User's Manual

CTX

Commitment To Excellence

Federal Communications Commission (F.C.C.) Statement

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:

- 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.

Use only shielded cables or connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

CE

This device complies with requirement of EMC directive 89/336/EEC with regard to Electromagnetic Compatibility, and 73/23/EEC and 93/68/EEC with regard to Low Voltage directive.

* IBM PC, IBM PS/2, and VGA are registered trademarks of International Business Machines Corp. Windows, DOS are registered trademarks of Microsoft Corp. Macintosh is a registered trademark of Apple Computer Inc. ENERGY STAR is a U.S. registered mark. As an Energy Star Partner, we have determined that this product meets the Energy Star guidelines for energy efficiency.

Copyright© 1998, Chuntex Electronic Co., Ltd. We reserve the right to make changes or improvements in the product described in this manual without notice.

Important Safety Instructions

English

1. Please read carefully all of these instructions below and keep the manual for later use.

2. Please install the swivel base below this product before it comes into use.

3. The voltage ratings and the rated frequency are on the overlay centered at rear side of this product. Do not connect with any source of other voltage or frequency and please follow all warnings and instructions marked on the product.

4. Unplug this product from the wall outlet before cleaning and use a damp cloth to clean it. Do not use liquid cleaners or aerosol cleaners.

5. Do not expose this product to rain or moisture.

6. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

7. Do not block or cover ventilating openings with cloth or other material. Neither should this product be placed near or over a radiator or a heat register, nor should the product be placed in a built-in installation unless proper ventilation is provided.

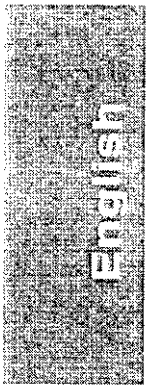
8. This product is equipped with a 3-wire grounding type plug. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug. Choose a Tandem Blade attachment plug configuration power cord for 230V AC input.

   Due to the safety requirements of different areas, please select a suitable power cord according to the following rules, in addition to the electric rating:

   A. Northern America area: Please select a UL listed and CSA certified power cord.

   B. Germany: Please select a VDE certified power cord.

   C. Nordic countries: Please select a power cord certified by SEMKO, NEMKO, DEMKO or FIMKO.



D. The other areas: Please select a power cord suitable to the local power system and power outlet.

Usually a suitable power cord is provided by the manufacturer, while this product is sold. However, this product is sometimes, resold or transported to another area of different power system and safety requirements, please pay attention to the selection of a suitable power cord.

The plug on the power cord is intended to serve as the disconnect device, the socket-outlet shall be installed near the equipment and shall be easily accessible.

9. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

10. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

11. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risk. 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. If the product exhibits a distinct change in performance, indicating a need for service.

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English

Section 1 Introduction

The monitor is a multiple frequency high resolution color monitor for IBM compatible, Macintosh family and workstation systems. The monitor is equipped with microprocessor based intelligence and multiple frequency scanning capability, allowing it to provide maximum compatibility for various kinds of graphic system hardwares.

The monitor is designed with the latest screen technology including a 0.26mm High Contrast CRT to display crisp text and vivid color graphics with max. resolution up to 1600 x 1200, and supports VESA 85Hz modes to provide flicker-free picture. The full function digital control and On-Screen Display system provides easy adjustment of image geometry and color for different display modes with the precision of a fixed frequency monitor.

The design of the monitor is also ergonomics concerned, in addition to the friendly controls and user comfort features, the emission level of electric and magnetic field is kept low to meet the Swedish MPR II or TCO standard.

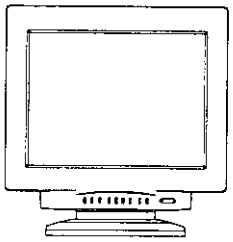
The monitor is also equipped with energy saving function, it is compatible with VESA power saving proposal, the lowest power consumption is less than 8 W.

Furthermore, the monitor is built-in the USB (Universal Series Bus) hub. Please refer to the "USB Kit Content" for the implementation of USB hub.

