



*Displays*

# CYRAQ 21A Series

## ***21" NEMA 4X Flat Panel Monitors***

**For Rack, Panel, and VESA Mounting  
Systems with Optional *AR Bonding™*  
*Technology***

**Screen Rotation Software Included**

## **USER'S MANUAL**

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# 1 Introduction

Congratulations on your purchase of the most innovative and versatile Industrial LCD monitor available today—the **CYRAQ™ 21**. The CyberResearch CYRAQ 21 uses a groundbreaking raised bezel design allowing the installation of a rugged 21.3" flat panel display in a standard EIA 19" rack! The engineers at CyberResearch have also designed mounting plates that allow the CYRAQ 21 to be *rack or panel-mounted* in either landscape or portrait orientation. The accompanying screen rotation software rotates the desktop 90°, 180°, or 270° to provide a suitable viewing angle for any display orientation.

The CYRAQ 21 complies with the power management regulations of VESA DPMS, making it extremely energy efficient—75W while active and 3W in power-saving mode. The CYRAQ 21 LCD monitor emits very low radiation levels and virtually no electromagnetic field. Fully compatible with the PC and Macintosh, the CYRAQ 21 provides dual inputs (VGA and DVI) is “Plug & Play” compatible and also complies with DDC1/DDC2B. The On Screen Display menu provides users with an intuitive interface making it simple to quickly adjust the display.

The CYRAQ 21 is the first ever 21.3" 1600 x 1200 flat-panel display capable of panel, swivel-arm or rack mounting. It sets a new standard for clear, bright, flicker-free images and its NEMA 4X front bezel makes it ideal for use in industrial environments.

## 1.1 Why the CYRAQ 21?

The CYRAQ concept was conceived in the Engineering Department at CyberResearch as we began to examine how the recent advances in LCD technology and image quality could potentially affect our market and customer base. The LCD monitor today provides viewing angles comparable to CRTs with no discernable loss of picture quality; a LCD resultantly provides crisp, clean, deep images WITHOUT screen glare. Coupled with a flat screen, slim design, extremely low radiation and almost no electromagnetic emissions, an LCD monitor can provide some very distinct advantages to users in manufacturing, commercial and scientific applications.

Put simply, the innovation of the CYRAQ series is derived from its size and applications. Never before have the industrial and scientific markets been able to utilize large LCD monitors versatile enough to be rack, panel or VESA arm mounted yet robust and capable enough to perform in harsh environments. The CYRAQ stainless steel enclosure not only provides an unmatched degree of protection to the unit's components, it dually helps achieve a NEMA 4X rating capable of sustaining normal operation (when installed correctly) while enduring screen washdown and other procedures commonly practiced in a harsh environment.

The CyberResearch, Inc. CYRAQ series displays have been engineered to couple with a revolutionary new mounting plate system that allows a user to install the CYRAQ display into a rack, or a panel without retrofitting disparate hardware, drilling holes, or welding mounting studs. The mounting plate systems make it a snap to install a CYRAQ into a standard 19" rack, or panel-mount in any orientation.

Currently, the CYRAQ family is comprised of many, many models including displays featuring rear controls only, VESA mounting, choice of color and touchscreen (serial or USB available). CyberResearch has also expanded the CYRAQ family to include the **CYRAQ 12** (12"), **CYRAQ 15** (15"), **CYRAQ 17** (17"), (in addition to 19", 21" & 24") models—please call us or visit our website for more information.

## 1.2 CyberResearch® AR Bonding™ Technology

Standard LCDs used in bright ambient light may appear “washed out” due to excessive reflection from these lighting conditions. CyberResearch has developed a manufacturing technique that reduces ambient light reflection inside the display case, making our LCDs appear brighter—even in direct sunlight.

CyberResearch now offers AR Bonding™ Technology on our entire line of signature CYRAQ LCDs, which dually seals the display while significantly reducing the transmission of reflected light to it. We’ve accomplished this by utilizing a high-quality bond that optically couples the front cover glass to the face of the display. This technique practically eliminates internal light reflection, which directly improves viewing quality.

Additionally, sealing the display with AR Bonding™ Technology greatly enhances its structural integrity, providing superior shock protection and dually eliminating the possibility of trapped moisture between the LCD and cover glass. This not only reduces troublesome fogging in humid and moist conditions, it keeps condensation and wetness away from your LCD.

Reducing the effect of ambient light reflection on your display can dramatically improve its performance! When AR Bonding™ Technology is applied to a 250 nit display, it can increase the effective contrast and provide the enhanced daylight viewing equivalent to that of a 500 or 600 nit display without AR Bonding™ Technology. Minimizing refracted ambient sunlight to the LCD yields a discernable increase in display performance.

## 1.3 Product Safety and Regulatory Information

To prevent fire or shock hazard, do not expose the unit to rain or moisture. Dangerously high voltages are present inside this unit. **Do not disassemble the unit—there are no user-serviceable components inside the monitor's enclosure.** Please contact CyberResearch, Inc. for repair.

This equipment is not intended for use in critical applications where its failure to operate would create immediate life threatening circumstances. Applications including, but not limited to nuclear reactor control, aerospace navigation systems and life support systems are not appropriate for this product.

The CYRAQ 21 should be mounted in a suitable cabinet or enclosure. The NEMA rating for this product is applicable only when the product is properly set up and installed.

### FCC Notice:

The Federal Communications Commission Radio Frequency Interference Statement includes the following warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television receptions, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### European Notice

Products with the CE marking comply with the EMC Directive (89/336/EEC), (92/31/EEC), (93/68/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN55022:1998+A1:2000 - Radio Frequency Interference
- EN55024:1998 - Electromagnetic Immunity of Information Technology Equipment
- EN61000-3-2:1995+A1/A2:1998 - Power Line Harmonics
- EN61000-3-3:1995 - Voltage Fluctuations

## 1.4 Specifications

Display		
Display Type	LCD flat panel	
Video Input Types	Standard analog VGA (15-pin) DVI (Digital Visual Interface)	
Screen Size (viewable area, diagonal)	21.3"	
Display Filter Screen Size	20" and larger	
Display Brightness	250 nits (High-Bright)	
Display Filter Brightness	High-bright (250 to 340 nits)	
Resolution, max.	1600 x 1200 pixels	
Display Special Features	<ul style="list-style-type: none"> <li>• Optimum Resolution: 1600x1200 @ 60Hz</li> <li>• Max. Resolution: 1600x1200 @ 60Hz</li> <li>• Supports: 1280x1024, 1024x768, 800x600, and 640x480</li> </ul>	
Maximum Number of Colors	16 million colors	
Maximum Color Depth in Bits	24-bit color	
Contrast Ratio	500:1	
Auto-Sizing to Fill Screen	Yes	
Viewing Angle	° Horizontal	170°
	° Vertical	170°
Scanning Frequency	Vertical	56Hz....75Hz
	Horizontal	30KHz....93KHz
	Vertical (digital signals)	56Hz....75Hz
	Horizontal (digital signals)	30KHz....81KHz
Dot Pitch	0.27mm	
Backlight Type	CCFT	

<b>Chassis</b>	
Mounting Configuration	Rack-mount (EIA 19") Panel-mount Desktop / benchtop Wall-mount Swivel-arm mount
Protection Rating	NEMA 4 sealed front panel IP65 (dustproof, most low-pressure jets of water)
Display Filter Protection	Water-Resistant (NEMA 4/12, IP65)
Front Panel Material	Stainless steel
Chassis Material	Stainless steel
Height, Rack Units	9U (15.75")
Front Panel Color	Stainless steel
Custom Color Options	Custom color available (min. qty: 50)
Chassis Special Features	<p>Features an ultra-compact, corrosion-resistant enclosure of heavy-duty stainless steel (304 SS). All models come with a water-resistant sealed front panel suitable for washdown. Built-in Poron® gasket seals between rear of display and user panel or rack-mounting plate. When properly mounted in an appropriate enclosure, these displays meet NEMA 4X standards for watertightness.</p> <p>Models CVSF 21A and CVBF 21A, designed for VESA swivel-arm mounting, do not include rear studs, gasket, or a mounting plate, but CVxx customers receive a \$75 credit toward purchase of a swivel arm on request.</p> <p>The glass front panel is of high light transmission tempered glass. Units without touchscreen feature antireflection, antiglare, hard-coat glass screens.</p> <p>May be ordered with user controls for OSD and display power on the front or rear.</p>
<b>Mounting</b>	
VESA Mounting Hole Pattern	100x100mm VESA mounting holes
Stand Features	<ul style="list-style-type: none"> <li>• Enclosure can be rack, panel, wall, or swivel arm mounted</li> <li>• Universal mounting plate facilitates mounting in a standard EIA 19" rack, or can be used behind panel for secure panel mounting</li> <li>• Optional portrait rack-mounting plate (<i>substituted on request</i>) lets you rack-mount display in portrait orientation (screen rotation software included)</li> </ul>



