

Elo Entuitive Touchmonitor User Guide

For 17" LCD Desktop Touchmonitors
1724L Series

ET1724L-7SWB-1-NL
ET1724L-8SWB-1-NL

entuitive
Touchmonitors



Revision A

Elo Entuitive Touchmonitor User Guide

17" LCD Desktop Touchmonitor

1724L Series

entuitive
Touchmonitors

Revision A

P/N 008561

Elo TouchSystems, Inc.

1-800-ELOTOUCH

www.elotouch.com

tyco

Electronics

elo
TOUCHSYSTEMS

Copyright © 2002 Elo TouchSystems Inc. All Rights Reserved.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, including, but not limited to, electronic, magnetic, optical, chemical, manual, or otherwise without prior written permission of Elo TouchSystems.

Disclaimer

The information in this document is subject to change without notice. Elo TouchSystems makes no representations or warranties with respect to the contents hereof, and specifically disclaims any implied warranties of merchantability or fitness for a particular purpose. Elo TouchSystems reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of Elo TouchSystems to notify any person of such revisions or changes.

Trademark Acknowledgments

IntelliTouch, SecureTouch, AccuTouch, Entuitive, and MonitorMouse are trademarks of Elo TouchSystems, Inc.

Other product names mentioned herein may be trademarks or registered trademarks of their respective companies. Elo TouchSystems claims no interest in trademarks other than its own.

Table of Contents

Chapter 1			
Introduction	1		
Product Description	1		
Precautions	1		
About the Product	1		
Chapter 2			
Installation and Setup	3		
Unpacking Your Touchmonitor.	3		
Rear View	4		
Connecting Your Touchmonitor	5		
Video Cable Connection	5		
Touchscreen Cable Connection	6		
Power Cable Connection	7		
Video Input Pin Assignment	8		
Installing the Driver Software	9		
Installing the Serial Touch Driver for Windows XP, Windows 2000, Me, 95/98 and NT 4.0	10		
Installing the Serial Touch Driver for MS-DOS and Windows 3.1	11		
Chapter 3			
Operation	13		
Touchmonitor Controls	14		
Setting the Refresh Rate	14		
Adjustments	15		
Screen Adjustments	16		
Direct Access Buttons	16		
Auto Adjust	16		
OSD Lock/Unlock	17		
Power Lock/Unlock	17		
OSD and Power Lock/Unlock	18		
OSD Adjustments	19		
BRIGHTNESS	19		
CONTRAST	19		
COLOR CONTROL	19		
YUV COLOR	19		
HUE	19		
FLESH TONE	19		
MISCELLANEOUS	19		
RECALL	19		
OSD TIMER	19		
OSD POSITION	19		
AUTO ADJUST	20		
LANGUAGE	20		
		H/VPOSITION	20
		H-POSITION.	20
		V-POSITION.	20
		CLOCK PHASE	20
		PHASE	20
		CLOCK	20
		Chapter 4	
		Troubleshooting Tips	21
		Appendix A	
		Native Resolution	23
		Appendix B	
		Touchmonitor Safety	25
		Care and Handling of Your Touchmonitor	27
		Appendix C	
		Technical Specifications	29
		Preset Timing Table	29
		VESA Mounting	30
		Touchmonitor Specifications	31
		AccuTouch Touchscreen Specifications	32
		IntelliTouch Touchscreen Specifications	33
		17" LCD Desktop Touchmonitor (ET1724L-XSWB- 1) Dimensions	34
		Regulatory Information	37
		Index	41

INTRODUCTION

Product Description

Congratulations on your purchase of an Elo TouchSystems Entuitive LCD desktop touchmonitor. Your new high-resolution industrial touchmonitor combines the reliable performance of Elo's touch technology with the latest advances in LCD display design. This combination of features creates a natural flow of information between you and your touchmonitor.

Precautions

Follow all warnings, precautions and maintenance as recommended in this user's manual to maximize the life of your unit. See Appendix B for more information on touchmonitor safety.

About the Product

Your LCD desktop touchmonitor is a 17" TFT color display with the following features:

- Direct analog RGB input
- 17.0" diagonal screen size
- 1280 x 1024 resolution
- DOS/ VGA/ SVGA/ XVGGA/ SXGA/ EGA/ CGA/ Mac compatible
- Frequency H-sync: 30-80k Hz; V-sync: 50-85kHz
(up to 75kHz @ 1280 x 1024)

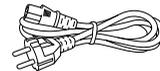
- Plug & Play
- High quality full screen re-scaling
- VESA DDC 1/2B data communication
- VESA DPMS power saving
- Supports VESA Flat Panel Monitor Physical Mounting Interface
- Worldwide agency approvals that include UL, CUL, TÜV- Bauart, FCC, CE, C-Tick, VCCI
- IntelliTouch or AccuTouch Technology

For full Product Specifications refer to Appendix C.

INSTALLATION AND SETUP

This chapter discusses how to setup your LCD desktop touchmonitor and how to install Elo TouchSystems driver software.

