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TOUCHSYSTEMS

Elo Entuitive Touchcomputer User Guide

Elo Entuitive ESY1525L Touchcomputer Series

entuitive
Touchmonitors

Revision C

Elo Entuitive Touchmonitor User Guide

15" LCD Desktop Touchcomputer

ESY1525L Touchcomputer Series

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TouchmonItors

Revision C

P/N 008594

Elo TouchSystems, Inc.

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Table of Contents

INTRODUCTION

Congratulations on your purchase of an Elo TouchSystems Entuitive **Touchcomputer**. This manual is to help you operate and maintain the **Touchcomputer**.

Precautions

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

About the Product

Your LCD Desktop **Touchcomputer** is a 15" XGA TFT color display with the following features:

The **Touchcomputer** consists of a 15 inch LCD monitor and a computer in a package approximately the size of a monitor. The **Touchcomputer** is capable of running Windows CE.**Net Ver4.2**, Windows 2000 **Pro** and Windows XP **Pro** **depending on how the Touchcomputer** is configured and the options the user **selects. The Touchcomputer** consists of an LCD main display with a touchscreen**, a backlight inverter, a** touch controller, speakers, and a **mother board**. The **Touchcomputer also includes** an external 12 VDC power Supply, a stand, a **chassis and case, and internal** and external cables. The **Touchcomputer** provides **an optional Magnetic Stripe** Reader and an optional Customer Display. The **Touchcomputer does not come** with a keyboard or a Mouse, but it does provide **external ports to add them.** The **Touchcomputer** has on screen touch to use as a

mouse and an on screen keyboard to take the place of an external keyboard. The **Touchcomputer** provides the following options.

Operating System

A selection of operating systems can be made between Windows CE**.Net Ver4.2**, **Windows** XP **Pro** or Windows 2000 **Pro**.

Windows XP Pro and 2000 Pro

When Windows XP **Pro** and Windows 2000 **Pro** are selected, the **Touchcomputer will** have a 20 GB or greater hard drive and 256 MB of SDRAM. The **Touchcomputer** will boot from the hard drive, which contains the operating **system. No compact** Flash will be provided.

Windows CE.Net Ver4.2

When Windows CE**.Net Ver4.2** is selected as the operating system, the **Touchcomputer will** boot from the onboard 64MB of compact flash. The **Touchcomputer will include** 256MB of SDRAM. No hard drive will be provided.

Customer Display

An optional serial customer display can be selected. No applications software is provided for the Customer Display. A test program is provided to verify the Customer Display is operating properly.

Magnetic Stripe Reader (MSR)

A USB HID (not available in Windows CE**.Net Ver4.2**) or USB Keyboard Emulation MSR can be selected. No applications software is provided for the MSR. A test program is provided to verify the MSR is operating properly.

Touchscreen

AccuTouch or IntelliTouch touchscreens may be selected with a USB interface. No applications software is provided for the touchscreen. A test program is provided to verify the touchscreen is operating properly.

Drivers

Drivers and test programs will be provided with each system to operate all options selected.

External Connections and Upgrades

The following drawing shows the **Touchcomputer** External connector panel. This panel of connectors is used by the user to make external connections to the **Touchcomputer**. No external connections, other than power, are needed for the **Touchcomputer** to operate.
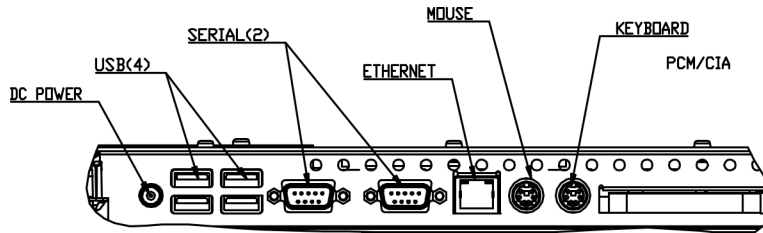
External Connections

Using these external connections, the following capabilities can be provided to the **Touchcomputer** by the user:

Wireless Network Capabilities

Wireless network capabilities can be provided via a wireless card added to the PCMCIA slot.

CD/DVD Drives

CD/DVD drives can be added using the external USB inputs.

