TFT LCD MONITOR

User's Manual
**Manual del usuario**

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Do not scratch the screen of the LCD monitor with sharp materials such as nails and pens.

The interior part of the monitor is composed of electric elements. If the monitor is broken, do not try to disassemble it, because it is necessary to contact appropriate technical services in order to have the product repaired.
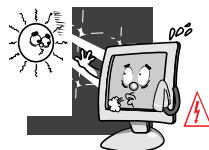
Take care of the LCD monitor so that it is not damaged by the external impact.
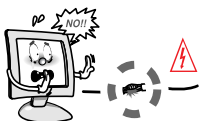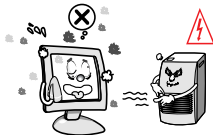
Take care not to use damaged cords and keep this product out of reach of children and persons who are not involved in using the product.

Disconnect the power cable when the monitor is not used during a long period of time while you are away from home.

Do not use this product near the windows receiving direct sunlight or direct natural light.

Choose a fresh and dry area and protect the monitor from extreme conditions of temperature and humidity, dust and smoke. Adequate temperature = 0-40°C. Adequate humidity = 30-80 RH.
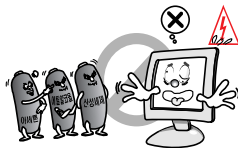
The LCD monitor screen can be damaged in the case that you clean the surface by using acetone, ethyl alcohol or acid detergent.

Do not install the monitor in a sloping place that is not safe due to the fact that the product can fall down and be broken, thus doing harm to other persons.

AC 110V
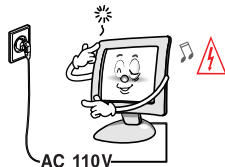
Check the power voltage before connecting to the AC power cable.
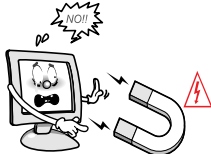
Take care so that the monitor is not in contact with magnetic materials, metals and inflammable substances.

Please comply with the rules to prevent injury and property damage.

▶ Introduction

Thank you for buying our TFT LCD monitor.
Our monitor is a high-resolution monitor that has features of electromagnetic wave blocking, reduction in electricity consumption, and efficient use of space.
In view of the fact that this user's manual is prepared for helping you toadequately use the product,
it is recommendable to read the user's manualbefore using the product.

▶ Product features

1) This product has a 19-inch flat surface (Color Active Matrix TFT LCD) with apixel size of 0.294 mm (H) x 0.294 mm (V) for displaying an ultra-precision, high-resolution image.
2) This product uses 19"(Thin Film Transistor) LCD panel and supports a maximum of 1280 x 1024.
3) This product is a monitor whose deflection frequency is automatically transformed up to 30 - 80 kHz horizontally and up to 56 - 75 Hz vertically.
4) This product is compatible with IBM PC and Apple Macintosh (a different adapter is necessary for Apple Macintosh).
5) This product has a power-saving function less than 40 W in ON mode, less than 2 W in stand-by mode, pause mode and less than 1 Win OFF mode in comparison with other monitors.
6) This product supports DDC and allows you to use 'Plug and Play'.

Note In the case of some system requirements, it may not be compatible with Plug and Play.

▶ Registered as a device whose electromagnetic wave-blocking capacity is (B Class). This product is registered as a device whose electromagnetic wave-blocking capacity is adequate and can be used in all places (including homes).

▶ **Checking the product**

Please check if the product contains the following items. If there are items missing, please contact the technical services.

1. TFT LCD monitor
2. User's manual (including product warranty).
3. AC to DC adapter.
4. Power cable (the power cable can be different according to use environment).
5. Signal Cable (Monitor Connection Cable)
6. Monitor Base
7. Audio cable

▶ **How to connect monitor stand base**

How to install the monitor stand
1. Lay the monitor on a flat surface.
2. Attach the monitor to the connecting parts as shown in the picture.
3. Turn it to the locking point.
   To detach it, do it inversely.

PUSH
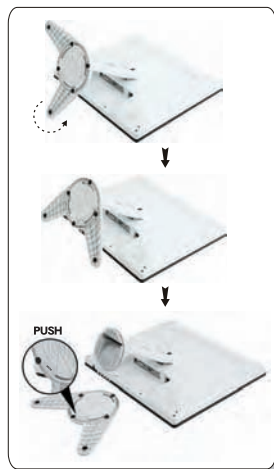
▶ **Installation**

1. Turn off the power before connecting to an external device.
2. Power connection, Connect the adapter to the DC jack connected to the signal cable of the monitor and connect the power cable.
3. Signal connection, This signal input terminal is a D-SUB connector. Connect the signal cable to the signal input of the computer.
4. Turn on the power of the monitor.
5. Turn on the power of the system that you want to use.
6. Continue with the operation when the screen appears. You can adjust the desired status of the screen using control buttons at the bottom of the monitor.
7. Up/Down Monitor Angle should not be over 15/20 degree.
8. To finish operation, turn off the system power and then turn off the power of the monitor.

