



Type No. C21F05120

ImageQuest F230

Perfectly Flat Color Monitor

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 modification 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 grounded shielded signal cables.

DECLARATION OF CONFORMITY

WE **ImageQuest 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 : C21F05120

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

Safety : EN 60950 : 1992 + A1, A2, A3, A4 , A11
EMC : EN 55022 : 1998, EN 55024 : 1998
EN 61000-3-2 : 1995+A1 : 1998+A2 : 1998
EN 61000-3-3 : 1995

following the provisions of the Low Voltage Directive 73/23/EEC, 93/68/EEC and the EMC Directive 89/336/EEC.

Accredited testlaboratory:
TÜV Rheinland
Am Grauen Stein
51105 Köln

KOREA / MAY 10, 2002

(Place and date of issue)

HONG KI, KIM

(Name and signature of authorized person)



Contents

1. Introduction	1/20
2. Safety Information	1/20
3. Installing the monitor	3/20
3-1. Packing List	3/20
3-2. Fastening the swivel and tilt base ...	4/20
3-3. Selecting a suitable location	4/20
3-4. Connecting the monitor	5/20
3-5. Setting the refresh rate.....	8/20
Preset Timing Table.....	8/20



4. Adjusting the picture.....	9/20
4-1. Using the On Screen Display.....	10/20
4-2. Direct access buttons.....	10/20
4-3. OSD Adjustments.....	11/20
5. Display power management..	16/20
Reducing power consumption.....	16/20
6. Troubleshooting.....	17/20
7. Specifications.....	20/20



1. Introduction

This manual contains instructions for installing and operating ImageQuest F230.

ImageQuest F230 is a highly ergonomic color display unit;

- 21" diagonal Flat(20" viewable) 0.25 mm dot pitch CDT
- Supporting high screen refresh rates and full scan flicker-free picture quality
- With On Screen Display menus for user control
- 100-240V AC input voltage
- VESA DPMS (Display Power Management Signaling)
- VESA DDC1/2B compatibility

2. Safety Information

When you set up and use your display unit, follow the safety instructions below.

- Do not use the display unit in humid environments like bathrooms, damp cellars, swimming pools, etc.
- This equipment must be connected to an earthed outlet which is close to the display unit and accessible in case you need to disconnect the display.
- Do not connect an extension cord.
- Never insert objects into the openings on the outside of the device as you can come into contact with live electrical components. This can cause fire or give strong electrical shocks.
- Slots in the cabinet are provided for ventilation. Do not block the ventilation slots in the display unit cabinet.
- Do not under any circumstances open the display unit cabinet.