Unpacking Your Touchmonitor



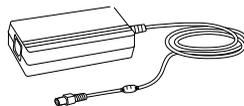
US power cord



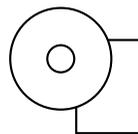
European power cord



Video cable



AC/DC Power adapter

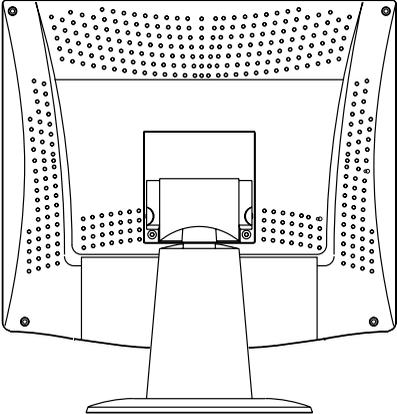


CD and Quick
Installation Guide



Serial touchscreen
cable

Rear View

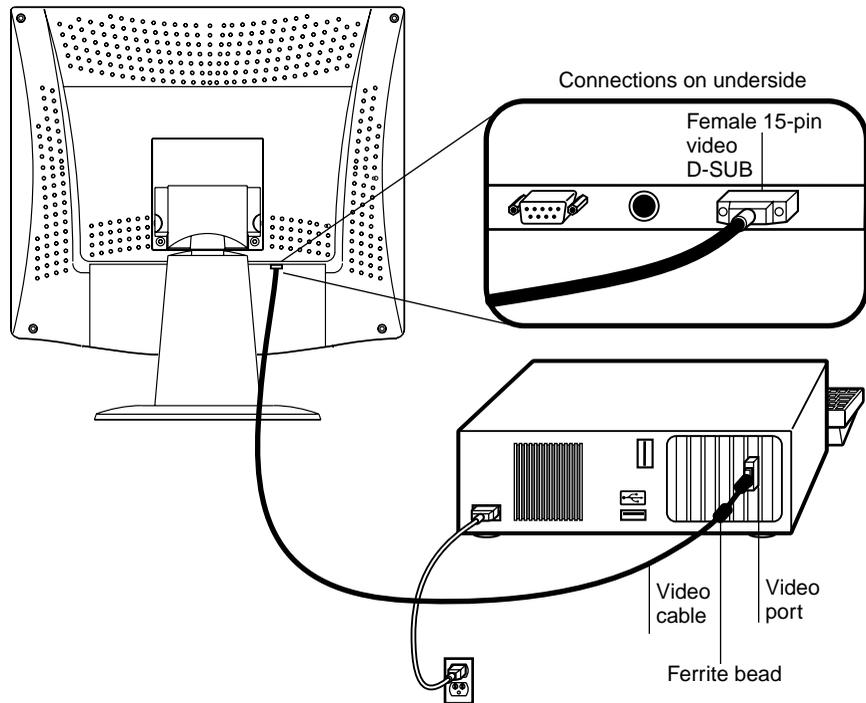


Connecting Your Touchmonitor



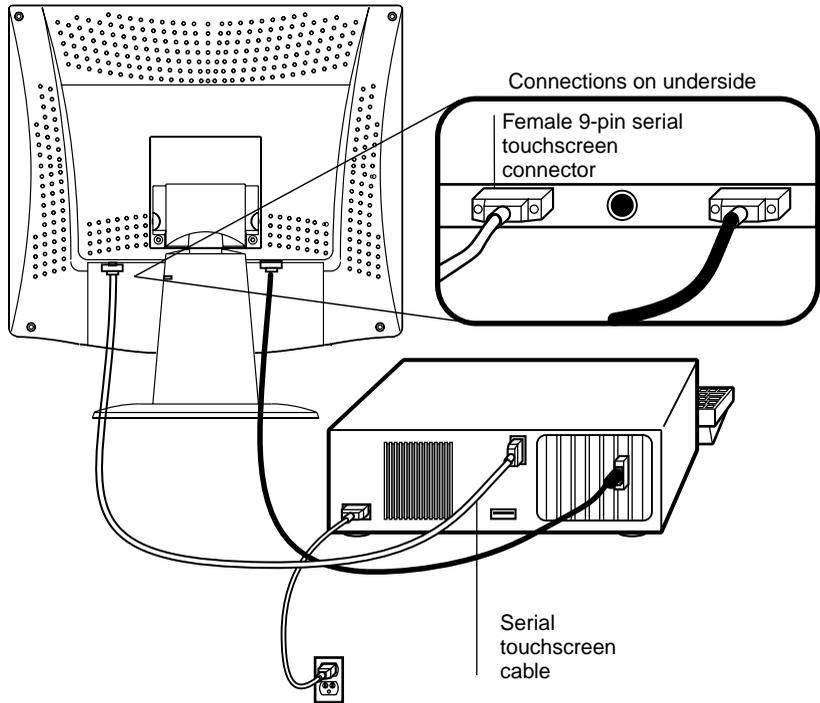
Before connecting the cables to your touchmonitor and computer, be sure that the touchmonitor and computer are off.

Video Cable Connection



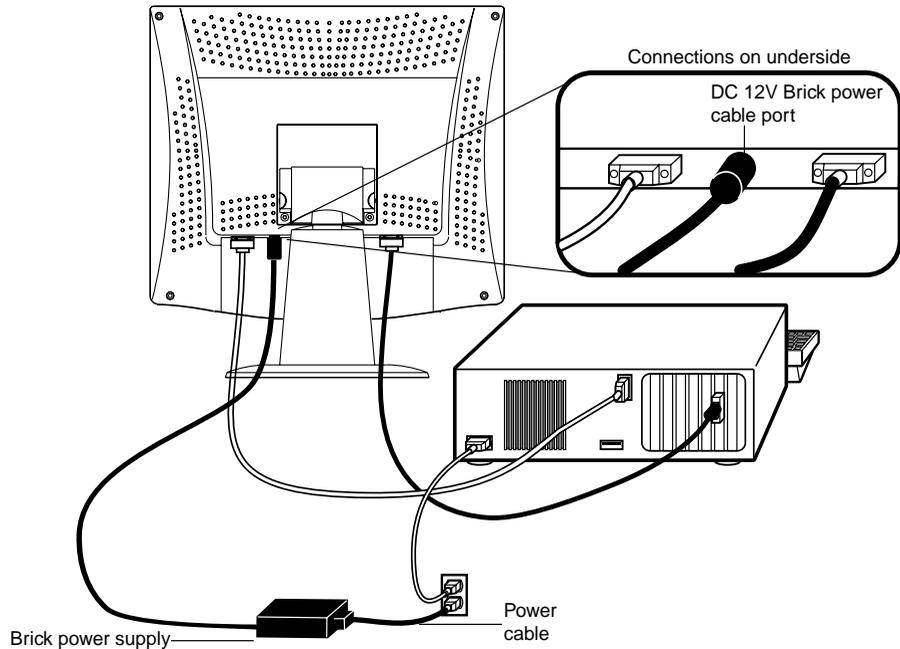
- 1 Set the touchmonitor on a solid horizontal surface, such as a table or desk.
- 2 Connect the female end of the video cable connector to the back of the LCD monitor, and connect the other end to the back of the computer.
- 3 Secure the cable to your touchmonitor and computer by tightening the screws on the connector clockwise.

