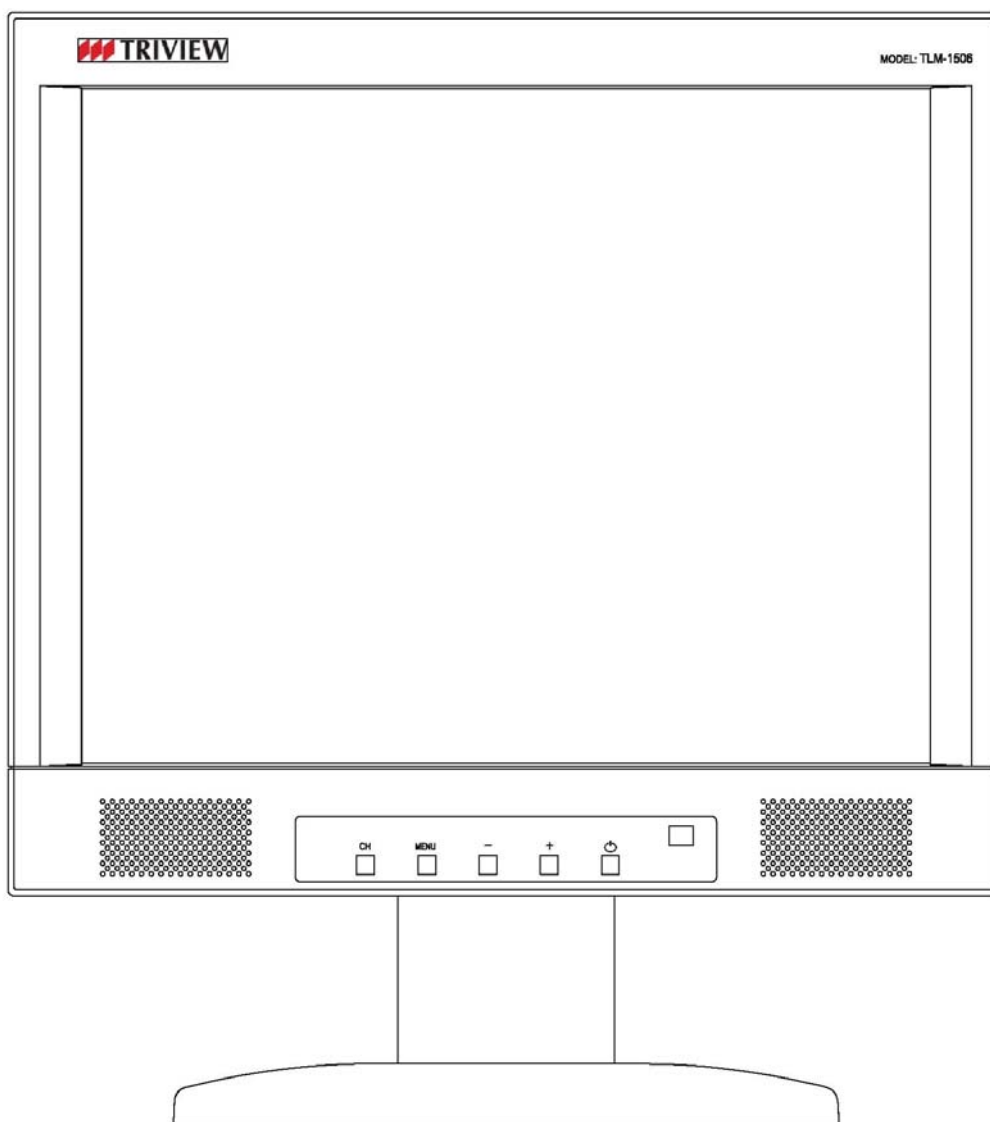


# OPERATING INSTRUCTIONS

## TLM-1506 / TLM-1706 / TLM-1906



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## **FCC INFORMATION**

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.

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with emission limits.

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

## **CE INFORMATION**

The product must be installed according to the currently valid installation regulations for EMC to guarantee the designed use and to prevent EMC problems.

