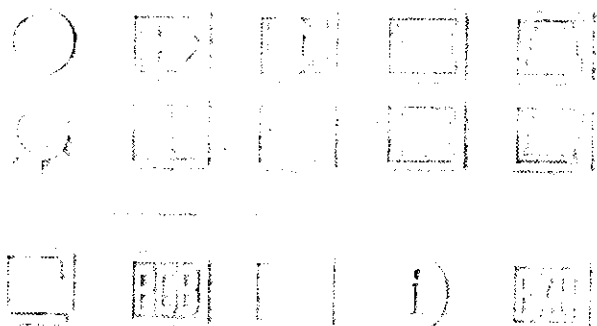
Power LED

When both the Main Power Switch on the rear panel and the Soft Power Switch on the front panel are switched on, this LED lights in green. This LED indicates different status when this unit operates in different Power Saving Modes.

7. External controls



VESA 1024x768 75



SCREEN ADJUSTMENT

This monitor's function button activates the On Screen Display(OSD), which has five different menus (Main menu, Advanced menu, Color temperature menu, Miscellaneous menu, and Information menu) for adjusting and customizing your monitor. Each of the Main menu, Advanced menu, Miscellaneous menu, and Information menu displays the horizontal and vertical resolution and frequency information of the applied video mode on the top of the menu window.

For an owner-adjusted user mode, only the sync frequencies and associated save user mode number(between 0 and F) are displayed.

A non-previously saved mode(not factory-preset) displays "User Mode" for the mode name.

MAIN MENU MODE

Main menu includes 10 different function icons and the other adjustment menus.

The 10 icons represent function of Contrast, Brightness, H-Size, H-Position, V-Size, V-Position, Pincushion, P-Balance, Trapezoid, Parallel.

The selected function within the menu is colored red and the associated function name is shown on the bottom of the menu window.

To select a function icon and adjust the functional parameter;

1. Press the function button to bring the OSD Main menu.
2. Scroll to a specific icon for adjustment by rotating the function knob in clockwise or counterclockwise direction.
3. Press the function button again and adjust the functional parameter by rotating the function knob clockwise or counterclockwise.
4. Go back to the Main menu by pressing the function button again.

ADVANCED CONTROL MENU

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VLInr-Centr

SPIn-Centr

SPIn-SCurve

Rotation

Purity

[EXIT]

This menu contains 10 functional items, which are Vertical Linear Symmetry, Vertical Linear Center, Side Pin Center, Side Pin S Curve, Rotation, Purity, Convergence and Moire.

To select a functional item and adjust the functional parameter:

1. Press the function button to bring the Main Menu.
2. Select the Adv. Control function icon by rotating the function knob and there is "Adv. Control" message shown on the bottom of OSD main menu. Press function to bring the Adv. Control Menu.
3. Select the functional item by rotating the function knob clockwise and press the function button again to adjust the functional parameter by rotating the function knob clockwise or counterclockwise.
4. Go back to the Adv. Control Menu by pressing the function button.
5. Go back to the Main Menu by selecting the "EXIT", which is an icon with an arrow sign located at the right-bottom side of the menu.

COLOR TEMPERATURE MENU

9300K

R	60	60
G	60	60
B	60	60

EXIT

This menu is for user to select the desired color settings. There are 5500 K, 6500 K, 9300 K and User four settings.

To select a color pre-setting and adjust the User setting:

1. Press the function button to bring the Main Menu.
2. Select the Color Temp. icon by rotating the function knob and there is "Color Temp" shown on the bottom of the OSD menu window. Press the function knob to bring the Color Temp. Menu.
3. Press the Function button to select the desired color temperature setting successively, 5500 K, 6500 K, 9300 K and User.
4. When either 5500 K, 6500 K, 9300 K is selected, it is colored yellow. The screen color is also changed.
5. The User is selected in order to adjust the color temperature parameter.
6. Rotate the function knob clockwise to select the R or G or B bar, and press the function button to select the parameter of R or G or B respectively.
7. Adjust the parameter by rotating the function knob clockwise or counterclockwise.
8. Go back to Color Temp. menu by pressing the function button.
9. Go back to the Main Menu by selecting the "EXIT", which is a icon with an arrow sign located at the right-bottom side of the menu.