F230

Perfectly Flat Color Monitor

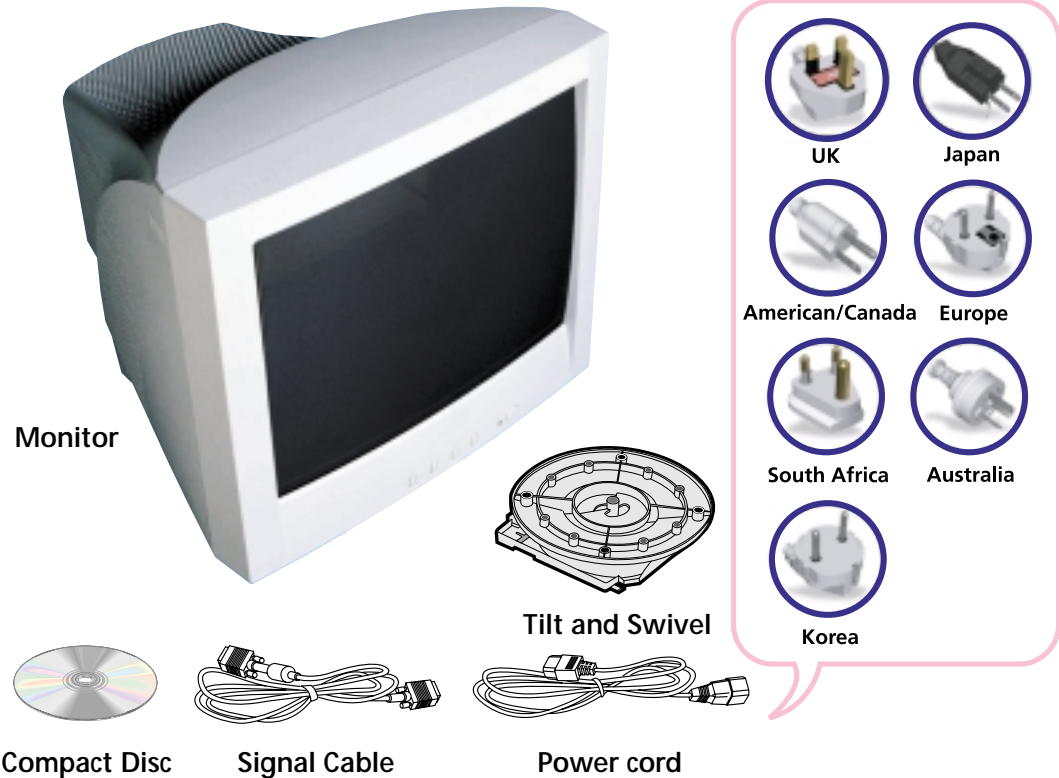
Cleaning and Maintenance

- To avoid risk of electric shock, do not disassemble the display unit cabinet. The unit is not user-serviceable. Remember to unplug the display unit from the power outlet before cleaning.
- Do not use alcohol (methyl, ethyl or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners or compressed air.
- Do not wipe the screen with a cloth or sponge that could scratch the surface.
- To clean your antistatic screen, use water and a special microfiber screen cleaning tissue used in optical lens cleaning, or lightly dampen a soft, clean cloth with water or a mild detergent.
- To clean display unit cabinet, use a cloth lightly dampened with a mild detergent.
- During the transportation of the monitor, the swivel base has to be removed in every case.

F230 Perfectly Flat Color Monitor

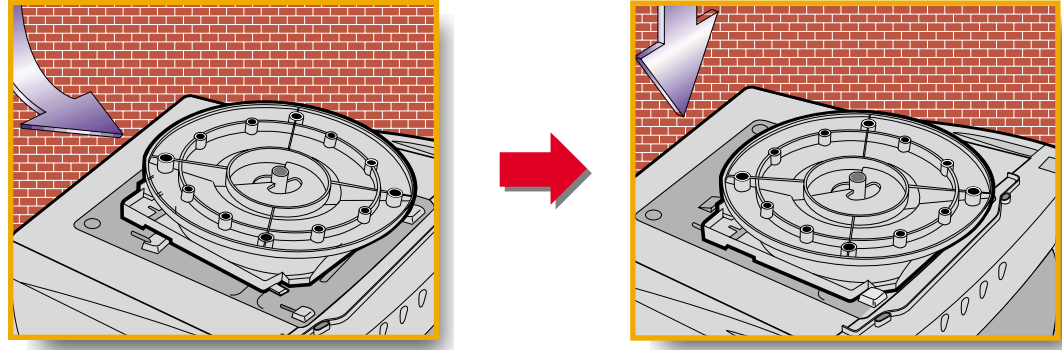
3. Installing the monitor 3-1. Packing List

The following items should be found in the packaging.



! Above power cord can be changed upon different voltage areas. Please contact your dealer if anything is missing or damaged.

