

Appendix E - User's Manual

TFT LCD Monitor

FCC NOTICE

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 UNDERSIRED
OPERATION.

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 communication. 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 oircuit difference from that to which the receiver is connected.
- Consult the dealer of an experienced radio/TV technician for help.

NOTE : This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

NOTE : The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

TFT COLOR LCD MONITOR

User's Guide

How to get the most enjoyment with monitor

This is a 15.1" color LCD monitor to display signals from PC or Video equipment. This manual has been prepared to assist you in becoming familiar with your new display monitor.

Features

- * 15.1" viewable XGA (1024 X 768) resolution LCD module
- * 262,144 Color Display
- * Brightness (200cd/m²)
- * DPMS (Display Power Management Signaling)
- * OSD (On screen Display) controls, Multi Language OSD Menu
- * Implement the DDC 1/2B features.

DDC 1/2B uses a formerly unconnected signal pins in the 15-pin VGA connector.

The system will perform "Plug&Play" feature if both monitor and host systems support DDC 1/2B protocol.

Note

Some computer systems are not compatible with the DDC standard. If your monitor is displaying a wrong resolution, please check your computer system including a DDC compatible video card and contact SAMKUNG Service Center.

General Safety precautions

This Monitor has been engineered and manufactured to assure your safety, and you can prevent your safety from serious electrical shock and other hazards by keeping in the following attentions.

1. Do not place heavy, wet or magnetic on the monitor or the power cord. Never cover the ventilation openings with any material and never touch them with metallic or inflammable materials.

2. Avoid operating the monitor in the place extremely heated, humid or affected by dust.

Temperature : 0 - 40℃

Humidity : 30 - 80RH

3. Be sure to turn the monitor off before plugging the power cord into the socket of power source. Make sure that the power cord and the other cords are securely and rightly connected.

4. Overloaded AC outlets and extension cords are dangerous . So are frayed power cords and broken plugs. They may result in a shock or fire hazard. Call your service technician for replacement.

5. Do not use the sharp tool such as pin or pencil to avoid the scratch on the LCD surface.

6. Do not use the solvent such as benzene to clean the monitor. It will damage to LCD surface.

Maintenance

Do not open the monitor. There are no user serviceable components inside. There is dangerous high voltage inside, even when power is off. If the display monitor does not operate properly, remove the power cord from the wall outlet, and contact your dealer. Careless use and un-professional maintenance are able to cause serious electrical shock and other hazards.

Video input terminal

A 15 pin D-sub connector is used as the input signal connector. Pin and input signs are shown in the table below

Pin number	Signal name	Pin number	Signal name	Pin number	Signal name
1	Red	2	Green	3	Blue
4	NC	5	GND	6	Red-GND
7	Green-GND	8	Blue-GND	9	+5V
10	Logic-GND	11	NC	12	SDA(DDC)
13	H-Sync	14	V-Sync	15	SCL(DDC)

OSD Control Procedure

■ Main menu & control selection

Press the MENU key to access the main menu.

The power LED is blinking.

Please select MENU Icon the control function you wish to adjust by the ◀ or ▶ key.

■ Exit Menu

Press the MENU key to exit.

The power LED is lit green,

■ Auto EXIT

The OSD images are disappeared automatically after few seconds inactivity.

■ Auto save

The monitor automatically saves the new setting while OSD is exit.

■ Normal mode

When video signal is working with normal display condition, power LED is lit Green.

■ DPMS mode

The LED indicates different status when this unit operates in different power saving modes.

■ Not Supported Video

When unsuitable signal is detected, the OSD displays : Not Supported Video" message.

Using Hotkey

Frequent adjustments such as AUTOMATIC ADJUSTMENT, BRIGHTNESS and CONTRAST can be done in easy without using MENU key which display all of the control menu.

Following table describes the allocation of the HotKey

OSD	Function
Ⓢ	Automatic Adjustment
▷	Contrast
◁	Brightness

On Screen Display Setting

Auto Adjustment	
Geometry	Automatically adjust the Vertical position, Horizontal position, Horizontal size and Phase
Color Balance	Automatically adjustment the contrast of the screen
Horizontal Position	Adjust the Horizontal position
Vertical Position	Adjust the Hertical position
Horizontal Size	Adjust the with of the screen's image
Phase	Adjust the noise of the screen's image
Brightness	Adjust the intensity of the screen
Contrast	Adjust the contrast of the screen
Color	
Temperature	Adjust the color temperature of the screen's image
Red	Control the intensity of Red color of the screen's image
Green	Control the intensity of Green color of the screen's image
Blue	Control the intensity of Blue color of the screen's image
OSD	
Language	Language
English	English
French	French
German	German
Italian	Italian
Spanish	Spanish
Advanced	
Factory Preset	Load the factory preset mode
Sharpness	Adjust the sharpness of the screen's image
DOS/GFX	Select resolution 720X400 or 640X400 mode
OSD Position	H. Adjust the horizontal position of the OSD
OSD Position	V. Adjust the vertical position of the OSD
Cancel	Cancel