MISCELLANEOUS MENU

VEBA 1024×768 75

Connector
 Power save
 Language
 Save User
 Delete User



This menu contains 8 functional items, which are Degauss, Connect, Power save, Language, Save User, Delete User, OSD Horizontal Position and OSD Vertical Position.

To select and active Degauss function item:

1. Press the function button to bring the Main Menu.
2. Select the Miscellaneous icon by rotating the function knob and there is "Miscellaneous" message shown on the bottom of the OSD main menu.
Press function button to bring the Miscellaneous Menu.
3. The Degauss function item is colored red.
4. Press the function button to activate the Degauss function. After a while, the "Degauss" message is colored purple and displayed on the bottom of the Miscellaneous menu window.
5. Go back to the Main Menu by selecting the "EXIT", which is a icon with an arrow sign located at the right-bottom side of the menu.

To select and active Connector function item:

1. Press the function button to bring the Main Menu.
2. Select the Miscellaneous icon by rotating the function knob and there is "Miscellaneous" message shown on the bottom of the OSD main menu.
Press function button to bring the Miscellaneous Menu.
3. The Connect function item is colored red. The presented cable - "D-Sub" or "BNC" message is colored purple and displayed on the bottom of the Miscellaneous menu window.
4. Press the function button to select D-sub/BNC cable.
5. Go back to the Main Menu by selecting the "EXIT", which is a icon with an arrow sign located at the right-bottom side of the menu.

•

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Miscellaneous icon, press function button to bring the Miscellaneous Menu.
3. Select the Power Save function item by rotating the function knob clockwise and the Power Save item is colored red.
4. Press the function button to make the Power Save function is either "On" or "Off" in turn, and the "On" or "Off" message is colored purple and displayed on the bottom of the Miscellaneous menu window.
5. Go back to the Main Menu by selecting the "EXIT", which is a icon with an arrow sign located at the right-bottom side of the menu.

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Miscellaneous icon, press function button to bring the Miscellaneous Menu.
3. Select the Language function item by rotating the function knob clockwise and the Language item is colored red.
4. Press the function button to select the desired language from either "English", "Deutsch", "Français", "Italian", or "Español" in turn. The selected language is colored purple and displayed on the bottom of the Miscellaneous menu window.
5. Go back to the Main Menu by selecting the "EXIT", which is a icon with an arrow sign located at the right-bottom side of the menu.

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Miscellaneous icon, press function button to bring the Miscellaneous Menu.
3. Select the Save User function item by rotating the function knob clockwise and the Save User item is colored red.
4. Press the function button to bring the Save User Menu.
5. Select the user mode number from 0 to E by rotating the function knob clockwise or counterclockwise and the selected mode number is colored red.
6. Press the function button to save the current display mode information, and the square under the number will be colored white. The save mode number and vertical frequency of the saved display mode will be shown on the top of the Save User menu window. The horizontal and vertical frequency of the saved display mode will be shown on the bottom of the Save User menu window.

7. After current display mode being saved, leave the OSD menu by rotating the function knob to select "EXIT", which is an icon with an arrow sign located at the right-bottom side of the menu. There is "EXIT" message shown on the bottom of the Save User menu.

To select Delete User function item;

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Miscellaneous icon, press function button to bring the Miscellaneous Menu.
3. Select the Delete User function item by rotating the function knob clockwise and the Delete User item is colored red.
4. Press the function button to bring the Delete User Menu.
5. Select the user mode number from 0 to E by rotating the function knob clockwise or counterclockwise and the selected mode number is colored red.
6. Press the function button to delete the saved mode information, and the square under the number will be colored blue. The saved mode number and vertical frequency of the saved mode shown on the top of the Delete User menu are disappeared. There is "EMPTY" message shown on the bottom of the Delete User menu window.
7. After deleting saved mode, leave the OSD menu by rotating the function knob to select "EXIT", which is an icon with an arrow sign located at the right-bottom side of the menu. There is "EXIT" message shown on the bottom of the Delete User menu.