Wired Network Connections

Wired network connections including internet can be made using the Ethernet input.

Hard Drive for CE Version

A hard drive for the CE version of the **Touchcomputer** can be added using the USB inputs **or HD can be added internally**.

Mouse

A mouse can be added using the mouse port.

Keyboard

- A keyboard can be added using the keyboard port.

Upgrades and Changes

A laptop type hard drive (2.5") can be added internally to the CE version of the Touchcomputer.

- SDRAM can be increased from the standard 256 M to 512 M

- Compact Flash can be added (through the compact flash door in the back of the Touchcomputer) to the Touchcomputer on Windows XP Pro and Windows 2000 Pro Touchcomputers.

- Customer Displays and Magnetic Stripe Readers can added to any Touchcomputer.

- Operating System changes between Windows XP Pro and Windows 2000 Pro can be made by loading the proper operating system on the internal hard drive.

- Operating system changes between either Windows 2000 Pro and Windows XP Pro to Windows CE.Net Ver4.2 can be made by adding Compact Flash with the appropriate image and booting from the compact flash.

- Operating system changes from Windows CE.Net Ver4.2 to either Windows XP Pro or Windows 2000 Pro can be made by adding an internal or external hard drive with the new operating system loaded.

Accessory Kit

An accessory kit will be provided with each monitor. The accessory kit provides the following:

- Touch Tool CD-The touchtool CD contains the drivers and manual for EloTouch touchscreen products. The touch drivers will come loaded with the Touchcomputer. These drivers are provided if the operating system needs to be reloaded.

- Touchcomputer CD-The Touchcomputer CD contains the drivers for devices used with the Touchcomputer, a copy of the Touchcomputer Users Guide, test programs to test the Touchcomputer, a copy of the My-T-Touch software, a copy of the Windows CE.Net Ver4.2 image. These are only needed if the operating system needs to be reloaded. A Board support Package (BSP) for Windows CE.Net Ver4.2 is included for creating customers own image. See the BSP notes and directions on the CD. See section 4.2.8 for a description of the BSP.

- Quick Install Guide-Shows pictorially how to operate the Touchcomputer.

- US Power Cable
- European Power Cable
- Power Brick
- Applicable Operating System CD
- Windows 2000 **Pro**
- Windows XP **Pro**
- No CD is provided for Windows CE**.Net Ver4.2** (but the image is on the **Touchcomputer** CD.)
- No serial or USB cables are provided

Models

The **Touchcomputer** is available in the following models. A key at the end of **the** model list explains the options.

E08919-000	ESY1525L-7UWA-1-CE
F00839-000	ESY1525L-7UWA-1-CE-C1
C63175-000	ESY1525L-8UWA-1-CE
E73369-000	ESY1525L-8UWA-1-CE-M3
E36798-000	ESY1525L-8UWA-1-CE-C1
A78783-000	ESY1525L-8UWA-1-CE-M3C1
C32392-000	ESY1525L-7UWA-1-XP
A82367-000	ESY1525L-7UWA-1-XP-C1
D37281-000	ESY1525L-8UWA-1-XP
D58125-000	ESY1525L-8UWA-1-XP-M2
D61906-000	ESY1525L-8UWA-1-XP-M3
C94408-000	ESY1525L-8UWA-1-XP-M2C1
E21843-000	ESY1525L-8UWA-1-XP-M3C1
F95046-000	ESY1525L-7UWA-1-2K
A88088-000	ESY1525L-7UWA-1-2K-C1
C04515-000	ESY1525L-8UWA-1-2K
F84197-000	ESY1525L-8UWA-1-2K-M2
C48832-000	ESY1525L-8UWA-1-2K-M3
A84590-000	ESY1525L-8UWA-1-2K-M2C1
F83851-000	ESY1525L-8UWA-1-2K-M3C1

Key

PIP Description Key

ESY = Elo System

15 = 15 Inch Display

25 = Desktop cabinetry (In grey plastics only)

