PLANAR™

LA1500R, LA1500RTR, and LA1500RTS

USER'S GUIDE

www.planar.com

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European Union 2002/95/EC Directive on the Restriction of Hazardous Substances (RoHS)

In February 2003, the European Union issued Directive 2002/95/EC on the Restriction of Hazardous Substances, commonly known as RoHS, in certain electrical and electronic equipment. It restricts the use of six hazardous substances, including lead (Pb).

The Directive states that all new products within its scope, placed on the European market after July 1, 2006 must be compliant with its requirements.

Planar Systems Inc. is fully in support of and compliant with EU Directive 2002/95/EC for applicable products within its scope.

A Planar part number will be modified with an "LF" suffix designation to indicate RoHS compliance, as shown on the part number label affixed to the display and on the box containing the display.

Important Recycle Instructions:

Hg

Lamp(s) inside this product contain mercury. This product may contain other electronic waste that can be hazardous if not disposed of properly. Recycle or dispose in accordance with local, state, or federal Laws. For more information, contact the Electronic Industries Alliance at WWW.EIAE.ORG. For lamp specific disposal information check WWW.LAMPRECYCLE.ORG. For more information on how to recycle your product, please visit WWW.PLANARSYSTEMS.COM/GREEN.

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Contents

Usage Notice

Precautions 4

Introduction

About the Product 5

Package Overview 8

Installation

Product Overview 9

User Controls

Front Panel Controls 13

On-Screen Display Menus 14

Appendix

Troubleshooting 16

Warning Signal 17

Product Dimensions 18

Video Modes 22

Touch Screen Driver Installation 24

Support and Service 29

Usage Notice

WARNING – To prevent the risk of fire or shock hazards, do not expose this product to rain or moisture.

WARNING – Please do not open or disassemble the product as this may cause electric shock.

Precautions

Follow all warnings, precautions and maintenance as recommended in this user's guide to maximize the life of your unit.

Do:

- ❑ Turn off the product before cleaning.
- ❑ LCD front surface may be cleaned using a soft clean cloth moistened with mild window glass commercial cleaners or 50/50 mixture of water and isopropyl alcohol.
- ❑ Use only the high quality and safety approved AC/DC power adapter that comes with your monitor.
- ❑ Disconnect the power plug from AC outlet if the product is not used for an extended period of time.

Don't:

- ❑ Do not touch the LCD display screen surface with sharp or hard objects.
- ❑ Do not use abrasive cleaners, waxes or solvents for cleaning.
- ❑ Do not operate the product under the following conditions:
  - Extremely hot, cold or humid environment.
  - Areas susceptible to excessive dust and dirt.
  - Near any appliance generating a strong magnetic field.
  - In direct sunlight.

Introduction

About Planar's LA1500R / LA1500RTR / LA1500RTS

The LA15 products all have a 15" flat panel screen with an active matrix, thin-film transistor (TFT) liquid crystal display (LCD).

Features include:

- ❑ Direct analog graphics signal input
- ❑ Active matrix TFT LCD technology
- ❑ 1024 x 768 XGA resolution
- ❑ 15" viewable display area
- ❑ 31.5 ~ 60.2 kHz horizontal scan
- ❑ 56 ~ 75 Hz refresh rate
- ❑ 0.297mm x 0.297mm pixel pitch
- ❑ 250 cd/m^2(typ.) brightness
- ❑ 600:1(typ.) contrast ratio
- ❑ L/R=80°/80°,U/D=+80°/-80° viewing angle, CR=10
- ❑ Tr+Tf = 8ms (typ.) response time
- ❑ 2 Cold Cathode Flourescent Lamps (CCFL) with 50,000 hrs life
- ❑ Auto-adjustment function
- ❑ Multilingual OSD user controls
- ❑ VESA DPMS power saving
- ❑ Durable touch screen
- ❑ VESA rear mounting 75mm x 75mm standard
- ❑ Operating temperature = 5°C to 35°C
- ❑ Storage temperature = -20°C to 60°C