3-2. Fastening the swivel and tilt base



3-3. Selecting a suitable location

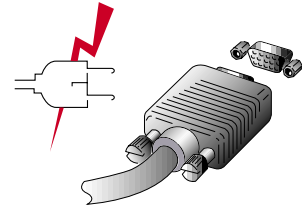
- Place the base against the bottom of the monitor so that the base fasteners are aligned with appropriate slots.
- Push the base towards the front of the monitor until the latch locks into position.
- Place the monitor at least 30cm from other electrical or heat-emitting equipment and allow at least 10cm on each side for ventilation.
- Place the monitor in a position where no light shines directly onto or is reflected on the screen.
- To reduce eye strain, avoid installing the display unit against a bright background such as a window.
- Position the monitor so that the top of the screen is no higher than eye level.
- Position the monitor directly in front of you at a comfortable reading distance (around 45 to 90cm)

F230

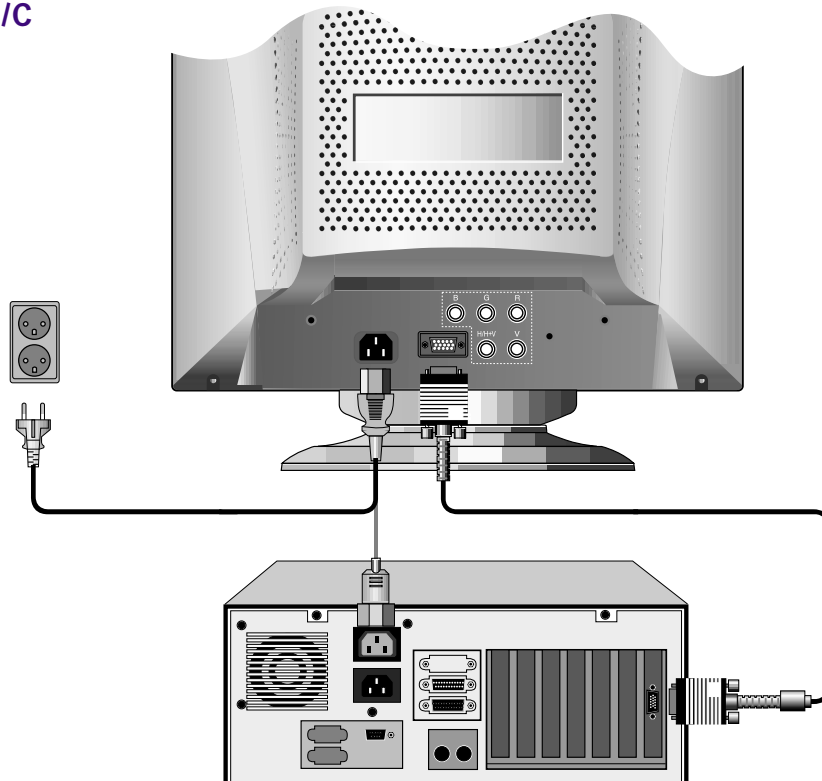
Perfectly Flat Color Monitor

3-4. Connecting the monitor

! Before you start cabling your monitor, check that the power is off on all units. To avoid any possibility of electric shock, always connect your equipment to properly earthed outlets.