⚠ Caution

● Adjusting LCD panel angle

- Do not hold or press down on the monitor's
  screen while adjusting angle since LCD
  panel maybe damaged or break if severe.
- Do not lean backward excessively so that
  the monitor does not fall backwards.
- Be careful of potential damage to the stand
  while adjusting angle.

MENU ◄ ► SELECT POWER ⌒ · ☾☀◯ *light* sensor
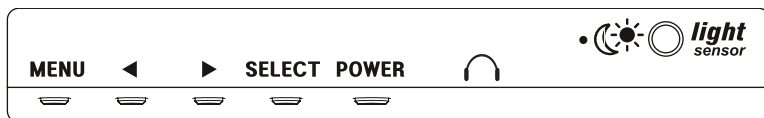
▶ **Function of the buttons**

If you press the power button, the indicator lamp is turned on, and the operation of the monitor is initiated. If you do not want to start the operation of the monitor, press the power button again.

◈ Power indicator lamp (green)
This product offers power-saving function. Power indicator lamp shows the current state of power. Power indicator lamp flashes during the following situations.

◈ MENU
Shows menu screen or makes it disappear. Moreover, it is used when exiting the category from the inside of the menu window.

◈ SELECT
Selects category within the menu window or executes automatic screen adjustment.

◈ (◄ / ►)
Moves to the desired category within the menu window or adjusts the value of selected category. Adjusts sound

Sound   ▉▉▉▉▉▉▉▉▁▁▁▁▁   50

◈ (⌒)
Sound is heard by linking to ear phone or head set.

☾☀ Auto Brightness Control

The product offers built-in function that automatically adjusts to optimized brightness depending on the brightness of the area at the vicinity. (At the time of purchase, this is set as On.)
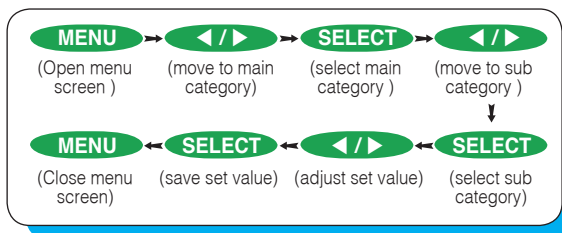
* Refer to the screen category of the MENU function for detailed method of use. (Page 10)

POWER DVI RGB IN AUD OUT S−VIDEO AV ANTENNA

8
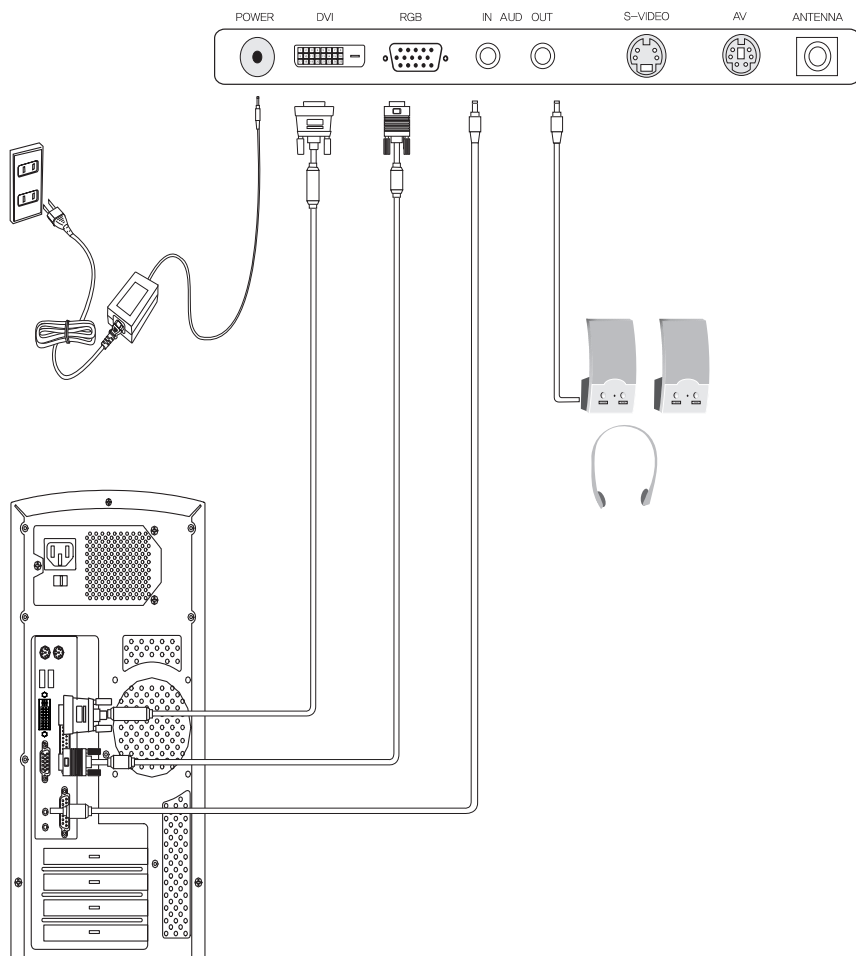
You can select the OSD menu in the OSD window using all the control buttons at the bottom of the screen. To change the current settings or adjust them for the desired settings, follow the following steps.