<b>Indicators, Switches, &amp; Controls</b>		
Front Panel Controls	OSD Controls	OSD controls for menu navigation (5 buttons)
	Brightness	Via OSD controls
	Contrast	Via OSD controls
	Other Controls/Features	<ul style="list-style-type: none"> <li>• Auto Button: One-touch automatic screen adjustment</li> <li>• Exit Button: Quits OSD menu (switches between analog or digital signal inputs when the OSD menu is off)</li> <li>• +/- Button: Increase/decrease item selected in OSD menu</li> <li>• Order models CRSF 21A, CRBF 21A, CVSF 21A, or CVBF 21A for sealed front-access OSD control buttons</li> <li>• Order models CRSR 21A or CRBR 21A for rear-access OSD control buttons</li> </ul>
Rear Panel Controls	Power On/Off Switch	1 on/off switch
Indicators	Power On/Off	LED indicates power on
<b>Signal Connectors</b>		
Video Input Connectors		HD15 (standard VGA) connector DVI-D (24-pin) connector
<b>Cables</b>		
Video Cable Length (included)		6 feet
Cabling Details		15-pin D-sub VGA, DVI-D, and AC power cables included (6-ft each)
<b>Power Supply</b>		
Power Supply Form Factor		Built-in (integral)
Nominal Input Voltage(s)		115/230VAC
Input Voltage Range(s)		90...264VAC
Input Frequency		50/60Hz
Power Supply Input Connector		On rear panel NEMA standard male PC cord socket w/ 6-ft USA power cord
<b>Power Consumption</b>		
Power Consumption Details		75W active, 3W in power-saving mode
<b>Cooling</b>		
Cooling Summary		3 cooling fans
Cooling Fans	Number of Fans of This Type	3
	Fan Size	60mm X 60mm
	Fan Location(s)	Rear
Air Filter Location		Rear
<b>Environmental Specifications</b>		
Operating Temperature		50°F....113°F (10°C....45°C)
Storage Temperature		-4°F....122°F (-20°C....50°C)
Relative Humidity, non-condensing		10%....80%
Shock Resistance	Operating	30g half-sine for 11ms
Vibration Resistance	Operating	15 to 57Hz: 0.006" peak-to-peak; 57 to 640Hz sine: 1.0g peak-to-peak
Altitude, Max.		1.89mi (3.05km)
<b>Safety &amp; Standards Compliance</b>		
Power Management		EPA Energy Star compliant DPMS (Display Power Management Signaling)

<b>Dimensions</b>	
Width	19.02" (483 mm)
Height	15.71" (399 mm)
Depth	3.1" (79 mm)
Width, Rack-Mount	EIA standard 19 inches at flanges
Height, Rack Units	9U (15.75")
Depth Behind Panel	1.5" (38 mm)
Depth In Front of Panel	1.6" (41 mm)
Max Protrusion from Panel (w/installed gasket)	1.7" (43 mm)
Panel-Mount Cutout, Width	17.3" (440 mm)
Panel-Mount Cutout, Height	14.0" (356 mm)
Maximum Panel-Mount Cutout Depth	.55" (14 mm)
Dimension Details	<ul style="list-style-type: none"> <li>• Bezel Depth in Front of Panel: 1.6" + gasket thickness</li> <li>• Gasket Depth: 0.125" uncompressed.</li> <li>• Mounting Adapter Plate Depth: 0.1"</li> <li>• Rack Height in Portrait View: 19.2" (11U)</li> </ul>
<b>Weight</b>	
Weight	24.03 lbs (10.9kg )
Display Filter Weight	Under 30 lbs.

## 1.5 Features

### 1.5.1 Overview

The CyberResearch CYRAQ 21 is a 21.3-inch analog/digital LCD monitor that offers the highest quality images possible with dual analog and digital source input. Its Dual input (VGA and DVI) allow users to connect two different input sources simultaneously. The CYRAQ 21 offers a 500:1 contrast ratio, 1600 x 1200 resolution, pixel pitch of 0.270mm H/V, Xtrawide™ 170°/170° viewing angle, Analog/Digital video inputs, a scanning frequency of 30-93 kHz horizontal and 56-85 Hz vertical, and advanced image scaling.

- 21.3" Viewable Screen Size
- 1600 x 1200 @ 67 Hz
- Breakthrough Universal Mounting Plate Allows the 21.3" CYRAQ to Mount in a 19" Rack
- 0.27 MM Dot Pitch
- Connects Via VGA (15-Pin) and Digital (DVI)
- Source Button Allows User to Toggle Between Inputs
- NEMA 4X Rating
- Rack, Panel, or Swivel-Arm Mounted

### 1.5.2 System Requirements

To achieve optimum response time the CYRAQ requires a computer with CPU speeds of 486 or higher. The CYRAQ is compatible with Windows and Macintosh operating systems. To operate the display at its highest resolution a video card that supports 1600 x 1200 pixels is required. See 1.4.3 for CyberResearch video cards that meet this requirement.

### 1.5.3 Recommended Video Cards

The CyberResearch video cards listed below support the CYRAQ 21 maximum video resolution of 1600 x 1200 (most of the cards listed exceed this specification). Given the nature of the video card market, one or more of the cards listed below may be replaced by a card with superior technology and capabilities at a more reasonable price point. Please reference our web site for the latest and most complete details on each card.

<b>Single Output</b>	<ol style="list-style-type: none"> <li>1. <b>GRI AGP64:</b> AGP VGA Graphics card with 64MB DDR VRAM</li> <li>2. <b>GRI PCI32:</b> PCI SVGA Graphics Card with 32MB VRAM</li> </ol>
<b>Dual Output</b>	<ol style="list-style-type: none"> <li>3. <b>GRI AGPD128:</b> VGA AGP Graphics Card with <b>Dual DVI or VGA</b>, 128MB DDR SDRAM</li> </ol>
<b>Triple Output</b>	<ol style="list-style-type: none"> <li>4. <b>GRI AGPT128:</b> AGP Parhelia™ <b>Triple VGA</b> Graphics Card with 3 RGB Outputs, 2 DVI Outputs, TV Output, 128MB DDR VRAM</li> <li>5. <b>GRI AGPT256:</b> AGP Parhelia™ <b>Triple VGA</b> Graphics Card with 3 RGB Outputs, 2 DVI Outputs, TV Output, 256MB DDR VRAM</li> </ol>

## 2 Setup

### 2.1 Unpacking the CYRAQ 21

Before unpacking it is very important to locate the CYRAQ monitor in a suitable environment. Make sure the installation location has good ventilation, is out of direct sunlight, away from excessive dust, dirt, heat, water, moisture and vibration. Please see Specifications section for environmental details.

#### 2.1.1 Your Package Contains:

- 1) A CYRAQ Series Display
- 2) CYRAQ Series Drivers & Manuals CD
- 3) Pivot®Pro Installation CD (optional)
- 4) 6-ft. Power Cable
- 5) 6-ft VGA and DVI cables
- 6) User's Manual
- 7) Universal Mounting Plate **CRMS UNL** (applies to landscape Rack-Mount and Panel-Mount Applications only) or Portrait Mounting plate **CRMS POR** (applies to portrait Rack-Mount applications)

**-OR-**

**CPBF, CPBR, CPSF & CPSR 21A** come with one **Compression Mounting Plate** lieu of CRMS UNL or CRMS POR

- 8) Eight Button Head Mounting 10-32 1/2" Bolts
- 9) Fourteen 10-32 Mounting Nuts.

