*shown with optional peripherals

Touchmonitor User Guide

1729L 17" LCD Desktop Touchmonitor
(Optional Magnetic Stripe Reader, Customer Display,
Barcode Scanner and Fingerprint Reader available)

elo TOUCHSYSTEMS

Tyco Electronics

Our commitment. Your advantage.

Elo TouchSystemsTouchmonitor

User Guide

17" LCD Desktop

1729L

Revision A

P/N E488297

Elo TouchSystems.

1-800-557-1458
www.elotouch.com

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CHAPTER

1

INTRODUCTION

Product Description

The 1729L consists of a 17.0” LCD main display with a touchscreen and the following optional peripherals: customer display, vacuum fluorescent display (VFD), fingerprint reader, barcode scanner, magnetic stripe reader (MSR), speaker bar and a 6 port USB (USB version only) Hub. The main display element is a 17.0 inch diagonal SXGA resolution (1280 x 1024) LCD display. Three types of touchscreens can be selected in the 1729L as options. They are AccuTouch, IntelliTouch, CarrollTouch, Surface Capacitive and Acoustic Pulse Recognition. The 1729L also features an unique stand featuring spring loaded movement and a dual hinge.

Detailed LCD Display Performance Requirements

17 inch TFT LCD Display Panel

Display Format	1280 x 1024
Display area 17”	337.92mm(H) x 270.336mm(V)
Pixel Pitch 17”	0.264mm(H) x 0.264mm(V)
Contrast Ratio	800:1 typical
Brightness	
LCD	280 cd/m^2 (Typical)
AccuTouch	224 cd/m^2 (Typical)
IntelliTouch	258 cd/m^2 (Typical)
CarrollTouch	258 cd/m^2 (Typical)
Surface Capacitive	238 cd/m^2 (Typical)
Acoustic Pulse Recognition	258 cd/m^2 (Typical)
Accutouch Transmission	80% typical
IntelliTouch Transmission	92% typical
IR Touchscreen Transmission	92% typical
Surface Capacitive Transmission	85% typical
Acoustic Pulse Recognition	92% typical
Response Time	Tr=15 msec/Tf=10 msec typical
Display Color	16.7 million colors
Vertical Viewing Angle	Typical Vertical Viewing Angle: 80deg(looking down)/80 deg(looking up) @ CR>=10
Horizontal Viewing Angle	Typical Horizontal Viewing Angle: 80deg(looking left)/80 deg(looking right) @ CR>=10

Customer Display

The Customer Display is a twenty character two line vacuum fluorescent display (VFD). It consists of a VFD and VFD controller.

USB Version

Optional Parameters	
Characters per row	20
Number of rows	2
Character configuration	5x7 dot matrix
Character Height	9.5mm
Character width	6.2mm
Character configuration	ASCII
Character color	Blue green
MTBF	300,000 hours

Fingerprint Reader

The fingerprint reader will be ELO part number E728123 (DigitalPersona U.are.U 4000B). The fingerprint reader is powered by the USB bus. The reader optically scans the fingerprint when the user touches the glowing window. Optical technology gives the highest quality fingerprint scans and reliability.

Table of Partial Fingerprint Reader Specifications:

Fingerprint Reader	DigitalPersona U.are.U 4000B
Power Supply	5.0Vdc +/- 0.25V
Current Draw – scanning mode	190 mA (typical)
Current Draw – idle mode	140 mA (typical)
Current Draw – suspend mode	1.5 mA (typical)
Image Resolution	512 dpi
Image Color	8-bit gray level
Scan capture size	14.6mm (nominal width) x 18.1mm (nominal length)
Image capture speed	100 ms
USB type	1.0, 1.1, or 2.0
Operating Temperature	0°C to 40°C
ESD (Electrostatic Discharge)	up to 15kV mounted in case

Magnetic Stripe Reader

The MSR is a USB 1.1 device which reads all three data stripes on standard credit cards or driver's licenses conforming to ISO/ANSI standards. The MSR will have foreign language capability. The credit card is read by sliding the credit card through the MSR, stripe side toward the display, forward or backward. The MSR is powered from the USB port; no external power is needed. Here are its specifications:

- ELO part number: E579977
- Power source: from USB port
- Message format: ASCII
- Card speed: 3 to 50 IPS
- Electronics MTBF: 125,000 hours
- Mechanical MTBF: 1,000,000 passes
- Operating current: 30 mA maximum
- Non-operating current: 300 µA maximum

Speaker Bar

The speaker bar will contain two speakers and an audio amplifier. The speakers in the speaker bar will provide improved sound quality and higher volumes over the internal speakers. The circuitry will be designed such that when the speaker bar is connected to the POST, the 2 internal speakers will be disconnected.

The optional speaker bar may also come with two optional USB barcode scanners (1-D or omni-directional). The barcode scanner is only an option if the speaker bar is present. When a scanner is chosen, a USB-SSI (Simple Serial Interface) converter board is included. Both barcode scanners are powered with the USB interface.

1.One-Dimensional scanner specifications:

a. Ability to generate 1-D scanning pattern
b. Low cost solution
c. USB powered
d. Easy communication between host and scanner
e. Visible laser diode operating at 650nm
f. 100+ scans/sec
g. RoHS-compliant

2.Omni-Directional scanner (Elo P/N E787026) specifications.

a. Ability to generate omni-directional scanning pattern
b. Maximum performance
c. 2-D scanning ability (PDF417, MicroPDF)
d. USB powered
e. Easy communication between host and scanner
f. Visible laser diode operating at 650nm
g. 600+ scans/sec
h. RoHS-compliant

3.USB-SSI converter board (Elo P/N E580321) specifications

a. Ability to convert from serial interface to USB interface and vice versa.
b. Compact size
c. Input Voltage: 5V
d. Buzzer

Six Port USB Hub

The Hub provides 4 internal USB ports that can be shared between the MSR, the fingerprint reader, the barcode scanner, the touchscreen, and the customer display. The hub also supplies two USB ports to the outside of the back of the 1729L for external use. The hub is only used by the USB version of the 1729L. The hub meets the following specifications:

1) Full compliance with USB specification 1.0, 1.1 and HID Class Definition Rev 1.0.
2) Shall be self powered
3) Should provide 2 external and 4 internal downstream ports with individual port over current detection, protection and recovery.
4) Support both Open Host Controller Interface (OHCI) and Universal Host Controller Interface (UHCI).
5) Support Suspend and Resume operation.
6) Support bus fault detection and recovery.