To select OSD Horizontal-Position/OSD Vertical-Position

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Miscellaneous icon, press function button to bring the Miscellaneous Menu.
3. Select the OSD HPOS or OSD VPOS function item by rotating the function knob clockwise and the selected function item is colored red.
4. Press the function button to bring the OSD HPOS or OSD VPOS menu.
5. Adjust the OSD's horizontal or vertical position on the screen by rotating the function knob clockwise or counterclockwise.
6. After the desired OSD position being adjusted, go back to the Miscellaneous Menu by pressing the function button.
7. Leave the Miscellaneous menu and go back to Main Menu by rotating the function knob to select "EXIT", which is an icon with an arrow sign located at the right-bottom side of the menu.

INFORMATION MENU

VEGA 1024x768 75

H 30.00KHZ

V 75 HZ

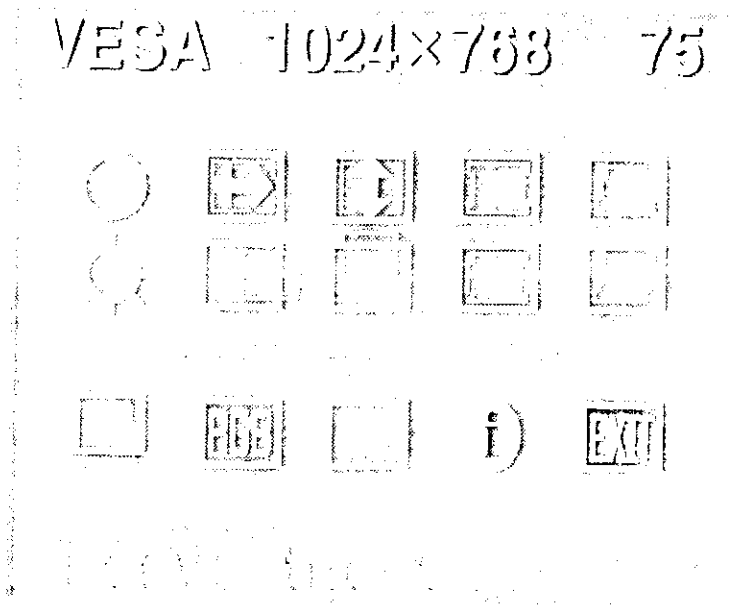
Ver3.0 1998

This menu shows the horizontal and vertical frequencies of the current displayed mode and the version of the OSD menu.

To invoke this menu:

1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the Information icon, and press function button to bring the Information Menu.