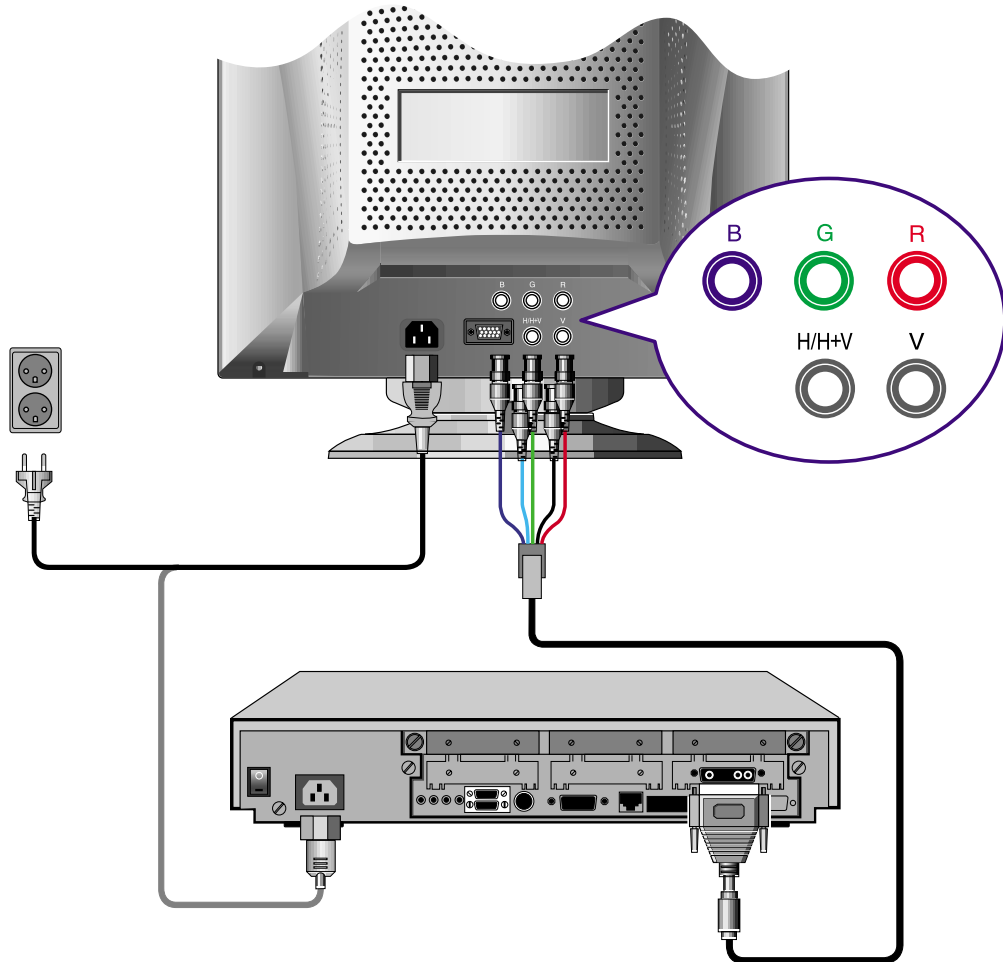


► P/C



F230 Perfectly Flat Color Monitor

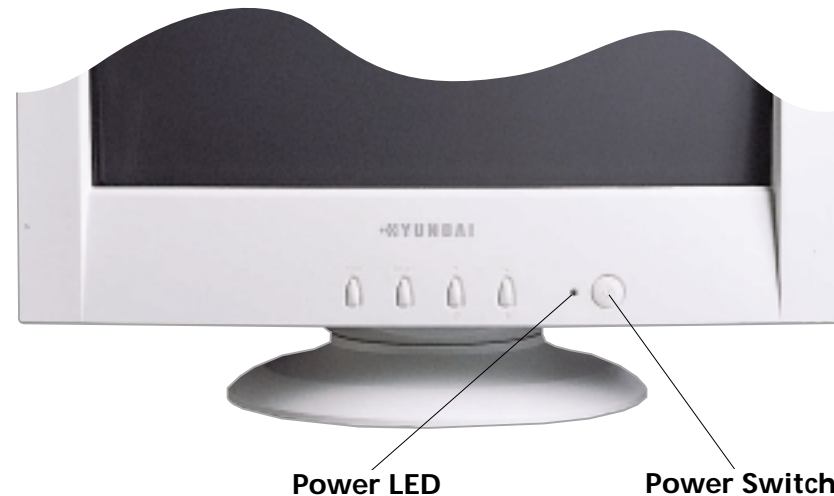
► WORK STATION



F230

Perfectly Flat Color Monitor

1. Insert the 15-pin signal cable connector to the VGA connection on your computer and screw it down. (Insert BNC connectors into the BNC connection on the monitor and PC)
2. Plug the display unit's power cable first to the back of the display unit.
3. *Then* plug the power cable to a 100V - 240V earthed electrical outlet or to the system unit, if it has an outlet for the display power cable.
4. Turn on the display unit using the power switch and check that the power LED is on. If not, repeat steps 2, 3 and 4 or refer to the *Troubleshooting* section of this guide.