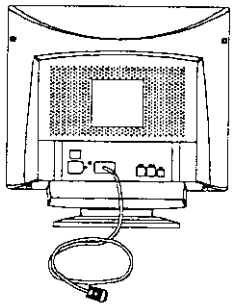
1.1 Contents of the Package

The following lists all of the items included in the color monitor package box, please save the original box and packing materials for future transportation or shipment of this monitor.

Front view



Rear View



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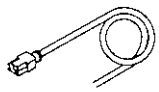
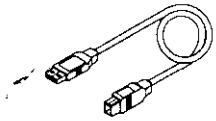
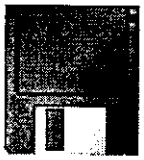
Power Cord



USB Cable



Diskette x 2

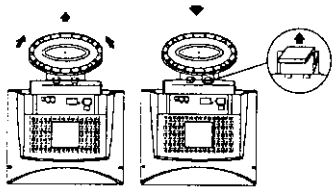


1.2 Removing or Installing the Tilt/Swivel Base

1. Turn off the system and all attached options.
2. Carefully set the display upside down.

Remove the Tilt/Swivel Base

1. Squeeze and hold the latches.
2. Pull the Tilt/Swivel Base to the rear of the display and lift to remove the base.



Install Remove

Install the Tilt/Swivel Base

1. Align the base with the slots in the bottom of the display and insert the Tilt/ Swivel Base into the slots.

2. Push the Tilt/Swivel Base firmly toward the front of the display until the latches click into the locked position.

1.3 Feature Highlights

Maximum Compatibility

- Automatically scans all horizontal frequencies between 30KHz and 95KHz, and all vertical frequencies between 50 Hz and 160 Hz.
- Supports multiple operating platforms such as IBM compatible, Macintosh* family.
- Maximum compatibility:
  640 x 480/160Hz, 800 x 600/150Hz, 1024 x 768/117Hz, 1280 x 1024/85Hz, 1600 x 1200/75Hz.
- Supports wide range of graphics standards including VGA, super VGA, 8514/A, XGA, Mac II 13" (640 x 480), Mac 16" (832 x 624), Mac 21" (1152 x 870), all VESA standards.

Latest Screen Technology

- 0.26 mm High Contrast 48.2cm/19 inches CRT increased the clarity and displays greater detail.
- Special anti-reflection, anti-glare and anti-static coating of the screen face provides better focus, contrast and color performance.
- Flat and square screen reduces image distortion and glare.
- Full feature digital control and multi-lingual OSD system allows easy adjustment of geometry and color. Besides the monitor provides even trapezoid, parallelogram, side-pin, pin-balance,moire and rotation adjustments for user to fine-tune the picture image.

* with optional adapter

English

Ergonomics Concerned

- Electric and magnetic field emission are kept low to meet the Swedish MPR II or TCO standard.
- Front user controls allow easy access and comfort for user to adjust the screen image to individual preference.
- Horizontal and vertical fullscan capability allows user to use the entire screen area in most resolutions.
- A tilt/swivel base for horizontal and vertical adjustments provides the optimum viewing angle.

Instant Power Saving Solutions

- The monitor is compatible with VESA DPMS (Display Power Management Signalings), providing four power saving modes by detecting horizontal and vertical sync signals.
- The monitor consumes 80 W to 155 W depending on the display content in normal operation, when the power saving mode is activated, it consumes less than 15 W in "stand-by" mode, less than 15 W in "suspend" mode and less than 8 W in "off" mode.