L = LCD

7 = AccuTouch

8 = IntelliTouch

S = Serial controller

U = USB controller

W = Worldwide agencies

A = Revision number

1 = Antiglare glass

Mx = MSR unit

x = 2 = MSR USB HID

x = 3 = MSR USB Keyboard Emulation

Cx = Customer Display

x = 1 = Serial Customer Display

CE = Windows CE.Net 4.2 Pro+

Xp = Windows Xp Pro

2K = Windows 2000 Pro

Touchcomputer SETUP

Initial Turn On and Software Registration

Touchcomputer Operating System Setup

The initial setup of the Windows operating system takes approximately 5-10 minutes. Additional time may be needed depending on computers hardware configuration and connected devices. To setup the Windows OS for you computer, turn on your computer and follow the instructions on the screen. The **Touchcomputer** should be connected to a network providing an internet connection. It is possible to register Windows over the telephone.

License Agreement

- Click "I accept this agreement"
- Click "Next"

Product Key

- Type in the 25 character product code located on the back of the unit.
- Click "Next"

Network Settings

- Wait for windows to configure network settings.

Performing Final Tasks

- Wait for windows to configure network settings.

Computer Reboots

- Wait for computer to reboot and finally boot up to the desktop.

Testing Pre-installed Devices

Touchcomputer come pre installed with several different hardware options. To test these options, click on the following icons on the Windows toolbar on the bottom right of the computer. You may also use the desktop icons.

Customer Display Testing

- Click on the "CD" icon.
- The customer display should change, now displaying the text "Elo TouchSystems Customer Display".

Keyboard Card Reader Testing

- Click on the "KCR" icon.
- Click on scan button
- Scan a credit card ensure data scanned correctly by seeing applicable information on all three tracks from the credit card.

USB Card Reader Testing

- Click on the "UCR" icon
- Click on scan button
- Scan a credit card ensure data scanned correctly by seeing applicable information on all three tracks from the credit card.

Controls

There are two controls to operate the **Touchcomputer**. There is a brightness control and a volume control. To increase the brightness, press **switch 3. To** decrease brightness, press **switch 4**. To **increase the volume, press switch 1.** To decrease volume, press **switch 2.**

Touchcomputer Controls

Switch 1

Switch 2

Switch 3
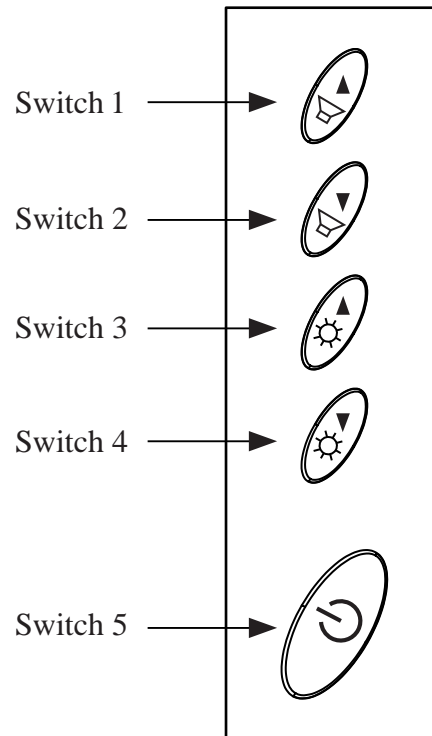
Switch 4

Switch 5

Power

To turn power off, **press and hold switch 5. To turn on press and hold switch 5 then shut down. To do a hard** shutdown, **press and hold switch 5**. To turn **power on, press the** power button once.

Power and OSD Lock Out

Normally the 5 switches on the side of the monitor depicted in the figure in the controls section control power, brightness and volume. The power switch can be made not to operate by activating the power lockout function. The brightness and volume adjustment can be made not to operate by activing the OSD lockout function. The OSD lockout function can be a activate by simultaneously pressing Switch 1 and Switch 2. The power lockout function can be activated by simultaneously pressing Switch 1 and Switch 3. When the switches are pressed, OSD lock or power lock will appear. The power lockout state can be set by releasing Switch 1 and Switch 3 in the desired state of power lock or power unlock.
The OSD lockout state can be set by releasing Switch 1 and 2 in the desired state of OSD lock or OSD unlock.

Technical Assistance

There are three methods to obtain contact information for technical assistance on the **Touchcomputer**.

