

Elo Entuitive Touchmonitor User Guide

For 15" and 17" CRT iTouch and AccuTouch Series
Touchmonitors

entuitive
Touchmonitors



ET1525C/1526C Series



ET1725C/1726C Series

Elo Entuitive Touchmonitor User Guide

For 15" and 17" CRT iTouch and AccuTouch
Series Touchmonitors

ETXX25C/26C-4XXWE-3 Series Models
ETXX25C/26C-7XXWE-1 Series Models



Revision B

P/N 008553

Elo TouchSystems, Inc.

**1-800-ELOTOUCH
www.elotouch.com**



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Table of Contents

Chapter 1		Regulatory Information	35
Introduction	1	Warranty	37
Precautions	1		
About the Product	1	Index	39
Chapter 2			
Installation and Setup	3		
Unpacking Your Touchmonitor.	3		
Installing the Base	4		
Uninstalling the Base.	5		
Selecting a Suitable Location	5		
Connecting Your Touchmonitor	6		
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 Touch Driver for MS-DOS and			
Windows 3.1	11		
Chapter 3			
Operation	13		
About Touchmonitor Adjustments	13		
Touchmonitor Controls	14		
Using the On Screen Display (OSD)	14		
Locking/Unlocking the OSD Functions.	15		
OSD Adjustments	16		
Chapter 4			
Troubleshooting	21		
Appendix A			
Touch Technology	23		
Touchscreens: An Overview.	23		
iTouch Touchscreens	24		
Appendix B			
Touchmonitor Safety	25		
Care and Handling of Your Touchmonitor	26		
Appendix C			
Technical Specifications	27		
Touchmonitor Specifications	27		
Signal PINOUT for 15" and 17" Monitors	31		
Power Consumption	32		
Preset Timing Table	33		

INTRODUCTION

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

- 14-inch viewable image 0.28mm dot pitch CDT for 15" and 15.9-inch viewable image 0.27mm dot pitch CDT for 17".
- Supports a wide range of screen refresh rates with flicker-free picture quality.
- Plug and Play functionality automatically adjusts the monitor to its optimum performance.
- VESA DPMS (Display Power Management Signaling).
- VESA DDC1/2B compatibility.
- Patented touch technology from Elo TouchSystems.
- RS-232 or USB touch interface.

CHAPTER 2

INSTALLATION AND SETUP

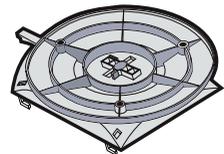
This chapter discusses how to install your CRT touchmonitor and how to install Elo TouchSystems driver software.

Unpacking Your Touchmonitor

Check that the following 8 items are present and in good condition:



CD (with e-manual)
and Quick Installation
Guide



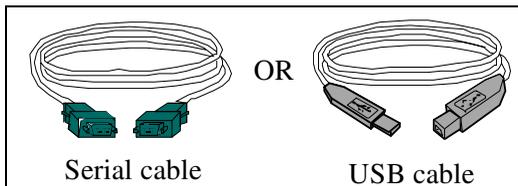
Base



VGA cable

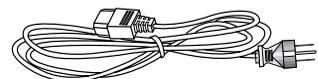


European power cable



Serial cable

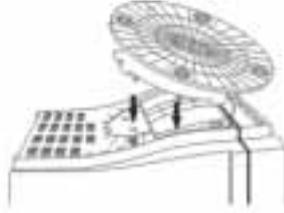
USB cable



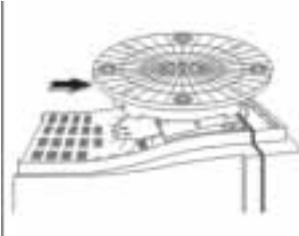
USA power cable

Installing the Base

- Carefully turn the touchmonitor upside-down.
- Place the base against the bottom of the monitor so that the base fasteners are aligned with appropriate slots.



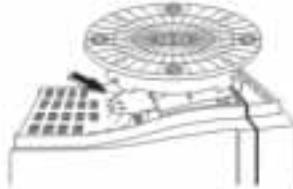
- Push the base towards the front of the monitor until you hear a “click” and the latch locks into position.



- Carefully turn the touchmonitor right-side up.

Uninstalling the Base

- Carefully turn the touchmonitor upside-down.
- Gently press the clip with one hand while pulling the base towards the rear of the cabinet with the other hand.