The device supplied with this manual is according to the EC, EMC Directive, 89/336/EEC & LVD 73/23/EEC

Standard used for showing compliance with the essential requirements of the device:

EN 55022

EN 61000-3-2

EN 61000-3-3

EN 50130-4

EN 55024

LVD: EN60950-1

## **SAFETY PRECAUTIONS**

1. Do not modify the three-prong grounding type monitor power plug in any way.
2. Operate this unit only from the type of power source indicated on the label.
3. Do not block or cover ventilation openings on the back or bottom of the monitor cabinet.



4. Do not place this monitor near a radiator or heating vent.
5. Do not push objects of any kind through cabinet openings. This may result in fire or electrical shock.
6. Before adding attachments always ask a service technician to perform routine safety tests to determine that equipment is in safe operating condition. Ground potential tests should be part of the routine safety check made by the service technician.
7. Do not place monitor on an unstable cart, stand, or shelf where it may fall and injure personnel or damage equipment.
8. Route power cords so that they cannot be walked upon or tripped over. Do not allow anything to rest on the power cord.
9. Do not install monitor in wet areas, or where it may be exposed to rain or water. Do not spill liquid of any kind on the unit.
10. Unplug the power cord from the unit before cleaning the display. Use only a damp cloth. Do not use alcohol, spirits, or ammonia to clean the display. **DO NOT ATTEMPT TO CLEAN THE INTERIOR OF THIS UNIT- THIS ACTION MUST BE PERFORMED BY THE SERVICE TECHNICIAN AS REQUIRED DURING NORMAL MAINTENANCE.**
11. Refer all servicing to qualified service personnel. **REMOVAL OF BACK COVER BY UNAUTHORIZED PERSONNEL MAY EXPOSE THE USER TO DANGEROUS VOLTAGES OR OTHER HAZARDS.**
12. Unplug the unit immediately and notify the service technician.
  - A. If liquid has been spilled into the display or the display has been exposed to rain or water.
  - B. If the unit has been dropped or the cabinet damaged.
  - C. If fuses continue to blow.
  - D. If the power cord is damaged or frayed.
  - E. If a distinct change from normal operation is apparent.

When replacement parts are required, be sure that the service technician uses components specified by the manufacturer which have the same characteristics as the original parts. **UNAUTHORIZED SUBSTITUTIONS MAY RESULT IN FIRE, ELECTRICAL SHOCK OR OTHER HAZARDS.**

Upon completion of any service or repairs, ask the technician to perform safety checks to determine that the equipment is in safe operating condition.

**WARNING: SERIOUS SHOCK HAZARDS EXIST WITHIN THE COVERS OF THIS MONITOR. DO NOT OPEN THE COVERS UNDER ANY CIRCUMSTANCES, THERE ARE NO USER SERVICEABLE COMPONENTS INSIDE**



## 1. Scope

This specification is used to define the performance of TLM-1506 / TLM-1706 / TLM-1906 color TFT LCD monitor. This system supports both video input and PC VGA input. In video input mode, the system can automatically detect the NTSC signal and PAL signal. In PC mode, TLM-1506 can support up to 1024x768 VESA standards. TLM-1706 and TLM-1906 can support up to 1280x1024 VESA standards.

## 2. Unpacking

After you unpack your LCD monitor, make sure the following items are included in the box and in good condition:

- 15", 17" or 19" LCD monitor.
- Monitor to PC analog signal cable (15 pin).
- Power cord, US type, 6-ft long, black.
- Operating Instructions.

## 3. Functional Specifications

### Power Supply

The power supply spec is listed below,

#### AC INPUT

\*AC power input range: 100 – 240 VAC, 60/50Hz, 1.5Arms (Max)

\* Power consumption: TLM-1506 and TLM-1706: 32W (Max)

TLM-1906: 40W (Max)