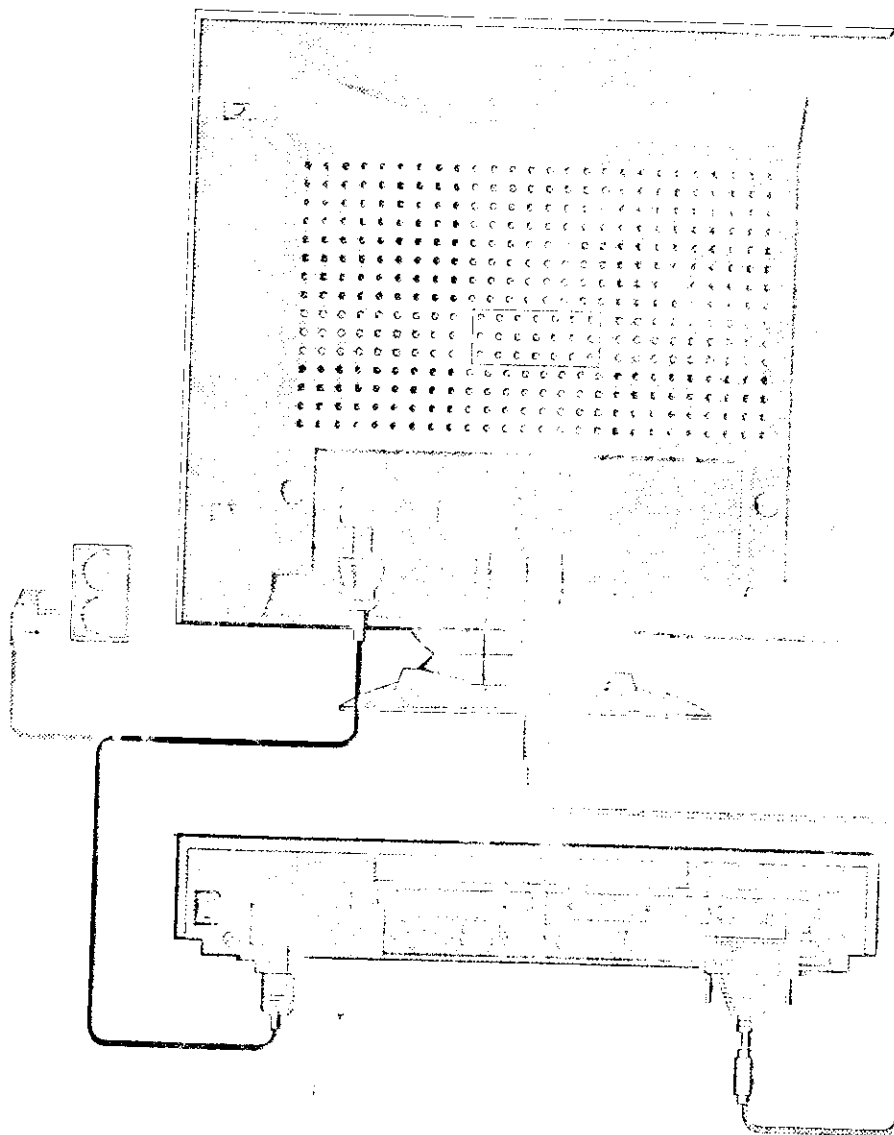
LEAVE THE OSD MENU



1. Press the function button to bring the Main Menu.
2. Rotate the function knob to select the EXIT icon, and press function button to leave the OSD menu.

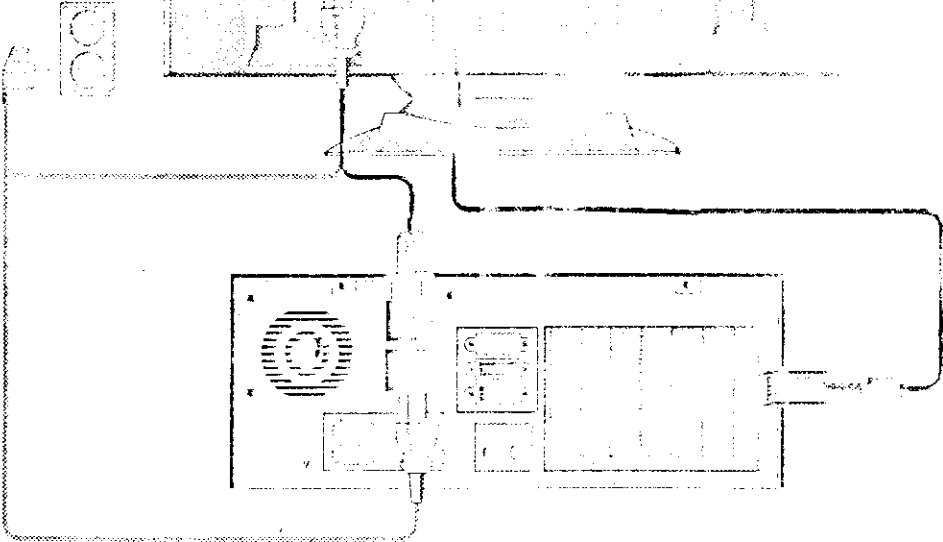
8. Connecting with external equipment

WORKSTATION



! Remember to turn off the power of workstation before installing this monitor to it.