### 2.1.2 Optional Accessories:

- 1) Longer VGA and DVI cables (call for available lengths)
- 2) Touchscreens are available for all models
- 3) SWC 100 VESA mounting plate for VESA mount models

**NOTE:** If any of these items are missing or damaged contact CyberResearch, Inc. immediately

### 2.1.3 Ordering Information

BRUSHED STAINLESS STEEL BEZEL	BLACK COLOR STAINLESS STEEL BEZEL
<b>CYRAQ™ 24 Series: 24" LCD Display, 1920 x 1200, 300 nits*</b>	
#CRSR 24C ..... Universal Mount; Rear Controls	#CRBR 24C ..... Universal Mount; Rear Controls
#CRSF 24C ..... Universal Mount; Front Controls	#CRBF 24C ..... Universal Mount; Front Controls
<b>CYRAQ™ 21 Series: 21.3" LCD Display, 1600 x 1200, 250 nits*</b>	
#CRSF 21A ..... Universal Mount; Front Controls	#CRBF 21A ..... Universal Mount; Front Controls
#CRSR 21A ..... Universal Mount; Rear Controls	#CRBR 21A ..... Universal Mount; Rear Controls
#CVSF 21A ..... VESA Mount Only, Front Controls	#CVBF 21A ..... VESA Mount Only, Front Controls
#CVSR 21A ..... VESA Mount Only, Rear Controls	#CVBR 21A ..... VESA Mount Only, Front Controls
#CPSF 21A ..... Panel Mount, Front Controls	#CPBF 21A ..... Panel Mount, Front Controls
#CPSR 21A ..... <b>Flush</b> Panel Mount, Rear Controls	#CPBR 21A ..... <b>Flush</b> Panel Mount, Rear Controls
<b>CYRAQ™ 19 Series: 19" LCD Display, 1280 x 1040, 250 nits*</b>	
#CRSR 19C ..... Universal Mount; Rear Controls	#CRBR 19C ..... Universal Mount; Rear Controls
#CVSR 19C ..... VESA Mount Only; Rear Controls	#CVSR 19C ..... VESA Mount Only; Rear Controls
#CPSR 19C ..... <b>Flush</b> Panel Mount; Rear Controls	#CPBR 19C ..... <b>Flush</b> Panel Mount; Rear Controls
<b>CYRAQ™ 17 Series: 17" LCD Display, 1280 x 1024, 1000 nits*</b>	
#CPSF 17SA ..... <b>Flush</b> Panel Mount; Front Controls	#CPBF 17SA ..... <b>Flush</b> Panel Mount; Front Controls
#CPSR 17SA ..... <b>Flush</b> Panel Mount; Rear Controls	#CPBR 17SA ..... <b>Flush</b> Panel Mount; Rear Controls
#CFSF 17SA ..... <b>Flush</b> Rack Mount; Front Controls	#CFBF 17SA ..... <b>Flush</b> Rack Mount; Front Controls

\* Please see our web site for the latest additions and updates to the CYRAQ™ family

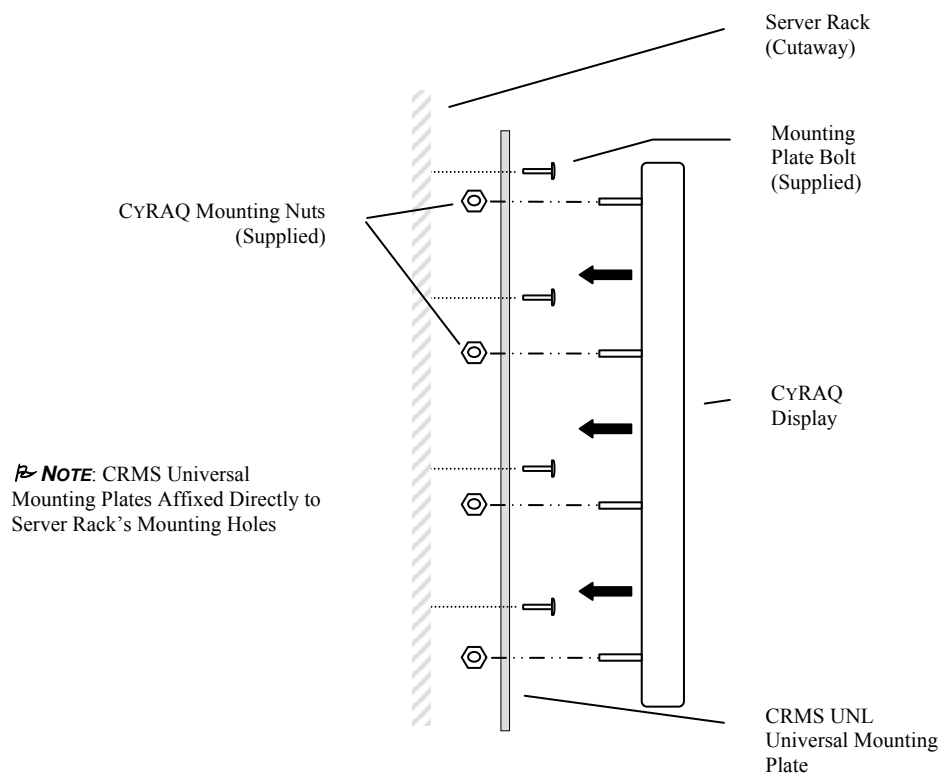
## 2.2 Rack Mounting: CRxF/CRxR 21

**IMPORTANT!** Ask yourself these questions before beginning installation:

1. Is sufficient power is available?
2. Is sufficient space is available to allow for proper airflow both inside and around the display?
3. Is there a possibility the air temperature inside the rack will exceed the CYRAQ 21's rated specification? (Operating temperature: 50°F....113°F ((10°C....45°C).)

**NOTE:** Though this product is designed to operate up to 113°F (45°C) with proper ventilation, the life span of any electronic device is shortened when it is consistently operated at high temperatures—keep rack temperature as low possible

4. Is there a possibility that the ambient humidity around the display will exceed its rated specification? (Relative Humidity, non-condensing: 10%....80%.)



**Figure 1: Installation Assembly**

## 2.2.1 Rack-Mount Gasket Installation

Installing the CYRAQ in the landscape orientation requires 9U (15.5") free rack space. Prior to installing the CYRAQ into a rack, the included gasket must be affixed to the mounting plate.

**IMPORTANT! Unless requested at the time of purchase, the display is shipped with gasket applied. Skip to section 2.2.2.**

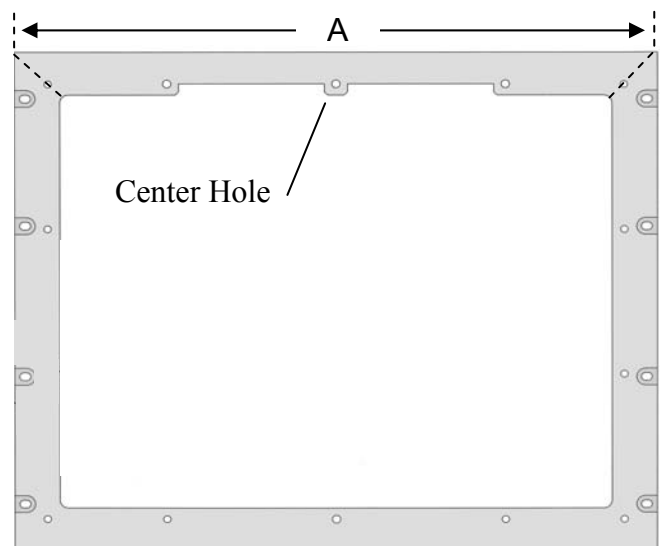
However, in certain instances the mounting gasket may be shipped loose to allow for increased installation flexibility in the case of custom applications. This permits customers to then choose which mounting application best suits their environment—panel- or rack-mount. Affixing the gasket to the back of the CYRAQ's enclosure is recommended for panel mounting applications; while adhering directly to the mounting plate is recommended for rack-mount applications.

The mounting gasket is a critical component to this monitor's NEMA 4X rating for watertightness—it must be installed correctly to meet this standard. It is also important to note that the rack-mount installation procedure differs from the panel mount procedure. Please read the instructions below carefully before installing the gasket.

1. On a flat surface, orientate the mounting plate as depicted in Figure 2.
2. Arrange the gasket to match mounting plate.
3. Remove adhesive backing from Section A of the gasket.

**NOTE:** It's important to focus on aligning the holes of gasket and mounting plate rather than their respective edges.

4. Align center hole in gasket with center hole on mounting plate, take care not to let other portions of the gasket in Section A touch mounting plate until aligned properly.
5. Carefully align and place the rest of Section A holes, working out from center.