Touchscreen Cable Connection



- 1** Connect the female end of the 9-pin touchscreen RS-232 cable to the serial port on the back of your computer.
- 2** Connect the male end of the cable to the serial touchscreen connector on your touchmonitor.
- 3** Secure the cable to your touchmonitor and computer by tightening the screws on the connector clockwise.

Power Cable Connection



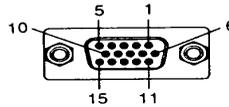
- 1 Depending on where you live, you will use either the European or US/Canadian power cable. Connect the female end of the power cable to the Brick power supply.
- 2 Connect the Brick power supply into the power port on the touchmonitor.



To protect your equipment against risk of damage from electrical surges in the power line, plug the Brick supply's power cord into a surge protector, and then connect the surge protector to a grounded (three-pronged) AC electrical outlet.

Video Input Pin Assignment

This section describes the pin assignment of the LCD's 15 Pin Mini D-sub (video cable) connector.



Pin No.	Signal Connector
1	Red Video Signal
2	Green Video Signal
3	Blue Video Signal
4	N.C.
5	Ground
6	Ground for red video signal
7	Ground for green video signal
8	Ground for blue video signal
9	N.C.
10	Ground
11	N.C.
12	DDC data
13	Horizontal sync signal
14	Vertical sync signal
15	DDC clock

Installing the Driver Software

The driver software allows your touchmonitor to work with your computer. Drivers are located on the enclosed CD-ROM for the following operating systems:

- Windows XP
- Windows 2000
- Windows Me
- Windows 98
- Windows 95
- Windows NT 4.0

Your touchmonitor is plug-and-play compliant. Information on the video capabilities of your touchmonitor is sent to your video display adapter when Windows starts. If Windows detects your touchmonitor, follow the instructions on the screen to install a generic plug-and-play monitor.

Refer to the appropriate following section for driver installation instructions.

Installing the Serial Touch Driver for Windows XP, Windows 2000¹, Me, 95/98 and NT 4.0

NOTE: For Windows 2000 and NT 4.0 you must have administrator access rights to install the driver.

1 Insert the Elo CD-ROM in your computer's CD-ROM drive.

If the AutoStart feature for your CD-ROM drive is active, the system automatically detects the CD and starts the setup program.

2 Follow the directions on the screen to complete the driver setup for your version of Windows.

If the AutoStart feature is not active:

1 Click **Start > Run**.

2 Click the **Browse** button to locate the EloCd.exe program on the CD-ROM.

3 Click **Open**, then **OK** to run EloCd.exe.

4 Follow the directions on the screen to complete the driver setup for your version of Windows.

1. To install Windows 2000 and Windows XP, you must use the "update driver" method; you will not find a setup.exe file within the download.

Installing the Serial Touch Driver for MS-DOS and Windows 3.1

You must have a DOS mouse driver (MOUSE.COM) installed for your mouse if you wish to continue using your mouse along with your touchmonitor in DOS.

To install Windows 3.x and MS-DOS from Windows 95/98, follow the directions below:

- 1 Insert the CD-ROM in your computer's CD-ROM drive.
- 2 From DOS, type `d:\EloDos_W31` to change to the correct directory on the CD-ROM (your CD-ROM drive may be mapped to a different drive letter).
- 3 Type `install` and press **Enter** to start the installation.
- 4 Align the touchscreen.

You must have already completed Steps 1 and 2 before proceeding.

To run the INSTALL program:

- 1 Type `INSTALL` at the DOS prompt in the directory containing the driver install files.
- 2 `INSTALL` asks you to select the software to install. Then choose `d:\EloDos_W31` from the displayed list.
- 3 `INSTALL` also asks you for the paths to use during installation, or you may use its defaults. `INSTALL` creates directories as necessary, and warns you if they exist.

If you are updating your software, you may wish to specify the paths containing the earlier versions, and overwrite the obsolete files. All executable programs are upward compatible. For a list of differences from each previous version of the drivers, be sure to select "Differences from Previous Versions" during the installation process.

`INSTALL` updates your `AUTOEXEC.BAT` file with the drivers you select. `INSTALL` makes a copy of your original `AUTOEXEC.BAT` file, called `AUTOEXEC.OLD`. If you already have Elo driver commands in your `AUTOEXEC.BAT` file, they will be commented out.

When `INSTALL` is finished, it leaves a file called `GO.BAT` in the subdirectory you specified. `GO` loads the touchscreen driver, runs the calibration program `ELOCALIB`, and gives you some final instructions.

If you are using Windows 3.1, you will also calibrate the touchscreen within Windows 3.1 with the Touchscreen Control Panel.

OPERATION

Variations in video output and application will likely require you to adjust your touchmonitor to optimize the quality of the display.

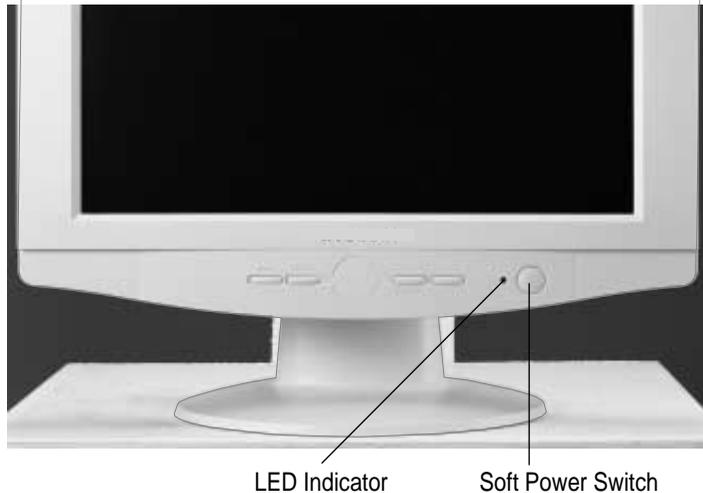
For best performance, your monitor should be operating in native resolution; that is, 1280 x 1024 at 60 Hz. Use the Display control panel in Windows to choose 1280 x 1024 resolution.

