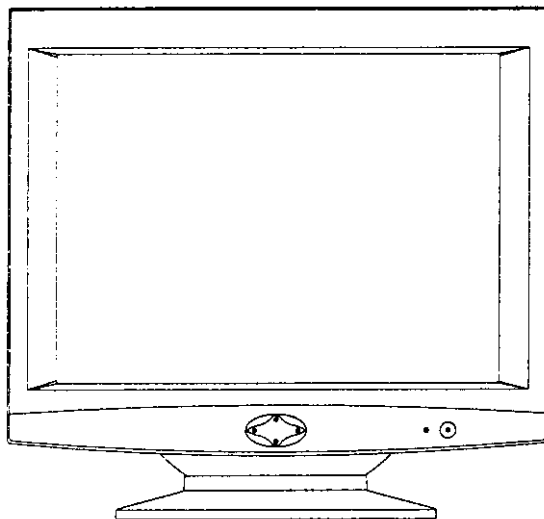


APPENDIX D:

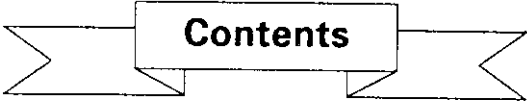
USER'S MANUAL

Operation & Installation Guide



MODEL NO. : KD-2100K

21" Multi-Scan Color Monitor



Contents

REGISTRATION CARD

FCC Compliance Statement I

Safety Instructions III

Introduction 1

Product Package 2

Setup 3

Controls and Adjustments 5

Timing Guide 9

Specifications 10

KDS USA Standard New Product Warranty

KDS - Advance Replacement Program



REGISTRATION CARD

Thank you for purchasing your KDS monitor. We want to know who you are, and be able to offer you future product promotions or announcements. Please take a moment to register your monitor with us, and we'll be sure to keep you updated on what is new with KDS.

Please fill in the information below for warranty registration and submit this document to the address listed below. If you have any questions, you may contact KDS directly using any of the methods listed below:

<p>TELEPHONE 1-800-283-1311</p> <p>EMAIL customer_service@kdsusa.com</p> <p>SET-UP QUESTIONS OR TECHNICAL SUPPORT EMAIL tech_support@kdsusa.com</p> <p>WEBSITE www.kdsusa.com</p>

1. YOUR INFORMATION

First Name _____ Last Name _____
Title _____
Company _____
Address _____
City _____ ST _____ Zip _____
Telephone _____ Fax _____

2. PRODUCT INFORMATION

Model _____ (You may place one of the labels from the box here)
Serial Number _____
Date Purchased _____

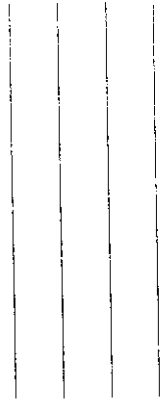
3. PURCHASE INFORMATION

Reseller (Who you purchased your KDS monitor from) _____
Address _____
Telephone _____

Please detach and return this completed form to:

Customer Service
KDS, USA Inc.
12300 Edison Way
Garden Grove, CA 92841
Fax: (714) 379-5592

Place
1st Class
Postage
Here



Customer Service
KDS, USA Inc.
12300 Edison Way
Garden Grove, CA 92841
www.kdsusa.com

FCC Compliance Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

DOC CLASS B NOTICE

This digital apparatus does not exceed Class B limits for radio noise emission for a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Safety Instructions

11. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to service personnel.
12. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the product.
 - c. If the product has been exposed to rain or water.
 - d. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - e. If the product has been dropped or the cabinet has been damaged.
 - f. Use of special cable(shielded interface cable with ferrite bead)
13. Use only the proper type of power supply cord set (provided in your manual accessories box) for this unit. It should be a detachable type:UL listed/CSA certified, type SVT/SJT, rated as 10A 125V minimum, VDE approved or its equivalent.
14. The Socket-Outlet is to be installed near the equipment and is easily accessible.



Korea Data System Co., Ltd. has established and applies a quality system for Design, Development, Production and Servicing for Monitors. Proof has been furnished that the requirements according to ISO 9001 are fulfilled.

Introduction

1. General information

Congratulations on selecting this high resolution multi-scan color monitor.

This high performance display contains the latest technology of flat screen design and micro-processor control. This monitor has been equipped with both automatic and manual adjustments.

The automatic controls are factory preset and feature automatic factory frequency scanning.

The manual controls feature use digital adjustments to personalize the display in various applications.