**Figure 2: Gasket Installation**

6. When done, firmly press down and smooth gasket in Section A.
7. Repeat process for each of the other three sides.

## 2.2.2 Landscape Orientation

**NOTE:** Portrait mounting orientation requires 11U (19.2") free rack space.

**NOTE:** Follow Section 2.2.1 Rack-Mount Gasket Installation procedure prior to beginning the steps below.

1. Align mounting plate rack-mount holes with server rack mounting holes; see Figure 3 for correct mounting orientation. Ensure gasket faces outward.
2. Install the eight 10-32 1/2" button head bolts into rack-mounting holes to secure mounting plate to the server rack.

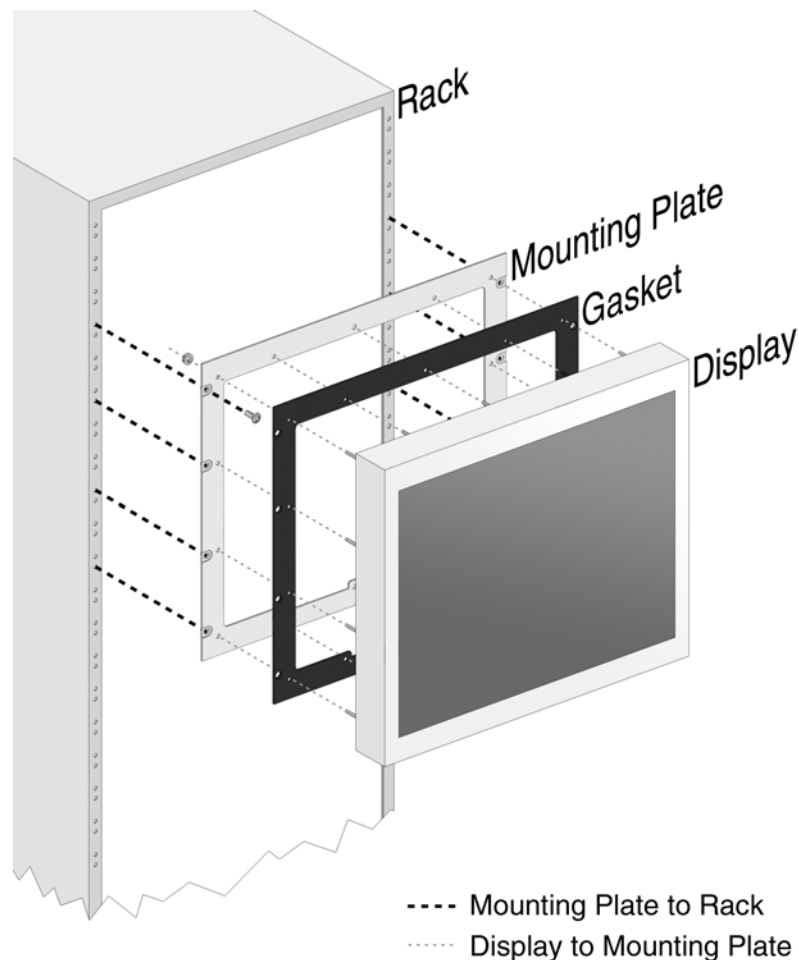
**NOTE:** Steps 3 & 4 require two people.

3. Align studs with the monitor mounting holes in mounting plate and install the CYRAQ™ until the gasket is flush with rear of enclosure.

### Important!

*Do not exceed 30 in/lbs when tightening mounting nuts.*

4. From inside rack, a second person must install and tighten the fourteen 10-32 mounting nuts.



**Figure 3: Rack-Mount Landscape Installation**



### 2.2.3 Portrait Orientation

**Note:** Follow Rack-Mount Gasket Installation procedure (if necessary) prior to beginning the steps below.

1. Align mounting plate rack-mount holes with server rack mounting holes; see Figure 4 for correct mounting orientation. **Ensure gasket faces outward.**
2. Install the eight 10-32 1/2" button head bolts into rack-mounting holes to secure mounting plate to the server rack.

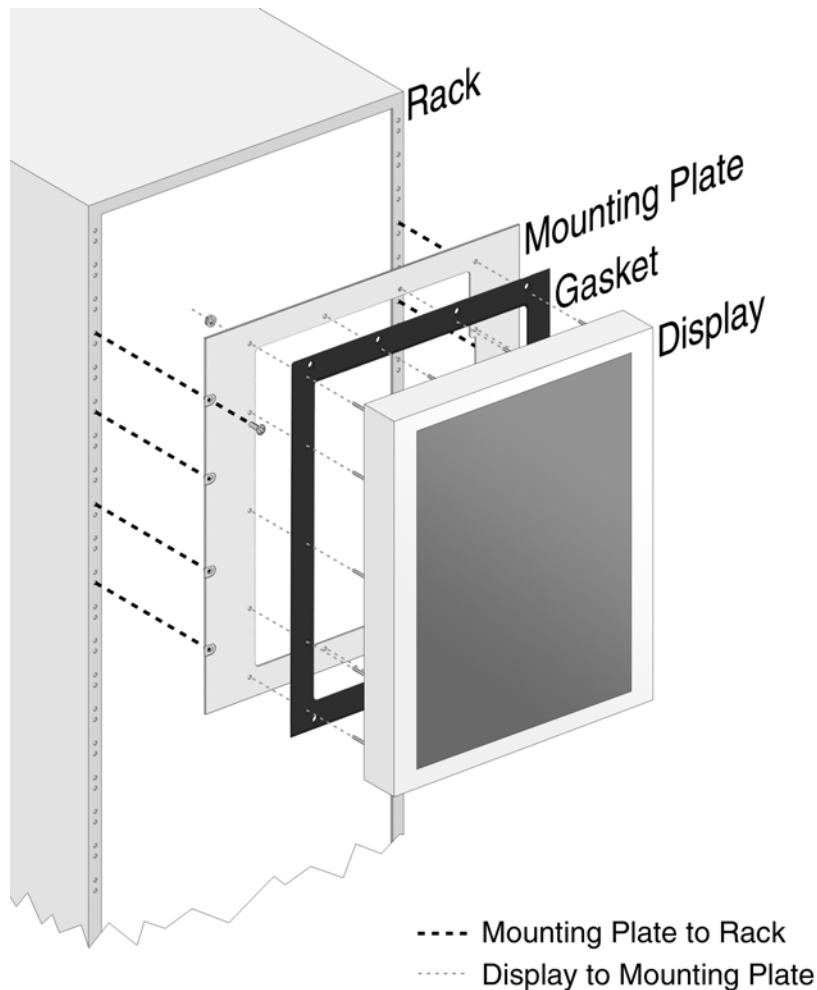
**Note:** Steps 3 & 4 require two people.

3. Align studs with the monitor mounting holes in mounting plate and install the CYRAQ™ until the gasket is flush with rear of enclosure.

#### **Important!**

*Do not exceed 30 in/lbs when tightening mounting nuts.*

4. From inside rack, a second person must install and tighten the fourteen 10-32 mounting nuts.



**Figure 4: Rack-Mount Portrait Installation**

## 2.3 Panel Mounting: CRxF/CRxR 21

Prior to performing subsequent steps, ensure the panel-mounting location (including panel thickness) is suitable for the CYRAQ 21, and meets Environmental requirements in Specifications section.

**NOTE:** Panel thickness should not exceed: .55" (14.1mm) if the unit has the standard 3.2mm (1/8") Poron™ gasket installed. Suggested panel thickness is calculated based on standard CYRAQ 21 parts and dimensions, custom units may not meet these specifications. Prior to panel mounting a CYRAQ, the included gasket must be affixed to the rear of the enclosure.

### 2.3.1 Panel-Mount Gasket Installation

**IMPORTANT!** Unless requested at the time of purchase, the display is shipped with gasket applied. Skip to section 2.3.2.

However, in certain instances the mounting gasket may be shipped loose to allow for increased installation flexibility in the case of custom applications. This permits customers to then choose which mounting application best suits their environment—panel- or rack-mount. Affixing the gasket to the back of the CYRAQ's enclosure is recommended for panel mounting applications; while adhering directly to the mounting plate is recommended for rack-mount applications.

The mounting gasket is a critical component to this monitor's NEMA 4X rating for watertightness—it must be installed correctly to meet this standard. It is also important to note that the rack-mount installation procedure differs from the panel mount procedure. Please read the instructions below carefully before installing the gasket.

1. Place the monitor face down on a flat surface with bottom of the monitor closest to you; take care not to damage or scratch the screen.
2. Arrange the gasket to match monitor orientation; align Section D with bottom of monitor's enclosure.
3. Remove adhesive backing of Section A on gasket.