### LCD Panel:

	TLM-1506	TLM-1706	TLM-1906
Type	15" TFT LCD	17" TFT LCD	19" TFT LCD
Screen Size	304.1(H) x 228.1(V) mm <sup>2</sup>	337.9(H) x 270.3(V) mm <sup>2</sup>	396.0(H) x 324.0(V) mm <sup>2</sup>
Viewable Picture Area	381mm (15 in) diagonal	431.8mm (17 in) diagonal	482.6mm (19 in) diagonal
Pixel Pitch	0.297(H) x 0.297(V)mm	0.264(H) x 0.264(V)mm	0.294(H) x 0.294(V)mm
Resolution	1024 x 768 pixels	1280 x 1024 pixels	1280 x 1024 pixels
Aspect Ratio	4:3	5:4	5:4
Display Colors	16.2M	16.7M	16.7M
Response Time	8ms	5ms	5ms
Back Light Life Time	50,000	50,000	50,000



### Optical Characteristics:

	TLM-1506	TLM-1706	TLM1906
Luminance	450 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
Contrast Ratio	500:1	1000:1	1000:1
Viewing Angle	140° Horizontal, 125° Vertical	160° Horizontal, 160° Vertical	160° Horizontal, 160° Vertical

### Video Characteristics:

Composite Video (CVBS): 1.0 Vp-p (0.5 – 1.5Vpp), Automatic switching from 75 Ω unbalanced termination to Hi-Z with loop-through operation.

Y/C (S-video): 1.0 Vp-p (0.5 – 1.5Vpp), Automatic switching from 75 Ω unbalanced termination to Hi-Z with loop-through operation.

### VGA Input:

Analog RGB: 0.707 Vrms.

### VGA Timing Modes

MODEL	TLM-1506	TLM-1706	TLM-1906
RESOLUTION			
640 x 480	60/75Hz	60/75Hz	60/75Hz
800 x 600	60/75Hz	60/75Hz	60/75Hz
1024 x 768	60/75Hz	60/75Hz	60/75Hz
1280 x 1024	N/A	60/75Hz	60/75Hz

### Audio Input:

Signal Level: 1.0 Vrms

### Audio Output:

Speaker 2W x 2

**Controls:** Front panel push buttons

CH : Select Video, S-Video(Y/C), VGA

MENU : Enter On-Screen Display (OSD) menu

– : Decrease the volume

+ : Increase the volume

POWER : Power On/Off



**Indicators:**

LED: Power-on (Green), Power Off (Red)

**Connectors:**

Power inlet: AC power socket.

Video : Two (2) BNC, one in, one loop thru out.

S-Video (Y/C) : One (1) Mini-DIN, 4-pin, one in

VGA : One (1) 15-pin D-sub

Audio : Two (2) RCA, one in; one out

**Environmental:****Temperature:**

Operating: 0°C to +40°C

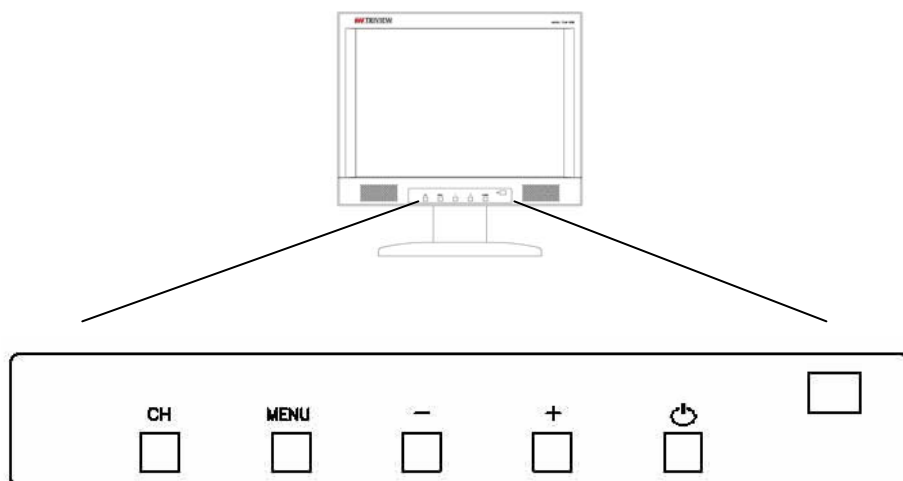
Storage: -20°C to +60°C

**Humidity:**

Operating: 10% to 85% (non-condensing)