The ergonomic characteristics of the antiglare flat screen, high refresh rates, and tilt swivel base allow comfortable usage when operating for a long period of time in high resolutions.

This operating manual describes the functions and features in more detail so that you may obtain the maximum performance of your monitor.

2. Features

- Multi-scanning at horizontal frequencies of 30KHz to 117KHz, vertical frequencies of 50Hz to 160Hz
- 21 inch(19.9" viewable) FST(Flat Square Technology) picture tube with ARASC/ARECS high-definition, anti-glare coating
- 0.28mm fine dot pitch
- Microprocessor-based design with digital controls
- Windows® 95 & 98 plug and play(VESA® DDC2B)
- 14 Preset modes, 40 user programmable
- 14 Preset modes, 40 user modes
- Overscan capability for increased viewable area
- Compatible with standard IBM VGA, extended VGA, Super VGA, IBM XGA, XGA/2, CAD/CAM Graphic as well as all VESA® ergonomic standards
- Compatible with Apple® Macintosh™
- Universal power supply
- MPR II compliant, TCO95(option)
- VESA® Display Power Management Signaling(DPMS™) compatible
- BNC Input

ARASC : Anti-Reflection, Anti-Static Coating

Product Package

Determine the most convenient location for your monitor.
Make sure that you have enough room to install cables and connect the monitor to the system unit and power supply.

Open the shipping carton and check the contents of the package.
The package should include the following items:

- * 21" Color Monitor
- * AC Power Cord
- * Signal Cable
- * Owner's Manual

Note : If any item(s) are missing or damaged, contact your dealer immediately.

2. Remove the monitor from its shipping carton(see figure 1).
Save the carton and packaging materials in case you need to relocate the monitor.

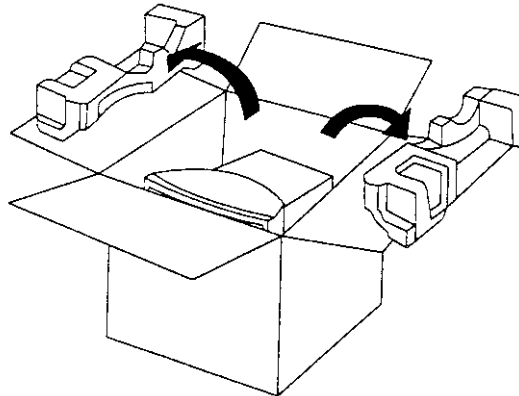


Figure 1

Setup

Setting up your monitor is easy. All you have to do is make a few simple connections and adjustments. The procedure is as follows:

1. Start up

Switch the power off to both your monitor and computer. The location of the power switch is on the lower right hand corner of the monitor.

2. Power cable Connection.

Connect the female end of the power cable to the power input on the back of the monitor. Next, plug the male cable to the wall outlet for power.

To power input of monitor.

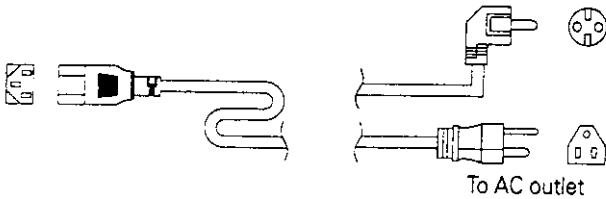
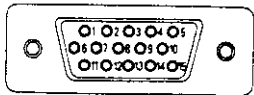


Figure 2

3. Signal cable connection

Connect the 15 pin signal cable to the PC
Lock both screws to ensure grounding.



D type 15pin connector

Figure 3

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	Video red	9.	N. C
2.	Video green	10.	Ground
3.	Video blue	11.	Ground
4.	Ground	12.	SDA
5.	Ground	13.	Hor-Sync
6.	Video red ground	14.	Ver-Sync
7.	Video green ground	15.	SCL
8.	Video blue ground		

Setup

4. Power ON

Switch ON the power to both your color monitor and computer.

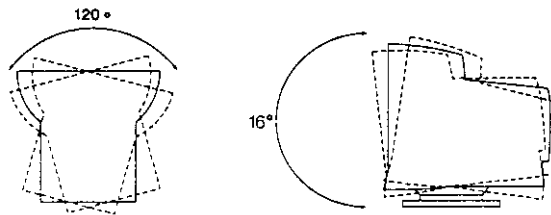
5. Adjusting the Picture

Adjust the controls, if necessary, to get the best picture.

A description of the functions of the controls may be found in the next section.

6. Adjusting the Tilt-Swivel Base

The tilt-swivel base can be adjusted for your maximum viewing comfort, it can be adjusted through angles of 120° horizontally and 16° vertically.