**NOTE:** It's important to focus on aligning the holes of gasket and studs on the rear of the enclosure rather than their respective edges.

4. Align center hole (in Section A) of gasket with center stud on rear of monitor; take care not to let other portions of the gasket touch mounting plate until aligned properly.
5. Carefully align and place the rest of Section A, working out from center.
6. When done, firmly press down and smooth gasket in Section A.
7. Repeat process for each of the other three sides.

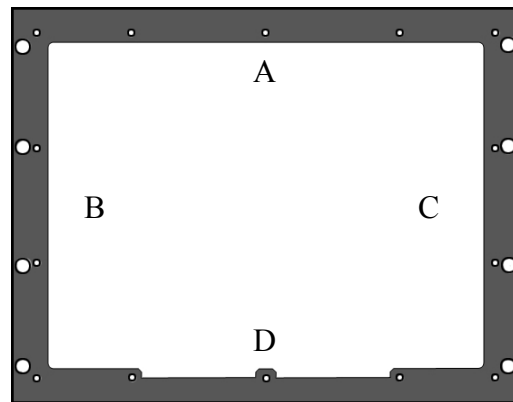


Figure 5: Panel Mount Gasket Installation

### 2.3.2 Panel Mounting the Monitor

1. Panel cutout is 356mm H x 440mm W for landscape installation (Figure 6).
2. Install CYRAQ in panel cutout. Ensure all studs clear cutout opening and Poron™ gasket on the rear of the unit is flush against panel (critical for NEMA compliance).

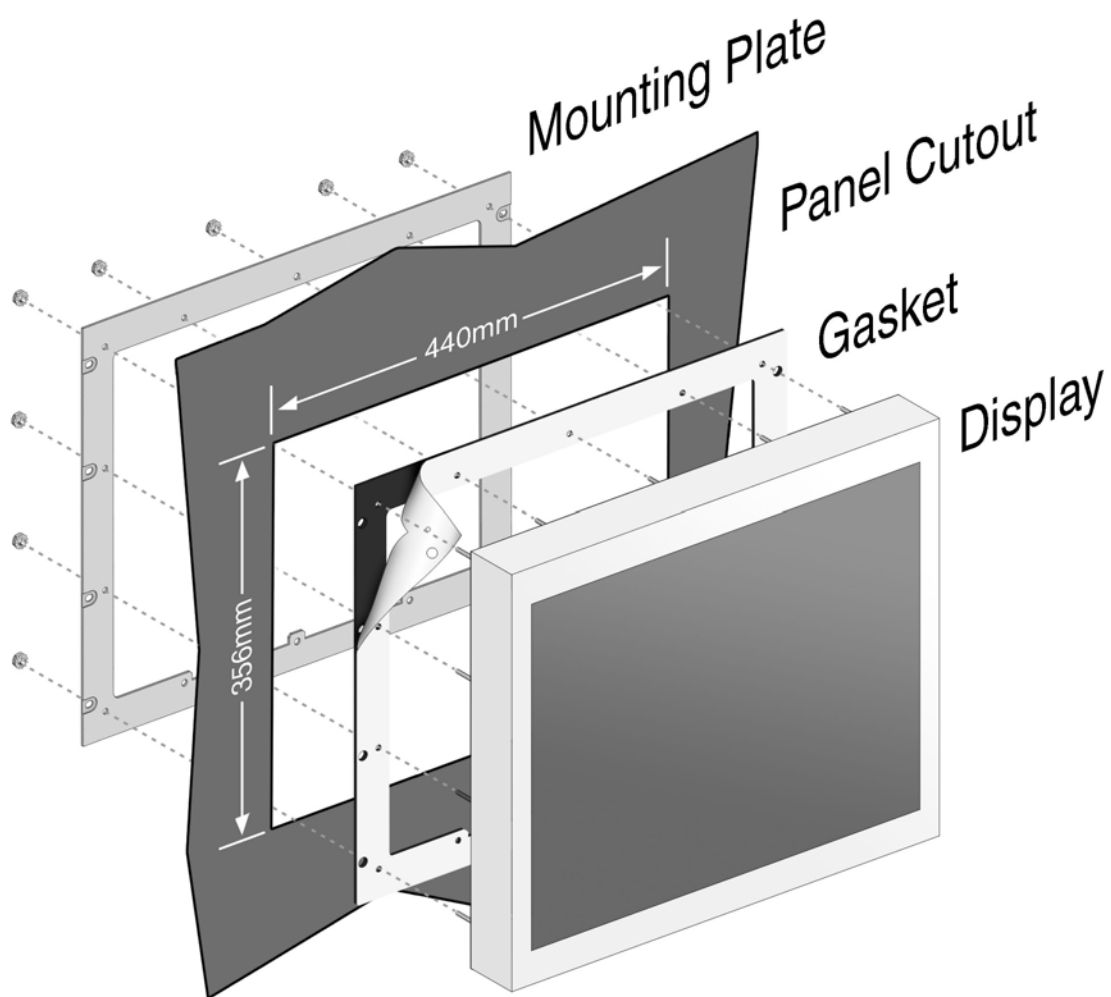
**NOTE:** Steps 3 & 4 require a second person

3. Align studs on the CYRAQ with the holes in mounting plate from the rear of panel (as seen in Figure 6).

#### **Important!**

*Do not exceed 30 in/lbs when tightening mounting nuts.*

4. Also from rear of the panel, second person must install and tighten the fourteen 10-32 mounting nuts.



**Figure 6: Panel-Mount Landscape Installation**

## 2.4 Flush Panel-Mounting: CPxF/CPxR 21A

Prior to performing subsequent steps, ensure the panel-mounting location (including panel thickness) is suitable for the CYRAQ 21, and meets Environmental requirements in Specifications section.

**NOTE:** Panel thickness should not exceed: .55" (14.1mm) Suggested panel thickness is calculated based on standard CYRAQ 21 parts and dimensions, custom units may not meet these specifications. Poron™ gasket is installed by CyberResearch, Inc. on CPBF & CPBR 21 models.

### 2.4.1 Panel Mounting the Monitor

1. Panel cutout is 405mm H x 489mm W for landscape installation (Figure 7).
2. Install the display in panel cut out. Ensure all studs clear cutout opening and Poron™ gasket on the rear of the unit is flush against panel (critical for NEMA compliance).