Storage: 10% to + 95% (non-condensing)

## 4. Controls and Indicators



Press this button to turn ON / OFF the monitor

MENU

1. Press this button to enter OSD menu
2. Press this button to confirm and exit the selected parameter

- +

1. Press the buttons to adjust volume
2. Under the main OSD menu, Press the buttons to move the cursor to desired selection in OSD menu
3. Press the buttons to adjust the value of selected parameter in sub OSD menu

CH

Press this button to switch VIDEO, S-VIDEO and VGA channels



## 5. OSD Menu

### 5.1 Video Mode

#### Main Menu



Press <+> or <-> key to move cursor to desired selection and push <MENU> key to select it.

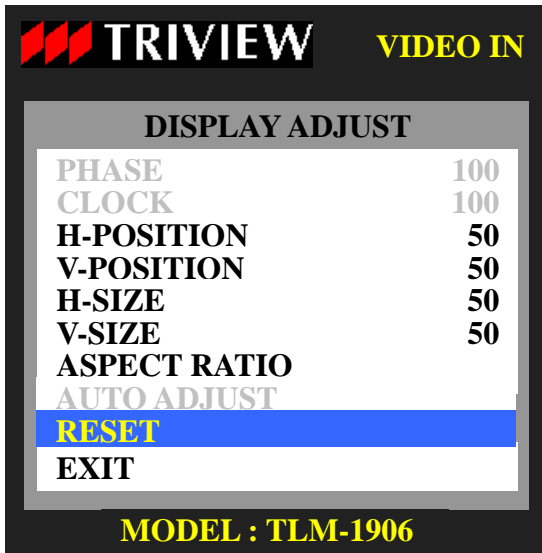
To leave OSD, simply move cursor to Exit and hit <MENU> key.

#### 5.1.1 Brightness/ Contrast/ Color/ TINT/ Sharpness



Press <+> or <-> key to adjust the value of Brightness (0~100), Contrast (0~100), Color (0~100), TINT (0~100) or Sharpness (0~3). After that, hit <MENU> key to confirm the selected parameter and return to main menu.

### 5.1.2 Display Adjust



Press <+> or <-> key to move cursor to desired selection and push <MENU> key to select it.

#### 5.1.2.1 H-Position/ V-Position/ H-Size/ V-Size

After move the cursor to desired parameter and hit <MENU> key, the cursor bar will turn into Light Blue, and then apply <+> or <-> key to adjust the value of H-Position (0~100), V-Position (0~100), H-Size (0~100) or V-Size (0~100). After that, hit <MENU> key to confirm the selected parameter and return to menu.

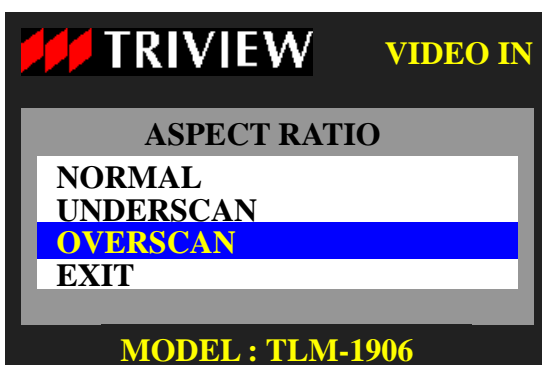
Note: H-Position allows user to adjust horizontal position of the image.

V-Position allows user to adjust vertical position of the image.

H-Size allows user to adjust horizontal size of the image.

V-Size allows user to adjust vertical size of the image.

#### 5.1.2.2 Aspect Ratio

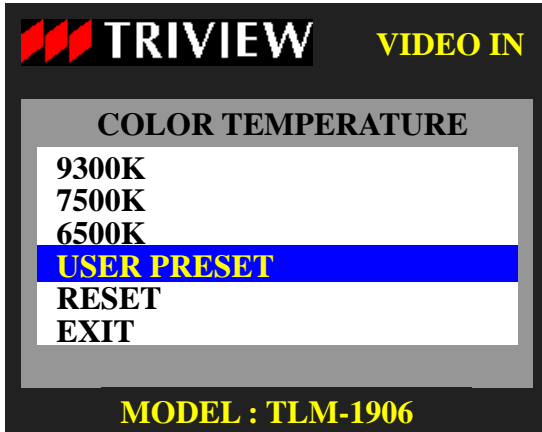


Aspect Ratio allows user to change the scan type of the image.