• **Touchcomputer** itself

• the Web

• telephone

These methods are described below.

Using the Touchcomputer

You can access the support information by going to the System Properties and clicking on the "Support Information" button. You can get to get to System Properties by either of the following methods:

• Right click "My Computer" and choose "Properties"

• Click on the "Start Button" and select "control panel"and double click on the "System" icon.

Using the Web

www.elotouch.com/support/default.asp

Using the Phone

Call toll-free 1-800-557-1458

CHAPTER

3

SAFETY/SERVICING THE Touchcomputer

When servicing the computer perform the following:

- Perform an orderly shutdown using the operating system menu.

- Shut down the **Touchcomputer** and remove all external cables.

- When opening the **Touchcomputer**, periodically touch any metal parts of the **Touchcomputer**, such as metal portions of the case or connector shells on the monitor.

- Handle components and cards with care. Do not touch components on the cards. When adding memory, hold it by the edges, not contacts.

4

TECHNICAL DESCRIPTION

Block Diagram

The block diagram of the **Touchcomputer** is shown below:

Elo Touchcomputer Block Diagram

				USB1	Dual USB Port(500 ma)
		Speakers	CN7	USB2	Dual USB Port(500 ma)
				CN13	Serial Port
LCD				CN14	Serial Port
				J16	PS2 keyboard
Inveter	OSD Switch panel	Optional Hard Drive	Optional Compact Flash	J17	PS2 keyboard
				J12	PCMCIA
				J15	Ethernet Port

CN10   J11   CN11   J7   CN5

Mother board

+12 VDC

CN1 Serial Port   CN9 USB Port   CN3 Internal +5 VDC @1 amp   CN2 Internal Serial Port   CN4 +5/+12vdc   CN6 USB Port

Optional MSR

Optional Customer Display

Optional AccuTouch or IntelliTouch Touchscreen

Optional AccuTouch or IntelliTouch USB Controller

Mother Board Block Diagram

MEMORY PC133/SDR	BOOT ROM	REALTEK RTL8100C FAST ETHERNET CONTROLLER	FAST ETHERNET

VIA EDEN ESP 600 MHZ PROCESSOR — FSB — VIA VT8606 TWISTER NORTHBRIDGE GRAPHICS CORE AND MEMORY CONTROLLER — PCI — VIA VT82C686B SOUTHBRIDGE PERIPHERAL CONTROLLER

SOUND
KEYBOARD
MOUSE
HARD DRIVE
2 SERIAL PORTS
4 USB PORTS

LCD DISPLAY

WINDBOND W83977F I/O CONTROLLER — 2 SERIAL PORTS

TI PCI1410 PC CARD CONTROLLER — PCMCIA

Connectors on Mother Board

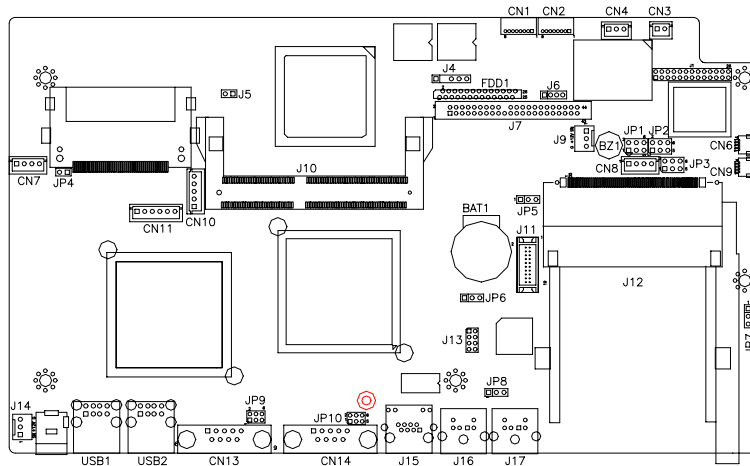The connectors on mother board allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on mother board and their respective functions.

