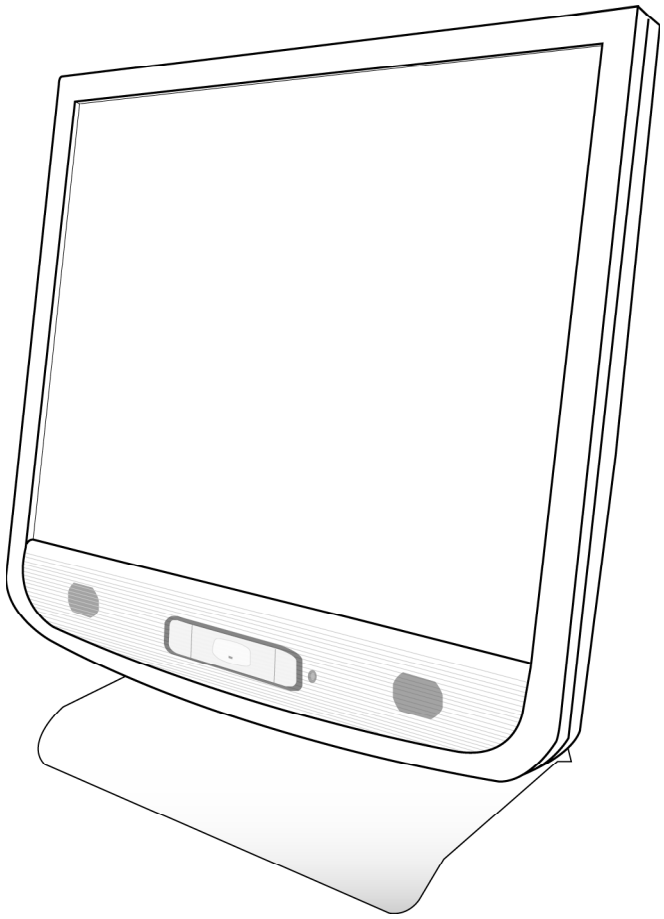
19 inch TFT LCD Monitor



USER'S MANUAL

Before operating the monitor, please read this manual thoroughly. This manual should be retained for future reference.

FCC Class B Radio Frequency Interference 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device complies with Parts 15 of the FCC Rule. Operation is subject to the following two conditions：(1) this device may not cause harmful interference；and (2) this device must accept any interference received, including interference that may cause undesired operations.

CANADA
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

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.

Socket-outlet shall be near the equipment and shall be accessible.

TCO'99 *(FOR OPTIONAL MODEL)*

Congratulations!

You have just purchased a TCO'99 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. With the growing manufacture and usage of electronic equipment throughout the world, there is a recognized concern for the materials and substances used by electronic products with regards to their eventual recycling and disposal. By proper selection of these materials and substances, the impact on the environment can be minimized.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Electronic equipment in offices is often left running continuously, resulting in unnecessary consumption of large amounts of energy and additional power generation. From the standpoint of carbon dioxide emissions alone, it is vital to save energy.

What does labelling involve?

The product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers and/or displays. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: ecology, ergonomics, emission of electrical and magnetical fields, energy consumption and electrical safety.

Ecological criteria impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, and other substances. The product must be prepared for recycling and the manufacturing site(s) shall be certified according to ISO14001 or EMAS registered.

Energy requirements include a demand that the system unit 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 system unit shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electrical and magnetical fields as well as work load and visual ergonomics.

Below you will find a brief summary of the ecological requirements met by this product. The complete ecological criteria document can be found at TCO Development's website http://www.tcodevelopment.com or may be ordered from:

TCO Development
SE-114 94 STOCKHOLM, Sweden

Fax: +46 8 782 92 07
E-mail: development@tco.se
Information regarding TCO'99 approved and labelled products may also be obtained at http://www.tcodevelopment.com

Ecological requirements

Flame retardants
Flame retardants may be present in printed wiring board laminates, cables, and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% by weight of the plastic in a computer casing can consist of flame retardant substances. Many flame retardants contain bromine or chlorine, and these flame retardants are chemically related to PCBs (polychlorinated biphenyls). Both the flame retardants containing bromine or chlorine and the PCBs are suspected of giving rise to health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes when not disposed of in accordance with strict standards for disposal.

TCO'99 requires that plastic components weighing more than 25 grams shall not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed wiring board laminates due to the lack of commercially available alternatives.

*Cadmium***
Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. TCO'99 requires that batteries, the colour-generating layers of display screens, and the electrical or electronics components shall not contain any cadmium.

*Mercury***
Mercury is sometimes found in batteries, relays and switches. TCO'99 requires that batteries shall not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

*Lead***
Lead can be found in picture tubes, display screens, solders and capacitors. TCO'99 permits the use of lead due to the lack of commercially available alternatives, but in future requirements TCO Development aims at restricting the use of lead.

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

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SAFETY 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.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibilities of the user to correct such interference.