### 5.1.2.3 Reset

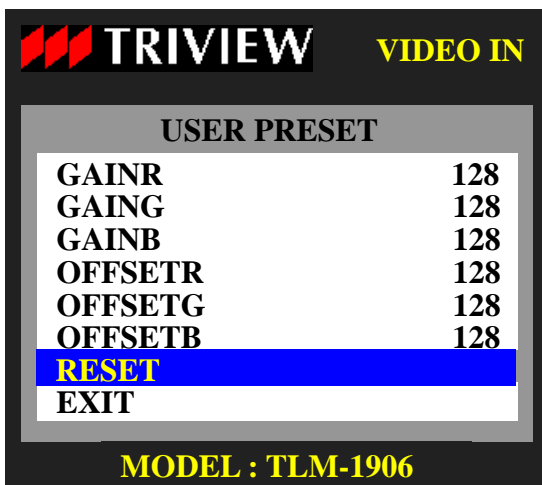
Reset allows user to recover the default setting of H-Position, V-Position, H-Size, and V-Size. But it won't affect the Aspect Ratio.

### 5.1.3 Color Temperature

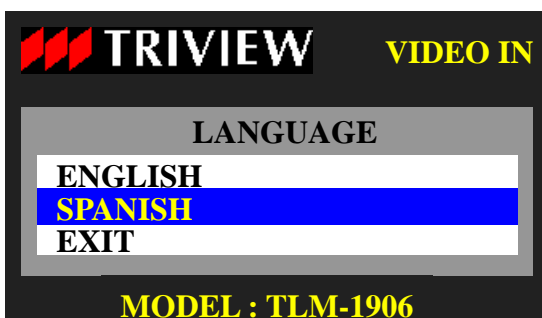


Color Temperature allows user change the color temperature of the monitor. Reset allows LCD monitor to return default setting.

Note: User Preset allows user to adjust the color of the LCD panel.

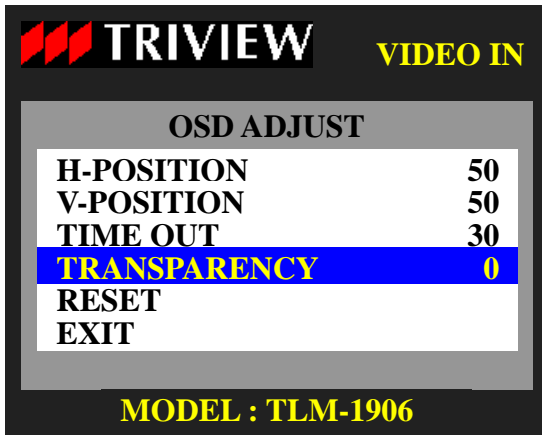


### 5.1.4 Language



Language allows user to switch between English and Spanish.

### 5.1.5 OSD Adjust



#### 5.1.5.1 H-Position/ V-Position/ Time Out/ Transparency

After move the cursor to desired parameter and hit <MENU> key, the cursor bar will turn into Light Blue, and then press <+> or <-> key to adjust the value of H-Position (0~100), V-Position (0~100), Time Out (0~30) or Transparency (0~3). After that, hit <MENU> key to confirm the selected parameter and return to menu.

Note: H-Position allows user to move OSD in horizontal direction.

V-Position allows user to move OSD in vertical direction.

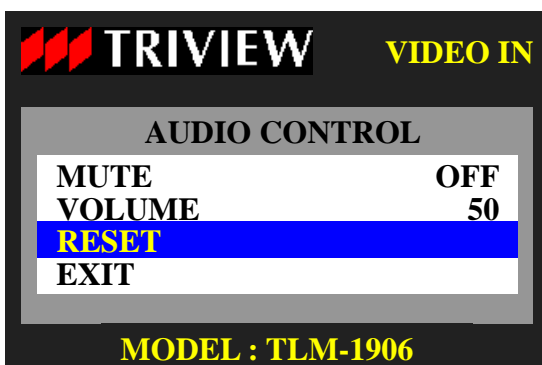
Time Out allows user to adjust the period of time that OSD shows on the screen.