External Power Supply

The 1729L shall be powered by a universal AC power source or 12 VDC from external power source. The power supply shall provide the following capability:

1) AC power: Input voltage 90 to 264 vac
2) Input frequency 47 to 63hz
3) DC power: Input voltage 12 vdc
4) Input line and load regulation +/-5%

CHAPTER

2

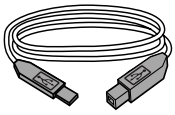
INSTALLATION AND SETUP

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

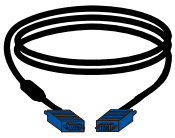
Unpacking Your Touchmonitor

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

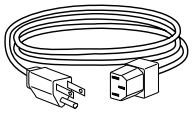
Touchmonitor



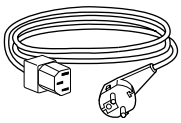
USB Cable



Video cable



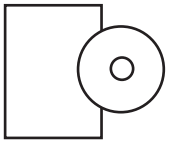
OR



Power cable US/Candian

European power cable

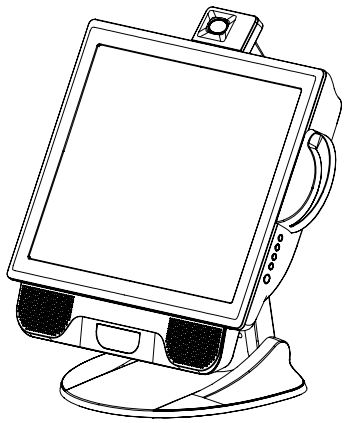
Audio Cable



CD and Quick Install Guide

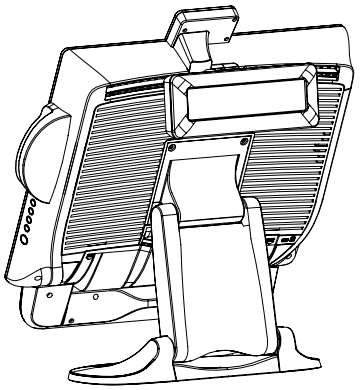
Product Overview

Main Unit

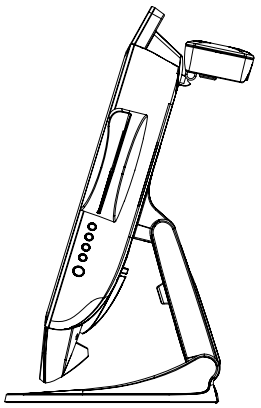


Note: Shown with optional peripherals

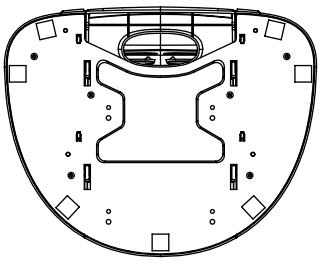
Rear View

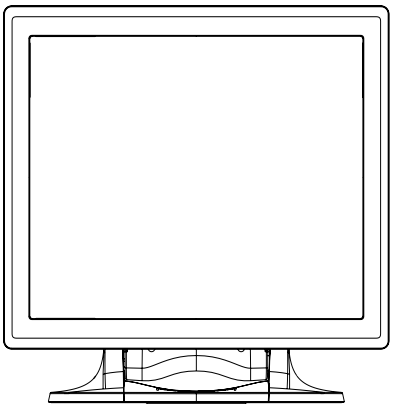


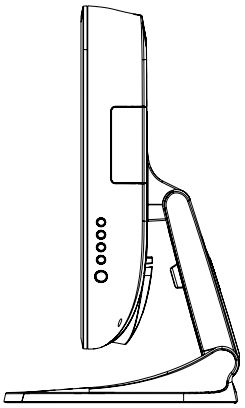
Side View

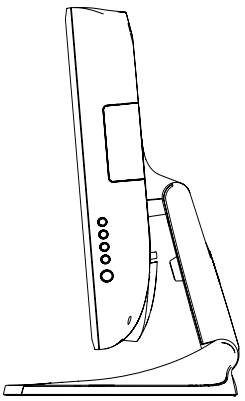


Base Bottom View

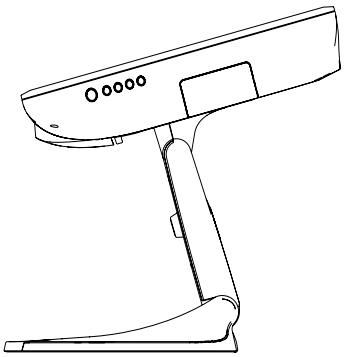




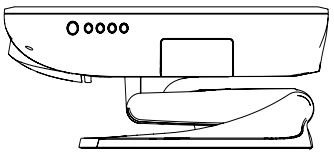




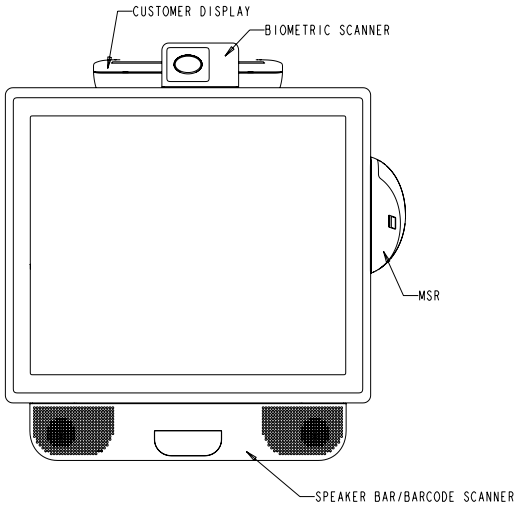
TILT -5° FROM VERTICAL

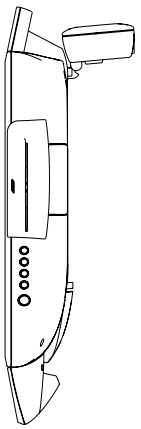


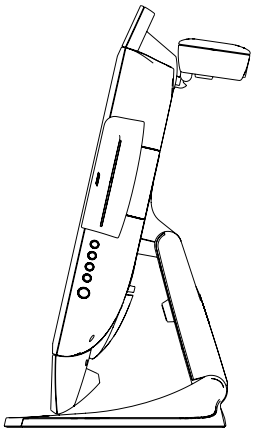
TILT 75° FROM VERTICAL



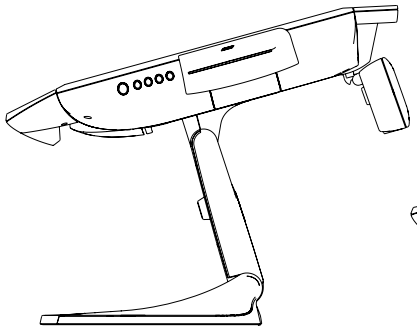
MONITOR FULLY COLLAPSED



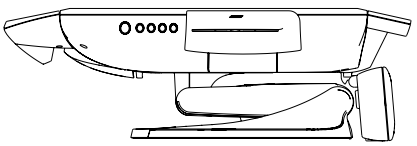




TILT 13° FROM VERTICAL
(MINIMUM TILT WITH SPEAKER ACCESSORY)