MENU →	◀ / ▶ →	SELECT →	◀ / ▶
(Open menu screen)	(move to main category)	(select main category)	(move to sub category)

MENU ←	SELECT ←	◀ / ▶ ←	SELECT
(Close menu screen)	(save set value)	(adjust set value)	(select sub category)

1. Press the Menu button to open the OSD menu window.
2. Press the ◀ / ▶ button to move the item of desired main menu.
3. If you highlight the desired menu item, press the Select button.
4. Press the ◀ / ▶ button to move the desired submenu item.
5. If you highlight the submenu item, press the Select button.
6. Press the ◀ / ▶ button to modify the current value.
7. Press the Select button to save the modified value.
8. Push MENU button to exit to sub category, main category and menu screen in this order.

Note The OSD window will disappear within a few seconds if there is no input in the OSD window. It does not appear when there is no input signal.

Main menu is configured as follows.

1. Screen
Factor in the brightness of the environment at the vicinity to adjust the brightness of monitor, and also adjusts to the level desired by user, Manually adjusts screen location, modulation and frequency.

2. Color
Manually, adjusts screen brightness, luminosity, color temperature and color proportion.

3. OSD
Adjusts the language used, the position of the menu screen, the display time of the menu screen and the saturation of the menu screen.

4. Others
Adjusts the language on the menu screen, and initializes menu value. User is able to select input signal, and adjust On/Off and value of audio function.

MENU Function

Screen

```
Screen          1280×1024   60.2Hz
    Automatic brightness     OFF
    Brightness adjustment    ≫ 50 ≪
    Horizontal location      ≫ 69 ≪
    Vertical location        ≫ 88 ≪
    Modulation               ≫ 58 ≪
    Frequency                ≫ 49 ≪
    Automatic screen adjustment  NO
```

Automatic brightness: Turns automatic brightness function On/Off
Brightness adjustment: Adjusts standard value for automatic brightness function (0-100)
Horizontal location: Adjusts horizontal location on screen .(0-100)
Vertical location: Adjusts vertical location on screen \.(0-100)
Modulation: Adjusts focus on the screen.(0-100)
Frequency: Adjusts pixel's horizontal size.(0-100)
Automatic screen adjustment: Automatically adjusts screen's location, modulation and frequency.

Color

```
Color           1280×1024   60.2Hz
    Brightness               ≫ 70 ≪
    Luminosity               ≫ 70 ≪
    Level of color force     User
    Red                      ≫ 50 ≪
    Green                    ≫ 50 ≪
    Blue                     ≫ 50 ≪
    Automatic color adjustment  No
```

Brightness: Adjusts brightness.(0-100)
Luminosity: Adjusts luminosity.(0-100)
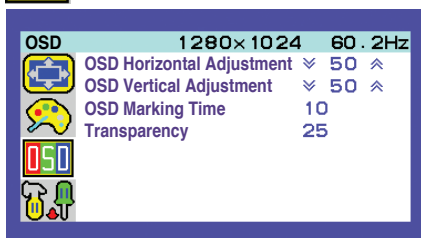**Level of color force**: Adjusts to color vision desired by user. (blue.red.user)
Red: Adjusts share of red.(0-100)
Green: Adjusts share of green.(0-100)
Blue: Adjusts share of blue.(0-100)
Automatic color adjustment: Automatically adjusts screen's color.