Transparency allows user to see the image under the OSD.

#### 5.1.5.2 Reset

Reset allows user to recover the default setting of OSD H-Position, OSD V-Position, Time Out and Transparency.

### 5.1.6 Audio Control



Audio Control allows user to adjust the sound of the monitor.

#### 5.1.6.1 Mute

Mute allows user to turn on/off the sound.



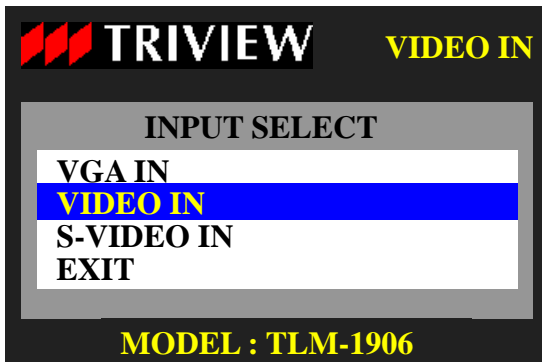
### 5.1.6.2 Volume

After move the curser to Volume and hit <MENU> key, the curser bar will turn into Light Blue, and then press <+> or <-> key to adjust the value of Volume (0~100). After that, hit <MENU> key to confirm the value of Volume and return to menu.

### 5.1.6.3 Reset

Reset allows user to recover the default setting of Mute and Volume.

### 5.1.7 Input Select



Input Select allows user to switch the VGA, Video and S-Video Channel.

### 5.1.8 Reset

Reset allows user to recover all default setting of the monitor except for Aspect Ratio and Language.

### 5.1.9 Exit

Exit allows user to leave OSD menu.

## 5.2 S-Video Mode

The feature and function of the S-Video are same as Video. Please refer to 5.1 Video mode.

## 5.3 VGA Mode

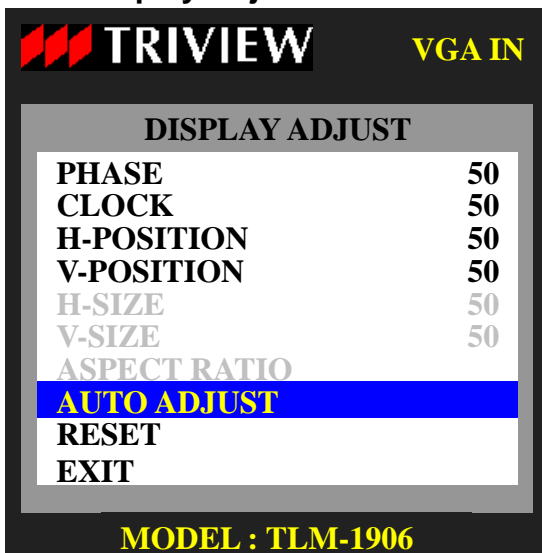
### Main Menu



### 5.3.1 Brightness/ Contrast

The function is same as Video mode. Please refer to 5.1.1.

### 5.3.2 Display Adjust



#### 5.3.2.1 Phase/ Clock/ H-Position/ V-Position

After move the cursor to desired selection and hit <MENU> key, the cursor bar will turn into Light Blue, and then press <+> or <-> key to adjust the value of Phase (0~100), Clock (0~100), H-Position (0~100) or V-Position (0~100). After that, hit <MENU> key to confirm the selected parameter and return to menu.



Note: Phase allows user to adjust phase of the image.

Clock allows user to adjust clock of the image.

H-Position allows user to adjust horizontal position of the image.

V-Position allows user to adjust vertical position of the image.

### **5.3.2.2 Auto Adjust**



*Move the cursor to AUTO ADJUST and hit the <MENU> key.*

Note: Auto Adjust allows user to adjust the image automatically.