1.4 Specifications

	Specification
Color Picture Tube	48.2cm/19 inches (viewable 18") diagonal measurement, 90 degree deflection, High Contrast anti-glare, anti-reflection, anti-static, medium short persistance phosphor, dark bulb
Dot Pitch	0.26mm, High Contrast
Input Signal	Video: 0.7 Vp-p/75 ohm Analog Positive Sync. : Separate Sync. TTL Level Horizontal Sync. Positive/Negative Vertical Sync. Positive/Negative : Composite Sync. TTL Level Positive/Negative
Scan Frequency	Horizontal 30 to 95 KHz (Automatically) Vertical 50 to 160 Hz (Automatically)
Display Area	Horizontal 365 mm (Adjustable) Vertical 270mm (Adjustable)
Max. Resolution	1600x1200non-interlaced
Display Colors	Analog input unlimited colors
Video Bandwidth	150 MHZ
Misconvergence	Center 0.3 mm, Corner 0.4mm maximum
Plug & Play	DDC 1/DDC 2B
USB	Down stream port x 4 Per down stream port support current 500 mA (Max.)
Power Supply	AC 100-120V/200-240V, 50/60 Hz (Automatically)
Power Consumption	155W max
Dimensions	460(W) x 454.7(H) x 426.5(D) mm
Weight	25.8 Kgs (G.W.) 22.2 Kgs (N.W.)
Environmental Consideration	Operating Temperature 0°C to 40°C Humidity 20% to 80% Storage Temperature -20°C to 60°C Humidity 10% to 90%

Note: Specifications are subject to change without notice.

1.5 Recommended Use of the Monitor

When setting up and using the monitor, pay special attention to the following for optimum performance.

- Do not use your monitor against a bright background or where sunlight or other light sources will shine directly on the screen.
- The monitor should be placed just below eye level (10°~15°) for optimum viewing.
- Set the monitor's brightness to match the ambient room light.
- For optimum focus, the contrast control should not be set to the maximum unless the input signal level is extremely low. Also, the brightness control should be set to a point where the overall background area just begins to disappear.
- Allow adequate ventilation around the monitor so that the heat from the monitor can properly dissipate.
- Neither the monitor itself, nor any other heavy object, should rest on the power cord. Damage to a power cord can cause fire or electrical shock.
- Keep the monitor away from high capacity transformers, electrical motors, and other strong magnetic field.
- Your monitor should not be used in damp, dusty, or dirty areas.
- Handle your monitor with care when transporting it.

CAUTION

- **Do not scrap or knock the surface of CRT with a pen, a screwdriver and so on.**
- **Clean the CRT surface with a lint-free, nonabrasive, soft cloth, and should not use the solution or glass cleaner containing corpuscels like an abrasive, alcohol and an alkaline solution.**

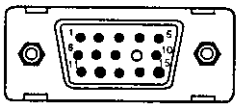
English

Section 2 Installation

This color monitor supports multiple operating platforms such as IBM compatible, Macintosh family. This section gives the details on pin assignment of the input connectors and the Preset Timing Chart of prevailing video standards are included in this section for your reference.

2.1 Pin Assignment Table

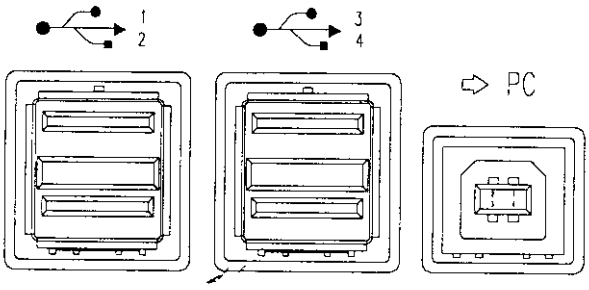
1. Pin Assignments of the Mini- D-15 Connector



MALE MINI D-15

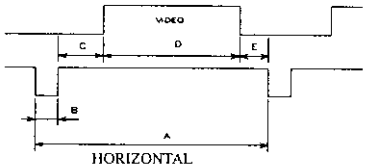
Signal	Mini D-SUB15 Pin
Red Video	1
Green Video	2
Blue video	3
Horizontal sync	13
Vertical Sync	14
Ground	4,5,6,7,8,10,11
No Connection	9
SDA (DDC)	12
SCL (DDC)	15

2. USB Connectors

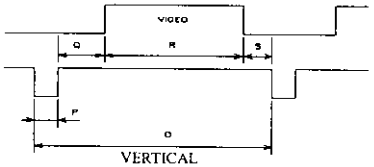


2.2 Preset Timing Chart

Note:This monitor is equipped with a micro-processor which allows user to set his own preferred mode(s) beyond those listed below.