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

PRECAUTIONS

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable cart, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a cart or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- Unplug the unit during a lightening storm or when it will not be used for long period of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor by yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

SPECIAL NOTES ON LCD MONITORS

The following symptoms are normal with LCD monitor and do not indicate a problem.

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.
- When the screen becomes black or flashing, or cannot illuminate any more, contact your dealer or service center to replace parts. Don't repair the screen by yourself!

BEFORE YOU OPERATE THE MONITOR

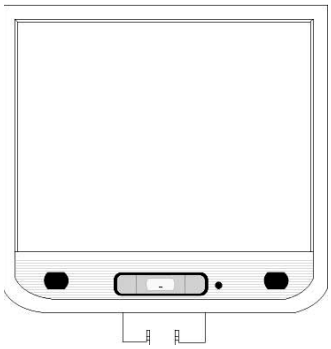
FEATURES

- 19" TFT Color LCD Monitor
- Crisp, Clear Display for Windows
- Recommended Resolutions*: 1280 X 1024 @60Hz*
- EPA ENERGY STAR®
- Ergonomic Design
- Space Saving, Compact Case Design

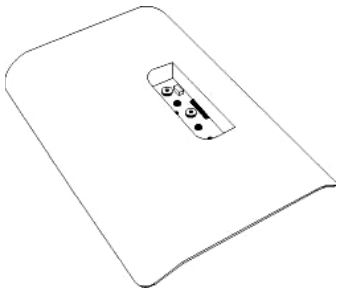
CHECKING THE CONTENTS OF THE PACKAGE

The product package should include the following items:

LCD Monitor

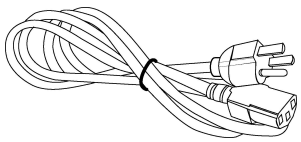


Screen

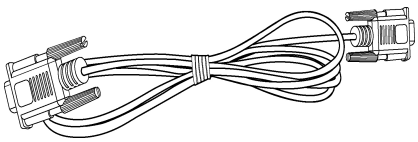


Base

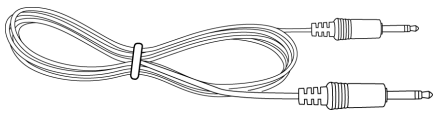
Cables and User manual



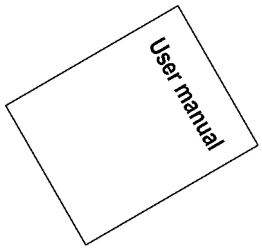
Power Cord



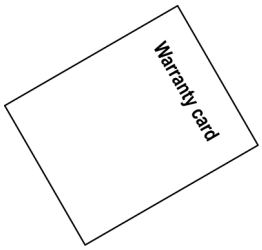
VGA Cable



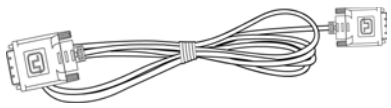
Audio Cable



User's manual



Warranty card



DVI Cable (dual input mode optional)

INSTALLATION INSTRUCTIONS

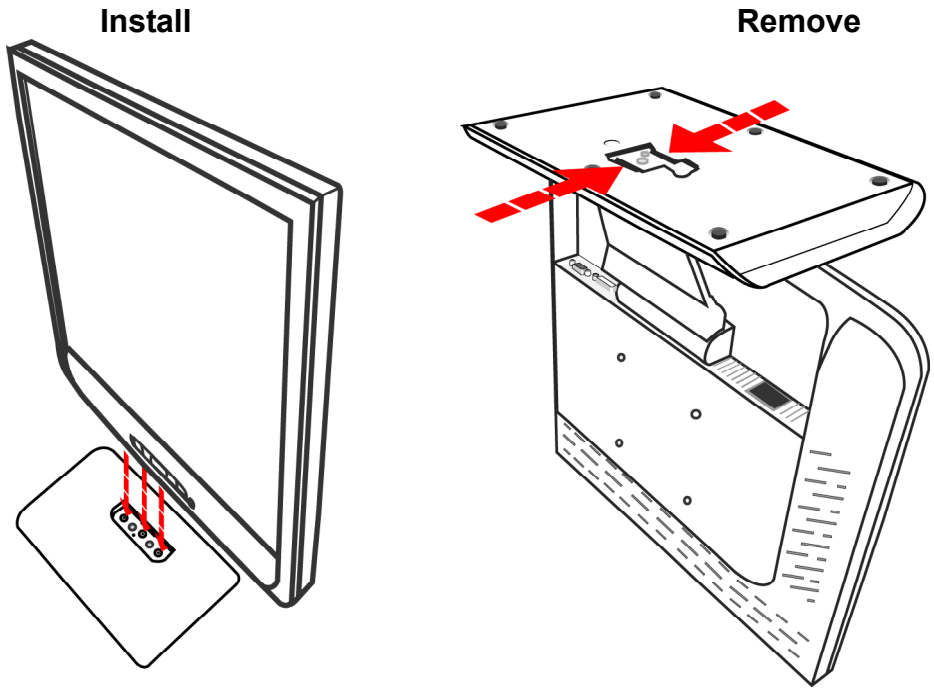


Figure.1. Installing and Removing the Base

POWER

POWER SOURCE:

1. Make sure that the power cord is the correct type required in your area.
2. This LCD monitor has an Internal universal power supply that allows operation in either 100/120V AC or 220/240V AC voltage area (No user adjustment is required.)
3. Connect the AC-power cord one end to your LCD monitor's AC-input socket, the other end to wall-outlet .