### **5.3.2.3 Reset**

Reset allows user to recover the default setting of Phase, Clock, V-Position and H-Position.

### **5.3.3 Color Temperature**

The function is same as Video mode. Please refer to 5.1.3.

### **5.3.4 Language**

The function is same as Video mode. Please refer to 5.1.4.

### **5.3.5 OSD Adjust**

The function is same as Video mode. Please refer to 5.1.5.

### **5.3.6 Audio Control**

The function is same as Video mode. Please refer to 5.1.6.

### **5.3.7 Input Select**

The function is same as Video mode. Please refer to 5.1.7.

### **5.3.8 Reset**

The function is same as Video mode. Please refer to 5.1.8.

### **5.3.9 Exit**

The function is same as Video mode. Please refer to 5.1.9.

## 6. Regulatory Agency

### 6.1 Safety Approvals

This series design shall meet the standards of the following domestic and foreign agencies:

UL listed: UL60950-2000 listing (Information Processing and Business Equipment)

CUL Certified: CAN/CSA C22.2 No. 950-95 (Information Technology Equipment)

CE LVD: IEC 60950: 1999 3<sup>rd</sup> edition

CB: IEC 60950: 1999 3<sup>rd</sup> edition

### 6.2 EMI/EMS Emission Approvals

This series design shall meet following EMI/EMS specifications:

FCC Compliance: FCC Rules and Regulations, Part 15, subpart B, Class B.

CE COMPLIANCE: EN55022:1998 class B, EN55024:1998, EN50130-4:1998  
EN 61000-3-2:2000, EN 61000-3-3:1995.

## 7. Mechanical

### 7.1 Weight

Model	TLM1-1506	TLM-1706	TLM-1906
Net weight	4.1 KG/ 9.0 lb	5.0 KG/ 11.0 lb	6.4 KG/ 14.5 lb
Gross weight	5.8 KG/ 13.0 lb	6.8 KG/ 15.0 lb	8.6 KG/ 19.0 lb

### 7.2 Dimensions:

Model	TLM-1506	TLM-1706	TLM-1906
Physical dimension	356(W) x 387(H) x 200(D)mm 14.0(W) x 15.2(H) x 7.9(D)inch	387(W) x 402(H) x 200(D)mm 15.2(W) x 15.8(H) x 7.9(D)inch	458(W) x 416(H) x 215(D)mm 18.0(W) x 16.4(H) x 8.5(D)inch
Packing dimension	432(W) x 470(H) x 203(D)mm 17.0(W) x 18.5(H) x 8.0(D)inch	450(W) x 470(H) x 203(D)mm 17.7(W) x 18.5(H) x 8.0(D)inch	546(W) x 521 (H)x 220(D)mm 21.5(W) x 20.5(H) x 8.7(D)inch

### 7.3 Wall mount:

Optional wall mount (VESA standard 100mmX100mm)

## 8. Reliability

Mean Time Between Failures (MTBF):