Input timing limits

H-Sync pulse width $1.0\mu\text{s} \leq \text{Sync Pulse Width} \leq 8.0\mu\text{s}$

V-Sync pulse $0.04\text{ms} \leq \text{Sync Pulse Width} \leq 0.5\text{ms}$

Note

If the width of Sync pulse is out of input timing range, monitor may be able to operate abnormal. Be sure to check the sync pulse width of input timing.

Input level limits

Low level : 0.4 V max

High level : 2.4 V min

Note

For better quality of display image, use the timing and polarity shown in the preset mode table. Please see your video card user's guide to ensure compatibility.

Microcontroller features

The microcontroller automatically detects the video board installed in your system. When you turn on the monitor, the Micro controller first checks the display mode memory stored in the user setting area and the factory presetting area.

Display modes memory

The microcontroller has memory capacity to store 24 different display modes including timing formats and display settings. This memory capacity is divided into two parts. One is the user setting area, the other is the factory presetting area.

User setting area

The user can add nonstandard modes. If you adjust display Image, the image is saved automatically. Then the microcontroller always detects and displays the last mode stored in the user setting area when the monitor is turned on. The user setting area maintains the last 6 display modes set by the user in its memory. When the user setting area is full (6 modes are registered), if new nonstandard timing is registered, the oldest timing settings will be deleted.

Factory presetting area

There are 14 display modes stored in this area. These display modes are preset at the factory and include most of the display modes currently available(see Timing Chart of this manual).

You can also retrieve the factory preset mode by selecting the RECALL menu.

Automatic save

The monitor automatically saves the setting value after certain times (20sec) of adjusting OSD menu.

Power management

This monitor equipped with DPMS (Display Power Management Signaling) function which automatically leads the monitor to the state of power saving that consumes just a little power less than 5 Watt, when the computer is left unattended.

Although the monitor can be left in power-saving mode for longer periods, we recommend that you turn it off after your daily work

Operation

The DPMS function requires support from the computer system of any software DPMS function applied, currently being used. If the keyboard (or mouse) is left unattended for a certain period, the program or system will set the sync signals to DPMS modes. The DPMS function has three status.

The recommended signals, power consumption and recovery times are shown in the table below.

Status	signal			Power Consumption	Recovery Time	LED Indicator
	Hsync	Vsync	Video			
On	Pulse	Pulse	Pulse	25Watt(Max)		Green
Standby	No Pulse	Pulse	Blank	Less than 5Watt	Within 2sec	Alternating Green/Orange(.5sec)
Suspend	Pulse	No Pulse	Blank			
Off	No Pulse	No Pulse	Blank			Off

Specifications

LCD	Type	TFT Color
	Size	15.1" viewable diagonal
	Dot Pitch	0.300 X 0.300 mm
	Brightness	200cd/m ² (Typ)
	Response Time	40msec Max
	viewing Angle	U/D : 45 °/45 °, R/L : 60 °/60 °
Input	Signal	RGB Analog
	Type	15pin D-sub
Sync	H-Freq	31 ~ 60KHz
	V-Freq	56 ~ 75 Hz
Video Band Width		80MHz Max
Display	Active Area	307.2 X 230.4mm
	Color	262.144(Normal), 16.777.216(Expansion)
Resolution(Max)		1024 X 768@75Hz
User Controls & OSD Controls		Contrast, Brightness, H/V Position etc.
Power Management		As per VESA Standard
Power Consumption		25Watt (Max)
Plug & Play		VESA DDC1/2B
Tilt	U/D	35 ° / 5 °
Temperature	Operating	0 to 40 °C
	Storage	-10 to 50 °C
Humidity	Operating	30% to 80% (Non-condensing)
	Storage	5% to 90% (Non-condensing)
Weight	Unit	4.2Kg
	Carton	6.1Kg
Dimension(W X H X Dmm)		393 X 190 X 393mm