5. Turn on the power to the computer. The picture will appear within about 15 seconds. Adjust the picture to obtain optimum picture quality. See the section *Adjusting the picture* in this guide for more information.

3-5. Setting the refresh rate

Preset Timing Table

Follow the instructions below to set your refresh rate in Windows 98/ME/XP/2000.

1. Go to the configuration window (Start-Settings-Configuration window).
2. Double click on the 'Display' icon.
3. Click on the 'Settings' tab.
4. Click on the 'Advanced' button.
5. Click on 'Adapter' and select 85Hz from the list.
6. Click on 'Apply' to accept the selected value.

The recommended setting is a resolution of 1600x1200 and a refresh rate of 85Hz.

No.	Resolution	Horizontal Frequency	Refresh rate
1	720 x 400	31.5 KHz	70 Hz
2	640 x 480	31.5 KHz	60 Hz
3	640 x 480	63.7 KHz	120 Hz
4	800 x 600	53.7 KHz	85 Hz
5	1152 x 864	67.5 KHz	75 Hz
6	1024 x 768	68.7 KHz	85 Hz
7	1024 x 768	81.8 KHz	100 Hz
8	1280 x 1024	79.9 KHz	75 Hz
9	1280 x 1024	91.1 KHz	85 Hz
10	1600 x 1200	93.8 KHz	75 Hz
11	1600 x 1200	106.3 KHz	85 Hz
12	1920 x 1440	112.5 KHz	75 Hz

* The horizontal sync width of input timing should be no less than 0.8 μ S.