CONTROLS AND CONNECTORS

CABLE CONNECTIONS:

Turn off your computer before performing the procedure below.

1. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
2. Connect one end of the 24-pin DVI cable (Dual input mode optional) to the back of the monitor and connect the other end to the computer's DVI port.
3. Connect the audio cable between the monitor's audio input and the PC's audio output (green port).
4. Plug the AC-power cord one end to LCD monitor's AC input socket, the other end to Wall outlet.
5. Turn on your monitor and computer.

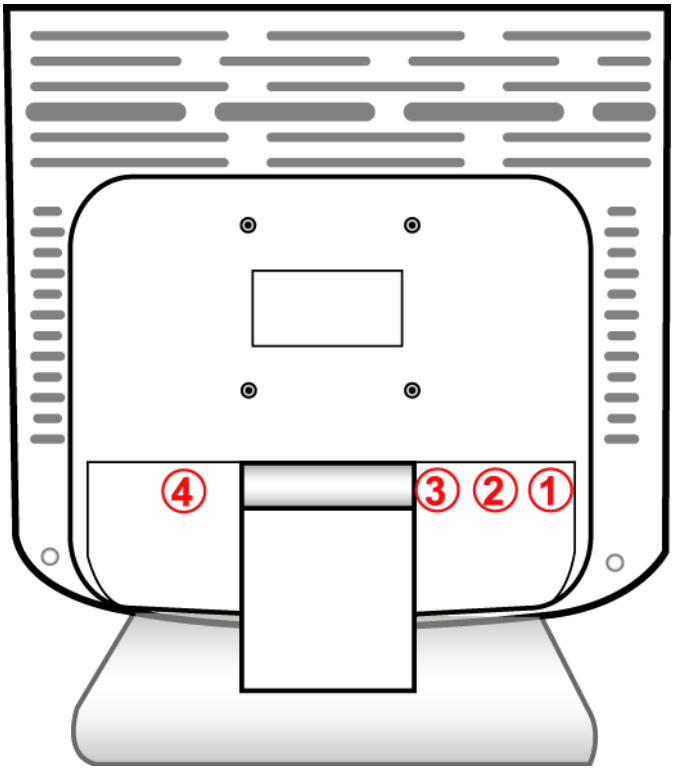


Figure.2. Connecting Cables

1.	VGA Input	2.	DVI Input (optional)
3.	Audio Input	4.	Power AC Input

ADJUSTING THE VIEWING ANGLE

- For optimal viewing it is recommended to look at the full face of the monitor, then adjust the monitor's angle to your own preference.
- Hold the stand so you do not topple the monitor when you change the monitor's angle.
- You are able to adjust the monitor's angle from 0° to 20°.

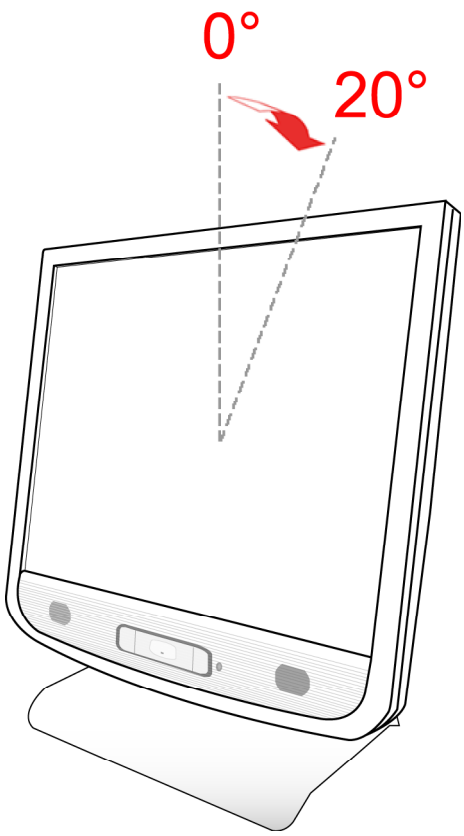


Figure.3. monitor's angle

NOTES:

- Do not touch the LCD screen when you change the angle. It may cause damage or break the LCD screen.
- Careful attention is required not to catch your fingers or hands when you change the angle.

OPERATING INSTRUCTIONS

GENERAL INSTRUCTIONS

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor (See Figure 4). By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the Signal cable from the monitor to the VGA card.
- Press the power button to turn on the monitor position. The power indicator will light up.