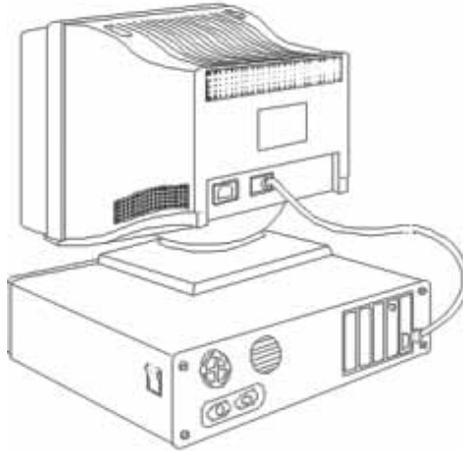
- Carefully turn the touchmonitor right-side up.

Selecting a Suitable Location

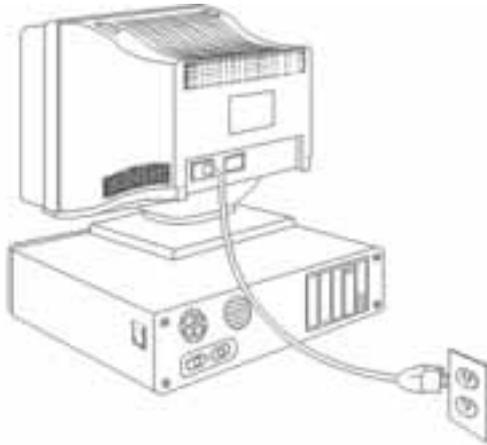
- Place the monitor at least 12 inches from other electrical or heat-emitting equipment and allow at least 4 inches on each side for ventilation.
- Place the monitor in a position where no light shines or is reflected directly on the screen.
- To reduce eye strain, avoid installing the display unit against a bright background such as a window.
- Position the monitor so the top of the screen is no higher than eye level.
- Position the monitor directly in front of you at a comfortable reading distance.

Connecting Your Touchmonitor

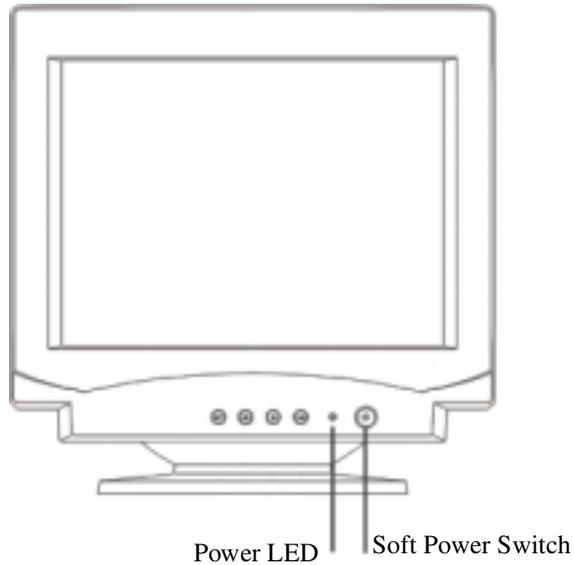
IMPORTANT: Before connecting the cables to your touchmonitor and computer, be sure that the computer and touchmonitor are turned off.



- 1 Connect the video cable to the video connector on your computer. Secure the cable to your computer by turning the screws on the connector in a clockwise direction.



- 2** Connect the power cable to the AC connector on your touchmonitor. To protect your equipment against risk of damage from electrical surges in the power line, plug the touchmonitor's power cord into a surge protector, and then connect the surge protector to a grounded (three-pronged) AC electrical outlet.
- 3** Connect the touchscreen cable. Determine if you have RS-232 or USB. Connect one end to the appropriate port on the back of your PC. Connect the other end of the cable to the touchscreen connector on your touchmonitor. The touchscreen cable connectors should fit snugly into the connectors on your touchmonitor and PC.



- 4** Power on your monitor using the Soft power switch and check that the power LED is on, then power on your PC. If not, repeat steps 2, 3, and 4, or refer to Chapter 4, Troubleshooting.
- 5** After a brief pause the picture should appear. If necessary, adjust the front panel controls according to your personal preference (see Chapter 3).
- 6** Insert the Elo TouchTools CD-ROM in your computer's CD-ROM drive to install the appropriate touchscreen driver software. Follow the directions starting on the next page to install the driver software.

Installing the Driver Software

Elo TouchSystems provides driver software that 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

Additional drivers and driver information for other operating systems are available on the Elo TouchSystems web site at www.elotouch.com.