TILT 75° FROM VERTICAL



MONITOR FULLY COLLAPSED

Kensington™ Lock

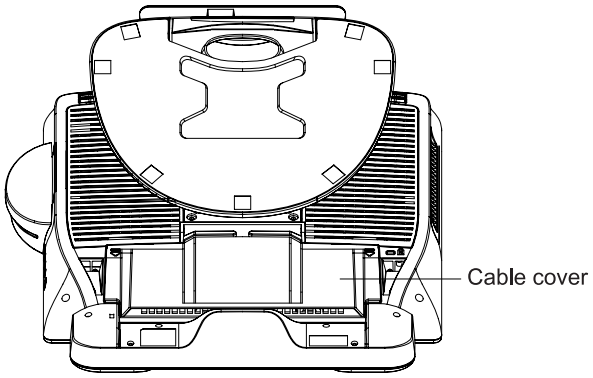
The Kensington™ lock is a security device that prevents theft. To find out more about this security device,
go to http://www.kensington.com.

USB Interface Connection

Your touchmonitor comes with only one touchscreen connector cables: **USB** cable. (For Windows 2000, Me and XP systems only.)
To set up the display, please refer to the following figures and procedures:

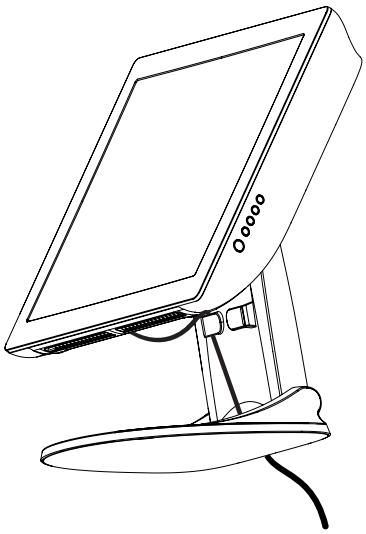
Remove the Cable Cover

The cables are connected at the back of the monitor.

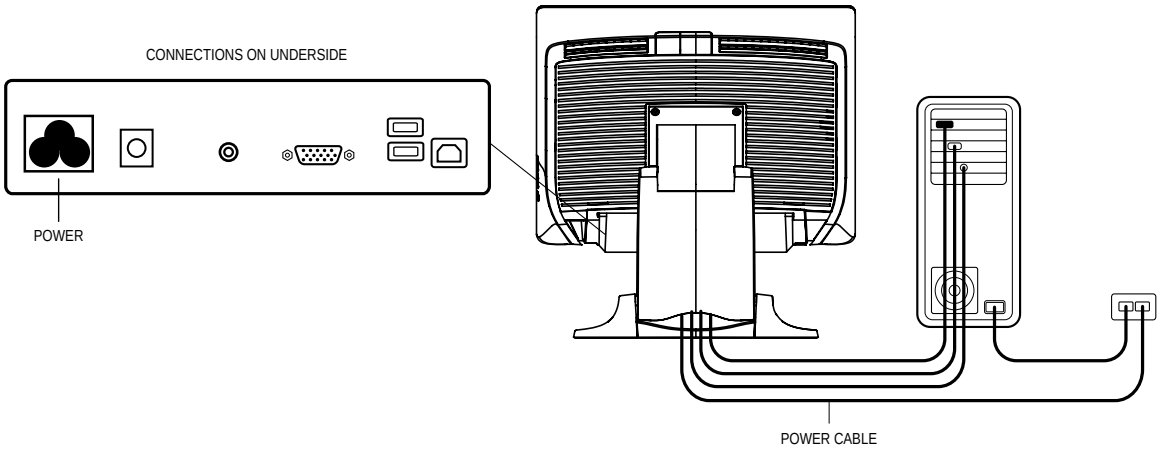


To remove the cover, grasp the lip of the cover and pull towards you until it snaps.

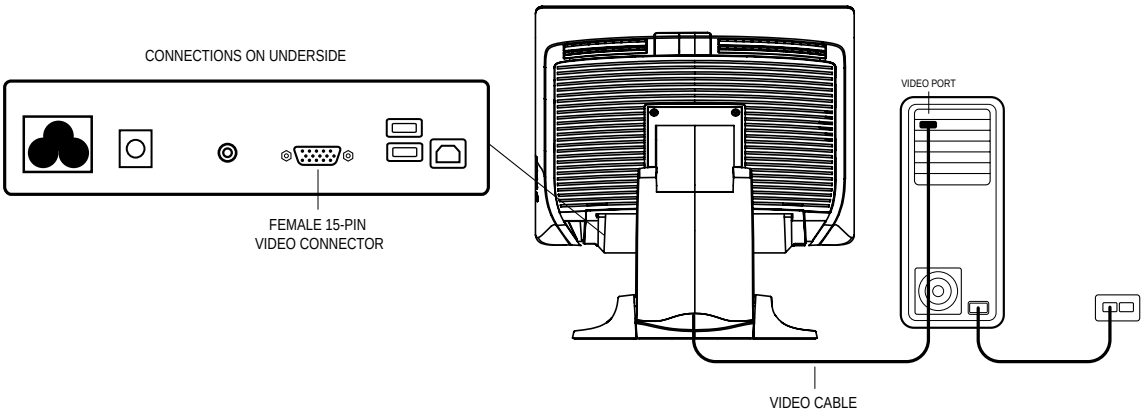
CAUTION Before connecting the cables to your touchmonitor and PC, be sure that the computer and touchmonitor are turned off.