Touch Screen for LA1500RTR

Resistive for finger interface

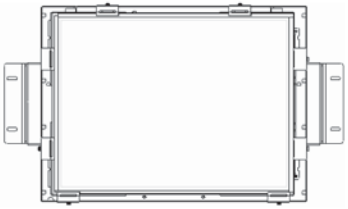
- ❑ Surface: Anti-glare treatment
- ❑ Interface: USB
- ❑ Durability: 35 million touches at a single point
- ❑ Hardness: 2H MIN (As provided in JIS K5400)
- ❑ Operating force: Finger - < 50g (average)
- ❑ Transmittance: 76% (typ.)
- ❑ Driver: Windows® 7, Vista, XP, 2000, ME, 98, NT 4.0, CE, XP Embedded Apple® Mac OS, Linux

Touch Screen for LA1500RTS

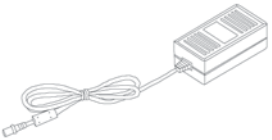
Surface Acoustic Wave (SAW) touch screen for finger and stylus input

- ❑ Surface: Anti-glare treatment
- ❑ Interface: Dual RS-232 Serial/USB controller
- ❑ Durability: 50 million touches at a single point
- ❑ Hardness of surface: Mohs' Hardness rating of 7
- ❑ Operating force: Typicaly less than 85g
- ❑ Transmittance: 92±5%
- ❑ Driver: Windows® 7, Vista, XP, 2000, ME, 98, NT 4.0, CE, XP Embedded Apple® Mac OS, Linux

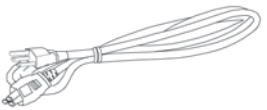
Package Overview



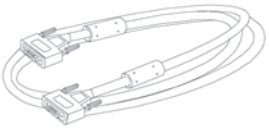
LCD Display



Power Adapter

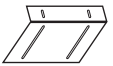


Power Cord



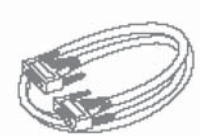
VGA Signal Cable

Landing Strip



"L" Bracket, 2 pcs

USB Cable
(for LA1500RTR/
LA1500RTS)

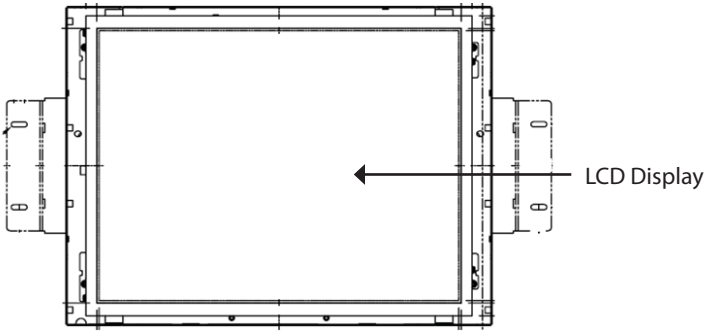


RS-232 Cable
(for LA1500RTS only)