Your Elo 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 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 Elo 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. Refer to Chapter 2 of the Elo DOS and Windows Driver Guide as necessary for additional installation information.

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

About Touchmonitor Adjustments

By design, your Elo Entuitive touchmonitor should not require any adjustments. The factory settings will give you optimum video results with most standard PC video display adapters.

However, after connecting your touchmonitor you can further optimize the settings to meet your requirements by following the directions in this chapter.

All adjustments you make to the controls are automatically memorized, so you do not need to reset your choices every time you unplug your touchmonitor or power it off and on. If there is a power failure your touchmonitor settings will not default to the factory specifications.

IMPORTANT:

Do not insert conductive metal objects into the monitor's circuitry. The monitor uses high voltages and the metal edges can be sharp. Disassembly or realignment of the monitor circuitry voids the warranty.

Touchmonitor Controls

You can adjust the screen display by using the buttons located below the screen.

Using the On Screen Display (OSD)

- 1 Push the **MENU** button to access the OSD. The resolution and frequency are displayed at the top of the menu for your information.
- 2 Push the ▲ or ▼ button to choose the item you want to adjust. The selected item is highlighted.
- 3 Push the **SELECT** button to adjust the highlighted item.
- 4 Push the ▲ or ▼ button to adjust the selection.
- 5 Push the **SELECT** button to return to the previous menu if you are in a submenu.

The display unit automatically saves the new settings in 3 to 4 seconds after your last adjustments and the menu disappears. You can also push the **MENU** button to make the menu disappear.

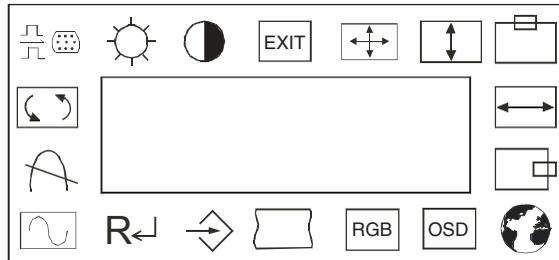


Figure 3.1 OSD Menu

Locking/Unlocking the OSD Functions

You are able to lock the OSD functions if you do not want them to be changed.

To lock the OSD functions:

- 1** Press the power button to turn the monitor off.
- 2** Press the power button on and press the Menu key for 2 or 3 seconds or until you see the green LED on the power button. The factory OSD menu window will appear.
- 3** Use the ▲ or ▼ button to select the OL option.
- 4** Press the Select button to highlight the Locked option on the menu.
- 5** Press the power button to turn the monitor off then turn it back on.

To unlock the OSD functions:

- 1** Press the power button to turn the monitor off.
- 2** Press the power button on and press the Menu key for 2 or 3 seconds or until you see the green LED on the power button. The factory OSD menu window will appear.
- 3** Use the ▲ or ▼ button to select the OL option.
- 4** Press the Select button to highlight the Unlocked option on the menu.
- 5** Press the power button to turn the monitor off then turn it back on.

OSD Adjustments

Symbol	Function	Process
H. Size		Adjusts the horizontal size of the entire screen image.
H. Position		Adjusts the horizontal position of the entire screen image.
V. Size		Adjusts the vertical size of the entire screen image.
V. Position		Adjusts the vertical position of the entire screen image.
Zoom		Simultaneously changes vertical and horizontal image size.
Geometry		Figure 3.4
Pincushion		If the vertical sides of the picture curve in or bulge out, you can correct the distortion by using the pincushion adjustment.
Trapezoid		If the picture is wider at the top or at the bottom, you can correct the distortion by using the trapezoid adjustment.
Parallel		If the sides of the screen image are tilted, you can correct the distortion by using the parallel adjustment.
Pin Balance		If the sides of the picture are bowed to the right or the left, you can correct the pin cushion balance by using this adjustment.
Top Corner		Eliminates top corner distortion.
Bottom Corner		Eliminates bottom corner distortion.