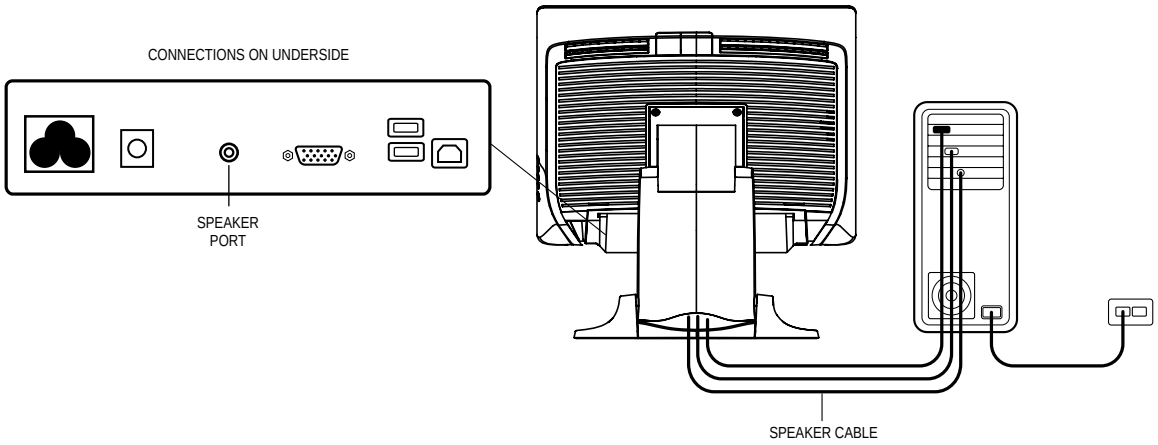
NOTE Before connecting the cables to the touchmonitor, route all the cables through the hole in the second as shown in the picture above.



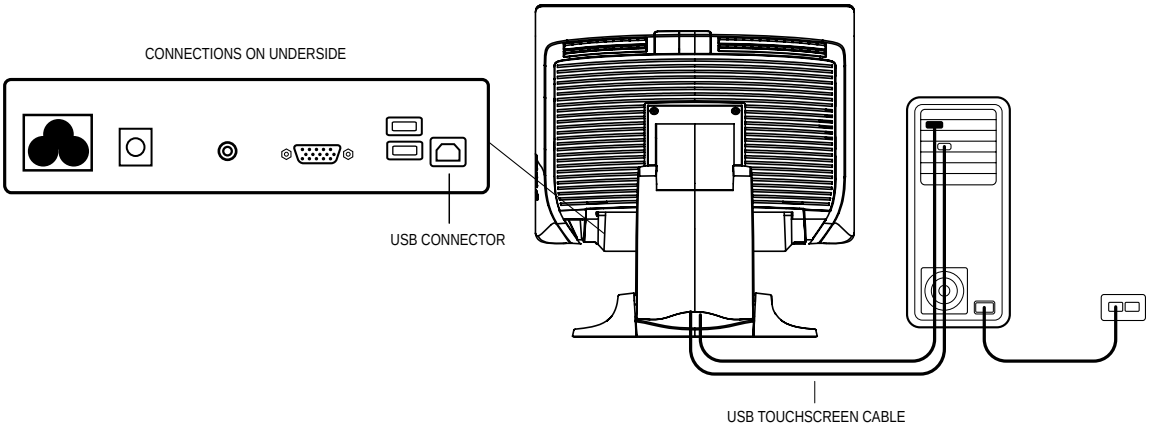
Connect one end of the **power cord** to the monitor and the other end to wall.
Connect the power cable to the power port in the monitor.



Connect one end of the **video cable** to the rear side of computer and the other to the LCD. Tighten by turning the two thumb screws clockwise to ensure proper grounding.



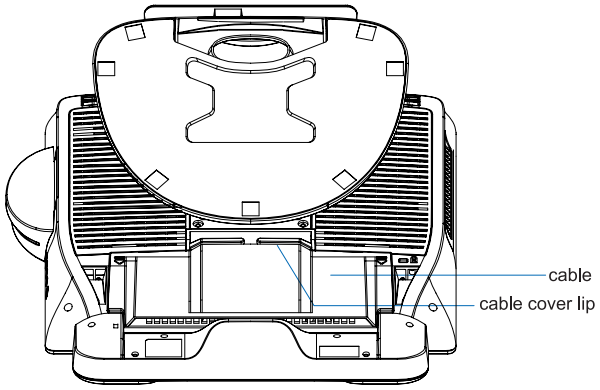
Connect one end of the **speaker cable** to the speaker port in the computer and the other end to the port in the monitor.



Connect one end of the **USB cable** to the rear side of the computer and the other to the LCD monitor.

The USB cable is for optional touch, MSR, CD and Finger Print Reader. Only one USB cable is needed because the device contains a self powered USB 1.1 Hub. Two self powered ports are available for running other USB devices. For touch only, no USB Hub is present.

Replace the Cable Cover



Then you have attached all the cables to the monitor, gently bring all the cables toward the standard so they fit under the cover lip.
Snap the Cable cover in place over the connections.

Optimizing the LCD Display

To ensure the LCD display works well with your computer, configure the display mode of your graphic card to make it less than or equal to 1280 x 1024 resolution, and make sure the timing of the display mode is compatible with the LCD display. Refer to Appendix A for more information about resolution. Compatible video modes for your touchmonitor are listed in Appendix C.

Installing the Peripheral Device Drivers

Finger Print Reader

Driver Installation:

1. Insert your Elo TouchTools CD
2. On the CD, browse to Touch Monitor Peripherals\Fingerprint Reader\Fingerprint Reader 1729 17A2\Drivers
3. Once in this folder, click on the executable file named Setup and follow the necessary prompts to complete the driver installation.

Test Applications:

1. Insert your Elo TouchTools CD
2. On the CD, browse to Touch Monitor Peripherals\Fingerprint Reader\Fingerprint Reader 1729 17A2\Test Applications
3. Open up the application named dpFTConnect
4. To test basic functionality, place a finger on the fingerprint reader and you will see an image of the fingerprint appear in the program window.

Magnetic Stripe Reader

No device are needed.

Testing the USB MSR Keyboard Emulation

1 Plug in the device.
2 Open MS Word.
3 Slide the card through the MSR to view the data.

Testing the USB-HID Class MSR

1 On the CD, browse to Touch Monitor Peripherals\Magnetic Stripe Card Reader (MSR)\Demo.
2 Open the Readme.txt and follow instructions to test the unit.