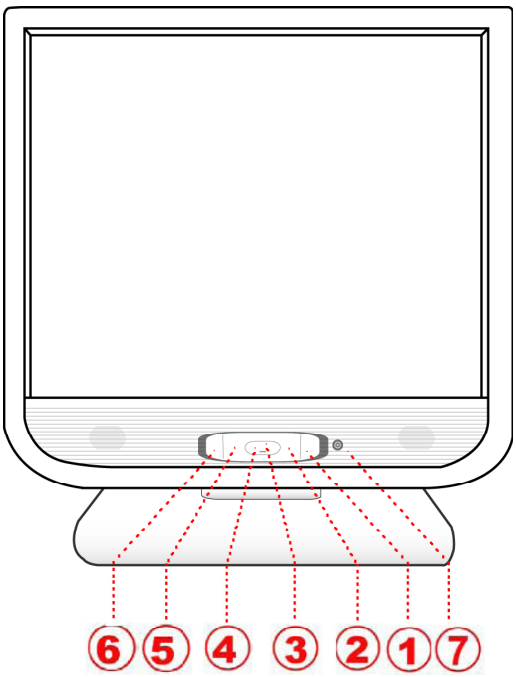


Figure.4. External Control Button

EXTERNAL CONTROLS:

1.	Menu / Enter	2.	Volume >
3.	Power Button	4.	Power Indicator
5.	Volume <	6.	Auto Adjustment
7.	Earphone		

FRONT PANEL CONTROL

- **Power Button:**
  Press this button to switch ON/OFF of monitor's power.

- **Power Indicator:**
  Green — Power On mode.
  Orange — Off mode.

- **MENU / ENTER:**
  1. Active OSD menu or function adjust confirm or
  2. Exit OSD menu when in volume OSD status.

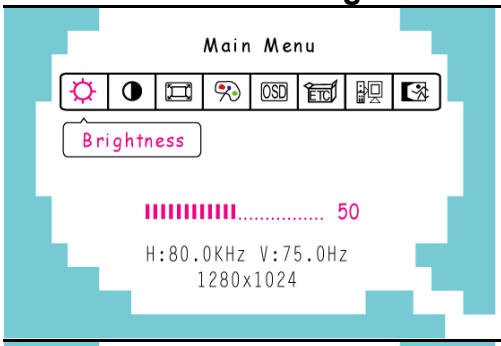
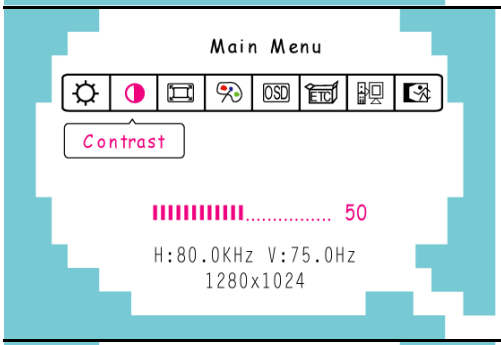
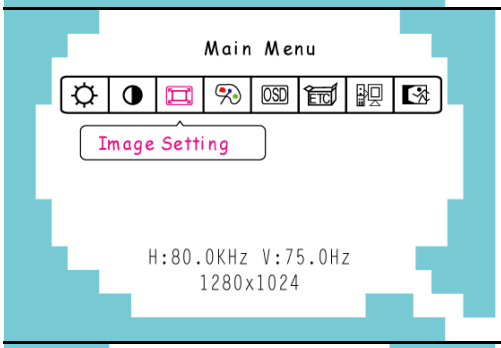
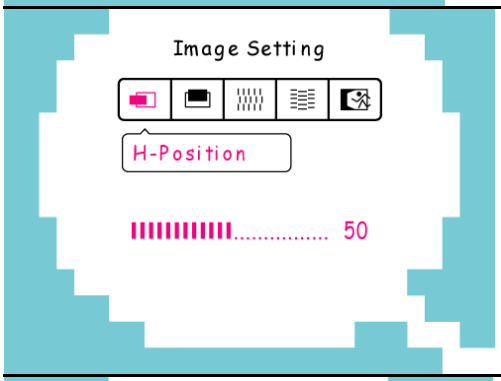
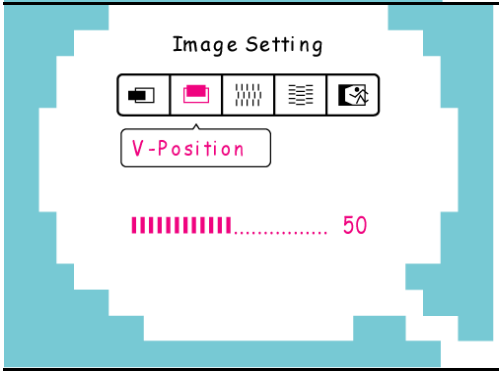
- **Volume < >:**
  1. Activates the volume control when the OSD is OFF.
  2. Navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