HORIZONTAL



VERTICAL

Display Format	VGA		VESA 640x480 at 85 Hz	640x480 at 120 Hz	VESA 800x600 at 85 Hz	800x600 at 120 Hz	VESA 1024x768 at 75 Hz	VESA 1024x768 at 85 Hz	1024x768 at 100Hz	VESA 1280x1024 at75 Hz	VESA 1280x1024 at 85 Hz	VESA 1600x1200 at 75 Hz
Horizontal Dots	640	720	640	640	800	800	1024	1024	1024	1280	1280	1600
Vertical Lines	480	400	480	480	600	600	768	768	768	1024	1024	1200
H Frequency(kHz)	31.500		43.269	63.230	53.674	75.985	60.024	68.677	80.468	79.976	91.146	93.750
H Sync Polarity	—	—	—	+	+	—	+	+	—	+	+	+
Apx (Period)	31.780		23.111	15.741	18.631	13.155	16.660	14.561	12.425	12.504	10.971	10.667
*Bpx (Pulse Width)	3.810		1.333	1.749	1.138	1.072	1.219	1.016	1.073	1.067	1.016	0.949
Cpx (Back Porch)	1.910		3.111	3.731	2.702	1.950	2.235	2.201	1.945	1.837	1.524	1.501
Dpx (Active Area)	25.420		17.778	11.660	14.222	9.830	13.003	10.836	9.310	9.481	8.127	7.901
Epx (Front Porch)	0.640		0.889	1.399	0.569	0.303	0.203	0.508	0.097	0.119	0.305	0.316
V Frequency(Hz)	60.000	70.000	85.008	119.868	85.061	120.039	75.030	84.997	99.836	75.024	85.024	75.000
V Sync Polarity	—	+	—	+	+	—	+	+	—	+	+	+
Qpx (Period)	16.680	14.270	11.764	8.343	11.756	8.333	13.328	11.765	10.020	13.329	11.761	13.333
Ppx (Pulse Width)	0.060		0.069	0.094	0.056	0.039	0.050	0.044	0.038	0.038	0.033	0.031
Qpx (Back Porch)	1.050	1.110	0.578	0.567	0.503	0.387	0.466	0.524	0.428	0.475	0.483	0.491
Rpx (Active Area)	15.250	12.710	11.093	7.555	11.179	7.890	12.795	11.183	9.550	12.804	11.235	12.800
Spx (Front Porch)	0.320	0.390	0.023	0.127	0.019	0.017	0.017	0.015	0.040	0.012	0.011	0.011

* Bμs (Pulse Width) should be more than 0.5 μs.

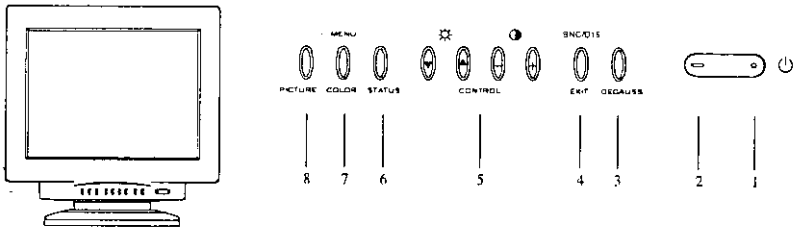
To reduce visual tiredness and eye strain, choice of the higher refreshed mode is preferred.

English

Section 3 Controls and Adjustments

Once you have installed the monitor with your system, this section gives you some guidelines on how to use it more efficiently. It leads you through the various function of the user controls as well as explains how to adjust the monitor to your individual preference.

3.1 Front User Controls



1. **POWER SWITCH**
   To turn the monitor On and Off.

2. **POWER INDICATOR**
   When the power to the monitor is ON, the indicator is lit.
   In normal operation, the indicator is green.
   While in power saving mode, the indicator will turn to amber.

3. **DEGAUSS SWITCH**
   To manually degauss the monitor.

4. **EXIT SWITCH**
   To exit OSD window.