S. Correct		Corrects vertical center linearity.
C. Correct		Corrects vertical top and bottom linearity.
V. Moire		Clears vertical moire if a series of concentric circles or arcs appear on your screen.
H. Moire		Clears horizontal moire if a series of concentric circles or arcs appear on your screen. Note: Moire is an interface pattern that makes the screen seem to have faint lines. A picture that is rastered or consists of small repeating figures is sensitive to moire interference. Strong colors are also liable to intensify moire. The moire pattern on the screen does not affect the printout of the image.
Language		You can select the language in which adjustment menus are displayed. The following languages are available; English, German, French, Italian, Spanish, Swedish, Finnish, Danish, and Portuguese.
Rotation		If the entire screen image is tilted, you can correct the distortion by using the rotation adjustment.
Input Level		Selects video input level 0.7Vp-p or 1.0 Vp-p.
OSD, H. Position, V. Position Timeout		(Figure 3.2) Adjusts the horizontal and vertical position of the OSD window and determines how long (in seconds) the OSD menu waits before closing automatically when no action has been performed.
Color Temp		(Figure 3.3) Using these icons, you can select one of the preset color Temperatures (9300K or 6500K). Confirm your choice by pressing the OSD menu. To change the color temperatures individually, select the corresponding icon under “C3” and confirm the desired value using the OSD dial. To confirm the setting press the menu again.
Save		Saves current setting.
Recall		Recalls factory settings of the image parameters.

Status		Displays horizontal and vertical frequency.
Degauss		<p>If you have moved the display unit, you should perform demagnetization. Demagnetizing takes place automatically when the display unit is switched on, and the unit normally maintains faultless color purity during operation.</p> <p>If you have tilted, swiveled or moved the display unit, you can perform demagnetization. During the process the picture is distorted for a few seconds. After demagnetization, the color impurities have disappeared if caused by stray magnetic fields.</p> <p><i>Do not</i> use the degauss feature more than once every half hour or the degauss function will not work.</p>
Brightness		Adjusts the brightness of the screen.
Contrast		Adjusts the contrast of the screen.

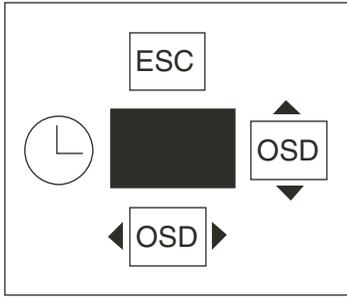


Figure 3.2

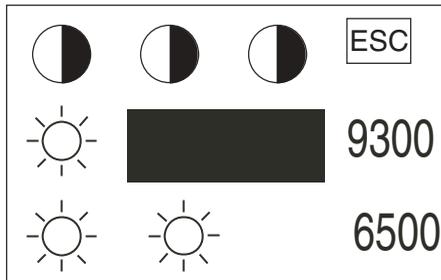


Figure 3.3

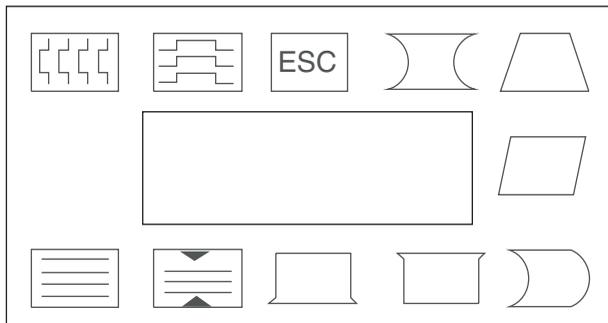


Figure 3.4

TROUBLESHOOTING

Problem	Suggestion (s)
No picture.	<p>Your touchmonitor may not be getting power. Make certain that your power strip is plugged into the wall socket and that the PC and touchmonitor are plugged in and powered on.</p> <p>Test the power supply by trying different cables or a different wall outlet, or by plugging another appliance into the outlet.</p> <p>If the monitor's LED is slowly flashing, the monitor is in standby mode. Push one of the keyboard keys. Check that the keyboard is properly connected to the computer.</p> <p>Ensure that your computer and video card are properly configured (consult the video card documentation).</p>
Touchmonitor does not enter power management mode.	<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>
Screen flickers	<p>The screen may seem to flicker when the refresh rate is less than 75Hz. See the list of recommended modes in Appendix C, page 33.</p>
Color defects	<p>If your color is not uniform, degauss the touchmonitor as described in Chapter 3, page 18, and make sure that the touchmonitor is at least 12 inches from any other electrical equipment.</p>
Picture appears to be ghosting.	<p>Make certain there is a good connection between the touchmonitor and the computer.</p>
Picture is not centered.	<p>Read about adjusting your touchmonitor picture and make the appropriate adjustments.</p>

Problem	Suggestion (s)
Picture appears “washed out”.	Readjust your brightness and contrast settings.
Picture not present or severely distorted.	Verify that your video display adapter settings are formatted for the correct resolution and vertical refresh rates.
Duplicated images	A problem with your graphics adapter or touchmonitor. Contact your service representative.
"NO SIGNAL" window appears.	The monitor is receiving no video signal from the PC. Ensure the PC is plugged in, turned on, and the video cable is connected.
"SIGNAL OUT OF RANGE" window appears.	The monitor is receiving a video signal which is beyond the limits of its capability. Change the PC's video display adapter settings to agree with one of the display modes given in Appendix C.
Touch doesn't work.	Check to make sure the touchscreen cable is securely attached at both ends.