Note:

Due to the sensitivity of this monitor to earth's magnetic field, you may experience minor irregularities in the display if you swivel the monitor through more than 120° while the monitor is ON. If such behavior occurs, please turn the monitor OFF and ON again. The display should return to normal.

7. Setup of the Video Circuitry

To use the full potential of this product, it is necessary to first set the video circuitry of the computer according to the maximum capabilities of this monitor.

This can be expressed in any of the following ways:

- 1600 × 1200 94Hz
- 1280 × 1024 107Hz
- 1024 × 768 140Hz
- 800 × 600 160Hz
- 640 × 480 160Hz

Controls and Adjustments

There are a few switches that are located on your monitor. The power indicator and adjustable controls allows the user to maximize the display for individual preferences. The description of these functions are as follows :

Front Panel Controls

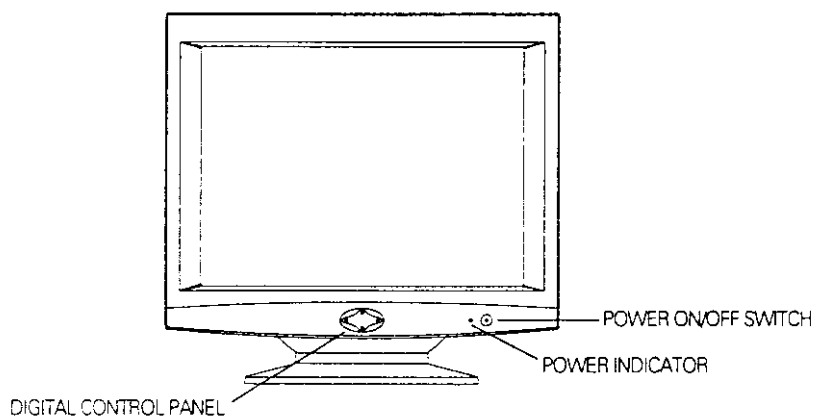


Figure 5

1. Power ON/OFF Switch

Press this button to turn the power ON or OFF. There will be a short delay before the display appears.

2. Power Indicator

This power indicator illuminates when the power is switched ON and the power cord is properly attached.

MODE	ON	STAND BY	SUSPEND	OFF
Power Indicator	Green	Amber	Green/Amber Blink 1.0 sec	Green/Amber Blink 2.0 sec

Controls and Adjustments

Digital Control Panel

The digital control panel is located at the bottom of your color monitor. If you are not satisfied with the factory size position settings, use these controls to program those you prefer in each resolution. Then, these adjusted settings are kept in memory even if you change resolution or turn off the monitor.



KEY FUNCTION

1. ENTER 

This button will enable the On Screen Display(OSD-instructions for using the OSD are described in the following section). This button is also used to select the function in the Main Menu or to save the setting in the Sub Menu.

2. EXIT/DEGAUSS 

This button manually degausses the CRT. It may be used if the display becomes discolored or washed out in appearance. This button can also be used to exit from the OSD.

3. DOWN 












Use this button to move down the OSD selection menu and adjust the attribute of the monitor while in OSD mode. Pressing this button out of the OSD menu allows you to decrease the level of contrast of the display screen.

4. UP 

Use this button to move up the OSD selection menu and adjust the attribute of the monitor while in OSD mode. Pressing this button out of the OSD menu allows you to increase the level of contrast of the display screen.

Controls and Adjustments

OSD/MAIN MENU

1. **CONTRAST** 
Selecting this function allows you to make adjustments to the level of contrast of the display screen.
2. **BRIGHTNESS** 
Selecting this function allows you to make adjustments to the brightness level of the display screen.
3. **H-POSITION(HORIZONTAL POSITION)** 
Select this function, then use the + and - buttons to center the image horizontally on the display screen.
4. **H-SIZE(HORIZONTAL SIZE)** 
Select this function, then use the + and - buttons to expand or decrease the image to horizontally fill the display screen.
5. **V-POSITION(VERTICAL POSITION)** 
Select this function, then use the + and - buttons to center the image vertically on the display screen.
6. **V-SIZE(VERTICAL SIZE)** 
Select this function, then use the + and - buttons to expand or decrease the image to vertically fill the display screen.
7. **PINCUSHION**  / **CORNER - PIN** 
Select this function, then use the + and - buttons to straighten the sides of the image.
8. **BOW** 
Select this function, then use the + and - buttons to straighten the sides of the image.
9. **TRAPEZOID** 
Select this function, then use the + and - buttons to straighten the sides of the image.
10. **PARALLEL** 
Select this function, then use the + and - buttons to straighten the sides of the image.
11. **CONVERGENCE**
 - Adjust the horizontal static convergence by pressing the adjust button (+) or (-)



- Adjust the vertical static convergence by pressing the adjust button (+) or (-)



Controls and Adjustments

12. COLOR TEMP(TEMPERATURE)

Select this function, then choose either 6500°K, which produces a warm gray background; or 9300°K, which produces a cool gray background.