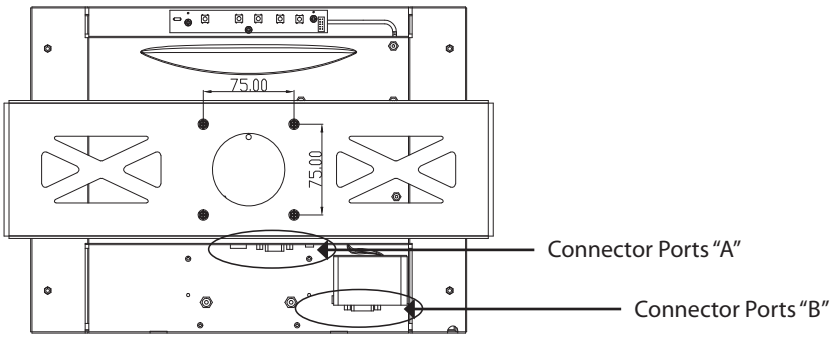
Installation

Product Overview

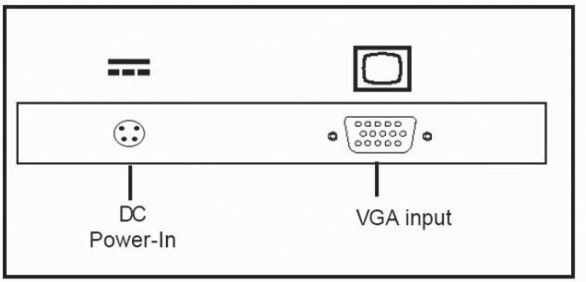
• Front View



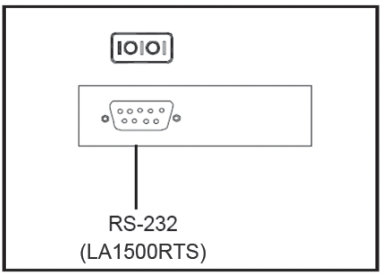
• Rear View

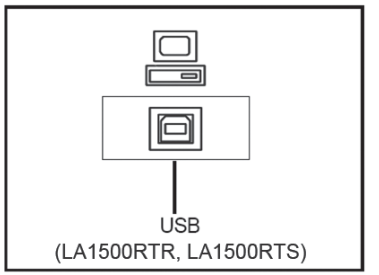


• Connector Ports "A"



• Connector Ports "B"





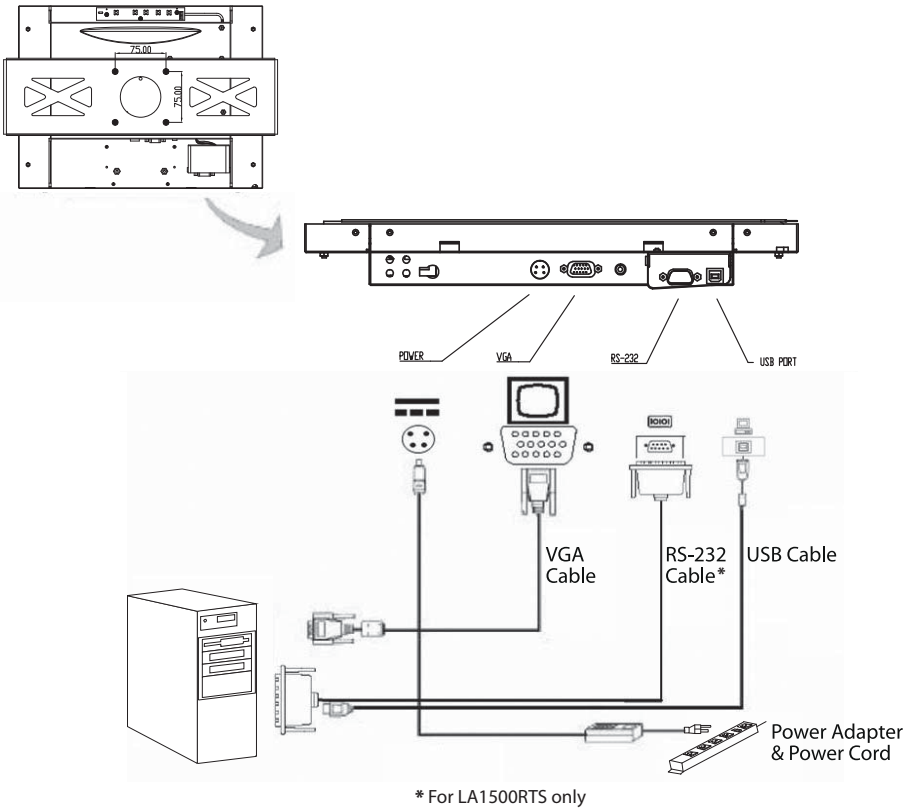
Connecting the display **(Figure 1.1)**

To set up this display, please refer to the following figure and procedures.

1. Be sure all equipment is off.
2. Connect the DC power cord to the power connector. Plug one end of the AC power cord into the power adapter, and the other end into an electrical outlet(1).
3. Connect the VGA signal cable from display VGA input connector to the 15-pin VGA connector of your host computer and tighten the screws(2).
4. For the LA1500RTR or the LA1500RTS touch screen models configure the touch screen. Refer to the "Touch Screen Driver Installation" section on page 24.
5. Turn on your computer, display and video source.