F230

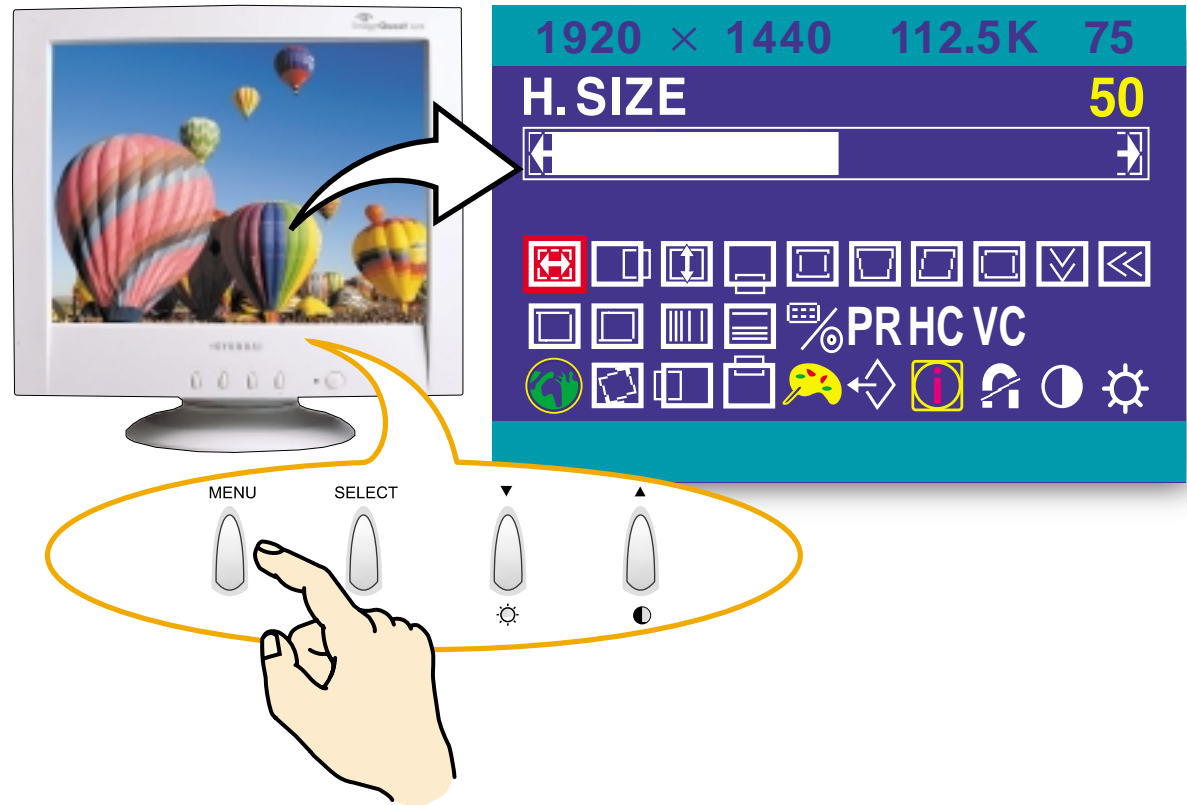
Perfectly Flat Color Monitor

Resolution table to support

Resolution	Support Refresh rate	Maximum Refresh rate	Maximum Horizontal Frequency
640 x 480	60/70/85/100/120/150Hz	150 Hz	78.7 KHz
800 x 600	60/70/85/100/120/144Hz	144 Hz	94 KHz
1024 x 768	60/70/85/100/120/144Hz	144 Hz	120.2 KHz
1280 x 1024	60/70/85/100/112Hz	112 Hz	122.304 KHz
1600 x 1200	60/70/85/91Hz	91 Hz	121.728 KHz
1800 x 1440	60/75/81Hz	81 Hz	122.148 KHz
1920 x 1440	60/70/81Hz	81 Hz	122.148 KHz
2048 x 1536	60/70/76Hz	76 Hz	121.904 KHz

4. Adjusting the picture

You can adjust the screen display by using the buttons located below the screen.



4-1. Using the On Screen Display

1. Push the MENU button to call the OSD to the screen. The resolution and frequency are displayed at the top of the menu box for your information.
2. Push the ▲ or ▼ button to choose the item you want to adjust. The selected item is highlighted.
3. Push the SELECT button to adjust the highlighted item.
4. Use the ▲ or ▼ button to adjust the selection.
5. Push the MENU button to return to the previous menu if you are in a submenu.
6. The display unit automatically saves the new settings in 3 to 4 seconds after your last adjustments and the menu disappears. You can also push the MENU button to make the menu disappear.

4-2. Direct access buttons



BRIGHTNESS

Use the button ▼ to select the brightness adjustment.
Adjust with ▲ or ▼ button.



CONTRAST

Use the button ▲ to select the contrast adjustment.
Adjust with ▲ or ▼ button.

4-3. OSD Adjustments

You can play the movie file to see how to adjust the picture image by clicking each icon or title hereunder.

The OSD adjustments available to you are listed below.



H. SIZE

Adjusts the horizontal size of the entire screen image.



H. POSITION

Adjusts the horizontal position of the entire screen image.



V. SIZE

Adjusts the vertical size of the entire screen image.



V. POSITION

Adjusts the vertical position of the entire screen image.



PINCUSHION

If the vertical sides of the picture curve in or bulge out, you can correct the pincushion distortion by using this adjustment.



TRAPEZOID

If the picture is wider at the top or at the bottom, you can correct the trapezoid distortion by using this adjustment.



PARALLEL

If the sides of the screen image are tilted, you can correct the parallel distortion by using this adjustment.

F230

Perfectly Flat Color Monitor



PIN BALANCE

If the sides of the picture are bowed to the right or to the left, you can correct the pincushion balance by using this adjustment.



V. MOIRE

Clears vertical moire if a series of concentric circles or arcs appear on your screen.



H. MOIRE

Clears horizontal moire if a series of concentric circles or arcs appear on your screen.

Moire is an interference pattern that makes the screen seem to have faint lines. A picture that is rasterised or consists of (small) repeating figures is sensitive to moire interference. Strong colors are also liable to intensify moire.

The moire pattern on the screen does not affect the printout of the image.



TOP CORNER

If the top corner sides of the picture curve in or bulge out, you can correct the top corner distortion by using this adjustment.



BOTTOM CORNER

If the bottom corner sides of the picture curve in or bulge out, you can correct the bottom corner distortion by using this adjustment.