Operating in other resolutions will degrade video performance. For further information, please refer to Appendix A.

All adjustments you make to the controls are automatically memorized. This feature saves you from having to reset your choices every time you unplug or power your touchmonitor off and on. If there is a power failure, your touchmonitor settings will *not* default to the factory specifications.

Touchmonitor Controls

Setting the Refresh Rate



Follow the instructions below to set your refresh rate in Windows 98.

- 1 Go to the configuration window (Start>Settings>Configuration window).
- 2 Double-click on the **Display** icon.
- 3 Click on the **Settings** tab.
- 4 Click on the **Advanced** button.
- 5 Click on **Adapter** and select 60Hz from the list.
- 6 Click on **Apply** to accept the selected value.

Adjustments

All adjustments are made using the on-screen display (OSD) controls.

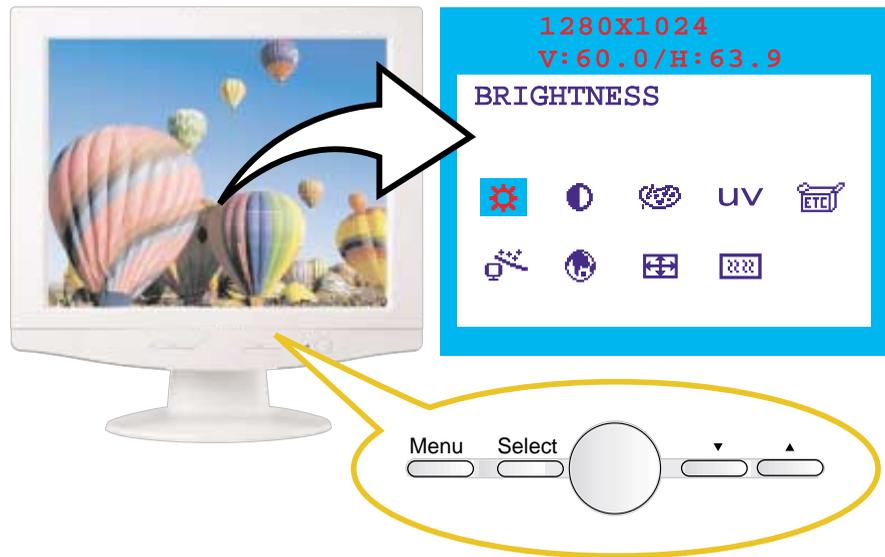


Figure 3.1 Touchmonitor Controls

Control	Function
Power	Press the power key to turn the monitor on. Press it again to turn the monitor off.
Menu	Activate the OSD adjustment menu. Move from the submenu back to the previous menu.
Select	To select the adjustment items from the OSD menu.
Adjust ▲	To scroll up in the menu or to increase the value of the selected item.
Adjust ▼	To scroll down in the menu or to decrease the value of the selected item.
Power LED	The LED will be green when the monitor is in the normal ON mode, and will be orange when it is in the power saving mode.

Screen Adjustments

The setting switches are normally in stand-by mode.

- 1 Push the **MENU** button once to display the OSD screen. The resolution and frequency are displayed at the top of the menu box.
- 2 Push the **▲** or **▼** button to select the item you want to adjust. The selected item will be highlighted.
- 3 Push the **SELECT** button to adjust the highlighted item.
- 4 Push the **▲** or **▼** button to adjust the selection.
- 5 After making the adjustment, push the **MENU** button to return.
- 6 The display unit automatically saves the new settings in 1 second after your last adjustment and the menu disappears. You can also push the **MENU** button to make the menu disappear.

Direct Access Buttons

Auto Adjust

To display a full screen, such as Window's background. Press the **SELECT (AUTO)** button to adjust the shape of the screen automatically.

OSD Lock/Unlock

This function allows you to lock and unlock the OSD options.

- 1 Press the **MENU** and **Power** button together for 2 or 3 seconds.
- 2 Select the OL icon.
- 3 Select Yes.
- 4 Power the monitor off then on.
- 5 Press the **MENU** button. The status is OSD lock on the user mode.

To Unlock the OSD:

- 1 Press the **MENU** and **Power** button together for 4 or 5 seconds on the OSD lock status.

Power Lock/Unlock

- 1 Press the **MENU** and **Power** button together for 2 or 3 seconds.
- 2 Press the **MENU** button and select the PL icon.
- 3 Select Yes.
- 4 Press the **MENU** button and select the OL icon.
- 5 Select No.
- 6 Power the monitor off then on.
- 7 Press the Power button. The status is Power lock on the user mode.

To Unlock the Power:

- 1 Press the **MENU** and **Power** button together for 4 or 5 seconds on the Power lock status.

OSD and Power Lock/Unlock

- 1 Press the **MENU** and **Power** button together for 2 or 3 seconds.
- 2 Press the **MENU** button and select the PL icon.
- 3 Select Yes.
- 4 Power the monitor off then on.
- 5 Press the **MENU** and **Power** button. The status is OSD and Power lock on the user mode.

To Unlock the OSD and Power:

- 1 Press the **MENU** and **Power** button together for 4 or 5 seconds on the OSD and Power lock status.

OSD Adjustments

The OSD adjustments available are listed below.



BRIGHTNESS

Adjusts the brightness of the screen.



CONTRAST

Contrast allows you to adjust the difference between black and white shades for image sharpness.



COLOR CONTROL

Color temperature affects the tint of the image. With lower color temperatures, the image turns reddish, with higher temperatures the image turns bluish.

There are three color settings available: Mode 1(a cool white), Mode 2 (a warm white), or USER. The USER setting allows you to set individual values for red, green, and blue.



YUV COLOR

Color technology allows users to make the following color adjustment.

HUE

Adjusts the hue of the video image.

FLESH TONE

Adjusts the flesh tone of the video image.



MISCELLANEOUS

RECALL

Recalls the saved color data.

OSD TIMER

Sets the displayed time of the OSD Menu window on the screen.

OSD POSITION

Adjusts the OSD menu's horizontal or vertical position on the screen.