Connector Locations on Mother Board

Connectors on Mother Board
CN1, CN2: COM4 and COM3 Connectors
CN3: +5V Connector
CN4: +5V AND +12V Connector
CN6, CN9: USB Pin Header
CN10: Panel Inverter Power Connector
CN11: OSD Panel Board Connector
CN13, CN147: COM1 and COM2 Serial Ports
FDD1: Floppy Drive Connector
USB1, USB2: USB Connectors
J4: IrDA Connector
J6: Reset Button and IDE LED
J7: Primary IDE Connectors
J9: System Fan Power Connector
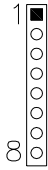J11: 24-bit LVDS Connector (DF13-20)
J13: VGA CRT Connector
J14: System Fan Power Connector
J16: PS/2 Keyboard Connector
J17: PS/2 Mouse Connector

CN1, CN2: COM4 and COM3 Connectors

Pin #	Signal Name
1	DCD
2	RXD
3	CTS
4	GND
5	TXD
6	RTS
7	DSR
8	DTR

CN3: +5V Connector
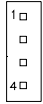
Pin #	Signal Name
1	+5V
2	Ground

CN4: +5V AND +12V Connector
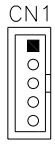
Pin #	Signal Name
1	+5V
2	Ground
3	+12V

CN6, CN9: USB Pin Header
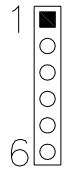
Pin #	Signal Name
1	Ground
2	USB-
3	USB+
4	Vcc

CN10: Panel Inverter Power Connector

CN1
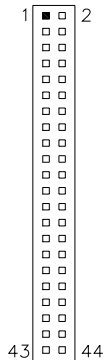
Pin #	Signal Name
1	+12V
2	Ground
3	Bright Adj
4	Ground
5	BKLT ON

CN11: OSD Panel Board Connector
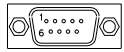
Pin #	Signal Name
1	Vol+
2	Vol-
3	Bright+
4	Bright-
5	Ground
6	Power On/Off

J7: Primary IDE Connectors

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
ASDRAMess 1	33	34	No connect
ASDRAMess 0	35	36	ASDRAMess 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground
Vcc	41	42	Vcc
Ground	43	44	N.C.
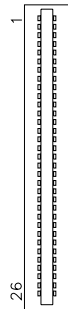
CN13, CN147: COM1 and COM2 Serial Ports

Signal Name	Pin #	Pin #	Signal Name
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5	10	NC

FDD1: Floppy Drive Connector

FDD1is a slim 26-pin connector and will support up to 2.88MB FDD.

Signal Name	Pin #	Pin #	Signal Name
VCC	1	2	INDEX
VCC	3	4	DRV_SEL
VCC	5	6	DSK_CH
NC	7	8	NC
NC	9	10	MOTOR
DINST	11	12	DIR
NC	13	14	STEP
GND	15	16	WDATA
GND	17	18	WGATE
GND	19	20	TRACK
NC	21	22	WPROT
GND	23	24	RDATA
GND	25	26	SIDE

USB1, USB2: USB Connectors

Pin #	Signal Name
1	Vcc
2	USB-
3	USB+
4	Ground

J9: System Fan Power Connector

J9 is a 3-pin header for an optional fan. The fan must be a 12V fan.

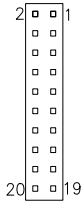| Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J11: 24-bit LVDS Connector (DF13-20)

Signal Name	Pin #	Pin #	Signal Name
TX0-	2	1	TX0+
Ground	4	3	Ground
TX1-	6	5	TX1+
5V/3.3V	8	7	Ground
TX3-	10	9	TX3+
TX2-	12	11	TX2+
Ground	14	13	Ground
TXC-	16	15	TXC+
5V/3.3V	18	17	ENABKL
+12V	20	19	+12V

J13: VGA CRT Connector

J13 is an 8-pin header for an optional external VGA CRT female connector.
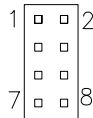
Signal Name	Pin	Pin	Signal Name
Red	1	2	Vcc
Green	3	4	Ground
Blue	5	6	N.C.
N.C.	7	8	N.C.
Ground	9	10	H-Sync
Ground	11	12	V-Sync
Ground	13	14	N.C.
Ground	15	16	N.C.

J14: System Fan Power Connector

J14 is a 3-pin header for the optional system fan. The fan must be a 12V fan.

Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J16: PS/2 Keyboard Connector
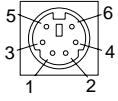
Pin	Signal Name
1	Keyboard data
2	N.C.
3	GND
4	5V
5	Keyboard clock
6	N.C.

J17: PS/2 Mouse Connector
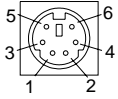
Pin	Signal Name
1	Mouse data
2	N.C.
3	GND
4	5V
5	Mouse clock
6	N.C.

Computer Specifications

Processor

- VIA Eden 600MHz low power CPU or equivalent

Memory

- RAM- 256 MB expandable to 512 MB

Green Function

- APM 1.2 compliant

Audio Function

- Stereo one watt capability per channel

Operating System

- Support for WinCE.Net Ver4.2
- Support for Windows 2000 Pro
- Support for Windows Xp Pro

Ports

- Four RS-232 Serial Ports. Two internal ports(CN2 and CN1) and 2 external ports (CN13 and CN14).
- Connectors-External ports shall use standard DB9 connectors.
- Six USB self powered version 1.1 Ports. All ports have the capability to provide 0.5 amps at 5 VDC each. Two ports are internal (CN6 and CN9) and four external (USB1 and USB2).
- The external USB ports shall use two standard dual USB connectors.
- One Ethernet 100/10Base-T Port (J15)
- One PCMCIA version 2.1 Slot (J12)
- PS2 Keyboard (J16)
- PS2 Mouse (J17)

- One Compact Flash Socket (CN**5**)
- One hard drive socket located on the bottom of the board (**J7**)

Real Time Clock

- Battery backed up real time clock that features a multi-century calendar.
- Lithium battery with socket.
- On Screen Display
  - Volume Control
  - Backlight Brightness

Windows CE.Net Ver4.2 Board Support Package

A board support package is available to assist users with custom software development. The board support package contains the following items:

- Installation instructions
- A platform image that can be added to the Wince platform directory.
- A .cec file or equivalent to add the platform features to the platform builder catalog.
- A boot loader to support Ethernet debug and download.
- All testing shall be done with the final image from Elo.

Panel Connectors

The following connectors are available from the outside of the **Touchcomputer**

- Four USB ports
- Ethernet
- 2 serial port
- PS2 Keyboard (No keyboard provided)
- PS2 Mouse (No mouse provided)
- Board input Power
- PCMCIA Slot with eject button
- Compact Flash

Display

The LCD display consists of an LCD, inverter, and OSD switch module. The performance of the LCD display will be:

Display Size	15.0 diagonal
Native Resolution	1024 x 768 pixels
Display Color Number	16.2 million Colors, 6 Bit+FRC
Display Type	a-Si TFT active – matrix
Typical Contrast Ratio	500:1
Typical/Min Brightness	LCD 350 cd/m² AccuTouch287 cd/m² IntelliTouch322 cd/m²
Typical Display Speed	Rising Time 9 ms / Falling Time16 ms
Typical Vertical Viewing Angle	60 deg (looking down) / 45 deg (looking up) @CR 10 70 deg (looking down) / 55 deg (looking up) @CR 5
Typical Horizontal Viewing Angle	60 deg (looking from Left) / 60 deg (Looking from Right)CR 10 75 deg (looking down) / 75 deg (looking up) @CR 5
Chromaticity	Chromaticity coordinates will fall within the values in the table

TABLE 1. Chromaticity Values

	Symbol	Minimum	Typical	Maximum
Chromaticity of White	Wx	0.282	0.312	0.342
	Wy	0.288	0.318	0.348
Chromaticity of Red	Rx	0.613	0.6437	0.673
	Ry	0.314	0.344	0.374
Chromaticity of Green	Gx	0.274	0.304	0.334
	Gy	0.536	0.566	0.596
Chromaticity of Blue	Bx	0.111	0.141	0.171
	By	0.055	0.085	0.115

Touchscreen Assembly

The touchscreen assembly consists of a touchscreen and a controller. AccuTouch or IntelliTouch touchscreens will be provided as options and use one of the USB ports on the **mother board** .