**NOTE:** Steps 3 & 4 require a second person

3. Align studs on the rear of display with the holes in mounting plate from the rear of panel (as seen in Figure 7).

#### **Important!**

*Do not exceed 30 in/lbs when tightening mounting nuts.*

4. Also from rear of the panel, second person must install and tighten the fourteen 10-32 mounting nuts.

**See Next Page For Illustration**

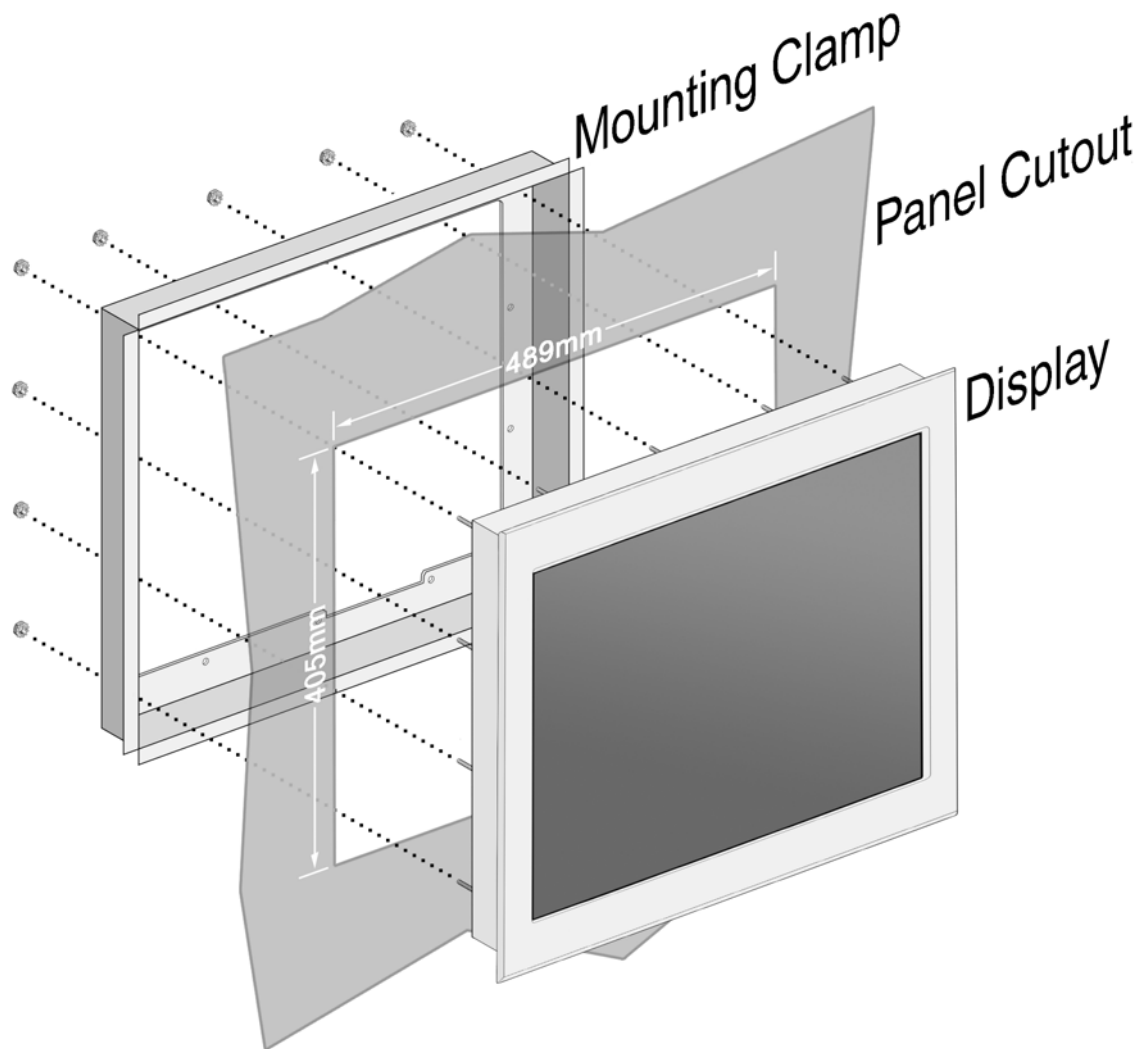


Figure 7: Flush Panel-Mount Landscape Installation

## 2.5 VESA Mounting: CVBF/CVBR 21

**NOTE:** These are “Quick Install” instructions for a popular style bench-top mount VESA arm. This VESA arm style ***MAY NOT*** be the mounting choice you’ve selected for your CYRAQ. Check the documentation accompanying your VESA arm.

- 1) **Disconnect** the power, video and touchscreen cables.
- 2) Secure cranking unit (#1) to bracket (#2) with at least two bolts (Figure 9). The use of bolts and bolt position depends on thickness of desk. Fully secure bolts with included “T” type hex key.
- 3) Secure the clamp to the desk/bench top (Figure 10). This will make subsequent installation easier. The clamp is capable of securing the arm to surfaces 15-100mm thick (30mm and up is ideal).
- 4) Before continuing, remove the screw from the arm’s base using a Philips head screw driver (Figure 12).
- 5) Carefully place display on the bench top with screen facing down, as seen in Figure 13.

**NOTE:** The SWC 100 permits 100 x 100mm VESA monitors and 75 x 75mm VESA arms to be used jointly.

- 6) Secure the SWC 100 adapter (Figure 11) to the VESA arm.



Figure 11: SWC 100 Adapter Mounting Plate

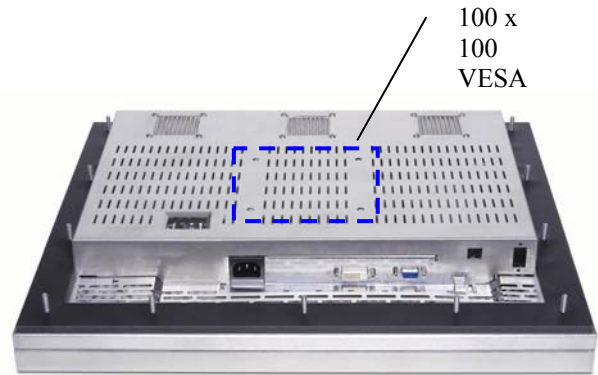


Figure 8: 100 x 100mm VESA Mounting Holes

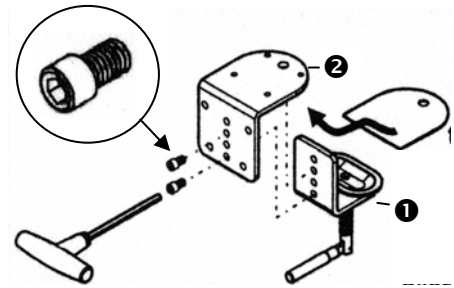


Figure 9: VESA Arm Clamp

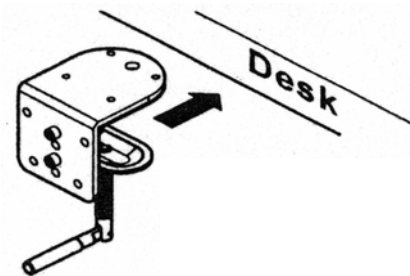


Figure 10: Affix Clamp to Benchtop

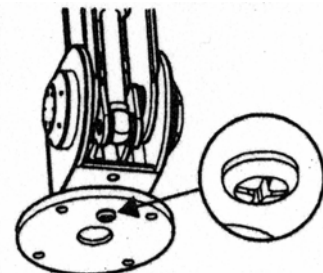


Figure 12: Remove Screw

- 7) Secure the arm/adapter plate assembly to the display.
- 8) Secure arm to the clamp with 4 flat head screws (Figure 14); tighten using the “L” shaped hex key.

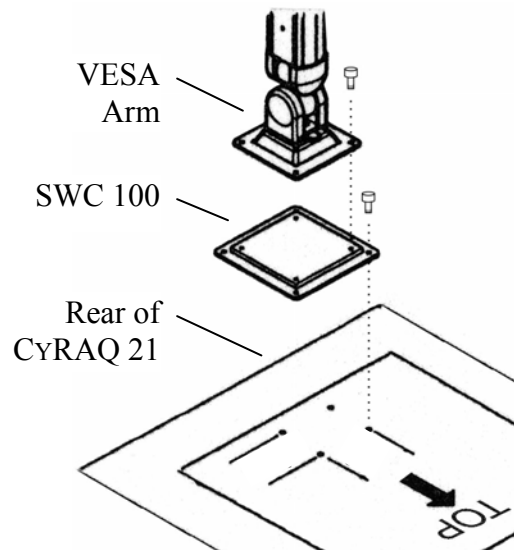


Figure 13: Mounting Arm to Display

**NOTE:** Check arm capacity setting prior to installation.

- 9) Use the “T” hex key provided to adjust the weight capacity (Figure 15).
  - a. Carefully support the main body of arm while gently pushing downward
  - b. Turn hex key counterclockwise (toward ‘-’) to decrease capacity
  - c. Clockwise (toward ‘+’) to increase capacity