AUTO ADJUST

Adjusts the shape of the screen automatically at the full screen pattern.



LANGUAGE

Select the language in which adjustment menus are displayed. The following languages are available: English, French, German, Italian, Spanish and Japanese.



H/VPOSITION

H-POSITION

H-Position adjusts the horizontal position of the entire screen.

V-POSITION

V-Position adjusts the vertical position of the entire screen.



CLOCK PHASE

PHASE

Adjusts the noise of the screen image.

CLOCK

Adjusts the horizontal size of the entire screen image.

TROUBLESHOOTING TIPS

If you are experiencing trouble with your touchmonitor, refer to the following table. If the problem persists, please contact your reseller or our technical support at 1-800-557-1458.

Problem	Suggestion(s)
<p>No image appears on screen.</p>	<p>Check that the video cable and power connectors are properly connected as described in Chapter 2.</p> <p>Make sure the pins of the connectors are not crooked or broken.</p> <p>Check that power switch of the touchmonitor has been pressed and LED on the front of touchmonitor is lit.</p> <p>Test the power supply by trying different cables, or a different wall outlet or plug another appliance into the outlet.</p> <p>Make certain the video cable is properly connected and that it is not damaged. Check for bent pins on the cable connectors.</p> <p>Ensure that your computer and video card are properly configured (consult video card documentation) and the video card is firmly seated in the card slot of the computer motherboard.</p>
<p>Error message: Video mode not supported</p>	<p>Check the resolution and the frequency on the video port of your computer.</p> <p>Compare these values with the data in the Preset Timing Table.</p>
<p>The display does not enter the power management mode</p>	<p>The video signal from the computer does not comply with VESA DPMS standard. Either the computer or the graphics adapter is not using the VESA DPMS power management function.</p>
<p>Message: No signal</p>	<p>Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged.</p> <p>If the connector is loose, tighten the connector screws. Check that the computer is switched on.</p>

Problem	Suggestion(s)
Duplicated images	There is a problem with your graphics adapter or display unit. Contact your service representative.
Partial image or incorrectly displayed image	<p>Check whether the resolution of your computer is higher than that of the LCD touchmonitor.</p> <p>Check that the video cable from the monitor has been securely and correctly connected to the video connector at the rear of the computer.</p> <p>Reconfigure the resolution of your computer to make it less than or equal to 1280 x 1024. See Appendix A for more information on resolution.</p>
Image is unstable and flickering	<p>Check and reconfigure the touchmonitor mode of the vertical refresh rate of your graphic card to make it compatible with the LCD touchmonitor.</p> <p>Check that the display resolution and frequency from your PC or graphic adapter is an available mode for your monitor. You can check this through the Windows Control Panel. From the Control Panel click on Display, then Settings.</p>
Image is scrolling	<p>Make sure the VGA signal cable (or adapter) is well connected.</p> <p>Check and reconfigure the display mode of the vertical refresh rate of your graphic card to make it compatible with the LCD touchmonitor.</p>
Touch does not work	Make sure the touchscreen cable is securely connected at both ends.



NATIVE RESOLUTION

The native resolution of a monitor is the resolution at which the LCD panel is designed to perform best. In almost all cases, screen images look best when viewed at their native resolution. You can lower the resolution setting of a monitor but not increase it. For the Elo LCD touchmonitor, SXGA-17 inch, the native resolution is 1280 x 1024.

Input Video	17" LCD
640 x 480 (VGA)	Transforms input format to 1280 x 1024 size
800 x 600 (SVGA)	Transforms input format to 1280 x 1024 size
1024 x 768 (XGA)	Transforms input format to 1280 x 1024 size
1280 x 1024 (SXGA)	Displays in native resolution

The native resolution of an LCD is the resolution that matches the LCD's pixels. Video performance is always best at native resolution settings. The various standard LCD resolutions are usually represented as follows:

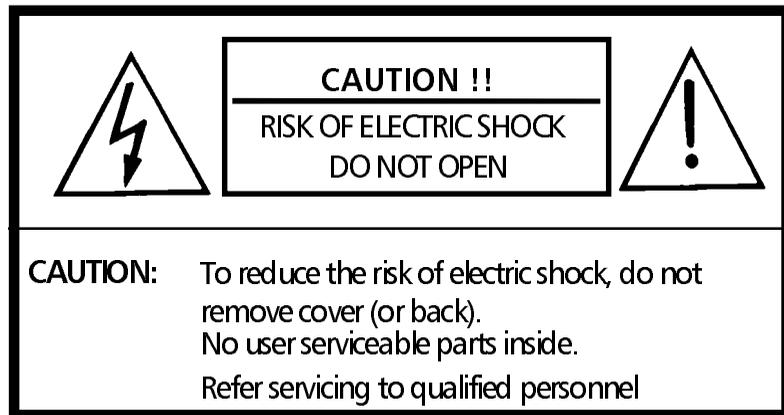
VGA	640 x 480
SVGA	800 x 600
XGA	1024 x 768
SXGA	1280 x 1024

For example, a SVGA resolution LCD panel displays 800 pixels horizontally and 600 pixels vertically. Input video is also represented by the same terms. XGA input video has a format of 1280 pixels horizontally by 1024 pixels vertically. When the input pixels contained in the video input format match the native resolution of the panel, there is a one-to-one correspondence of mapping of input video pixels to LCD pixels. For example, the pixel in 45 column and 26 row of the input video is in 45 column and 26 row of the LCD. When the input video is set at a lower resolution than the native resolution of the LCD, the direct correspondence between the video pixels and the LCD pixels is lost. The LCD controller can compute the correspondence between video pixels and LCD pixels using algorithms contained in the controller. The accuracy of the algorithms determines the fidelity of conversion of video pixels to LCD pixels. Poor fidelity conversion can result in artifacts in the LCD display, such as characters of varying width.

B

TOUCHMONITOR SAFETY

This manual contains information that is important for the proper setup and maintenance of your touchmonitor. Before setting up and powering on your new touchmonitor, read through this manual, especially Chapter 2 (Installation), and Chapter 3 (Operation).