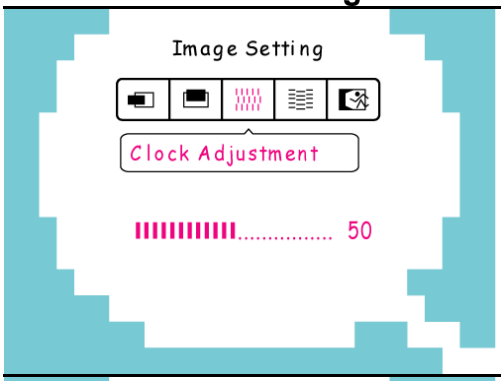
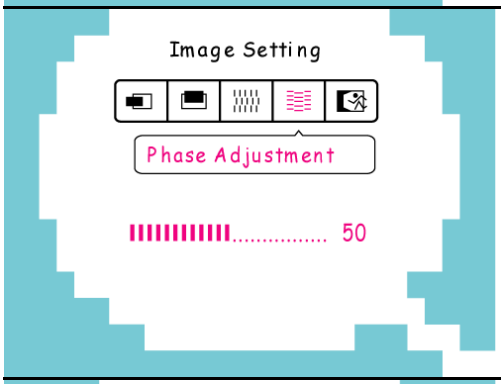
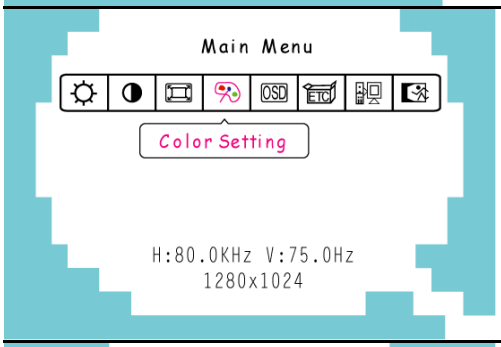
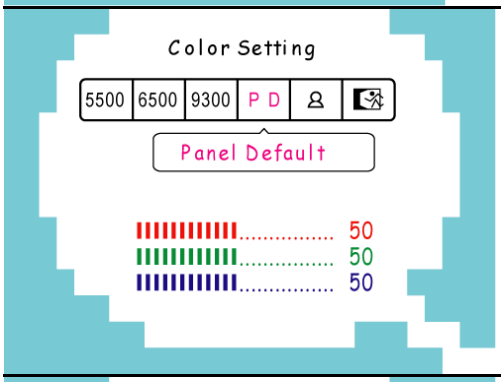
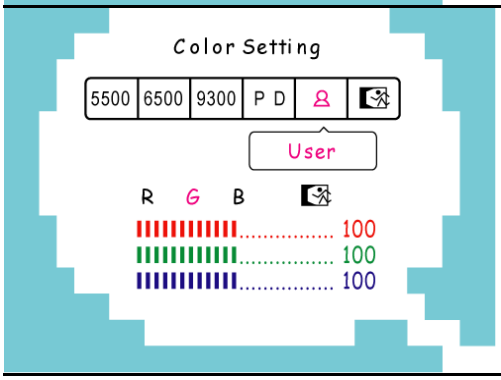
- **Auto Adjust button:**
  When OSD menu is in off status, press this button to activate the Auto Adjustment function.
  (The Auto Adjustment function is used to optimized the H-Position, V-Position, Clock and Focus.)