13. COLOR TUNNING

•GAIN(RED/GREEN/BLUE)

Select this function, then use the + and - buttons to adjust the (Red/Green/Blue) level on the display screen.


14. ROTATION

Select this function, then use the + and - buttons to rotate the image until the sides of the image are parallel to the edge of the bezel.

15. MOIRE

Select this function, then use the + and - buttons to adjust the vertical, Horizontal moire level on the display screen.

16. RECALL

Select this function, then press and hold the  button, continue to depress this button until the progress bar disappears.

17. POWER CONNECTOR

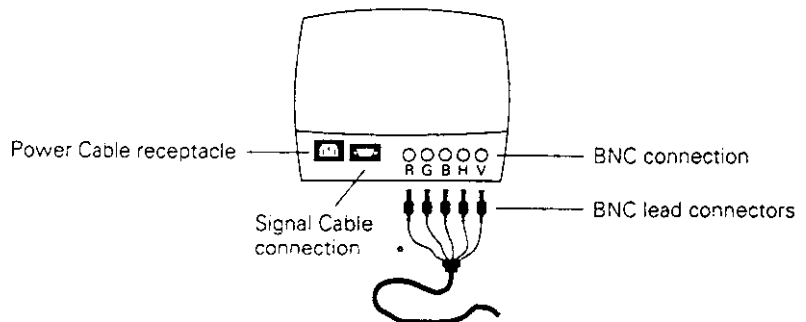
This receptacle accepts the female end connector of the supplied power cord. Attach the power cord to this receptacle, then plug it into a properly grounded AC outlet to supply power to the monitor.

18. SIGNAL CABLE

Connect the end of the signal cable to the VGA connector located on the video card.

19. BNC SIGNAL CONNECTORS

The BNC-5 connector can be used to connect to high-performance video adapters.



Timing Guide

The 21" color monitor is a multi-frequency monitor. It operates at horizontal frequencies between 30KHz and 117KHz, vertical frequencies between 50 Hz and 160 Hz. Because of its microprocessor-based design, it offers auto-synchronization and auto-sizing capabilities. This monitor offers 14 pre-programmed settings as listed in the table below.

TABLE

Preset	Resolution	Frequency H(KHz)	Frequency V(Hz)	Polarity	Interaced
M1	720 × 400 / VGA	31.5	70	- / +	NO
M2	640 × 480 / VGA	31.5	60	- / -	NO
M3	640 × 480 / VGA	37.5	75	- / -	NO
M4	640 × 480 / VESA	43.5	85	- / -	NO
M5	800 × 600 / VESA	46.9	75	+ / +	NO
M6	800 × 600 / VESA	53.7	85	+ / +	NO
M7	832 × 624 / MAC	49.7	75	- / -	NO
M8	1152 × 864 / VESA	67.5	75	+ / +	NO
M9	1024 × 768 / VESA	60.0	75	+ / +	NO
M10	1024 × 768 / VESA	68.7	85	+ / +	NO
M11	1280 × 1024 / VESA	80.0	75	+ / +	NO
M12	1280 × 1024 / VESA	91.1	85	+ / +	NO
M13	1600 × 1200 / VESA	93.8	75	+ / +	NO
M14	1600 × 1200 / VESA	106.3	85	+ / +	NO

* In addition to 14 factory modes, there are 8 additional user modes.
If more than 8 modes are inputted, it will be overridden in accordance with saving order of additional modes.

* In case of using Macintosh, you must need Mac adapter.