F/C



Abstract

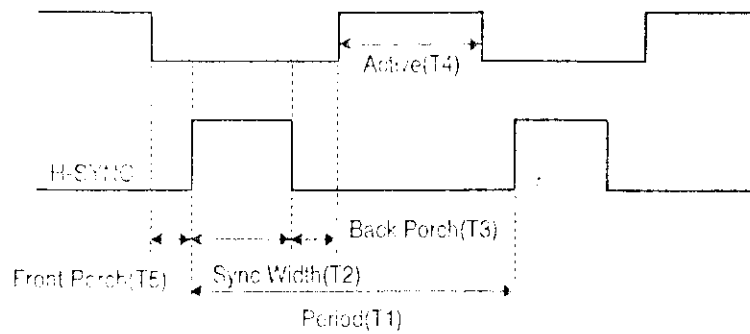
9. Preset timing chart

TIMING CHARTS

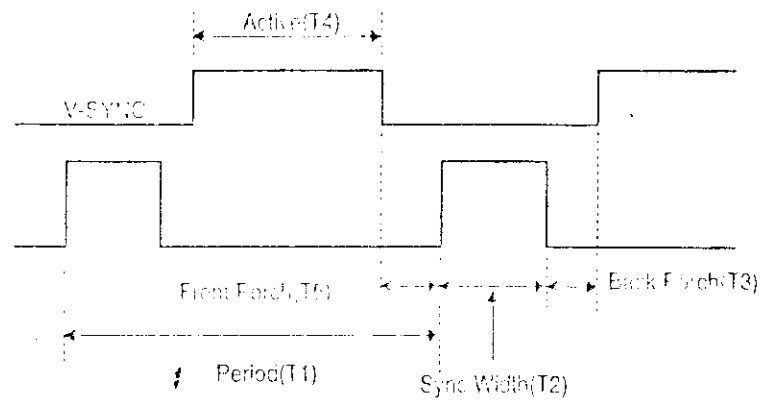
Supported video timings

This monitor shall be capable of displaying following video timing charts

- Timing charts



(FIG.1 H-SYNC)



(FIG.2 V-SYNC)

- Input timing limits
H-sync pulse width: $1.0\mu s \leq \text{Sync Pulse Width} \leq 8.0\mu s$
V-sync pulse width: $0.04ms \leq \text{Sync Pulse Width} \leq 0.5ms$
- Input level limits
Low level : 0.4V max
High level : 2.4V min

• Timing table

Horizontal		Dot	640	640	720	800	800	800	1024	1024	1024	1024	1280	1280	1280	1600	1600
Frequency	kHz	131.25	131.25	156.25	156.25	177.78	177.78	31.66	37.879	46.875	53.674	48.263	60.033	68.677	81.845	63.981	79.976
Period(T1)	µs	31.7	31.7	31.11	31.11	31.778	31.778	26.400	21.333	18.631	20.677	16.660	14.561	12.219	15.630	12.504	10.971
Sync Width(T2)	µs	3.34	3.34	3.56	3.56	3.813	3.200	1.616	1.138	2.092	1.219	1.016	1.164	1.037	1.067	1.016	1.185
Back Porch(T3)	µs	1.937	2.222	1.715	1.907	2.200	3.232	2.702	2.462	2.233	2.301	1.433	2.206	1.837	1.422	1.877	1.501
Active(T4)	µs	25.122	25.122	25.422	25.422	20.000	16.162	14.222	15.734	13.003	10.876	9.309	11.952	9.481	8.127	9.877	7.901
Front Porch(T5)	µs	0.606	1.336	0.582	0.636	1.000	0.323	0.569	0.360	0.203	0.508	0.291	0.444	0.119	0.406	0.395	0.316
Vertical		Lines	456	480	480	100	600	600	600	768	768	768	1024	1024	1024	1200	1200
Frequency	Hz	59.940	59.940	59.940	120.11	70.080	60.317	75.000	85.061	60.064	75.079	84.007	100.795	60.030	75.025	85.024	60.000
Period(T1)	ms	16.693	16.693	16.693	8.325	14.259	16.579	13.333	11.750	16.666	13.333	11.765	9.922	16.661	13.329	11.761	16.667
Sync Width(T2)	ms	0.964	0.964	0.994	0.964	0.964	0.106	0.064	0.056	0.124	0.050	0.044	0.037	0.047	0.038	0.033	0.040
Back Porch(T3)	ms	1.01	0.578	0.566	1.090	0.607	0.448	0.303	0.600	0.460	0.524	0.464	0.584	0.473	0.483	0.613	0.491
Active(T4)	ms	15.233	11.092	7.540	12.711	13.840	12.800	11.479	15.880	12.705	11.183	9.384	16.000	12.804	11.235	16.000	12.800
Front Porch(T5)	ms	0.245	0.023	0.126	0.413	0.026	0.021	0.019	0.062	0.017	0.015	0.037	0.016	0.013	0.011	0.013	0.011
Interlaced	Y/N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Sync Polar	H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pixel Clock	MHz	25.1709	36.000	35.000	28.322	40.000	19.500	36.000	65.000	75.075	64.800	10.000	108.000	135.000	135.000	157.500	202.500