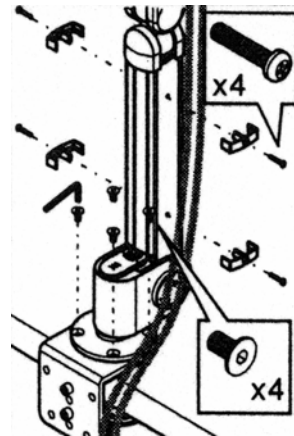


Figure 14: Mounting Arm Base to Clamp

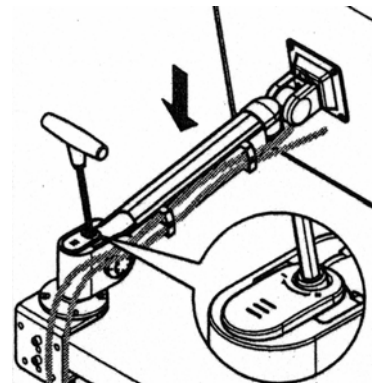
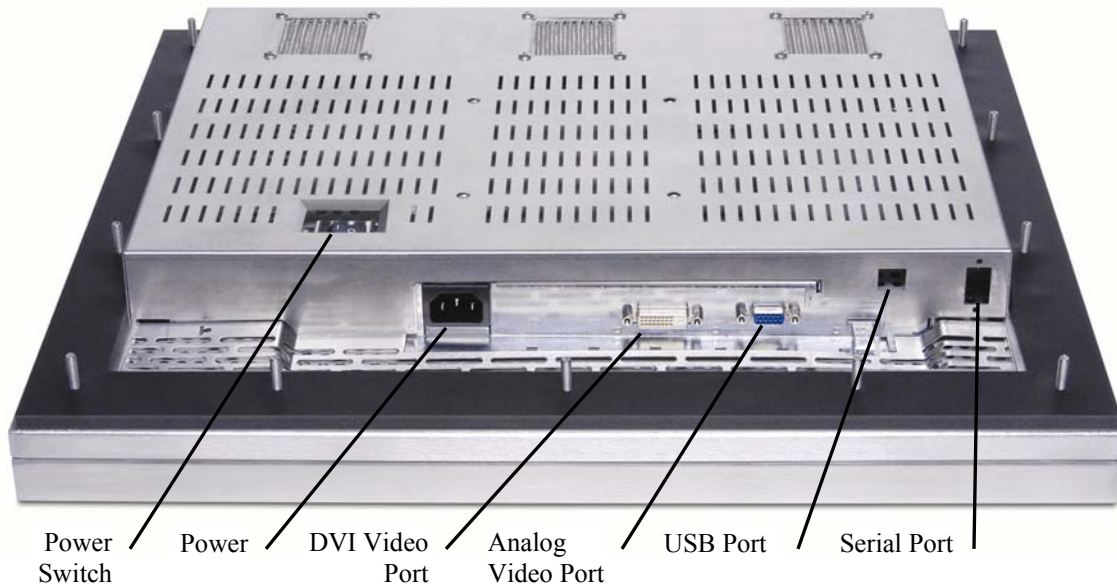


Figure 15: Adjust Weight Capacity


## 2.6 Connecting the Display

**IMPORTANT!** Before connecting the power cable to the display, connect all the other cables first.

**Figure 16: CYRAQ Connection Layout**



**NOTE:** Turn off the computer before connecting the display

1. After connecting all other cables, connect the power cable to the power jack on the back of the display; refer to Figure 16.
2. Flip the Power Switch on the rear of the display (Figure 16) to the “On” position.
3. Press the On/Off Button  on the front of the display, the status light will illuminate.
4. Start the computer.
5. If the computer is running, restart.
6. The display should now function normally.

**NOTE:** See section 4 Touchscreen for connection and driver instruction

**NOTE:** If the CYRAQ’s screen remains blank or displays the error message “Out of Range” or “No Input Signal,” there may be a connection or signal problem. One or a combination of the possibilities listed below may be the cause:

- Windows resolution is set either too high or too low for the display; check the resolution by reinstalling the old monitor
- The refresh rate may be set too high. The refresh rate of an LCD monitor doesn’t need to be set as high as a CRT’s refresh rate; set the refresh rate @ 60Hz.



- The power source isn't 115VAC.
- The video cable isn't tightly connected at one or both ends; reconnect and tighten the cable adapter screws.
- The analog and DVI cables are both connected to the display and the same computer.
- The display is reading the wrong video input; push the Exit/Source button to toggle between the VGA and DVI inputs.
- The unit is malfunctioning.

## 2.7 Display Driver Installation

1. Insert the driver CD into the computer's CD drive.
2. When the splash screen appears, select Install Drivers.



Figure 17: Splash Screen

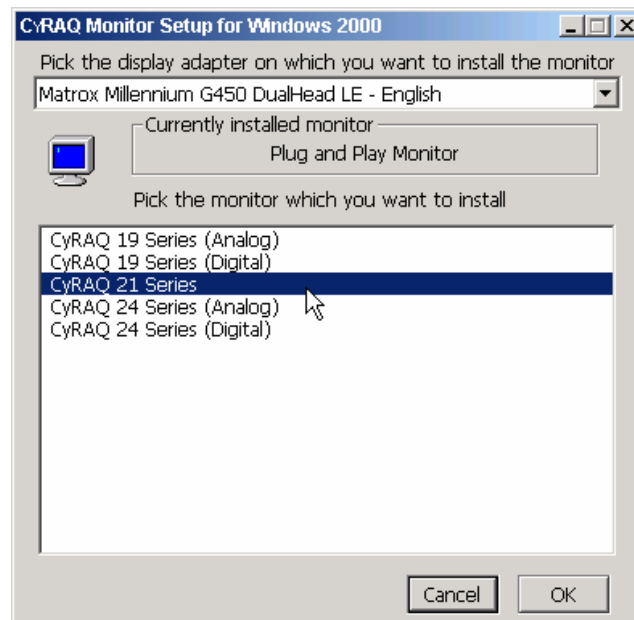
3. When the Install Products window appears, click Display Drivers.



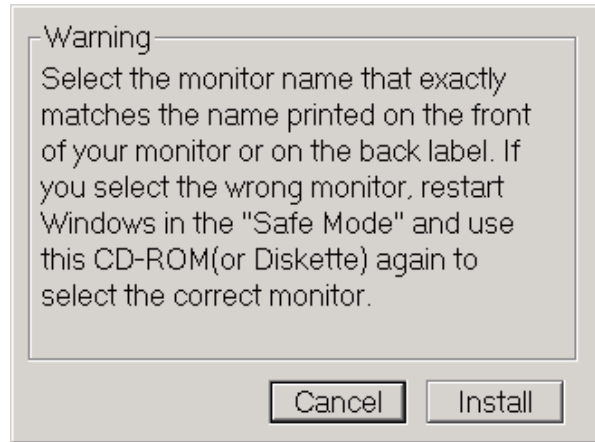
4. Then click on your operating system



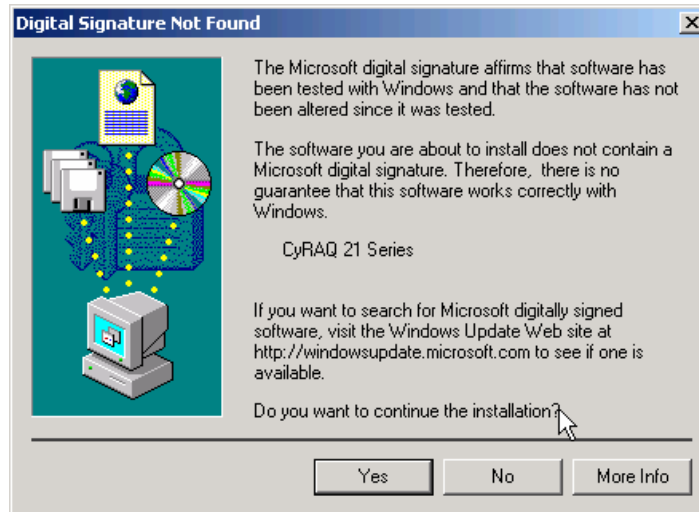
5. Select CYRAQ 21 and click OK



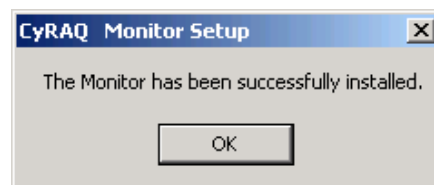
6. Read the monitor warning, “Select the monitor name that exactly matches the name printed on the front of your monitor or on the back label. If you select the wrong monitor, restart Windows in “Safe Mode” and use this CD-ROM (or diskette) again to select the correct monitor.



7. Then Click Install
8. When the Digital Signature window appears, click Yes



9. When the driver has been installed a Monitor Setup message will appear, click OK



**℞ NOTE:** If the CYRAQ doesn't display an image immediately, move the mouse to awaken it from "Suspend" mode.

**℞ NOTE:** If an image still isn't displayed, toggle the Exit/Source button to ensure the correct input is being used.

## 2.8 Screen Rotation Software

The CYRAQ Series of displays comes with software that allows users to rotate their desktop to 0, 90, 180 and 270 degrees. This software is essential if mounting the CYRAQ in a position other than landscape.

If your package contains just one CD, the *CYRAQ Series Drivers & Manuals CD*, MagicRotation™ software has been bundled with your product; please proceed with MagicRotation™ Installation instructions.

### Important!

If your package includes a Pivot® Pro Installation CD, skip to 2.8.3 Pivot® Pro Installation

### 2.8.1 MagicRotation™ Installation

**NOTE:** Close all unnecessary applications before continuing; at the end of this procedure you will be prompted to restart your computer.