TOUCH TECHNOLOGY

Touchscreens: An Overview

Typically, users communicate with computers by using a mouse, a keyboard, or a combination of the two. Users who are not keyboard-literate or mouse-savvy can become frustrated with how long human-to-computer interactions take.

Computer literacy is learned. This is complicated by the fact that using a keyboard or a mouse is neither intuitive nor natural for most people. Touchscreens cut out the learning curve by eliminating keyboard/mouse intermediaries and allowing a natural flow of information to develop between a user and a computer.

When a user wants to access information or perform a function on a computer with a touchscreen installed, a touch quickly and accurately does the job that once required complicated keyboard interactions or precise mouse movements.

A frustrating experience with a computer during a transaction can create dissatisfaction for your customer. Touchscreens help eliminate unpleasant transactions by creating a natural flow of information that enhances your product or service. Touchscreens speed up user/computer interactions. People get what they want faster and are more satisfied with the process.

iTouch Touchscreens

Elo built on its IntelliTouch surface wave technology to create its iTouch "touch-on-tube" solution. Elo eliminated the clear glass layer between the viewer and the display.

Elo CRT iTouch monitors offer consistent features across all sizes:

- Touch directly on tube—no touchscreen overlay and no parallax
- Preserves 100 percent of CRT brightness, clarity, antireflection and color properties
- More durable and safer than even bonded touchscreen overlays
- Same fast, accurate, stable performance as surface wave
- "Drift free" and not affected by surrounding metal or poor earths
- Dual touches are not averaged, allowing extremely fast two-handed play
- Z-axis for pressure can add a new dimension to games
- No need for periodic recalibration

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 Setup, and Chapter 3, Operation.



- 1** To reduce the risk of electric shock, follow all safety notices and never open the touchmonitor case.
- 2** Your new touchmonitor is equipped with a three-wire, grounding power cord. The power cord plug will only fit into a three-pronged 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** The slots located on the sides and top of the touchmonitor case are for ventilation. Do not block or insert anything to the ventilation slots.
- 4** It is important that your touchmonitor remains dry. Do not pour liquid into or onto your touchmonitor. If your touchmonitor becomes wet do not attempt to repair it yourself.

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 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 display unit cabinet, use a cloth lightly dampened with a mild detergent.
- Avoid getting liquids inside your 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.
- During transportation of the monitor, the swivel base *must* be removed.





TECHNICAL SPECIFICATIONS

NOTE: All specifications are subject to change.

Touchmonitor Specifications

	17" Monitor	15" Monitor
Picture Tube	17" (15.9" diagonal viewable image), 0.27-mm dot pitch.	15" (14" diagonal viewable image), 0.28-mm dot pitch..
Maximum Resolution	640x350/70Hz 720x400/70Hz 640x480/60, 72, 75, 85HZ 800x600/56,60,72,75,85HZ 1024x768/60, 70, 75, 85Hz 1280x1024/60Hz Non-interlaced	640x350/70Hz 640x400/70Hz 640x480/60, 75, 85HZ 800x600/56,60,72,75,85HZ 1024x768/60Hz
Deflection Frequency	Horizontal: 30-70 kHz Vertical: 50-160 Hz	Horizontal: 30-55 kHz Vertical: 50-160 Hz
Maximum Video Input Bandwidth	100 MHz	65 MHz
Display Area*	H: 300 mm V: 225 mm	H: 270 mm V: 202 mm
Input Signal	R.G.B. Analog, 15 pin D-sub	R.G.B. Analog, 15 pin D-sub
Input Voltage	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
Display Colors*	Analog input; unlimited colors	Analog input; unlimited colors
Typical Power Consumption	65 watts	65 watts

*Dependent on video controller/card used.