External 12 VDC Power Supply

The **Touchcomputer** shall be powered by 12 VDC from a universal type power supply brick with the following characteristics:

- Input voltage 85 to 263 vac
- Input frequency 47 to 63 hz
- Output voltage 12 vdc
- Output line and load regulation +/- 2%
- Output **current 5Amps**

Stand

The stand supports the LCD display and provides adjustment for the angle of the display with respect to the viewer.

Customer Display

The Customer Display is a twenty character two line vacuum fluorescent display (VFD). It consists of a VFD and VFD controller. There is a serial version controller and a USB controller. The actual VFD is common to the serial and USB versions. CE will only use the serial as no CE USB driver is available.

Optical Parameters

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

USB MSR

The USB card reader is a USB port powered MSR which conforms to ISO/ANSI standards. The USB MSR is available in HID and Keyboard emulation versions. The reader shall read all three stripes on a standard credit card or drivers license. The reader shall conform to the USB Human Interface Device class specification Version 1.1 The reader communicates over a USB revision 1.1 port. A green LED provides the operator with continuous status of the reader operations.

Specifications

|	
Reference Standards Conform to applicable standards	International Standards Organization, American National Standards Institute, California Drivers License, American Association of Motor Vehicle Administrators
Power Input	From USB port
Message Format	ACCII
Card Speed	3 to 50 IPS
MTBF	Electronics 125,000 hrs; Head 1,000,000 passes
Operating Current	30 ma max
Suspend current	300 ua max
Length	100 mm
Width	32.5 mm max

5

Touchcomputer COMPONENT LAYOUT

The figures below show the complete **Touchcomputer** identifying the major components discussed in Chapter 1.

Touchcomputer Assembly
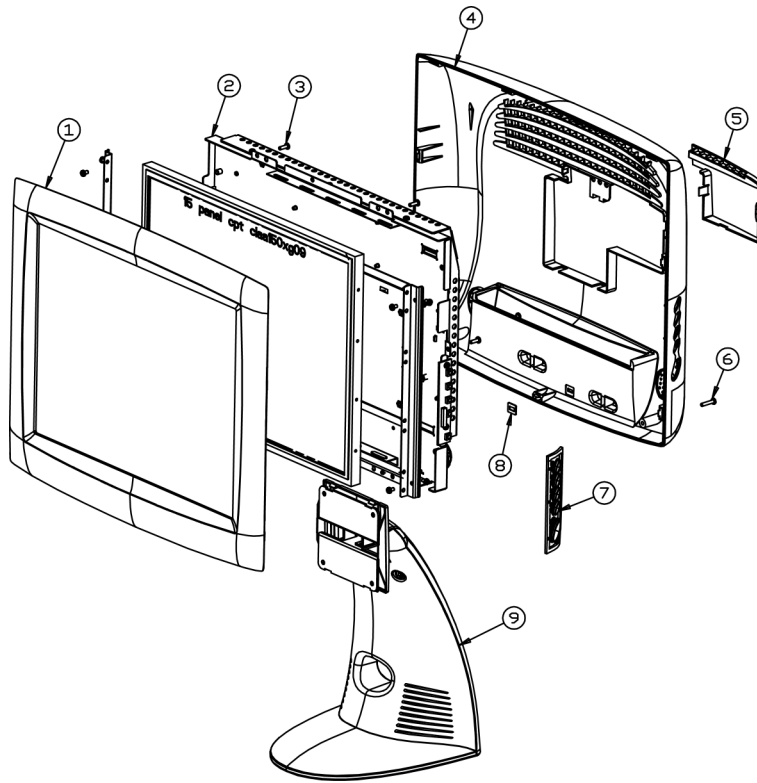
Touchcomputer Exploded View
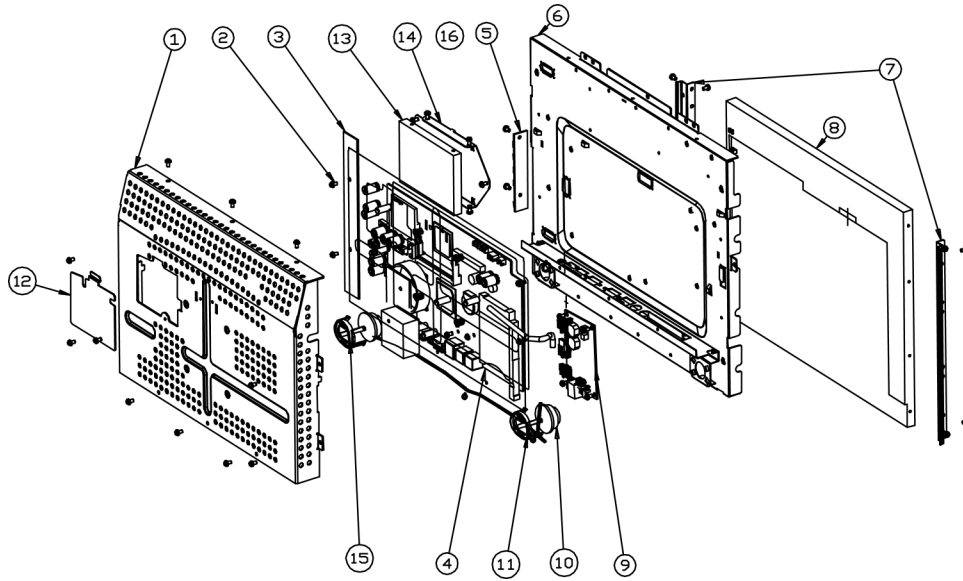
COMPONENTS