OSD

```
OSD           1280×1024   60.2Hz
OSD Horizontal Adjustment  ≫ 50 ≪
OSD Vertical Adjustment    ≫ 50 ≪
OSD Marking Time              10
Transparency                 25
```
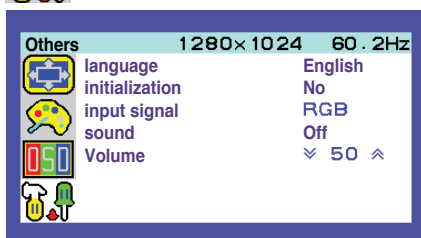
OSD Horizontal Adjustment: Adjusts OSD menu screen's horizontal location.(0-100)
OSD Vertical Adjustment: Adjusts OSD menu screen's vertical location. (0-100)
OSD Marking Time: Adjusts OSD menu screen's marking time within the screen Possible to set the time for disappearance of OSD menu screen up to 40 seconds when OSD operation button is not pushed on. (10,20,30,40)
Transparency: Adjusts transparency at the OSD menu screen background. (0~100)

Others

```
Others        1280×1024   60.2Hz
language                 English
initialization           No
input signal             RGB
sound                    Off
Volume                 ≫ 50 ≪
```

Language: Changes language on the OSD menu. Six languages are available. (English, German, French, Spanish, Korean and Japanese)
Initialization:Initializes all functions.
Input signal : User can select input signal depending on installed device. (RGB,DVI)
Sound: Turns audio function On/Off.
Volume: Adjusts size of sound.(0-100)

Reference

60Hz is the optimized mode on the DVI mode's 1280*1024 resolution
Parts of the category are provided in the DVI mode's screen, color menu
-Category supported
  Screen (automatic Brightness, Brightness adjustment)/color (Brightness, luminosity))

Auto Screen Adjustment

◈ **Auto Screen Adjustment**
Appears when automatic screen adjustment is executed on RGB mode.

Automatic Brightness Adjustment

◈ **Automatic Brightness Adjustment**
Appears when automatic color Adjustment is executed on RGB mode.

◈ **Auto Brightness**
Appears when automatic brightness function is executed.

No input Signal

◈ **No input signal**
Appears when there is no PC input signal Check cable connection .

Input Signal Verification

◈ **Input Signal Verification**
Appears when Video Mode is out of the permissible range.

Power-Saving Mode

◈ **Power-Saving Mode**
Appears when PC input signal is absent.
This message disappears automatically after five seconds.
Check PC power

▶ Timing guide

This product is a multi-frequency monitor.
It functions in horizontal frequencies from 30 kHz to 80 kHz and vertical
frequencies from 56 Hz to 75 Hz. Due to its design based on microprocessor,
it offers the functions of automatic synchronization and automatic size.
This monitor is equipped with 10 programmed configurations that are shown
in the timing table. The followings are the ten configurations.

Preset		Resolution		Frequency		Clock [MHz]	Polarity (H/V)
		Horizontal	Vertical	Horizontal	Vertical		
VGA	M1	720	400	31.5KHz	70Hz	28.322	- / +
VESA	M2	640	480	31.5KHz	60Hz	25.175	- / -
	M3	640	480	37.5KHz	75Hz	31.500	- / -
	M4	800	600	37.9KHz	60Hz	40.000	+ / +
	M5	800	600	46.9KHz	75Hz	49.500	+ / +
	M6	1024	768	48.4KHz	60Hz	65.000	- / -
	M7	1024	768	60.0KHz	75Hz	78.750	+ / +
	M8	1280	1024	64.0KHz	60Hz	108.000	+ / +
	M9	1280	1024	80.0KHz	75Hz	135.000	+ / +
MAC	M10	832	624	49.7KHz	75Hz	57.284	- / -

▶ Signal connection

This signal input terminal is a D-SUB connector. Connect the signal cable to
the signal input of the computer.

Note Disconnect the power connected to the monitor before
connecting the signal output of the system.