F230

Perfectly Flat Color Monitor



H. LINEARITY

If either left or right side of the picture is out of proportion to the other, you can correct horizontal linearity by using this adjustment.



V. LINEARITY

If top and bottom side of the picture is out of proportion to the center area, you can correct vertical linearity by using this adjustment.



BNC / D-SUB

Press the SELECT button to select signal source. (BNC or D-SUB)



PURITY

If primary color like white, blue or red is displayed on the whole screen and some areas or dots are showing different colors, you can correct them by using this adjustment.

Color purity error is caused by misalignment of one of the electron beams (R,G, B). Each beam is set to strike only phosphor dots of a single color like the red beam for the red phosphor dots only. If such beam is misaligned to strike incorrect phosphor dots, then the colors of the screen will be incorrect.



H. CONVERGENCE

If the shadows appear around the text or graphic image, you can remove them horizontally by using this adjustment.



V. CONVERGENCE

If the shadows appear around the text or graphic image, you can remove them vertically by using this adjustment.

F230

Perfectly Flat Color Monitor

Convergence is related to the three electron beams (Red, Green and Blue) which come together at a single spot on the screen. If the individual electron beams do not converge perfectly, mis-convergence error appears as shadows around text and graphic images with different colors than you designated.



LANGUAGE

You can select the language in which adjustment menus are displayed. The following languages are available; English, French, German, Italian, Spanish, Swedish, Finnish, Danish and Portuguese.



ROTATION

If the entire screen image is tilted, you can correct the distortion by using this adjustment.



OSD H. POSITION

Adjusts the OSD menu's horizontal position on the screen.

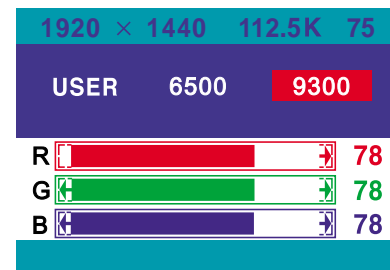


OSD V. POSITION

Adjusts the OSD menu's vertical position on the screen.



COLOR CONTROL



Color temperature affects the tint of the image. With lower color temperatures the image turns reddish and with higher temperatures bluish.

There are three color settings available: 9300K, 6500K or USER. With the USER setting you can set individual values for red, green and blue.

F230

Perfectly Flat Color Monitor



RECALL

If you operate your display unit in a factory preset mode, this function deletes adjustments you made for size, position and shape, and restores the properties which have been set in the factory. If you operate your display unit in a user mode, this function has no effect except that the contrast will be reset to the maximum value and the brightness to the cut-off level.



INFORMATION

Information shows horizontal and vertical sync polarity of current timing set.



DEGAUSS

External magnetic fields may cause distortion or discoloration in the picture. Demagnetizing takes place automatically when the display unit is switched on, and the unit normally maintains faultless color purity during operation.

If you have tilted, swiveled or moved the display unit, you can perform demagnetization. During this process the picture is distorted for a few seconds. After demagnetizing, the color impurities have disappeared if caused by stray magnetic fields.

Do not use the degauss feature more than once every half hour.



CONTRAST

Adjusts the contrast of the screen.



BRIGHTNESS

Adjusts the brightness of the screen.

5. Display power management

Reducing power consumption

If the power management function of your computer is enabled, your monitor turns on and off automatically. You can control power management features from your computer.

Your computer may have power management features which enable the computer or monitor to enter a power saving mode when the system is idle. You can reactivate the system by pressing any key or moving the mouse.

Mode	LED	Power consumption
Normal	Green	≤ 110 W (Typ.)
Standby	Green/Orange blinking (1sec.)	≤ 3 W
Suspend	Green/Orange blinking (0.5sec.)	≤ 3 W
off	Orange	≤ 3 W
Power switch off	Not illuminated	≤ 1 W

! The power button at the front bezel does not disconnect the display unit from the mains. Please unplug the power cord from the mains to close the power totally.