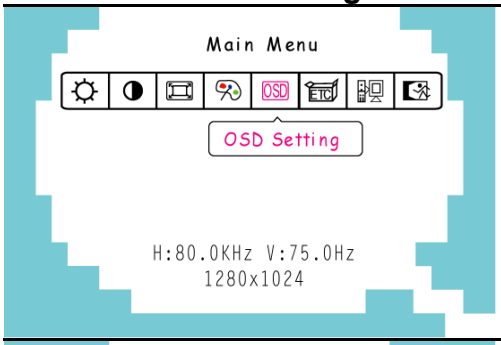
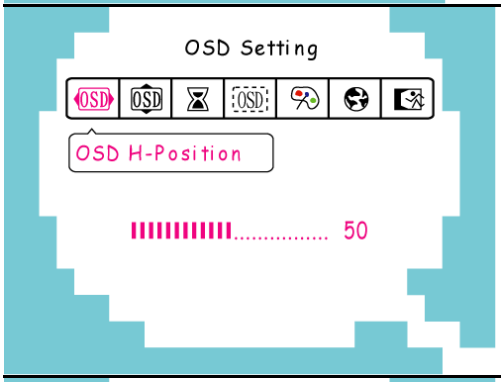
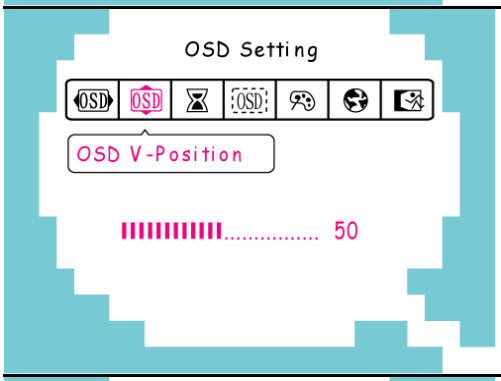
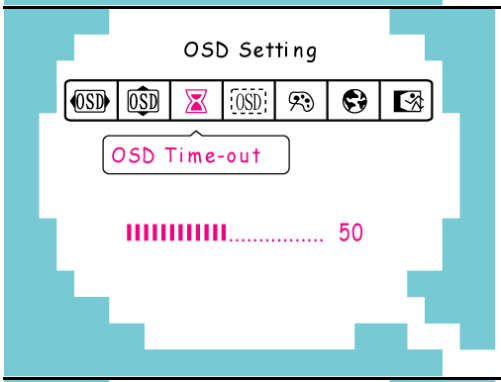
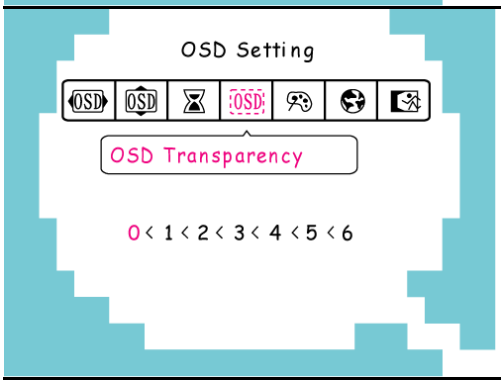
NOTES:

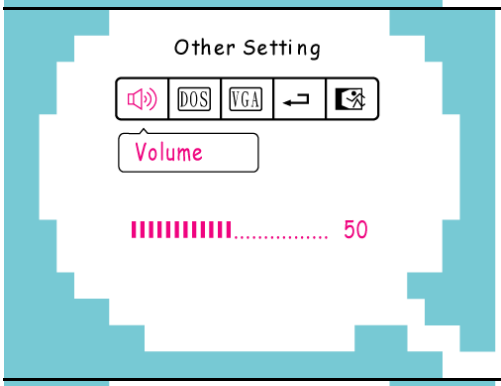
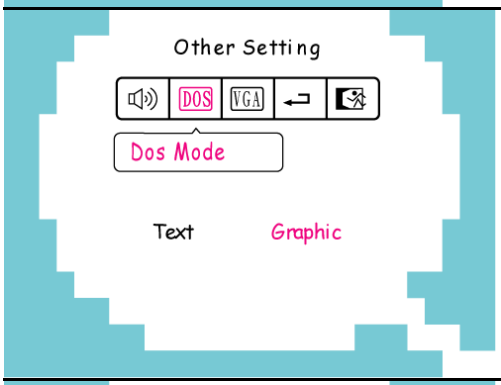
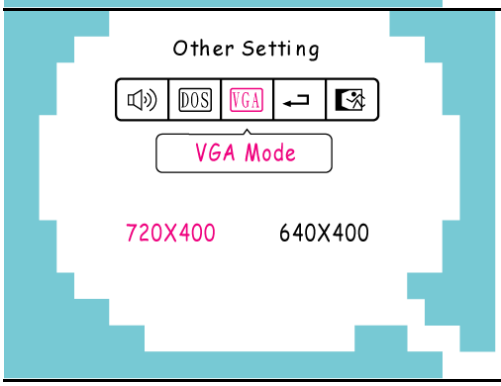
- Do not install the monitor in a location near heat sources such as radiators or air dusts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping box and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory.
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

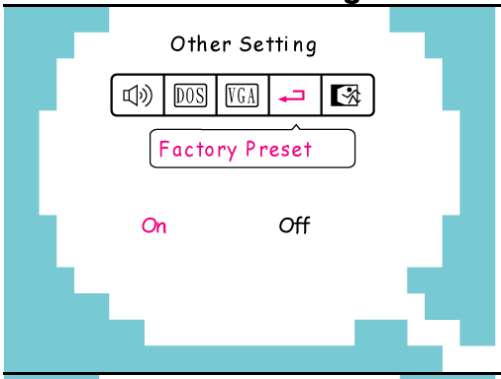
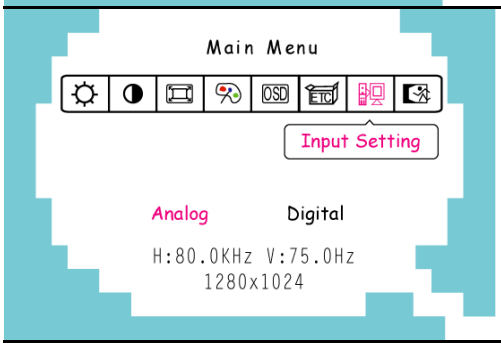
HOW TO ADJUST A SETTING

OSD Diagram	OSD Description
	**Brightness adjustment:** Select the 「Brightness」option on the 「Main Menu」. Enter the option and adjust the level.
	**Contrast adjustment:** Select the 「Contrast」option on the 「Main Menu」. Enter the option and adjust the level.
	**How to adjust screen position and quality:** Select 「Image Setting」on the 「Main Menu」, and then enter the option.
	**Horizontal position adjustment:** Select the 「H-position」option to shift the screen image to the left or right. Enter the option and adjust the level.
	**Vertical position adjustment:** Select the 「V-position」option to shift the screen image up or down. Enter the option and adjust the level.