Pin number	Description	Pin number	Description
1	Red	9	No connection
2	Green	10	Ground
3	Blue	11	Ground
4	No connection	12	SDA
5	Ground	13	Horizontal - Sync
6	Red ground	14	Vertical - Sync
7	Green ground	15	SCL
8	Blue ground		
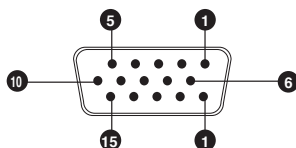
▶ In case of DVI terminal

PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	T.M.D.S DATA 2-	9	T.M.D.S Data 1-	17	T.M.D.S Data 0-
2	T.M.D.S DATA 2+	10	T.M.D.S Data 1+	18	T.M.D.S Data 0+
3	T.M.D.S Data 2/4 Shield	11	T.M.D.S Data 1/3 Shield	19	T.M.D.S Data 0/5 Shield
4	T.M.D.S Data 4-	12	T.M.D.S Data 3-	20	T.M.D.S Data 5-
5	T.M.D.S Data 4+	13	T.M.D.S Data 3+	21	T.M.D.S Data 5+
6	DDC Clock	14	+5V Power	22	T.M.D.S Clock Shield
7	DDC Data	15	Ground	23	T.M.D.S Clock+
8	Reserved	16	Hot Plug Detect	24	T.M.D.S Clock-
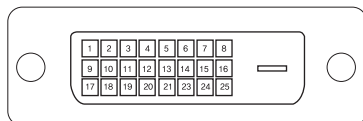
LCD	Type	19" diagonal viewable screen TFT (Thin Film Transistor). Active Matrix Panel 0.294mm(H) x 0.294mm(V).
	Pixel Pitch	R,G,B verfical stripe
	Surface Color	16, 194, 227 colors
	Display Condition	anti-glare coating
Angle of view	H/V	150°/135°
Contrast ratio	Type	700:1
Brightness	Type	300 cd/m^2
Response Time	Type	8ms
Compatibility	PC	IBM XT, AT, 386, 486, Pentium or PS/2 and compatibles (from VGA up to 1280x768 @ 75 Hz NI)
Refresh rate	Maximum	1280x1024 @ 75 Hz N(60 Hz for optimal display)
Connectors	Input signal	15-pin D-SUB, DVI-D
	Power	Jack type DC+12 V In
Voltage/ Power	Input Output Consumption	AC 100-240 V, 50-60 Hz DC 12 V 40W (Max)
Screen size	Maximum	337.920 mm(H) x 270.336 mm(V)
Features	Temperature Humidity Altitude	33°F~104°F (0°C ~ 40°C) 20%RH-90%RH (no condensation) Up to 10,000 feet
Storage conditions	Temperature Humidity	-14°F ~ 104°F (-20°C ~ 40°C) 5%RH-90%RH(no condensation)
Dimension		412.0 mm (W) x 427.0 mm (H) x 189.6 mm (D)
Weight	unit/box	4.32kg / 5.68kg
Function	Speaker	3W x 2
	Audio in/out	Stereo Mini Jack 3.5mm

★ The design and specifications of the product are subject to change without previous notice to improve the quality of the product.

▶ **No power.**
- Flip the power switch ON. The Power LED turns on.
- Make sure AC power cord is securely connected to the power jack and to a power outlet.

▶ **Power on but no screen image.**
- Make sure the video cable attached with this monitor is tightly secured to the video output port on the back of the computer
- Adjust the brightness and contrast.

▶ **Image is unstable, unfocused.**
- Use AUTO-TUNE to adjust automatically.
- If the image is still unstable after AUTO-TUNE processing, please adjust PHASE manually to get image focused.
- Check whether the resolution or refresh rate in windows display setting is beyond supported range (please refer to the specification of supported mode.)

▶ **Flickering**
- Not enough power is being supplied to the Monitor.
  Connect the Monitor to a different outlet. If a surge protector is being used, there may be too many devices plugged in.
- See Timing Guide in this manual with a list of refresh rates and frequency settings showing the recommended setting for the Monitor.

▶ **Wrong or abnormal colors.**
- If any colors (Red, Green, or Blue) are missing, check the video cable to make sure it is securely connected. Loose pins in the cable connector could cause a bad connection.
- Connect the Monitor to another computer.
- Check the graphics card for proper sync scheme (or sync polarities) to match the Monitor's specifications.

▶ **Double (split) screen image**
- Make sure your graphics card is set to Non-Interlaced mode.

▶ **Entire screen image rolls (scrolls) vertically.**
- Make sure the input signals are within the LCD monitor's specified frequency range. (Maximum : 1280 X 1024 @ 75Hz)
- Connect the video cable securely.
- Try the Monitor with another power source.

▶ **Control buttons do not work.**
 - Press only one button at a time.

ABOUT THE LCD

The LCD contains over 3,932,160 thin-film transistors (TFTs).
A small number of missing, discolored, or lighted dots on the screen
is an intrinsic characteristic of TFT LCD technology and is not an LCD
defect.
If you display a fixed pattern for more than 10 hours, its image may
remain on the screen in overlap mode when you display something else.

FCC   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 on a circuit different from that to which
   the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

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 OPERATION

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.