Notice: To ensure the LCD display works well with your computer, configure the display mode of your graphic card to less than or equal to 1024 x 768 resolution and make sure timing of the display mode is compatible with the LCD panel. "Video Modes" of this LCD panel are listed in the appendices for your reference.

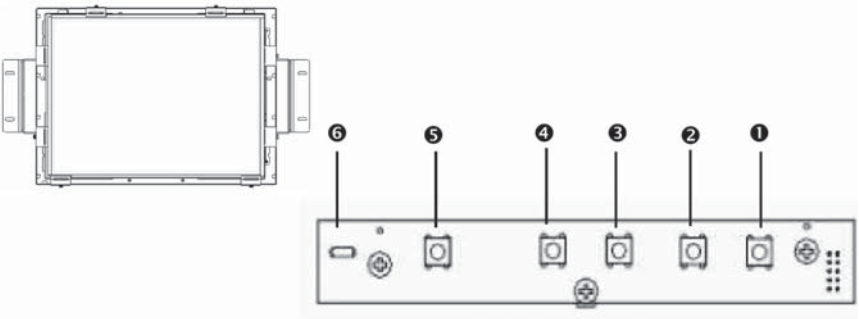
Figure 1.1



* For LA1500RTS only

User Controls

Front Panel Controls



No./ Icon	Control	Function
❶	Menu button	Displays the OSD menus.
❷	Select / Auto	Select- To select the adjustment items from OSD menus. Auto- To activate the "Auto Adjustment" function to obtain an optimum image.
❸	Brightness Minus / Minus	1. Decreases the brightness of the display image. 2. Decreases value of the adjustment items.
❹	Brightness Plus / Plus	1. Increases the brightness of the display image. 2. Increases value of the adjustment items.
❺	Power Switch	Switches on/off the power of the LCD display.
❻	Power LED	1. Green indicates the display is turned on. 2. Amber indicates the display is in power-saving mode.

How to Use the OSD Menus

1. Press the "Menu" button to pop up the on-screen menu and to select between the four main menus.

2. Choose the adjustment items by pressing the "+" and "-" buttons.

4. The OSD menu will automatically close, if you have left it idle for a pre-set amount of time.

On-Screen Display Menus

Main OSD Menu:

Main Menu	Sub Menu	Function Description
Sharpness	1-4	Adjust the sharpness of the image.
Reset	No/Yes	Returns the display parameters of the current mode to its factory default settings.
Color Setting	SRGB / 9300K 7200K / 6500K 5000K / User defined	Adjusts the color temperature.
Color Adjustment-Red	0-100	It allows you to adjust the red color of the display.
Color Adjustment-Green	0-100	It allows you to adjust the green color of the display.
Color Adjustment-Blue	0-100	It allows you to adjust the blue color of the display.

Appendix

Troubleshooting

If you are experiencing trouble with the LCD display, refer to the following. If the problem persists, please contact your local dealer or visit Planar Support at www.planar.com/support. See support contact information on rear cover.

Problem: No image appears on screen.

- Check that all the I/O and power connectors are installed correctly and well connected as described in the "Installation" section.
- Make sure the pins of the connectors are not crooked or broken.
- Reconfigure the resolution of your computer to make it less than or equal to 1024 x 768.

Problem: Partial image or incorrectly displayed image.

- Check to see if the resolution of your computer is higher than that of the LCD display.
- Reconfigure the resolution of your computer to make it less than or equal to 1024 x 768.

Problem: Image has flickering vertical line bars.

- Use "Clock" to make an adjustment.
- Check and reconfigure the display mode of the vertical refresh rate of your graphic card to make it compatible with the LCD display.

Problem: Image is unstable and flickering

- Use "Phase" to make an adjustment.

Problem: Image is scrolling

- Check and make sure the VGA signal cable (or adapter) is well connected.
- Check and reconfigure the display mode of the vertical refresh rate of your graphic card to make it compatible with the LCD display.