	17" Monitor	15" Monitor
Power Management	Compliant with EPA/Energy Star, VESA DPMS signaling method.	Compliant with EPA/Energy Star, VESA DPMS signaling method.
Plug and Play Compatibility	Compliant with VESA DDC 1/2B standards.	Compliant with VESA DDC 1/2B standards.
CRT Life	Average operational CRT life is 12,000 hours to half brightness.	Average operational CRT life is 12,000 hours to half brightness.
On-Screen Adjustments/ Lock/Unlock OSD	Brightness, Contrast, Exit, Zoom, V.Size, V. Position, H. Size, H. Position, Language, Save, Recall, Status, Degauss, Rotation, Input Level, OSD, Color Temperature, Trapezoid, Parallel, Pin Balance, Top/Bottom Corner, S/C Correct, H/ V Moire.	Brightness, Contrast, Exit, Zoom, V.Size, V. Position, H. Size, H. Position, Language, Save, Recall, Status, Degauss, Rotation, Input Level, OSD, Color Temperature, Trapezoid, Parallel, Pin Balance, Top/Bottom Corner, S/C Correct, H/ V Moire.
Safety Regulations	UL, cUL, DHHS, TÜV/GS	UL, cUL, DHHS, TÜV/GS
EMC IC ES-003 C-Tick VCCI	MPRII, FCC Class B, CE	FCC Class B, CE, MPRII
Monitor Dimensions	404w x 405h x 426d	362w x 368h x 385d
Net Weight	15.5kg	14kg
Operating Temperature	0-40°C	0-40°C
Humidity	20%-80%	20%-80%

Table C.1 iTouch 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. iTouch 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)	100%
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. Clear surface: Excellent, with no noticeable degradation. Antiglare surface: 6:1 minimum.

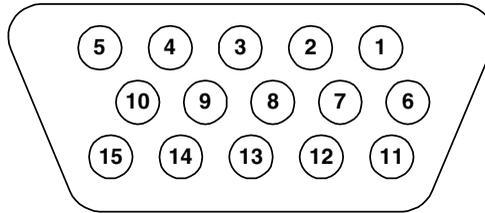
Environmental

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).

Table C.2 AccuTouch Touchmonitor Specifications

Mechanical	
Positional Accuracy	Standard deviation of error is less than 0.080 in. (2.03 mm). This 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	Meets Taber Abrasion Test (ASTM D1044), CS-10F wheel, 500 g. Meets pencil hardness 3H.
Expected Life Performance	AccuTouch technology has been operationally tested to greater than 35 million touches in one location without failure, using a stylus similar to a finger.
Optical	
Light Transmission (per ASTM D1003)	Typically 75% at 550-nm wavelength (visible light spectrum).
Visual Resolution	All measurements made using USAF 1951 Resolution Chart, under 30 X magnification, with test unit located approximately 1.5 in. (38 mm) from surface of resolution chart. Clear surface: N/A Antiglare surface: 6:1 minimum.
Haze (per ASTM D1003)	Clear surface: Less than 1.5%. Antiglare surface: Less than 15%.
Gloss (per ASTM D2457)	Clear surface: N/A Antiglare surface: 90 ± 20 gloss units tested on a hard-coated front surface.
Environmental	
Chemical Resistance	The active area of the touchscreen is resistant to the following chemicals when exposed for a period of one hour at a temperature of 21°C: Acetone Methylene chloride Methyl ethyl ketone Isopropyl alcohol Hexane Turpentine Mineral spirits Unleaded gasoline Diesel fuel Motor oil Transmission fluid Antifreeze

Signal PINOUT for 15" and 17" Monitors



PIN Number	Signal
1	Red video
2	Green video
3	Blue video
4	Ground
5	*VGA card detection (GND)
6	Red return
7	Green return
8	Blue return
9	NC
10	Sync return
11	Ground
12	SDA (Serial Data)
13	Horizontal Sync
14	Vertical Sync
15	SCL (Serial Clock)

*Pin 5, self-test pin shall be grounded when signal connector is plugged in.

Power Consumption

The touchmonitor comes with a power-saving feature that controls its power consumption. This feature complies with both the EPA's Energy Star requirements. It also conforms to the Display Power Management System (DPMS) power-down signaling method approved by the Video Electronics Standard Association (VESA).

15" Monitor		
Mode	LED	Power consumption (W)
Normal	Green	60
Standby	Green/ blinking	15
Suspend	Green/ blinking	15
Off	Green/ blinking	5
Unplugged	Not illuminated	0

17" Monitor		
Mode	LED	Power consumption (W)
Normal	Green	65
Standby	Green/ blinking	15
Suspend	Green/ blinking	15
Off	Green/ blinking	5
Unplugged	Not illuminated	0

NOTE: The only way to isolate the display unit completely from the mains supply is to unplug the mains cable.