Converting MSR from HID to Keyboard Emulation

1. On the CD, browse to Touch Monitor Peripherals\Magnetic Stripe Card Reader (MSR) \HID to KB Converter.
2. Open up the program named MSR Change Mode
3. The dim box will indicate the current setting. Click on Keyboard Mode to switch to Keyboard Emulation mode.
4. Click Quit to close the window.

Converting MSR from Keyboard Emulation to HID

1. On the CD, browse to Touch Monitor Peripherals\Magnetic Stripe Card Reader (MSR) \HID to KB Converter.
2. Open up the program named MSR Change Mode
3. The dim box will indicate the current setting. Click on HID Mode to switch to HID mode.
4. Click Quit to close the window.

Barcode Scanner

Driver Installation:

1. Insert your Elo TouchTools CD.
2. On the CD, browse to Touch Monitor Peripherals\Barcode Scanner Startup\Drivers.
3. Double-click on USB7210.msi and follow the prompts given by the setup file.
4. Once you have finished installing the above: Right click on My Computer and click on Properties. Click on the Hardware tab and then click Device Manager.
5. Double click on USB7210 Converter Module, which should be located in the Other Devices section. Next click on Reinstall Driver.
6. Now your Windows operating system should guide you through the rest of the instal lation process. If any files are requested, please provide the following pathname in your Elo TouchTools CD: Touch Monitor Peripherals\Barcode Scanner Startup\Drivers.

Test Applications:

1. Insert your Elo TouchTools CD.
2. On the CD, browse to Touch Monitor Peripherals\Barcode Scanner Startup\Test Applications.
3. Double click on Scanner Test Application Readme. This document will explain how to test your scanner for basic functionality.

Hall Effect Switch:

The scanner module also adds a Hall Effect Switch (HE Switch) that enables the unit to automatically set the Trigger mode of the Scan Engine depending on the location of anexternal magnet (included in scanner cradle).
The output of the HE Switch switches low (turns ON) when a magnetic field (south polarity) perpendicular to the Hall sensor exceeds the operate point threshold, BOP (typically 100 G magnetic field). When the magnetic field is reduced below the release point, BRP, (typically 45 G magnetic field) the HE Switch output goes high (turns OFF). The Hall Effect Switch goes to the USB Controller's DSR input. As the HE Switchopens or closes, it causes the USB Controller to initiate a USB Interrupt message to thehost. When the Host Application software detects the DSR input active LOW via theUSB Interrupt and a CDC message (HE Switch is ON), it sends a 'Continuous Trigger'SSI command.

The Scan Engine turns on the laser and is able to scan and decode barcodes continuouslywithout the user having to press the trigger (momentary switch). When the Host Appli-cation software detects the DSR input HIGH (HE Switch is OFF), it sends a 'LevelTrigger' SSI command to the Symbol Scan Engine. The Scan Engine turns off the laserand will scan and decode barcodes only when the trigger is activated.

Enable 2-D Scanning:

Your scanner default settings do not enable 2-D barcode reading ability. In order to enable this option, follow these steps:

1) Scan the barcodes below to enable PDF417 and MicroPDF417. These are both types of 2-D barcodes.

2) Now scan the barcode below to change your scanning pattern. Using this scanning pattern will allow you to read 2-D barcodes (you can still read 1-D barcodes also).

*Note: These barcodes (higher resolution) can also be found in the integration guide for the barcode scanner, which is located in the TouchTools CD.

Customer Display

Driver Installation:

1. Insert your Elo TouchTools CD.
2. On the CD, browse to Touch Monitor Peripherals\Rear Facing Customer Display\Drivers\USB Drivers. Click on the folder that has the name of your operating system for the necessary drivers.
3. Once in this folder, open up the zip file and open the install text file for further driver installation instructions.

*** Note: If your software requires OPOS Drivers, it is available in the following location:Touch Monitor Peripherals\Rear Facing Customer Display\Drivers\OPOS Drivers.**

Test Applications:

1. Insert your Elo TouchTools CD.
2. On the CD, browse to Touch Monitor Peripherals\Rear Facing Customer Display\Testing\USB.
3. Open up the text file named USB Test and follow the instructions. This testing procedure assumes you have already installed the necessary USB drivers.

Installing the Touch 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
- CE 2.x, 3.0, 4x
- Windows XP Embedded
- Windows 3.x
- MS DOS
- OS/2

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

Your Elo USB 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 USB Touch Driver for Windows XP, Windows 2000, Me and 98

1 Insert the Elo CD-ROM in your computer's CD-ROM drive.
If Windows XP, Windows 2000,Windows 98, or Windows Me starts the Add New Hardware Wizard:

2 Choose **Next**. Select "Search for the best driver for your device (Recommended)" and choose **Next**.

3 When a list of search locations is displayed, place a checkmark on "Specify a location" and use **Browse** to select the \EloUSB directory on the Elo CD-ROM.

4 Choose ***Next***. Once the Elo TouchSystems USB touchscreen driver has been detected, choose **Next** again.

5 You will see several files being copied. Insert your Windows 98 CD if prompted. Choose **Finish**.

If Windows XP, Windows 2000,Windows 98, or Windows Me does not start the Add New Hardware Wizard:

NOTE: For Windows XP and Windows 2000 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.

CHAPTER

3

OPERATION

About Touchmonitor Adjustments

Your touchmonitor will unlikely require adjustment. Variations in video output and application may require adjustments to your touchmonitor to optimize the quality of the display.

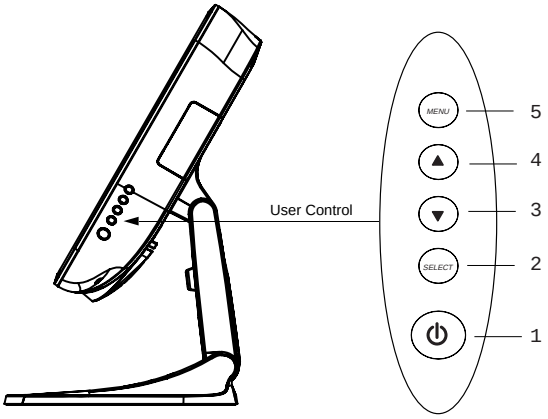
For best performance, your touchmonitor should be operating in native resolution, that is 1280 x 1024 at 60-75 Hz. Use the Display control panel in Windows to choose 1280 x 1024 resolution.

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.