- 1 Turn off the touchmonitor before cleaning.
- 2 Your brick supply is equipped with a 3-wire, grounding power cord. The power cord plug will only fit into a three-prong safety ground outlet. Do not attempt to fit the plug into an outlet that has not been configured for this purpose. Do not use a damaged power cord. Use only the power cord that comes with your Elo TouchSystems touchmonitor. Use of an unauthorized power cord may invalidate your warranty.

- 3** This display should be installed on a solid horizontal base.
- 4** Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the display from overheating. Do not block ventilation slots and openings with objects or install the display in a place where ventilation may be hindered.
- 5** This display should be operated from the type of power source indicated on the AC/DC adapter.
- 6** Do not install this display near a motor or transformer where strong magnetism is generated. Images on the display will become distorted and the color irregular.
- 7** Do not allow metal pieces or objects of any kind fall into the display from ventilation holes.
- 8** Do not attempt to service this unit yourself. Removal of the display cover may expose you to dangerous voltage or other risks. Refer all servicing to qualified service personnel.
- 9** Unplug this product from the wall outlet and refer servicing to qualified service personnel in the event that:
 - 1** Liquid is spilled into the product or the product is exposed to rain or water.
 - 2** The product does not operate normally when the operating instructions are followed.
 - 3** The product has been dropped or the cabinet has been damaged.
 - 4** The product exhibits a distinct change in performance, indicating a need for service.
 - 5** Power cord or plug is damaged or frayed.

Care and Handling of Your Touchmonitor

The following tips will help keep your Elo Entuitive touchmonitor functioning at the optimal level.

- To avoid risk of electric shock, do not disassemble the brick supply or display unit cabinet. The unit is not user serviceable. Remember to unplug the display unit from the power outlet before cleaning.
- Do not use alcohol (methyl, ethyl or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners or compressed air.
- To clean the brick supply or display unit cabinet, use a cloth lightly dampened with a mild detergent.
- Avoid getting liquids inside your brick supply or touchmonitor. If liquid does get inside, have a qualified service technician check it before you power it on again.
- Do not wipe the screen with a cloth or sponge that could scratch the surface.
- To clean the touchscreen, use window or glass cleaner. Put the cleaner on the rag and wipe the touchscreen. *Never* apply the cleaner directly on the touchscreen.





TECHNICAL SPECIFICATIONS

Preset Timing Table

Your Elo Entuitive touchmonitor is compatible with the following standard video modes. All specifications are typical and subject to change.

Table C.1 Analog R.G.B. Input.

Number	Resolution	Horizontal Frequency
1	720 x 400@70Hz	31.5KHz
2	640 x 480@60Hz	31.5KHz
3	640 x 480@75Hz	37.5KHz
4	800 x 600@56Hz	35.2KHz
5	800 x 600@60Hz	37.9KHz
6	800 x 600@72Hz	48.1KHz
7	800 x 600@75Hz	46.9KHz
8	832 x 624@75Hz	49.7KHz
9	1024 x 768@60Hz	48.4KHz
10	1024 x 768@70Hz	56.5KHz
11	1024 x 768@75Hz	60.0KHz
12	1152 x 870@75Hz	68.7KHz
13	1280 x 1024@60Hz	63.9KHz
14	1280 x 1024@75Hz	80.0KHz

VESA Mounting

This display unit supports VESA FPM PMI standard for 100mmx100mm screw mounting by giving four screw holes inside the base stand of the unit. The base stand must be removed before connecting to the Speciality Flat Panel Monitor Mounting Device.

Touchmonitor Specifications

Display Type	17" TFT
Recommended Resolution	1280 x 1024@60Hz
Maximum Resolution	Analog RGB: 1280x1024@75Hz
Frequency Rate	Horizontal: 31.0 to 80.0KHz Vertical: 56 to 75Hz
Maximum Bandwidth	135 MHz
Display area	337.92 x 270.336 mm
LCD display color	16.7M Colors max.
OSD menu	Brightness, Contrast, Color control, YUV color, Miscellaneous, Auto adjust, Language, H./V. Position, Clock phase
Brightness	250 cd/ m ² /panel 237 cd/m ² IntelliTouch (95%) 200 cd/m ² AccuTouch (80%)
Response time	25ms typ.
AC/DC adapter	Input DC12V ~ 3.75A
Input signals	R.G.B. Analog
Power consumption	45W
Power management	VESA DPMS
Input connector	15 Pin D-Sub.
Regulation	UL, CUL, TÜV- GS, FCC, CE, C-Tick, VCCI, IC UL-AR/S, CB, TCO99
Dimensions	420 mm (W) x 437 mm (H) x 220 mm (D).
Weight	8.0kgs. unpacked; 10.75kgs. packed
Accessories	VGA cable, AC/DC adapter, US and European power cord, touch cable.
Temperature	Operation 5 ~ 45°C Storage 20 ~ 60°C
Plug & Play	VESA DDC 1/2B

AccuTouch Touchscreen Specifications

Mechanical

Positional Accuracy	Standard deviation of error is less than 0.080 in. (2.03 mm). Equates to less than $\pm 1\%$.
Touchpoint Density	More than 100,000 touchpoints/in ² (15,500 touchpoints/cm ²).
Touch Activation Force	Typically less than 4 ounces (113 grams).
Surface Durability	Surface durability is that of glass, Mohs' hardness rating of 7.
Expected Life Performance	AccuTouch technology has been operationally tested to more than 35 million touches in one location without failure, using a stylus similar to a finger.
Sealing	Unit is sealed to protect against splashed liquids, dirt, and dust.

Optical

Light Transmission	(per ASTM D1003) 80%; $\pm 5\%$
Visual Resolution	All measurements made using USAF 1951 Resolution Chart, under 30X magnification, with test unit located approximately 1.5 in (38 mm) from surface of resolution chart. Antiglare surface: 6:1 minimum.
Gloss (per ASTM D2457 using a 60-degree gloss meter)	Antiglare surface: Flat: 90 ± 20 gloss units.