5. **CONTROL KEYS**
   •To adjust the parameter of the selected function.
   •To adjust the contrast or brightness level of the screen.

6. **STATUS**
   To display and select functions of "Mode", "Off time", "Power save", "Recall", "Language" and "Location".
   •"Mode" is to show Horizontal/Vertical frequency & polarity
   •"Off time" is to set OSD window display time.
   •"Power save" is to enable or disable function of power save.
   •"Recall" is to recall the factory settings of "Picture" and "Color".
   •"Language" is to select the OSD language.
   •"Location" is to move the OSD window.

7. **COLOR**
   To display and select color mode.(four color modes are available for choice)

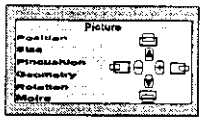
8. **PICTURE**
   To display and select functions of "Position", "Size", "Pincushion", "Geometry", "Rotation" and "Moire".

Power save note
This monitor is equipped with automatic power-saving circuitry design which will work with any computer unit following the VESA DPMS detection format, and it meets ENERGY STAR low power state definition. When first power on and input signal into the monitor, the power save function remains in active, the function will then be triggered when the input signal is cut off by the computer itself, or loss of signal input afterwards.

3.2 How To Use On-Screen Adjustment

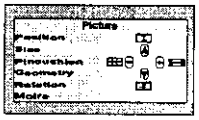
3.2.1 PICTURE

A. POSITION:



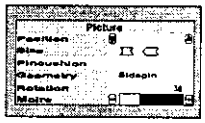
a. Press the " + " key to reposition display to the right and " – " to the left.
b. Press the " ▲ " key to move the entire picture upward and " ▼ " downward.

B. SIZE:



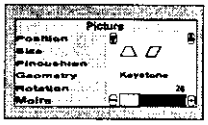
a. Press the "+" key to enlarge horizontal width and "–" to reduce.
b. Press the "▲" key to enlarge vertical size and "▼" to reduce.

C. PINCUSHION:



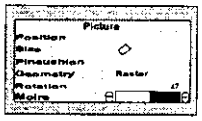
a. Press the " ▼ "or " ▲ " key to select "Sidepin" or "Balance".
b. Press the " + " or " – " key for prefered adjustment.

D. GEOMETRY:



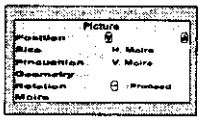
a. Press " ▼ " or " ▲ "to select Keystone and Parallel.
b. Press the " + " or " – " keys for prefered adjustment.

E. ROTATION:



Press the "+" or "–" key to rotate the screen.

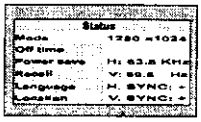
F. MOIRE:



a. Press the '+' key to proceed.
b. Press the '+' or '–' key for prefered picture.

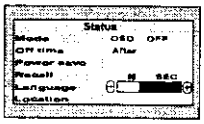
3.2.2 STATUS

A. MODE:



To display existing timing data of resolution, frequency and polarity.

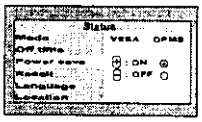
B. OFF TIME:



Press the " + ", " – " key to adjust from 5 to 255 seconds.

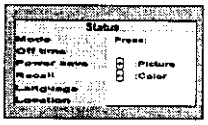
English

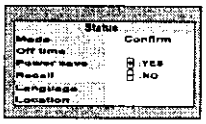
C. POWER SAVE :



Press the " + " key to enable or " – " key to disable function of power save.

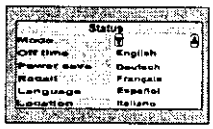
D. RECALL:





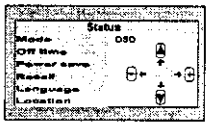
a. Press the "+" or "– " key to select "Picture" or "Color".
b. Confirm the action of recall by pressing the " + " key to proceed or pressing the " – " key to cancel.

E. LANGUAGE:



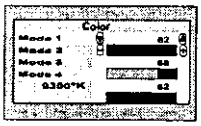
Press the " ▼ " or " ▲ " key to select the English, German, French, Spanish or Italian.