To restore factory set up, choose it from the OSD.

17” LCD Function Key



	Controls	Function
1	**Power Switch**	Turns the display system power **on** or **off**.
2	**Select**	Displays the OSD menus on the screen and used to select (“Clockwise” and “Counter-clockwise” direction) the OSD control options on the screen.
3	▼	Adjusts the decreasing value of the selected OSD control option.
4	▲	Adjusts the increasing value of the selected OSD control option.
5	**Menu**	Menu display and menu exit.

Controls and Adjustment

OSD Lock/Unlock

You are able to lock and unlock the OSD feature. The monitor is shipped in the unlocked position.

To lock the OSD:

1 Press the Menu button and ▲ button simultaneously for 2 seconds. A window will appear displaying “OSD Unlock”. Continue to hold the buttons down for another 2 seconds and the window toggles to “OSD Lock”.

Power Lock/Unlock

You are able to lock/unlock the Power feature. The monitor is shipped in the unlockedposition.To lock the power:

1 Press the Menu button and the ▼ simultaneously for 2 seconds. A window for another 2 seconds and the window toggles to —Power Lock“.

OSD Menu Functions

To display the OSD Menu press the **Menu** button.

1 Press the ▲ button or ▼ button to select the different OSD control option.

2 When the function you want to change is displayed, press the **Select** button.

To adjust the Value of the function:

1 Pressing the ▲ button increases the value of the selected OSD control option.

2 Pressing the ▼ button decreases the value of the selected OSD control option.

After adjusting the values, the monitor will automatically save the changes.

NOTE: The OSD screen will disappear if no input activities are detected for 45 seconds.

OSD Control Options

Brightness

• Background Luminance of the LCD panel is adjusted.

Contrast

• Adjusts the contrast or the values of color gain (RED, GREEN or BLUE).

V-Position

• Moves the screen up or down.

H-Position

• Moves the screen left or right.

Recall Defaults

• All data copy from factory shipment data.

Color Temperature

• Press ▲ or ▼ to select 9300, 6500, 5500, 7500 and user. Only when selecting user you can malce adjustments to the R/G/B content.

Volume

• To increase or decrease the sound level.

Sharpness

• The sharpness can be adjustable.

Phase

• Adjusts the phase of the dot clock.

Clock

• Adjusts the ratio of dividing frequency of the dot clock.

OSD Position

• Allows the OSD indication position to be selected.

OSD Timeout

• Adjust time for OSD to disappear.

Auto Adjust

• Clock system auto adjustment (under 5 seconds).

Language

• Select the language used for the OSD menu from among English, France, Deutsch, Spanish and Japanese.

Information

• The frequency of the horizontal/vertical synchronizing signal under the input is indicated with tolerance of ±1KHz for horizontal and ±1 Hz for vertical.

Power-Save (No Input)

- The LCD panel background is cut when there is no signal input (AC line power consumption of 4w or less).

Power LED Display & Power Saving

General Power Saving Mode

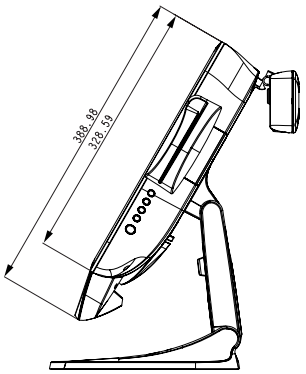
When the power switch are switch **on**, this LED lights in **green**.
The LED indicates the different power status with altered LED colors when monitor operates in different modes (see following table).

Mode	Power Consumption	Indicator
On	50w max.	Green
Sleep	4w max.	Orange
Off	2w	NO

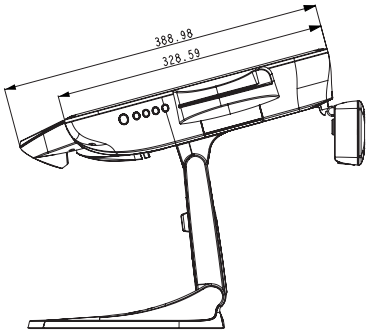
We recommend switching the monitor off when it is not in use for a long period of time.

Display Angle

For viewing clarity, you can tilt the LCD forward up 67 to 90 degrees.



Tilt 30° from vertical



Tilt 75° from vertical

CAUTION In order to protect the LCD, be sure to hold the base when adjusting the LCD, and take care not to touch the screen.

CHAPTER

4

TROUBLESHOOTING

If you are experiencing trouble with your touchmonitor, refer to the following table. If the problem persists, please contact your local dealer or our service center. Elo Technical Support numbers are listed on the last page of this manual.

Solutions to Common Problems

Problem	Suggestion(s)
The monitor does not respond after you turn on the system.	Check that the monitor's Power Switch is on. Turn off the power and check the monitor's power cord and signal cable for proper connection.
Characters on the screen are dim	Refer to the *Controls and Adjustments* section to adjust the brightness.
The screen is blank	During operation, the monitor screen may automatically turn off as a result of the Power Saving feature. Press any key to see if the screen reappears.Refer to the *Controls and Adjustments* section to adjust the brightness.
OSD or power buttons don't work	Check to see that they are not locked out. See page 3-33.
"Out of Range" display	check to see of the resolution or vertical frequency of your computer is higher than that of the LCD display.

CHAPTER

A

NATIVE RESOLUTION

The native resolution of a monitor is the resolution level at which the LCD panel is designed to perform best. For the Elo LCD touchmonitor, the native resolution is 1280 x 1024 for the SXGA-17 inch size. 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.

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

The native resolution of an LCD is the actual number of pixels horizontally in the LCD by the number of pixels vertically in the LCD. LCD resolution is usually represented by the following symbols:

VGA	640 x 480
SVGA	800 x 600
XGA	1024 x 768
SXGA	1280 x 1024
UXGA	1600 x 1200

As an example, a SVGA resolution LCD panel has 800 pixels horizontally by 600 pixels vertically. Input video is also represented by the same terms. XGA input video has a format of 1024 pixels horizontally by 768 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. As an example, the pixel in column 45 and row 26 of the input video is in column 45 and row 26 of the LCD. For the case when the input video is 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 on its 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 displayed image such as varying width characters.

CHAPTER

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 To reduce the risk of electric shock, follow all safety notices and never open the touchmonitor case.

2 Turn off the product before cleaning

3 Your new touchmonitor is equipped with a 3-wire, grounding power cord. The power cord plug will only fit into a grounded 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.