Problem: Ghosting image (characters and graphics)

- Use "Clock" to make an adjustment. If the problem persists, use "Phase" to make an adjustment.

Warning Signal

If you see warning messages on your LCD screen, this means that the LCD display cannot receive a clean signal from the computer graphics card.

There may be three sources for this problem. Please check the cable connections or contact Planar for more information.

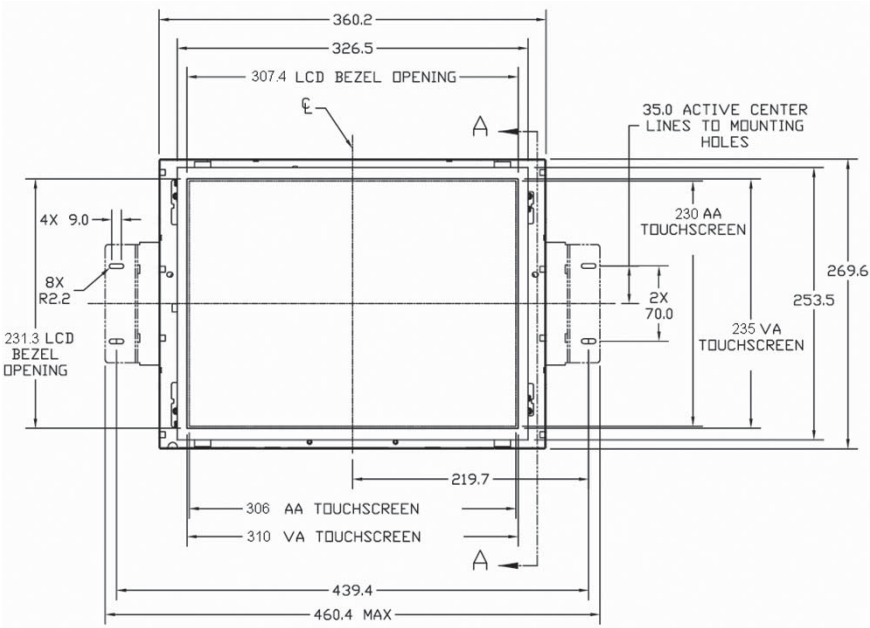
- **No Signal**
  This message means that the LCD display has been powered on but it cannot receive any signal from the computer graphic card. Check all the power switches, power cables, and VGA signal cable.

- **Going to Sleep**
  This message means that the LCD display is under the power saving mode. In addition, the LCD display will enter the sleep mode when experiencing a sudden signal disconnecting problem.

- **Out of Range**
  This message means that the signal of the computer graphic card is not compatible with the LCD display. When the signal is not included in the "Video Modes" list we have listed in the Appendices of this manual, the LCD display will display this message.

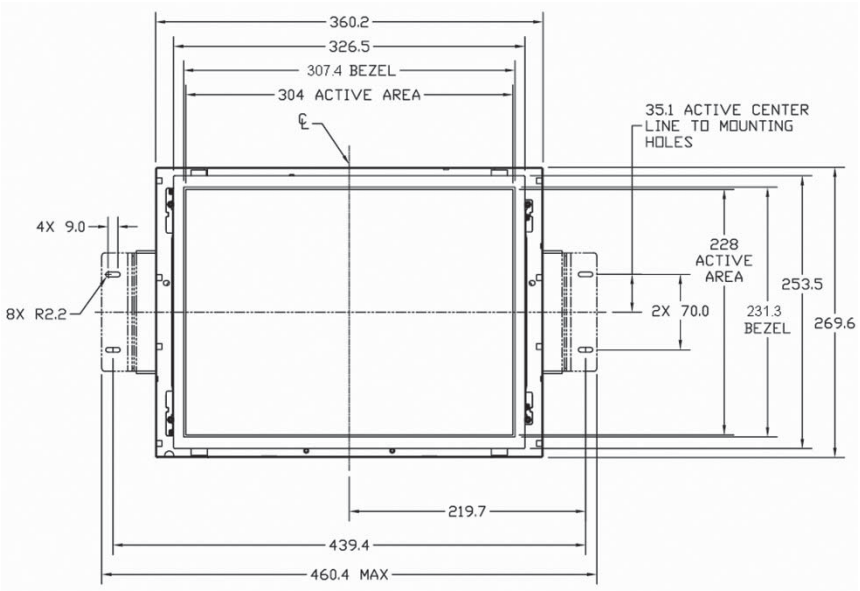
Product Dimensions

LA1500RTR - Front View:



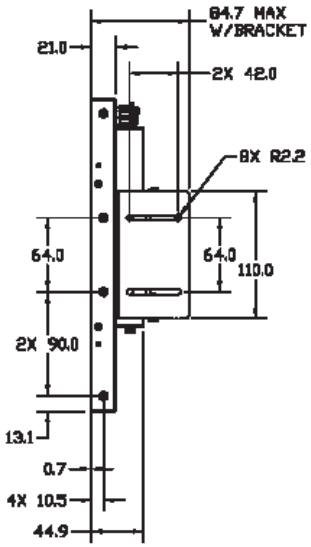
LA1500RTR Front View

LA1500R - Front and Side View:

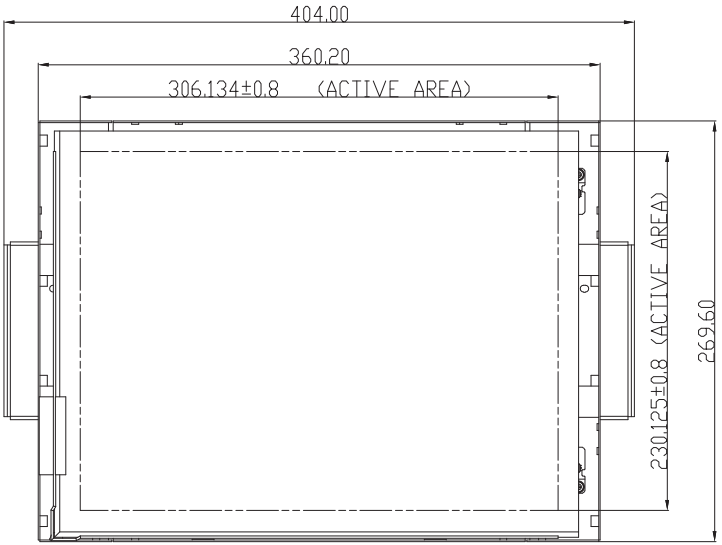


LA1500R Front View

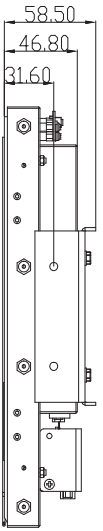
LA1500R Side View



LA1500RTS - Front and Side View:

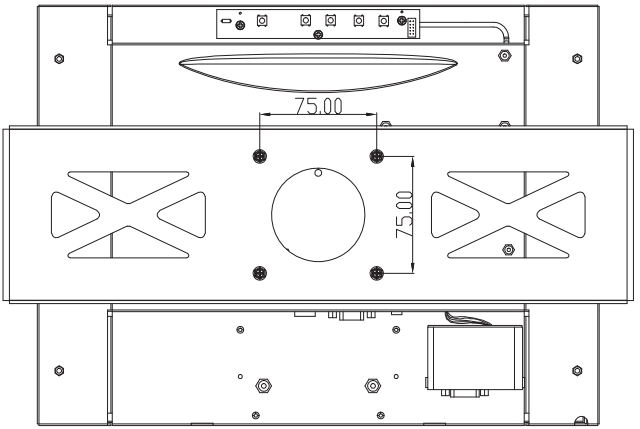


LA1500RTS Front View



LA1500RTS Side View

LA1500R/RTR/RTS - Rear View:



LA1500R/RTR/RTS Rear View

Video Modes

The monitor supports the following industry-standard combinations of screen resolution and refresh rates. Other combinations are possible, but may require adjustments to the image.

For the optimal performance, set your computer to a screen resolution of 1024 x 768 at a 60 Hz refresh rate.