OSD Diagram	OSD Description
	**Clock adjustment:** Select the 「Clock Adjustment」 option to reduce the vertical flicker of characters on the screen. Enter the option and adjust the level.
	**Phase adjustment:** Select the 「Phase Adjustment」 option to reduce the horizontal flicker of characters on the screen. Enter the option and adjust the level.
	**How to adjust color:** Select the 「Color Setting」 option on the 「Main Menu」, and then enter the option.
	Move the cursor to one of the preset options and select it.
	**User defined option:** Move the cursor to the User option and select it 1. To adjust the red, enter the 「R」option and adjust the level. 2. To adjust the green, enter the 「G」 option and adjust the level. 3. To adjust the blue, enter the 「B」option and adjust the level.

OSD Diagram	OSD Description
	**How to set the OSD:** Select 「OSD Setting」on the 「Main Menu」, and then enter the option.
	**OSD horizontal adjustment:** Select the 「OSD H-Position」option to adjust the horizontal position of the OSD. Enter the option and adjust the level.
	**OSD vertical position adjustment:** Select the 「OSD V-Position」option to adjust the vertical position of the OSD. Enter the option and adjust the level.
	**OSD timer setting:** Select the 「OSD Time-out」option to set the OSD time out from 10 to 120 seconds. Enter the option and adjust the level.
	**OSD Transparency setting:** Select the 「OSD Transparency」option to adjust the transparency of the OSD. Enter the option and adjust the level.

OSD Diagram	OSD Description
	**OSD color setting:** Select the 「OSD Color」setting option to adjust the color of the OSD. Enter the option and adjust the level.
	**Language:** Select the 「Language」 option to change the language of the OSD. Enter the option and select a language.
	**Volume adjustment:** Select the 「Volume」option to change the volume level. Enter the option and adjust the level.
	**DOS mode:** Select the 「DOS Mode」option to set the monitor for DOS display. Enter the option and select Text or Graphics.
	**VGA mode:** Select the 「VGA Mode」option to set the monitor for VGA display. Enter the option and select 720x400 or 640x400.

OSD Diagram	OSD Description
	**Recall the factory settings:** Select the 「Factory Preset」 option to change between the monitor's default settings and the current settings. Enter the option and select On or Off.
	**Input Setting:** Select the「Input Setting」option to change between the analog (D-Sub) or Digital (DVI) source. Enter the option and select Analog or Digital.

PLUG AND PLAY

Plug & Play DDC2B Feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities. The DDC2B is a bidirectional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

THIS MONITOR WILL APPEAR TO BE NON-FUNCTIONAL IF THERE IS NO VIDEO INPUT SIGNAL. IN ORDER FOR THIS MONITOR TO OPERATE PROPERLY, THERE MUST BE A VIDEO INPUT SIGNAL.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signal this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

TECHNICAL SUPPORT (FAQ)

Q & A FOR GENERAL DEFECTIVE

PROBLEM & QUESTION	POSSIBLE SOLUTION
Power LED is not on	*Check if the Power Switch is in the ON position *Power Cord should be connected
No Plug & Play	*Check if the PC system is Plug & Play compatible *Check if the Video Card is Plug & Play compatible *Check if the D-15 plug pin of Video Cable is bent
Picture is fuzzy	*Adjust the Contrast and Brightness Controls.
Picture bounces or a wave pattern is present in the picture	*Move electrical devices that may cause electrical interference.
The power LED is ON (orange) but there's no video or no picture.	*Computer Power Switch should be in the ON position. *Computer Video Card should be snugly seated in its slot *Make sure monitor's video cable is properly connected to the computer. *Inspect monitor's video cable and make sure none of the pins are bent. *Make sure computer is operational by hitting the CAPS LOCK key on the keyboard while observing the CAPS LOCK LED. The LED should either turn ON or OFF after hitting the CAPS LOCK key.
Missing one of the primary colors (RED, GREEN, or BLUE)	*Inspect the monitor's video cable and make sure that none of the pins are bent.
Screen image is not centered or sized properly.	*Adjust pixel frequency CLOCK and FOCUS or press hot-key (AUTO)
Picture has color defects (white does not look white)	*Adjust RGB color or select color temperature
Horizontal or vertical disturbances on the screen	*Use win 95/98/2000/NT/ME/XP shut-down mode Adjust CLOCK and FOCUS or perform hot- key (AUTO).