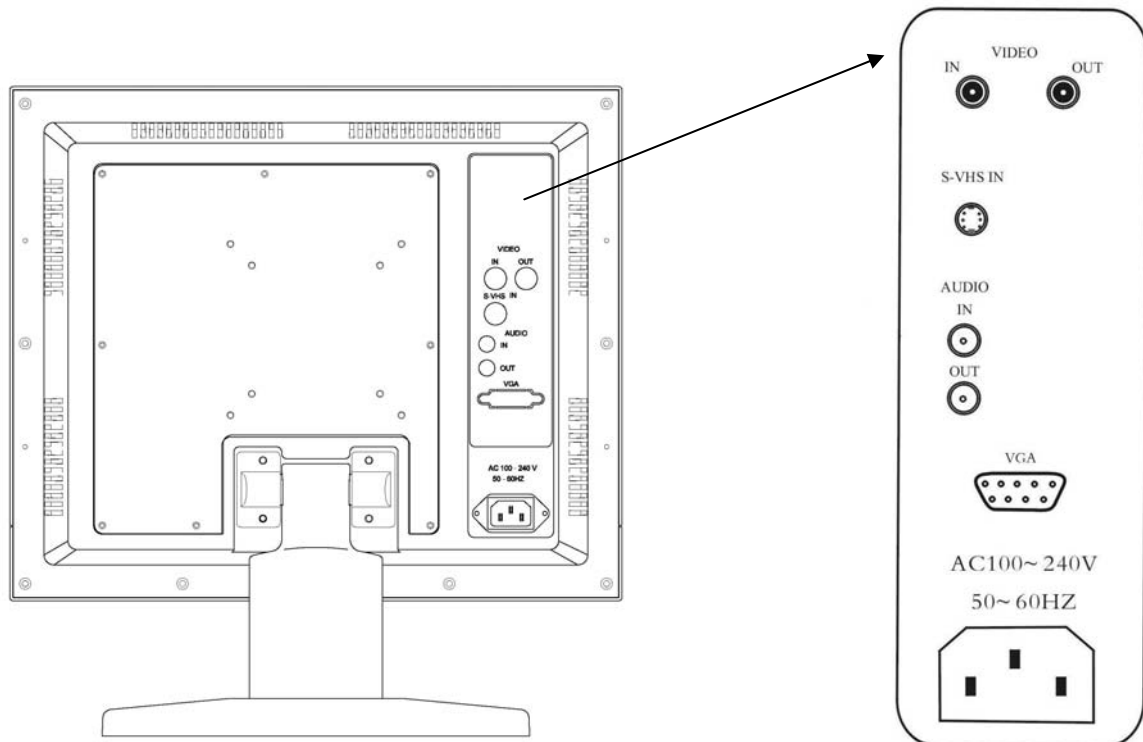
MTBF shall be 50,000 hours minimum at 90% confidence level and 100% duty cycle continuous operation at 25°C. The calculation shall not include LCD panel.





## 9. Appendix

### REAR PANEL COMPONENTS AND CONTROL



- VIDEO : Video input / Looping output
- S-VHS : S-Video input
- AUDIO : Audio input / output
- VGA : VGA input
- AC IN : AC power input

## 10. LCD Video Monitor Specification

MODEL		TLM-1506	TLM-1706	TLM-1906
DESCRIPTION				
Panel type		15" TFT color LCD	17" TFT color LCD	19" TFT color LCD
Screen size		15" (381mm) diagonal	17" (432mm) diagonal	19" (483mm) diagonal
Viewable size		304.1x228.1mm	337.9x270.3mm	376.3 x301.0mm
Dot pitch		0.297x0.297mm	0.264x0.264mm	0.294 x 0.294mm
Viewing angle (H/V)		140°/125°	160°/160°	160°/160°
Contrast ratio		500:1	1000:1	1000:1
Brightness		450 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>	300 cd/m <sup>2</sup>
Resolution		1024x768	1280 x1024	1280 x1024
Display color		16.2M	16.7M	16.7M
Response time		8ms	5ms	5ms
Power input		AC 100-240 V		
Power consumption		32W		40W
Dimension (Physical) WxHxD mm		356x387x200mm (with base) 356x300x67mm (without base)	387x402x200mm (with base) 387x338x67mm (without base)	458x416x215mm (with base) 458x373x77mm (without base)
Weight (Physical)		4.1 Kg (with base)	5.0 Kg (with base)	6.4 Kg (with base)
Wall mount		VESA standard 100mmX100mm		
Input signal	PC	Connector: 15-pin D-sub		
		SVGA/XGA	SVGA /XGA/ SXGA	SVGA /XGA/ SXGA
	Video	NTSC/PAL composite video, Connector: 2 BNC for Video I/O, 1 mini-din 4pin for S-video Input Level: 1.0Vp-p / 75 ohm System : NTSC / PAL BGHI		
Audio	Input	1 x Stereo Audio I/O (RCA x 2)		
	Speaker	2W x 2		
DC output		N/A		
User's control		CH, MENU, -, +, Power		
Remote control		N/A		
Rack Mount Kit (Optional)		TRK-1506	TRK-1706	TRK-1906
Regulation		UL, CUL, FCC-B, CE		

Specification subjects to change without notice.

## **TATUNG COMPANY OF AMERICA**

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