Mode	Resolution	V. Frequency (Hz)	H. Frequency (kHz)
IBM VGA	640 x 350	70	31.5
IBM VGA	640 x 400	70	31.5
IBM VGA	720 x 400	70	31.5
IBM VGA	640 x 480	60	31.5
VESA VGA	640 x 480	72	37.9
VESA VGA	640 x 480	75	37.5
VESA SVGA	800 x 600	56	35.2
VESA SVGA	800 x 600	60	37.9
VESA SVGA	800 x 600	72	48.1
VESA SVGA	800 x 600	75	46.9
VESA XGA	1024 x 768	60	48.4
VESA XGA	1024 x 768	70	56.5
VESA XGA	1024 x 768	75	60.0

Touch Screen Driver Installation

Driver Installation for LA1500RTR: Resistive Touch screen with USB Connection (TouchKit Driver)

The LA1500RTR is available with USB connection. The touch driver is located at www.planar.com/support for these operating systems: **Windows® 7, VISTA, XP, 2000, ME, 98, NT 4.0, CE, XP Embedded, Linux, Apple® Mac OS.**

Please Note: The LA1500RTR is Microsoft® Windows® HID (Human Interface Device) compatible if you use the USB touch screen interface. No additional software driver is required for general operation of the touch screen. A calibration tool can be installed for improved touch position accuracy. See "Optional Calibration Tool Install" section for more information.

LA1500RTR Optional Calibration Tool Install

If you would like to use the Optional Calibration Tool, follow the instructions below. Please note: **the calibration tool supports Windows® 7, VISTA, XP, and 2000 operating systems via USB only.**

1. Select the monitor size and then model name.
2. Click on the "Load Utility" button that appears to the right of the model name.
3. The HID calibration tool will automatically open. From here the user can choose to do the following:
   a. 4 Points Calibration
   b. 9 Points Linearization
   c. 25 Points Linearization
   d. Clear
   e. Draw Test
   f. Advanced. In the Advanced settings area the user may do the following:
      i. Adjust the Double Click Area.
      ii. Enable auto right click and adjust the auto right click time.
      iii. Choose to be either in the HID Mouse Mode or HID Digitizer Mode
      iv. Simply click the "Apply" button once the settings are finalized.

LA1500RTR Install Instructions

If you are using a PC running Windows® 7, VISTA, XP, 2000, ME, 98, NT4.0, follow the instructions below:

1. Power on the PC.
2. Be sure the USB cable is connected from the PC to the LCD display.
3. Follow the step-by-step instructions as shown on the pop-up windows.

If you are using a PC running Windows® XP Embedded, follow the instructions below:

Express:

1. Power on the computer.
2. Make sure that the USB cable is connected to the computer.
3. Make sure that your EWF is disabled. If your EWF is enabled, please disable the EWF by using the EWF Manager command.
4. Once the EWF is disabled click on the XP driver at www.planar.com/support and follow the step-by-step instructions as shown on the pop-up windows.

Custom:

1. Power on the computer.
2. Make sure that the USB cable is connected to the computer.
3. Follow the step-by-step instructions found in the zipped file at www.planar.com/support.

If you are using a PC running Windows® CE, follow the instructions below:

1. Power on the computer.
2. Make sure that the USB cable is connected to the computer.
3. Using Platform Builder, build an image file by following the step-by-step instructions found in the zipped file at www.planar.com/support.

If you are using a PC running Linux or Apple® Mac OS, follow the instructions below:

1. Power on the computer.
2. Make sure that the USB cable is connected to the computer.
3. Follow the step-by-step instructions found in the zipped file at www.planar.com/support.

Driver Installation for LA1500RTS: SAW Touch screen with RS232 and USB Connections (TouchKit Driver)

The LA1500RTS is available with both RS232 and USB connections. The touch driver is located at www.planar.com/support for these operating systems: **Windows® 7, VISTA, XP, 2000, ME, 98, NT 4.0, CE, XP Embedded, Linux, Apple® Mac OS.**

Please Note: The LA1500RTS is Microsoft® Windows® HID (Human Interface Device) compatible if you use the USB touch screen interface. No additional software driver is required for general operation of the touch screen. A calibration tool can be installed for improved touch position accuracy. See "Optional Calibration Tool Install" section for more information.