4 The slots located on the sides and top of the touchmonitor case are for ventilation. Do not block or insert anything inside the ventilation slots.

5 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 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 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.
- 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 .

CHAPTER

C

TECHNICAL SPECIFICATIONS

Display Modes

Your Elo touchmonitor is compatible with the following standard video modes:

Item	Resolution	Type	H. Scan(KHz)	V. Scan(Hz)	Pol.
1	640 x 350	VGA 70Hz	31.47	28.322	
2	720 x 400	VGA 70Hz	31.47	28.322	
3	640 x 480	VGA 60Hz	31.47	25.175	
4	640 x 480	MAC 66Hz	35	32.24	-/-
5	640 x 480	VESA 72Hz	37.86	31.5	-/-
6	640 x 480	VESA 75Hz	37.5	31.5	-/-
7	800 x 600	VESA 56Hz	35.16	36	+/+
8	800 x 600	VESA 60Hz	37.88	40	+/+
9	800 x 600	VESA 75Hz	46.88	49.5	+/+
10	800 x 600	VESA 72Hz	48.08	50	+/+
11	832 x 624	MAC 75Hz	49.72	57.283	-/-
12	1024 x 768	VESA 60Hz	48.36	65	-/-
13	1024 x 768	SUN 65Hz	52.45	70.49	-/-
14	1024 x 768	VESA 70Hz	56.48	75	-/-
15	1024 x 768	VESA 75Hz	60.02	78.75	+/+
16	1280 x 1024	SXGA 60Hz	64	108	+/+
17	1280 x 1024	SXGA 75Hz	80	135	+/+
18	1152 x 864	SXGA 75Hz	67.5	108	+/+
19	1280 x 960	SXGA 60Hz	60	108	+/+

Touchmonitor Specifications

Model		**1729L**
LCD Display		17.0” TFT Active Matrix Panel
Display Size		337.92(H) x 270.336(V) mm
Pixel Pitch		0.264(H) x 0.2647(V) mm
Display Mode		VGA 640 x 350 (70 Hz) VGA 720 x 400 (70 Hz) VGA 640 x 480 (60 / 72 / 75 Hz) SVGA 800 x 600 (56 / 60 / 72 / 75Hz) XGA 1024 x 768 (60 / 70 / 75Hz) SXGA 1280 x 1024 (60 / 70 / 75Hz)
Native		XGA 1024 x 768
Contrast Ratio		800 : 1 (typical)
Brightness		
LCD		280 cd/m^2 (Typical)
AccuTouch		224 cd/m^2 (Typical)
IntelliTouch		258 cd/m^2 (Typical)
CarrollTouch		258 cd/m^2 (Typical)
Surface Capacitive		238 cd/m^2 (Typical)
Acoustic Pulse Recognition		258 cd/m^2 (Typical)
Response Time		Tr= 15 msec, Tf= 10 mesc typical
Display Color		16.7 million color
Viewing Angle		(R/L)= -80°/+80° (typical), (U/D) -80°/+80° (typical)
Input Signal	VGA Analog Video	R.G.B. Analog 0.7V peak to peak
	Sync	TTL Positive or Negative, Composite Sync, Sync on green
	DVI Video	Digital TMDS Input
Signal Connector		15 Pin D-Sub, DVI-D(optional)
Front Control		Power on / off , Menu, ▲ , ▼ , Select
OSD		Brightness, Contrast, H/V-Position, Recall default, Color Temperature, Volume, Sharpnss, Phase, Clock, OSD position, OSD Timeout, Auto Adjust, Language, Information
Plug & Play		DDC1 / 2B
Touch Panel (optional)		AccuTouch, IntelliTouch and CarrollTouch, Surface Capacitive, Acoustic Pulse Recognition
Power		Input: AC 90-264V, 47-63Hz, or DC 12V/5A (max.)
Operating Conditions	Temp	0°C ~ 40°C (41°F ~ 95°F)
	Humidity	20% ~ 80% (No Condensation) Altitude To 12,000 Feet
Dimensions (HxWxD)		391 x 329 x 285mm
Weight (Net)		21.4lbs., monitor weight 19.4 lbs.
Certifications		UL, C-UL, FCC, CE, TUV, VCCI, MPRII, C-TICK

AccuTouch Touchscreen Specifications

MECHANICAL	
Construction	Top: Polyester with outside hard-surface coating with clear or antiglare finish. Inside: Transparent conductive coating. Bottom: Glass substrate with uniform resistive coating. Top and bottom layers separated by Elo-patented separator dots.
Positional Accuracy	Standard deviation of error is less than 0.080 in. (2.03 mm). This equates to less than ±1%.
Touchpoint Density	More than 100,000 touchpoints/in² (15,500 touchpoints/cm²).
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 85% 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. Antiglare surface: 6:1 minimum.
Haze (per ASTM D1003)	Antiglare surface: Less than 15%.
Gloss (per ASTM D2457)	Antiglare surface: 90 ± 20 gloss units tested on a hard-coated front surface.

IntelliTouch Touchscreen Specifications

MECHANICAL	
Positional Accuracy	Standard deviation of error is less than 0.080 in. (2.03 mm). Equates to less than ±1%.
Touchpoint Density	More than 100,000 touchpoints/in2 (15,500 touchpoints/cm2).
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)	90%
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.
Gloss (per ASTM D2457 using a 60-degree gloss meter)	Antiglare surface: Curved: 60 ± 20 gloss units or 75 ± 15 gloss units.
ENVIRONMENT	
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 Levels 4 (15kV air/8 kV contact discharge)