Environmental

Chemical Resistance	The active area of the touchscreen is resistant to all chemicals that do not affect glass, such as: Acetone Methylene chloride Methyl ethyl ketone Isopropyl alcohol Hexane Turpentine Mineral spirits Unleaded Gasoline Diesel Fuel Motor Oil Transmission Fluid Antifreeze Ammonia based glass cleaner Vinegar
Electrostatic Protection (per EN 61 000-4-2)	The touchscreen withstands 20 discharges of 15KV, distributed randomly across the active area of the touchscreen with proper transient protection.

See <http://www.elotouch.com/products/accutech/accuspec.asp> for complete and updated specifications.

IntelliTouch Touchscreen Specifications

Mechanical

Positional Accuracy	Standard deviation of error is less than 0.080 in. (2.03 mm). Equates to less than $\pm 1\%$.
Touchpoint Density	More than 100,000 touchpoints/in ² (15,500 touchpoints/cm ²).
Touch Activation Force	Typically less than 3 ounces (85 grams).
Surface Durability	Surface durability is that of glass, Mohs' hardness rating of 7.
Expected Life Performance	No known wear-out mechanism, as there are no layers, coatings, or moving parts. IntelliTouch technology has been operationally tested to more than 50 million touches in one location without failure, using a stylus similar to a finger.
Sealing	Unit is sealed to protect against splashed liquids, dirt, and dust.

Optical

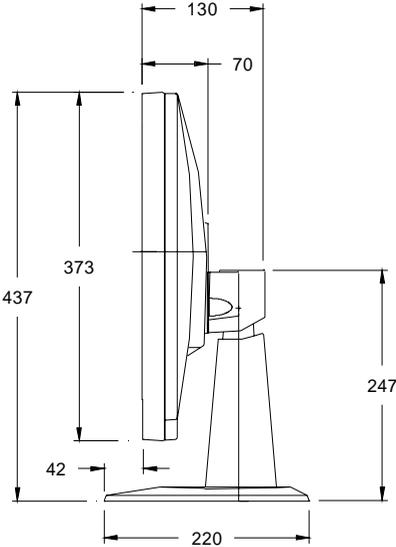
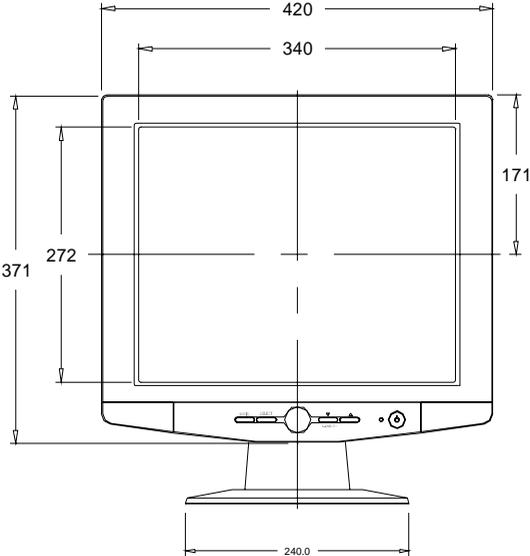
Light Transmission (per ASTM D1003)	95%
Visual Resolution	All measurements made using USAF 1951 Resolution Chart, under 30X magnification, with test unit located approximately 1.5 in (38 mm) from surface of resolution chart. Antiglare surface: 6:1 minimum.
Gloss (per ASTM D2457 using a 60-degree gloss meter)	Antiglare surface: Flat: 85 ± 20 gloss units.

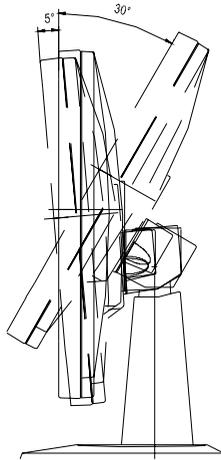
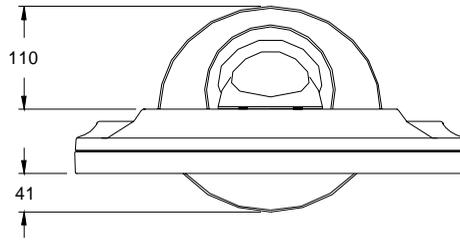
Environmental

Chemical Resistance	The active area of the touchscreen is resistant to all chemicals that do not affect glass, such as: Acetone Toluene Methyl ethyl ketone Isopropyl alcohol Methyl alcohol Ethyl acetate Ammonia-based glass cleaners Gasoline Kerosene Vinegar
Electrostatic Protection (per EN 61 000-4-2, 1995)	Meets Level 4 (15 kV air/8 kV contact discharges).

See <http://www.elotouch.com/products/inteltec/intelspec.asp> for complete and updated specifications.

17" LCD Desktop Touchmonitor (ET1724L-XSWB-1) Dimensions





NOTE: Dimensions in millimeters

REGULATORY INFORMATION

I. Electrical Safety Information:

A) Compliance is required with respect to the voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified herein will likely result in improper operation, damage to the equipment or pose a fire hazard if the limitations are not followed.

B) There are no operator serviceable parts inside this equipment. There are hazardous voltages generated by this equipment which constitute a safety hazard. Service should be provided only by a qualified service technician.

C) This equipment is provided with a detachable power cord which has an integral safety ground wire and 3-prong connector intended for connection to a grounded safety outlet.

1) Do not substitute the cord with other than the provided approved type. Under no circumstances use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.

2) The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.

3) Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment to mains power.

II. Emissions and Immunity Information

A) Notice to Users in the United States: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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.

B) Notice to Users in Canada: This equipment complies with the Class B limits for radio noise emissions from digital apparatus as established by the Radio Interference Regulations of Industrie Canada.

C) Notice to Users in the European Union: Use only the provided power cords and interconnecting cabling provided with the equipment. Substitution of provided cords and cabling may compromise electrical safety or CE Mark Certification for emissions or immunity as required by the following standards:

This Information Technology Equipment (ITE) is required to have a CE Mark on the manufacturer's label which means that the equipment has been tested to the following Directives and Standards:

This equipment has been tested to the requirements for the CE Mark as required by EMC Directive 89/336/EEC indicated in European Standard EN 55 022 Class B and the Low Voltage Directive 73/23/EEC as indicated in European Standard EN 60 950.