LA1500RTS Optional Calibration Tool Install

If you would like to use the Optional Calibration Tool, follow the instructions below. Please note: **the calibration tool supports Windows® 7, VISTA, XP, and 2000 operating systems via USB only.**

1. Select the monitor size and then model name.
2. Click on the "Load Utility" button that appears to the right of the model name.
3. The HID calibration tool will automatically open. From here the user can choose to do the following:
   a. 4 Points Calibration
   b. 9 Points Linearization
   c. 25 Points Linearization
   d. Clear
   e. Draw Test
   f. Advanced. In the Advanced settings area the user may do the following:
      i. Adjust the Double Click Area.
      ii. Enable auto right click and adjust the auto right click time.
      iii. Choose to be either in the HID Mouse Mode or HID Digitizer Mode
      iv. Simply click the "Apply" button once the settings are finalized.

LA1500RTS Install Instructions

If you are using a PC running Windows® 7, VISTA, XP, 2000, ME, 98, NT4.0, follow the instructions below:

1. Power on the PC.
2. Be sure the USB or the RS-232 Serial cable is connected from the PC to the LCD display.
3. Follow the step-by-step instructions as shown on the pop-up windows.

If you are using a PC running Windows® XP Embedded, follow the instructions below:

Express:

1. Power on the computer.
2. Make sure that the RS232 or USB cable is connected to the computer.
3. Make sure that your EWF is disabled. If your EWF is enabled, please disable the EWF by using the EWF Manager command.
4. Once the EWF is disabled click on the XP driver at www.planar.com/support and follow the step-by-step instructions as shown on the pop-up windows.

Custom:

1. Power on the computer.
2. Make sure that the RS232 or USB cable is connected to the computer.
3. Follow the step-by-step instructions found in the zipped file at www.planar.com/support.

If you are using a PC running Windows® CE, follow the instructions below:

1. Power on the computer.
2. Make sure that the RS232 or USB cable is connected to the computer.
3. Using Platform Builder, build an image file by following the step-by-step instructions found in the zipped file on www.planar.com/support.

If you are using a PC running Linux or Apple® Mac OS, follow the instructions below:

1. Power on the computer.
2. Make sure that the RS232 or USB cable is connected to the computer.
3. Follow the step-by-step instructions found in the zipped file at www.planar.com/support.

When changing the Touch Interface (RS-232 or USB), please follow the instructions below:

1. Uninstall the touch driver.
2. Re-start the computer.
3. Remove the original Touch Interface (RS-232 or USB).
4. Connect the computer to the Touch Interface (RS-232 or USB) that you would like to use.
5. Load the driver found at www.planar.com/support, and then follow the step-by-step instructions as show on monitor.

PLEASE NOTE!
Don't plug in both the RS-232 and USB cables!
Doing so may cause a driver conflict, making your touch screen inoperable.

Support and Service

Planar is a US company based in Beaverton, Oregon and Espoo, Finland with a worldwide sales distribution network.

Visit Planar at http://www.planar.com/support for product registration, operations manuals, line drawings, touch screen drivers, warranty information and access to Planar's Technical Library for online troubleshooting.

To speak with Planar Customer Support please have your model and serial number available and dial one of these numbers:

Americas Support

Tel: 1-866-PLANAR1 (866-752-6271) or +1 503-748-5799
Hours: M-F, 8am - 8pm Eastern Time | M-F, 5am - 5pm Pacific Time

Europe and Asia-Pacific Support

Tel: +358-9-420-01
Hours: M-F, 7am - 4pm CET

Toll or long distance charges may apply.

Planar Systems, Inc.
Customer Service
24x7 Online Technical Support: http://www.planar.com/support

Americas Support
Tel: 1-866-PLANAR1 (866-752-6271) or +1 503-748-5799
Hours: M-F, 8am - 8pm Eastern Time | M-F, 5am - 5pm Pacific Time

Europe and Asia-Pacific Support
Tel: +358-9-420-01
Hours: M-F, 7am - 4pm CET

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