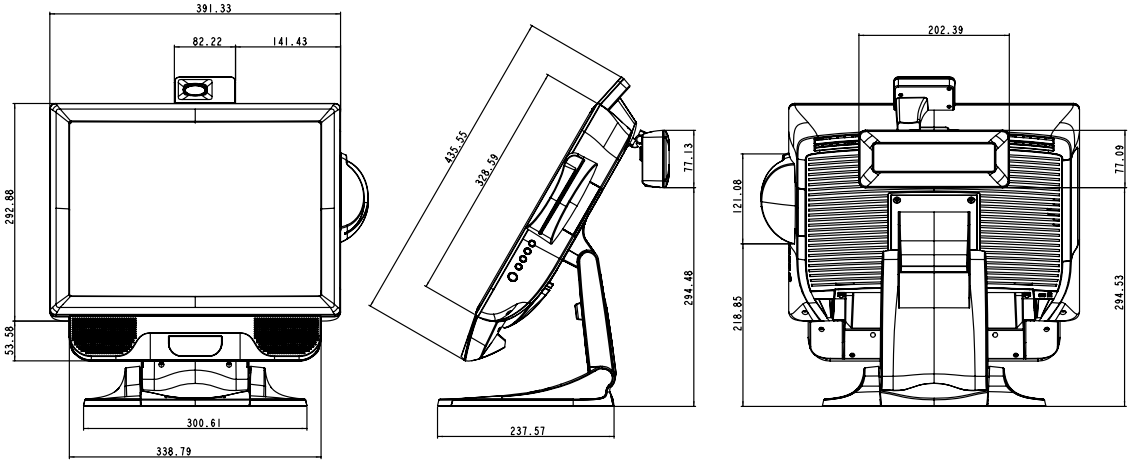
Infrared Touchscreen Specifications

MECHANICAL	
Input Method	Input Method Finger or gloved hand activation
Electrical	
Positional Accuracy	Typical centroid accuracy: 2 mm with 1 mm STD error
Resolution	Touchpoint density is based on controller resolution of 4096 x 4096
Touch Activation Force	No minimum touch activation force is required
Controller	Board: USB 1.1
OPTICAL	
Light Transmission	Glass overlay: 90% per ASTM D1003-92
	Environmental
Chemical Resistance	Glass overlays: The touch active area of the touchscreen is resistant to 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. Polycarbonate bezel: around perimeter of display has some sensitivity to hydrocarbons.
Durability	
Surface Durability	Glass filter option: Surface durability is that of glass, Mohs' hardness rating of 7.

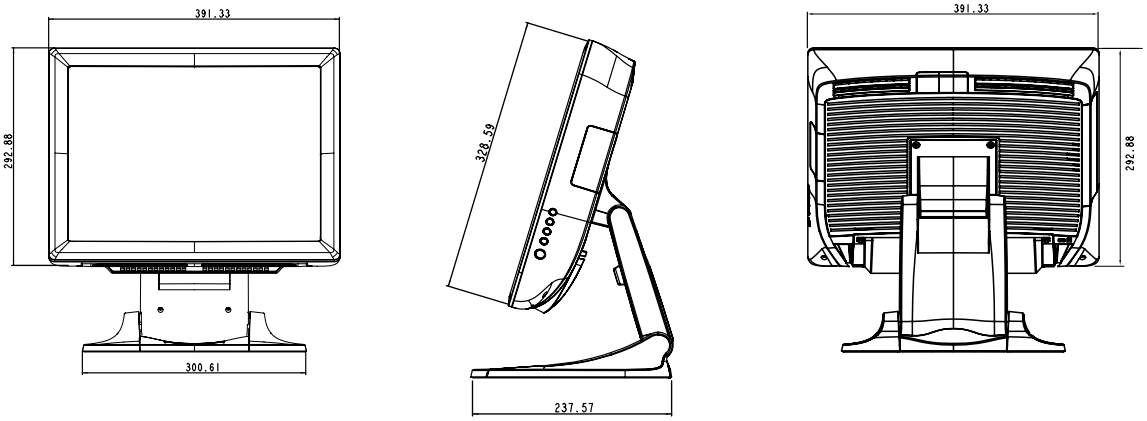
Acoustic Pulse Recognition Specification

MECHANICAL	
Input method	Finger, finger nail, gloved hand, or stylus activation
ELECTRICAL	
Position accuracy	1% max. error
Resolution accuracy	Touchpoint density is based on controller resolution of 4096 x 4096
Touch activation force	Typically 2 to 3 ounces (55 to 85 grams)
Controller	Board: USB 1.1
OPTICAL	
Light transmission	90%+/-5%
ENVIRONMENTAL	
Chemical resistance	The touch activation area of the touchscreen is resistant to 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
DURABILITY	
Surface durability	Surface durability is that of glass, Mohs' hardness rating of 7
Expected life	No known wear-out mechanism, as there are no layers, coatings, or moving parts. APR technology has been operationally tested to more than 50 million touches in one location without failure, using a stylus similar finger.

17” LCD Touchmonitor(ET1729L-XXXA-1-XX-XX-G) Dimensions



17” LCD Touchmonitor(ET1729L-XXXA-1-XX-G) Dimensions



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 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.

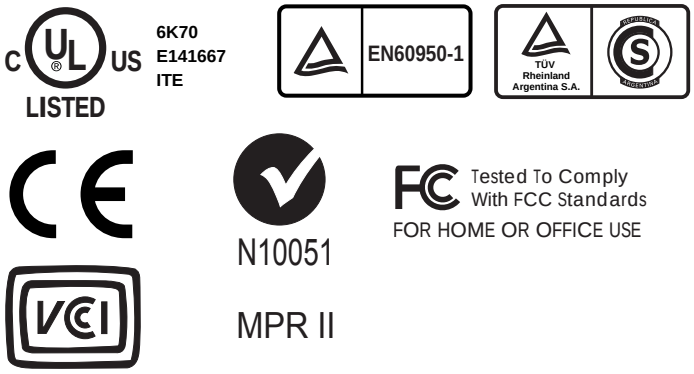
iii) Reorient the affected receiver's antenna.

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.



"The application of this monitor is restricted to special controlled luminous environments.The screen surface trend to reflect annoying light of lamps and sunlight. To avoid these reflections the monitor should not be positioned in front of a window or directed to luminaries. The monitor is in compliance with Reflection Class III according to ISO 13406-2"

"*Die Anwendung dieses Bildschirms ist auf speziel kontrollierte Umgebungsbeleuchtungen eingeschränkt. Die Bildschirmoberfläche neigt zu störenden Spielungen von Lampen und Sonnenlicht. Um diese Refelxionen zu vermeiden sollte der Monitor nicht auf Fenster und Beleuchtungseinrichtungen ausgerichtet sein. Der Monitor erfüllt nur die Relexionsklasse III nach ISO 13406-2"*

This class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference reveived, including interference that may cause undesired operation.

CAUTION:
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

VORSICHT:
Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

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 the 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.

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Check out Elo TouchSystems Web site!

www.elotouch.com

Get the latest...

- *Product information*
- *Specifications*
- *News on upcoming events*
- *Press release*
- *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:

North American
Elo TouchSystems, Inc.
301 Constitution Drive,
Menlo Park, CA 94025
USA

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