Preset Timing Table

Your Elo Entuitive touchmonitor has 5/4 preset timing modes. The following are modes preset as factory defaults:

No.	Resolution	Horizontal Frequency	Refresh Rate
1	640x400	31.5 kHz	70 Hz
2	640x480	31.5 kHz	60 Hz
3	640x350	31.5 kHz	70 Hz
4	800x600*	53.7 kHz	85 Hz
5	1024x768*	68.7 kHz	85 Hz (17" only)

*Recommended primary mode

REGULATORY INFORMATION

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 or damage to the equipment, or may pose a fire hazard if the limitations are exceeded.

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

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

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

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

3) If there are any questions about the installation prior to connecting the equipment to mains power, contact a qualified electrician or the manufacturer.

Emissions and Immunity Information

A) Notice to Users in the United States: This equipment has been tested and found to comply with Part 15 Class B of FCC Rules for digital devices. 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 has been tested and found to comply with Class B radio noise emission limits as established by the Radio Interference Regulations of Industrie Canada for digital devices.

C) Notice to Users in the European Union: This equipment has been tested and found to comply with the Class B requirements of CE marking for Information Technology Equipment as required by: Low Voltage Directive 73/23/ECC and standard EN 60950; EMC Directive 89/336/ECC, and per standard EN 55022.

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-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



WARRANTY

Except as otherwise stated herein or in an order acknowledgment delivered to Buyer, Seller warrants to Buyer that the Product shall be free of defects in materials and workmanship. With the exception of negotiated warranty periods, the warranty for the touchmonitor and components of the product is 2 years.

Seller makes no warranty regarding the model life of components. Seller's suppliers may at any time and from time to time make changes in the components delivered as Products or components.

Buyer shall notify Seller in writing promptly (and in no case later than thirty (30) days after discovery) of the failure of any Product to conform to the warranty set forth above; shall describe in commercially reasonable detail in such notice the symptoms associated with such failure; and shall provide to Seller the opportunity to inspect such Products as installed, if possible. The notice must be received by Seller during the Warranty Period for such product, unless otherwise directed in writing by the Seller. Within thirty (30) days after submitting such notice, Buyer shall package the allegedly defective Product in its original shipping carton(s) or a functional equivalent and shall ship to Seller at Buyer's expense and risk.

Within a reasonable time after receipt of the allegedly defective Product and verification by Seller that the Product fails to meet the warranty set forth above, Seller shall correct such failure by, at Seller's options, either (i) modifying or repairing the Product or (ii) replacing the Product. Such modification, repair, or replacement and the return shipment of the Product with minimum insurance to Buyer shall be at Seller's expense. Buyer shall bear the risk of loss or damage in transit, and may insure the Product. Buyer shall reimburse Seller for transportation cost incurred for Product returned but not found by Seller to be defective. Modification or repair, of Products may, at Seller's option, take place either at Seller's facilities or at Buyer's premises. If Seller is unable to modify, repair, or replace a Product to conform to the warranty set forth above, then Seller shall, at Seller's option, either refund to Buyer or credit to Buyer's account the purchase price of the Product less depreciation calculated on a straight-line basis over Seller's stated Warranty Period.

THESE REMEDIES SHALL BE THE BUYER'S EXCLUSIVE REMEDIES FOR BREACH OF WARRANTY. EXCEPT FOR THE EXPRESS WARRANTY SET FORTH ABOVE, SELLER GRANTS NO OTHER WARRANTIES, EXPRESS OR IMPLIED BY STATUTE OR OTHERWISE, REGARDING THE PRODUCTS, THEIR FITNESS FOR ANY PURPOSE, THEIR QUALITY, THEIR MERCHANTABILITY, THEIR NONINFRINGEMENT, OR OTHERWISE. NO EMPLOYEE OF SELLER OR ANY OTHER PARTY IS AUTHORIZED TO MAKE ANY WARRANTY FOR THE GOODS OTHER THAN THE WARRANTY SET FORTH HEREIN. SELLER'S LIABILITY UNDER THE WARRANTY SHALL BE LIMITED TO A REFUND OF THE PURCHASE PRICE OF THE PRODUCT. IN NO EVENT SHALL SELLER BE LIABLE FOR THE COST OF PROCUREMENT OR INSTALLATION OF SUBSTITUTE GOODS BY BUYER OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, OR INCIDENTAL DAMAGES.