Specifications

Picture tube	21" (19.9" viewable) tinted, 0.28mm dot pitch A-AGRAS coated, high contrast, Invar shadow mask.
Resolution	1600(H) × 1200(V) Non-interlaced (addressable)
Maximum Dot Clock	232MHz at -3 dB (nominal)
Video input	Analog, positive going signal(0.7V p-p)
Horizontal input	TTL, positive or negative going pulse(2.4~5V p-p)
Vertical input	TTL, positive or negative going pulse(2.4~5V p-p)
Scan frequency	Horizontal: 30~117KHz Vertical: 50~160Hz
Standard display area	380mm(H) × 285mm(V) / 15.1"(H) × 11.2"(V)
Display color	Unlimited
Power input	100~240V AC, 50/60Hz
Fuse rating	250V, S 3.0A(UL, CSA, TÜV) or T 3.15A(TÜV)
Power consumption	On : Less than 160W Stand by : Less than 120W Suspend : Less than 10W Off : Less than 5W
Operating temperature	0 To 40 Degree C.
Dimensions	506mm(W) × 485mm(H) × 527mm(D) 19.9"(W) × 19.1"(H) × 20.7"(D)
Weight	28.8Kg(net) / 63.4 lbs



KDS USA Standard New Product Warranty

Effective October 1, 1997

Korea Data Systems, Inc. (KDS) warrants your new Visual Sensations™ or Avitron™ monitor against defects in materials and workmanship for a period of three (3) years from the date of the original purchase of the new product. This limited warranty covers the end-user for three (3) years on parts, CRT and workmanship for new product purchases only. Any product defect not originating from defects in materials or workmanship will not be considered covered under warranty.

In the unlikely event that a component should fail during its three-year warranty period due to a defect in materials or workmanship, KDS will at its option, repair or replace the entire monitor with a monitor of equal or greater value. Unless otherwise notified, the customer is responsible for shipping defective monitors to a specified KDS service center.

If a failure should occur with your new Visual Sensations™ or Avitron™ monitor *within the first ninety (90) days following the date of purchase*, in-warranty replacement will cover parts, labor and return freight to the customer to any point within the continental U.S.A. Aside from the warranty exclusions listed below, KDS will replace the defective product with new product, if available, of equal or greater value. Also, *for failures occurring within (90) days of ownership only*, KDS will arrange for pick-up of the defective unit from points within the continental U.S.A.

For units that fail beyond ninety (90) days, but before thirty-six (36) months of ownership, in-warranty replacement will cover parts, labor and return freight to the customer to any point within the continental U.S.A. Aside from the warranty exclusions listed below, KDS will replace the defective product with re-certified product of equal or greater value.

Replacement products will be shipped at KDS' expense to any point in the continental U.S.A. Extra freight charges will apply for expedited shipping, or to points outside of the continental U.S.A. Replacement products will continue to be covered under the original owner's three-year warranty period, or for a period of (90) days, whichever is greater. To take advantage of warranty services call:

**KDS Customer Service Department
(800) 283-1311**

WARRANTY EXCLUSIONS

This limited warranty does not cover the repair of cracked, scratched, broken or modified plastics; other cosmetic damage; or parts that have been altered, defaced or removed; or scratching, cracking or breakage of the CRT. This limited warranty does not apply to failures caused by alteration or repair not performed by KDS or authorized agents, accident, misuse, abuse, negligence, commercial use, improper shipping, or acts of God. This limited warranty does not cover repair of monitor display quality degradation resulting from normal usage. KDS shall not be liable for any incidental or consequential damages resulting from the use of this product.

This limited warranty gives you specific rights, and you may have other rights that may vary from state to state.

KDS-ADVANCE REPLACEMENT PROGRAM

In order to provide the highest possible level of service to our valued customers KDS offers a lifetime Advance Replacement Service. Under this service when a customer calls KDS' s Customer Service Department and their KDS product is determined to be defective, KDS will advance ship a replacement product of equal or greater value using a preferred freight carrier' s two or three day freight program to the customer site

Included with the replacement product will be a package containing return shipping labels and other relevant instructions on how to repackage and return the defective product. Upon receipt of the replacement product the customer will repackage the defective product in the box that contained the replacement product

KDS and the Customer bear their respective cost responsibilities as follows under this Lifetime Advance Replacement program:

Two or three day preferred carrier freight to customer site:KDS.

Same or Next Day expedited freight service(option):Customer

Return of defective product via preferred freight carrier:Customer

Missing or damaged parts or out-of-warranty repairs(option):Customer

This service is intended to expedite the repair and minimize the down time for all KDS customers. Under this service the customer needs only to lift up the phone and call KDS Customer Service or connect via computer to KDS' s Internet Home Page Customer Service Request Page. Once KDS has been contacted and the repair request made,KDS will advance ship a replacement product and arrange for the return shipment of the defective product.

A valid credit card or an acceptable purchase order will de required of the customer to insure customer compliance with this service.

KDS Customer Service Department-(800)283-1311