- CLOCK (pixel frequency) controls the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the picture has not correct width.

- FOCUS adjusts the phase of the pixel clock signal. With a wrong phase adjustment the picture has horizontal disturbances in light picture.

- For FOCUS and CLOCK adjustment use "dot-pattern" or win 95/98/2000/NT/ME/XP shut-down mode pattern.

ERROR MESSAGE & POSSIBLE SOLUTION

- **CABLE NOT CONNECTED :**

  1. Check that the signal-cable is properly connected, If the connector is loose, tighten the connector's screws.
  2. Check the signal-cable's connection pins for damage.

- **INPUT NOT SUPPORT :**

  Your computer has been set to unsuitable display mode, set the computer to display mode given in the following table.

FACTORY PRESET TIMING TABLE:

VIDEO MODE		RESOLUTION	HORIZONTAL FREQUENCY (kHz)	VERTICAL FREQUENCY (Hz)
VESA	VGA	640 × 480	31.469	59.94
		640 × 480	37.500	75.00
		640 × 480	37.861	72.81
	SVGA	800 × 600	35.156	56.25
		800 × 600	37.879	60.32
		800 × 600	48.077	72.19
		800 × 600	46.875	75.00
	XGA	1024 × 768	48.363	60.00
		1024 × 768	56.476	70.07
		1024 × 768	60.023	75.03
	SXGA	1280 × 1024	63.981	60.02
		1280 × 1024	79.976	75.03
IBM	DOS	640 × 350	31.469	70.09
		640 × 400	31.469	70.09
		720 × 400	31.469	70.09
MAC		640 × 480	35.000	66.67
		832 × 624	49.725	74.55
		1152 × 870	68.681	75.06

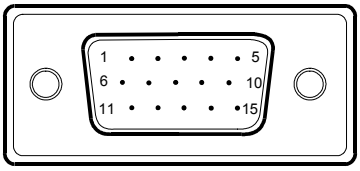
APPENDIX

SPECIFICATIONS

LCD Panel	Driving system	TFT Color LCD
	Size	48.2cm(19.0")
	Pixel pitch	0.294mm(H) x 0.294mm(V)
	Brightness	250cd/m^2 (Typical)
	Contrast	600:1 (Typical)
	Viewable angle	140° (H) 130° (V)
	Response time	8 ms
Input	Video	R,G,B Analog Interface Digital (Dual-Input Model) H/V TTL
	H-Frequency	31KHz – 80KHz
	V-Frequency	55 – 75Hz
Display Colors		16.2M Colors
Dot Clock		135MHz
Max. Resolution		1280 x 1024 @75Hz
Plug & Play		VESA DDC2B™
EPA ENERGY STAR®	ON Mode	≤42W
	OFF Mode	≤3W
Audio output		Rated Power 1W rms (Per channel)
Input Connector		D-Sub 15pin DVI-D 24pin (Dual-Input Model)
Maximum Screen Size		Hor. :376.2mm Ver. :301.06mm
Power Source		90~264VAC,47~63HZ
Environmental Considerations		Operating Temp: 5° to 40°C Storage Temp.: -20° to 65°C Operating Humidity: 10% to 85%
Dimensions		417(W)×447(H)×198(D) mm
Weight (GW/NW)		7.2 Kg / 5.7 K g
Regulatory Compliance		CCC, UL,VCCI,C-TICK, TUV, BSMI, CE, CB,FCC,CUL,TCO99 (for optional model)

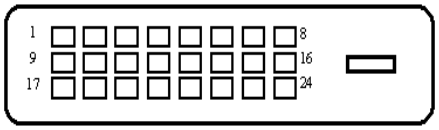
CONNECTOR PIN ASSIGNMENT

- ***15 - Pin Color Display Signal Cable:***



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	Red	9.	+5V
2.	Green	10.	Ground
3.	Blue	11.	Ground
4.	Ground	12.	DDC-Serial Data
5.	Ground	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		

- ***24 - Pin Color Display Signal Cable: (Dual Input Mode)***



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	TMDS Data 2-	13.	TMDS Data 3+
2.	TMDS Data 2+	14.	+5V Power
3.	TMDS Data 2/4 Shield	15.	Ground(for+5V)
4.	TMDS Data 4-	16.	Hot Plug Detect
5.	TMDS Data 4+	17.	TMDS Data 0-
6.	DDC Clock	18.	TMDS Data 0+
7.	DDC Data	19.	TMDS Data 0/5 Shield
8.	Analog Vertical sync	20.	TMDS Data 5-
9.	TMDS Data 1-	21.	TMDS Data 5+
10.	TMDS Data 1+	22.	TMDS Clock Shield
11.	TMDS Data 1/3 Shield	23.	TMDS Clock +
12.	TMDS Data 3-	24.	TMDS Clock -