6. Troubleshooting

If your monitor is not functioning properly, you may be able to solve the problem by reading followings.

Problem	Possible solution
Blank screen	<p>If the power LED is not lit, push the power switch to turn the monitor on. If the display unit is powered through the computer, check that the computer is switched on.</p> <p>The display unit might be in standby mode. Push one of the keyboard keys. Check that the keyboard is properly connected to the computer.</p> <p>Check that the power cable is correctly connected to the display unit and to the power outlet.</p>
Error message: <i>OUT OF RANGE</i>	<p>The graphics adapter is set for too high refresh rate or line frequency. Select another display mode with lower frequencies in computer.</p>
Self diagnostics message <i>NO SIGNAL</i>	<p>This message indicates that the signal is missing or faulty. Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged. If the connector is loose, tighten the connector's screws.</p>
The display does not enter power management mode	<p>The video signal from the computer does not comply with VESA DPMS standard. Either the computer or the graphics adapter is not using the VESA DPMS power management function.</p>

F230

Perfectly Flat Color Monitor

Problem	Possible solution
Screen flickers	The screen may seem to flicker when the refresh rate is less than 75Hz. See the list of recommended modes in the section <i>Preset timing table</i> .
Color defects	<p>If your color is not uniform, demagnetize the display unit as described in the section Degauss under <i>OSD adjustments</i>, and make sure that the display unit is at least 30cm from any other electrical equipment.</p> <p>Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged. Try another color temperature.</p> <p>If the picture has strong color defects, switch off the display unit and the computer.</p>
Size, position, shape or quality unsatisfactory	<p>Make sure that other electrical devices are at least quality 30cm away.</p> <p>Adjust the picture characteristics as described in the section <i>Adjusting the picture</i>.</p>
Duplicated images	A problem with your graphics adapter or display unit. Contact your service representative.

F230

Perfectly Flat Color Monitor

Contacting service

If the above troubleshooting hints do not help you find a solution to the problem, contact an authorized service agent. If the monitor is sent for service, use the original package if possible.

Unplug the display unit from the power outlet and contact a service agent when:

- The monitor does not operate normally according to the operating instructions.
- The monitor exhibits a distinct change in performance.
- The monitor has been dropped or the cabinet has been damaged.
- The monitor has been exposed to rain, or water or liquid has been spilled onto the monitor.

7. Specifications

Picture tube	21"(viewable size : 19") Dyna Flat, Dot pitch 0.25 mm Anti-Static, anti-glare, TCO treatment coated.
Display area	factory preset area : 380X285 mm
Number of color	Infinite
Input signals	R.G.B Analog, 15 pin D-sub, BNC
Frequency rate	Horizontal : 30 to 123kHz, Vertical : 50 to 150Hz
Maximum bandwidth	340 MHz
Maximum resolution	2048X1536@75Hz
Recommended resolution	1600X1200@85Hz
Input voltage	100-240 VAC, 3.0A
Power consumption	110W (Typ.)
Power Management	VESA DPMS
Plug & Play	Lower than EPA recommendation VESA DDC 1/2B
OSD menu	H/V SIZE, H/V POSITION, PINCUSHION, TRAPEZOID, PARALLEL, PIN BALANCE, H/V- MOIRE, TOP CORNER, BOTTOM CORNER, H/V LINEARITY, BNC/D-SUB(OPTION), PURITY, H/V CONVERGENCE, LANGUAGES, ROTATION, OSD H/V POSITION, COLOR CONTROL, RECALL, INFORMATION, DEGAUSS, BRIGHTNESS, CONTRAST
Ergonomics, Safety and EMC	TCO, FCC Class B, CE, cULus, TÜV-GS, DHHS, NEMKO, DEMKO, FIMKO, SEMKO
Operating Temperature	0 ~ 35°C
Weight	25.0Kg unpacked, 30.0Kg packed
Dimensions (W X H X D mm)	500 X 495.3 X 484.5 mm

• Specification is subject to change without notice for performance improvement.