D) General Information to all Users: This equipment generates, uses and can radiate radio frequency energy. If not installed and used according to this manual the equipment may cause interference with radio and television communications. There is, however, no guarantee that interference will not occur in any particular installation due to site-specific factors.

1) In order to meet emission and immunity requirements, the user must observe the following:

- a) Use only the provided I/O cables to connect this digital device with any computer.
- b) To ensure compliance, use only the provided manufacturer's approved line cord.
- c) The user is cautioned that changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2) If this equipment appears to cause interference with radio or television reception, or any other device:

- a) Verify as an emission source by turning the equipment off and on.
- b) If you determine that this equipment is causing the interference, try to correct the interference by using one or more of the following measures:
 - i) Move the digital device away from the affected receiver.
 - ii) Reposition (turn) the digital device with respect to the affected receiver.
 - iii) Reorient the affected receiver's antenna.
 - iv) Plug the digital device into a different AC outlet so the digital device and the receiver are on different branch circuits.
 - v) Disconnect and remove any I/O cables that the digital device does not use. (Unterminated I/O cables are a potential source of high RF emission levels.)
 - vi) Plug the digital device into only a grounded outlet receptacle. Do not use AC adapter plugs. (Removing or cutting the line cord ground may increase RF emission levels and may also present a lethal shock hazard to the user.)

If you need additional help, consult your dealer, manufacturer, or an experienced radio or television technician.



FC Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

IC ES03

INDEX

Numerics

17" LCD Desktop Touchmonitor (ET1724L-XSWB-1)
Dimensions, 34

A

About the Product, 1
AccuTouch Touchscreen Specifications, 32
Adjustments, 15
AUTO ADJUST, 20
Auto Adjust, 16

B

BRIGHTNESS, 19

C

Care and Handling of Your Touchmonitor, 27
Chemical Resistance, AccuTouch, 32
Chemical Resistance, IntelliTouch, 33
CLOCK, 20
CLOCK PHASE, 20
COLOR CONTROL, 19
Connecting Your Touchmonitor, 5
CONTRAST, 19

D

Direct Access Buttons, 16
Display Timing, 31

E

Electrical Safety Information, 37
Electrostatic Protection, AccuTouch, 32
Electrostatic Protection, IntelliTouch, 33
Emissions and Immunity Information, 37
Expected Life Performance, AccuTouch, 32
Expected Life Performance, IntelliTouch, 33

F

FLESH TONE, 19

G

Gloss, AccuTouch, 32
Gloss, IntelliTouch, 33

H

H/VPOSITION, 20

H-POSITION, 20
HUE, 19

I

Installation and Setup, 3
Installing the Driver Software, 9
Installing the Serial Touch Driver for MS-DOS and
Windows 3.1, 11
Installing the Serial Touch Driver for Windows XP,
Windows 2000, Me, 95/98 and NT 4.0, 10
Introduction, 1

L

LANGUAGE, 20
Light Transmission, AccuTouch, 32
Light Transmission, IntelliTouch, 33

M

MISCELLANEOUS, OSD Adjustments, 19

N

Native Resolution, 23

O

Operation, 13
OSD Adjustments, 19
OSD and Power Lock/Unlock, 18
OSD Controls, 15
OSD Lock/Unlock, 17
OSD POSITION, 19
OSD TIMER, 19

P

PHASE, 20
Positional Accuracy, AccuTouch, 32
Positional Accuracy, IntelliTouch, 33
Power Cable Connection, 7
Power Lock/Unlock, 17
Precautions, 1
Preset Timing Table, 29
Product Description, 1

R

Rear View, 4
Regulatory Information, 37
Resolution, 29

S

Screen Adjustments, 16
Sealing, Accutouch, 32
Sealing, IntelliTouch, 33
Setting the Refresh Rate, 14
Surface Durability, AccuTouch, 32
Surface Durability, IntelliTouch, 33
SVGA, 23

T

Technical Specifications, 29
Touch Activation Force, AccuTouch, 32
Touch Activation Force, IntelliTouch, 33
Touchmonitor Controls, 14
Touchmonitor Safety, 25
Touchmonitor Specifications, 31
Touchpoint Density, AccuTouch, 32
Touchpoint Density, IntelliTouch, 33

Touchscreen Cable Connection, 6
Troubleshooting Tips, 21

U

Unpacking Your Touchmonitor, 3

V

VESA Mounting, 30
VGA, 23
Video Cable Connection, 5
Video Input Pin Assignment, 8
Visual Resolution, AccuTouch, 32
Visual Resolution, IntelliTouch, 33
V-POSITION, 20

X

XGA, 23

Check out Elo's Web site!

www.elotouch.com

Get the latest...

- **Product information**

 - **Specifications**

 - **News on upcoming events**

 - **Press releases**

 - **Software drivers**
-

Getting in Touch with Elo

To find out more about Elo's extensive range of touch solutions, visit our Web site at www.elotouch.com or simply call the office nearest you:

USA & Headquarters

Elo TouchSystems, Inc.
8500 Kaiser Drive
Fremont, CA 94555-3613

(800) ELO-TOUCH (800-256-8682)
Tel 510-739-5018
Fax 510-730-0827
info@elotouch.com

Germany

Elo TouchSystems GmbH & Co. KG
Haidgraben 6
D-85521 Otoden
Germany

Tel +49 (89) 60822-0
Fax +49(89) 60822-160
elosa@elotouch.com

Belgium

Elo TouchSystems
Dezwaesteenvweg 892
B-3010 Kessel-Lo
Belgium

Tel +32 (16) 35-2100
Fax +32 (16) 35-2101
elosa@elotouch.com

Japan

Touch Panel Systems K.K.
Sun Himawari Bldg. 2F.
1-19-20 Shi-Yokohama
Kohoku-ku, Yokohama
Kanagawa 222-0033
Japan

Tel +81 (45) 478-2181
Fax +81 (45) 478-2180
www.tps.co.jp

tyco
Electronics