F. LOCATION:

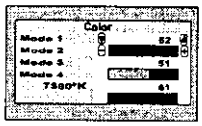


a. Press the " + " key to shift the OSD window to the right and " – " key to shift it to the left.
b. Press the " ▲ " key to move the OSD window upwards and " ▼ " key to move it downwards.

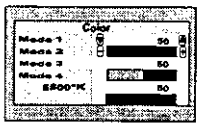
3.2.3 COLOR



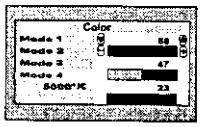
Mode 1



Mode 2



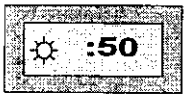
Mode 3



Mode 4

a. By press the " Color " key, you can select mode 1,2,3 or 4 to store user's setting.
b. Press the " ▼ " or " ▲ " key to select R/G/B gain and the " + " key to increase or " – " key to decrease its density.

3.2.4 CONTRAST AND BRIGHTNESS CONTROL



When OSD is off,
a. Press the " + " or " – " key to increase or decrease the contrast level of the screen.
b. Press the " ▲ " or " ▼ " key to set the prefered brightness.
c. Press the "+" and "–" kes or " ▲ " and " ▼ " keys at the same time to recall the factory preset value of Contrast or Brightnes.

3.2.5 EXIT SWITCH

To turn off the OSD window by pressing the key.

3.3 Energy Declaration

This monitor is equipped with a function for saving of energy which supports the VESA Display Power Management Signaling (DPMS) standard. This means that the monitor must be connected to a computer which supports VESA DPMS to fulfil the requirements in the NUTEK specification 803299/94/96. Time settings are adjusted from the system unit by software. From indicated inactivity to Power Saving Position A2 the total time must not be set to more than 70 minutes.

1. VESA Power-Management Proposal

VESA DPMS Standard			
H. sync	V. sync	Video	State
Off	On	Blank	Stand-by
On	Off	Blank	Suspend
Off	Off	Blank	Off

2. Power Consumption (120/230 Vac)

NUTEK	VESA state	LED indicator	Power Consumption
Normal operation	On	Green	<155W
Power Saving Position A1	Suspend	Amber	<15W
Power Saving Position A2	Off	Amber	<8W

According to TCO guidelines, the optimum TCO readings are measured when brightness and contrast are adjusted to their center position.

English

Section 4 Trouble-Shooting

Before calling an authorized service center, please check that the items below are properly connected or set.

In case of using a non-standard signal, please check the pin assignments and the signal timing of your adapter with the specifications outlined on section 2.1 and 2.2.

Problem	Items to check
No picture	• Power Switch should be in the ON position and the power cord should be connected. • Check the color of the power LED indicator, if it is orange, then the monitor is in the power saving mode. • Check the horizontal/vertical frequency if out of range. • Maximize the Brightness and Contrast controls.
"No Signal Input" is displayed on screen	• The video card should be completely seated in its slot. • Computer power switch should be in the ON position. • The signal cable should be completely connected to the video card/computer.
Display image is not centered, too small, or too large	• Adjust Position and Size controls to adjust the image.
Image is scrolling or unstable	• Signal cable should be completely attached the computer. • Check the pin assignments and signal timings of the monitor and your video card.
Picture is fuzzy	• Adjust the Contrast and Brightness Controls. • Push the degauss button once. CAUTION: A minimum interval of 20 minutes should exist before the degauss button is used a second time when not switching between modes. Do not hold the button down continuously
Picture bounces or a wave pattern is present in the picture	• Move electrical devices that may be causing electrical interference away from the monitor • See the inside front cover of this manual for FCC information.
Edges of the display image are curved either inward or outward	• Adjust the Pincushion control.
Color looks blotchy	• Press the degauss button once.
No Plug & Play	•Check if hosting system is Plug Play compatible. •Check if VGA card is DDC 1/DDC 2B compatible. •Check if Window '95 is installed, and the software key for DDC function is enabled. •Check if original maker's detachable signal cable is being used(D-15 only).