External 12 VDC Power Supply

The **Touchcomputer** is powered by 12 VDC from a universal type power supply brick. The power supply shall provide the following capability:

- Input voltage 85 to 263 vac
- Input frequency 47 to 63 hz
- Output voltage 12 vdc
- Output line and load regulation +/- 2%

Memory and Hard Drive Options

Windows 2000 Pro and Windows XP Pro

- Hard Drive Provided, 20GB or higher
- 256 MB provided
- No compact flash provided

Windows CE.Net Ver4.2

- No hard drive provided
- 64 MB or higher compact flash provided

Cables

External Cables

The following cables will be included:

- US power cable for the external power supply
- European power cable for the external power supply
- Power cable from the 12 VDC external supply to the **Touchcomputer**.

All cables are 6 feet long.

ENVIRONMENTAL REQUIREMENTS

Temperature Ranges

Operating Temperature (Independent of altitude)	0° to 40°
Non-Operating Temperature (Independent of altitude)	-30° to 60°

Humidity

Operating (non-condensing)	20% to 80%
Non-Operating (38.7°C max. wet bulb temperature)	5% to 95%

Altitude

Operating 0 to + 12,000 feet [3,658m].	Equivalent to 14.7 to 10.1 psia.
Non-Operating 0 to + 40,000 feet [12,192m].	Equivalent to 14.7 to 4.4 psia.

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.

LISTED
6K70
E141667
ITE

c(UL)us

MPR II

TÜV RheinLand Product Safety

GS geprüfte Sicherheit

N10051

CE

energy

FC Tested To Comply With FCC Standards
FOR OFFICE USE

"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"*

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. The warranty for the touch**computer** and components of the product is 1 year.

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.

Image retention or sticking is a characteristic of all LCD displays which causes an image left on the LCD monitor for a long time to be retained by the LCD after the image is removed. To reduce the effect of sticking power saving mode and screen savers should be used when possible.

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USA & Headquarters	**Germany**	**Belgium**	**Japan**
Elo TouchSystems, Inc.	Elo TouchSystems GmbH & Co. KG	Elo TouchSystems	Touch Panel Systems K.K
301 Constitution Drive,	Haidgraben 6	Diestsesteenweg 692	Sun Homada Bldg. 2F
Menlo Park, CA 94025.	D-85521 Ottobrunn	B-3010 Kessel-Lo	1-19-20 Shin-Yokohama,
	Germany	Belgium	Kanagawa 222-0033
(800) ELO-TOUCH (800-356-8682)			Japan
Tel 650-361-4700	Tel +49(89)60822-0	Tel +32(16) 35-2100	
Fax 650-361-4747	Fax +49(89)60822-150	Fax +32(16) 35-2101	Tel +81(45)478-2161
eloinfo@elotouch.com	elosales@elotouch.com	elosales@elotouch.com	Fax +81(45)478-2180
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