Buyer assumes the risk and agrees to indemnify Seller against and hold Seller harmless from all liability relating to (i) assessing the suitability for Buyer's intended use of the Products and of any system design or drawing and (ii) determining the compliance of Buyer's use of the Products with applicable laws, regulations, codes, and standards. Buyer retains and accepts full responsibility for all warranty and other claims relating to or arising from Buyer's products, which include or incorporate Products or components manufactured or supplied by Seller. Buyer is solely responsible for any and all representations and warranties regarding the Products made or authorized by Buyer. Buyer will indemnify Seller and hold Seller harmless from any liability, claims, loss, cost, or expenses (including reasonable attorney's fees) attributable to Buyer's products or representations or warranties concerning same.

INDEX

A

About the Product, 1
About Touchmonitor Adjustments, 13
AccuTouch Touchmonitor Specifications, 30

B

Bottom Corner, 16
Brightness, 18

C

C. Correct, 17
Care and Handling of Your Touchmonitor, 26
Chemical Resistance, 29, 30
Color Control, 17
Connecting Your Touchmonitor, 6
Construction, 30
Contrast, 18
CRT Life, 28

D

Deflection Frequency, 27
Display Area, 27
Display Colors, 27

E

Electrical Safety Information, 35
Electrostatic Protection, 29
EMI, 28
Emissions and Immunity Information, 35
Expected Life Performance, 29, 30

G

Geometry, 16
Gloss, 30

H

H. Moire, 17
H. Position, 16
H. Size, 16
Haze, 30
Humidity, 28

I

Input Level, 17
Input Signal, 27

Input Voltage, 27

Installing the Base, 4
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 Touch Driver for MS-DOS and Windows
3.1, 11
iTouch Touchscreen Specifications, 29
iTouch Touchscreens, 24

L

Language, 17
Light Transmission, 29, 30
Locking/Unlocking the OSD Functions, 15

M

Maximum Resolution, 27
Maximum Video Input Bandwidth, 27
Monitor Dimensions, 28

N

Net Weight, 28

O

On-Screen Adjustments, 28
Operating Temperature, 28
Operation, 13
OSD Adjustments, 16
OSD, H. Position, V. Position Timeout, 17

P

Parallel, 16
Picture Tube, 27
Pin Balance, 16
Pincushion, 16
Plug and Play Compatibility, 28
Positional Accuracy, 29, 30
Power Consumption, 27, 32
Power Management, 28
Precautions, 1
Preset Modes, 32
Preset Timing Table, 33

R

Recall, 17
Regulatory Information, 35

Rotation, 17

S

S. Correct, 17

Safety Regulations, 28

Save, 17

Sealing, 29

Selecting a Suitable Location, 5

Signal PINOUT for 15" and 17" Monitors, 31

Solutions to Common Problems, 21

Status, 18

Surface Durability, 29, 30

T

Technical Specifications, 27

Top Corner, 16

Touch Activation Force, 29, 30

Touchmonitor Controls, 14

Touchmonitor Safety, 25

Touchmonitor Specifications, 27

Touchpoint Density, 29, 30

Touchscreens

An Overview, 23

Trapezoid, 16

Troubleshooting, 21

U

Uninstalling the Base, 5

Unpacking Your Touchmonitor, 3

Using the On Screen Display (OSD), 14

V

V. Moire, 17

V. Position, 16

V. Size, 16

Visual Resolution, 29, 30

W

Warranty, 37

Z

Zoom, 16

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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
Folsom, CA 94628-3613

(800) ELO-TOUCH (800-266-8882)
Tel 916-239-5016
Fax 916-790-0822
etahfo@elotouch.com

Germany

Elo TouchSystems GmbH & Co. KG
Haingraben 6
D-99521 Otratzsch
Germany

Tel +49 (0)91 60822-0
Fax +49 (0)91 60822-100
etawko@elotouch.com

Belgium

Elo TouchSystems
Districtezenweg 692
B-3010 Kassella
Belgium

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

Japan

Touch Panel Systems K.K.
Sun Hamada Bldg 2F
1-18-20 Shin-Yokohama
Kohoku-ku Yokohama
Kanagawa 222-0093
Japan

Tel +81 (45) 479-2181
Fax +81 (45) 479-2180
www.tps.co.jp

tyco
Electronics