The monitor is compatible with additional modes within the specified frequency ranges provided that they are different at least for one of the following :

Horizontal Freq : $\pm 0.4\text{kHz MAX}$.

Vertical Period : $\pm 112\mu\text{s MAX}$.

Note : Even if the monitor does the input timing as a factory preset mode, the size and position may not be able to be set as desired. Check the input ranges are under the specifications and adjust the image as you want.
For better quality of display image, use the timing and polarity shown in the table above. Please set your video card user's guide to ensure compatibility.

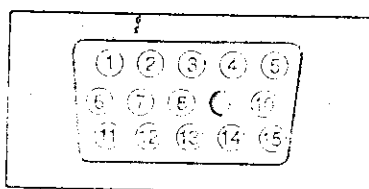
10. Video input terminal

A 15 pin D-sub connector is used as the input signal connector.
Pin and input signals are shown in the table below.

Pin Description

SIGNAL PIN NO.	SEPARATE SYNC	COMPOSITE SYNC
1	RED	RED
2	GREEN	GREEN
3	BLUE	BLUE
4	GROUND	GROUND
5	GROUND	GROUND
6	RED GROUND	RED GROUND
7	GREEN GROUND	GREEN GROUND
8	BLUE GROUND	BLUE GROUND
9	+5V	+5V
10	LOGIC GROUND	LOGIC GROUND
11	GROUND	GROUND
12	SDA	SDA
13	II-SYNC	(H+V) SYNC
14	V-SYNC (VCKI)	VCKI
15	SCL	SCL

D-Sub miniature connector



11. Specifications

CRT	SIZE	21"(19.7" viewable) Diagonal, Flat
	Dot Pitch	0.25mm
	Type	Non glare, Anti-Static, X-TAL PIGMENT
Input	Signal	R.G.B Analog
	Connector	15 pin D-Type, BNC
SYNC	H-F	30-95 kHz(Automatic)
	V-F	50-150 Hz(Automatic)
Video Bandwidth		135MHz(-3dB)
Display	Area(H×V)	350×285 mm (Max. OVERSCAN)
	Color	Infinite
Resolution		Max. 1600×1200(93kHz/75Hz)
User Controls & OSD Controls		Contrast, Brightness, H/V Position, H/V Size, Pincushion, Trapezoid, Rotation, Degauss, Color adjust, Preset timing, Recall, DPMS LED, Soft Switch, Power Switch, Convergence, Moire, Parity
Power Management		As per VESA Standard, Lower than EPA's recommendation
VESA DDC 1/2B		Basic
Compatibility		VESA, 8514/A, XGA, EVGA, MAC II
Power Source		100-240 VAC(Universal Power) 4A 150W
Safety & Regulation	TCO 95	Basic
	FMC	FCC Class B, CE
	Safety	UL, CSA, TUV-GS, ISO 9241-3, IEC 60825, NEMKO, CE, FCC, S, E, T, R, G
Temperature	Operating	5 to 35 degree celsius
	Storage	-30 to 60 degree celsius
Humidity	Operating	35% to 80%(Non condensing)
	Storage	30% to 85%
Weight		Unit : 28 Kg Carton: 30.8Kg
Dimension(W×H×Dmm)		504×503×514 mm

Specification is subject to change without notice for performance improvement.