1. Insert the Drivers & Manuals CD into your CD drive.
2. When the splash screen appears, choose “Install Drivers”.



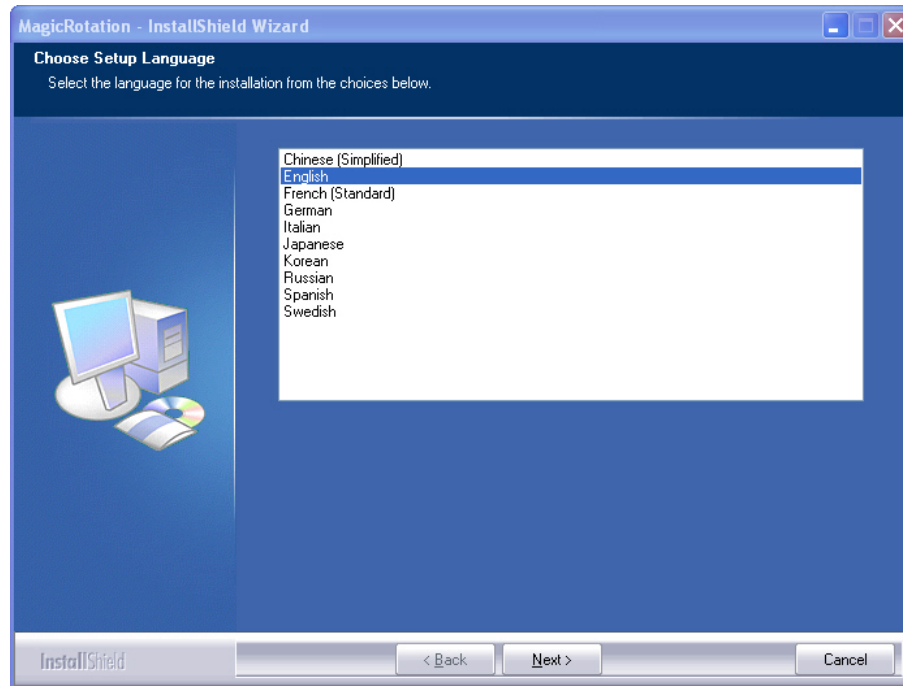
### 3. Choose Magic Rotation.



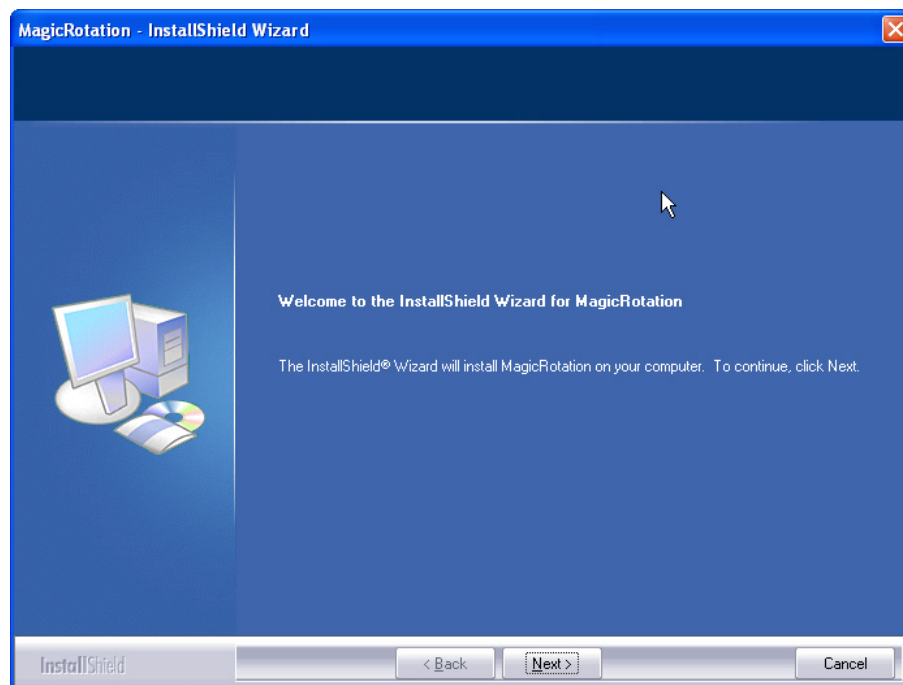
### 4. Then choose your operating system.



5. Choose the setup language for the installation

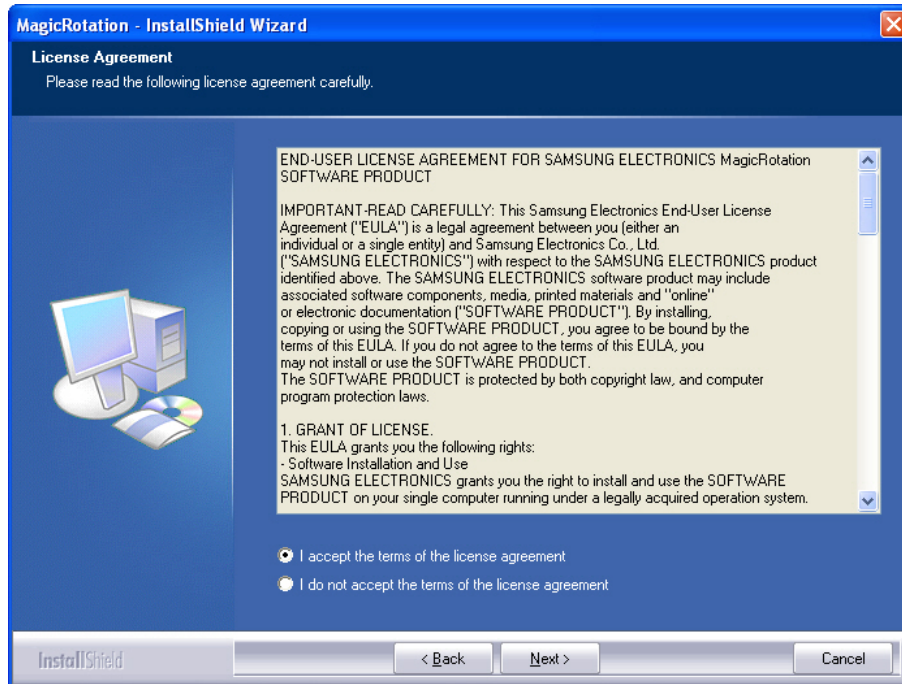


6. Then click Next to continue.

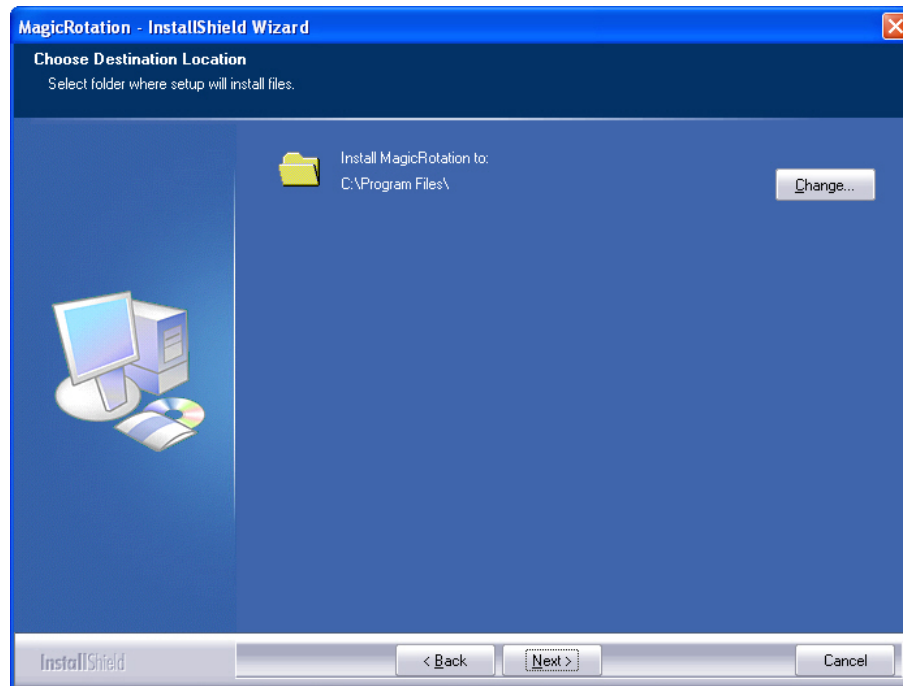




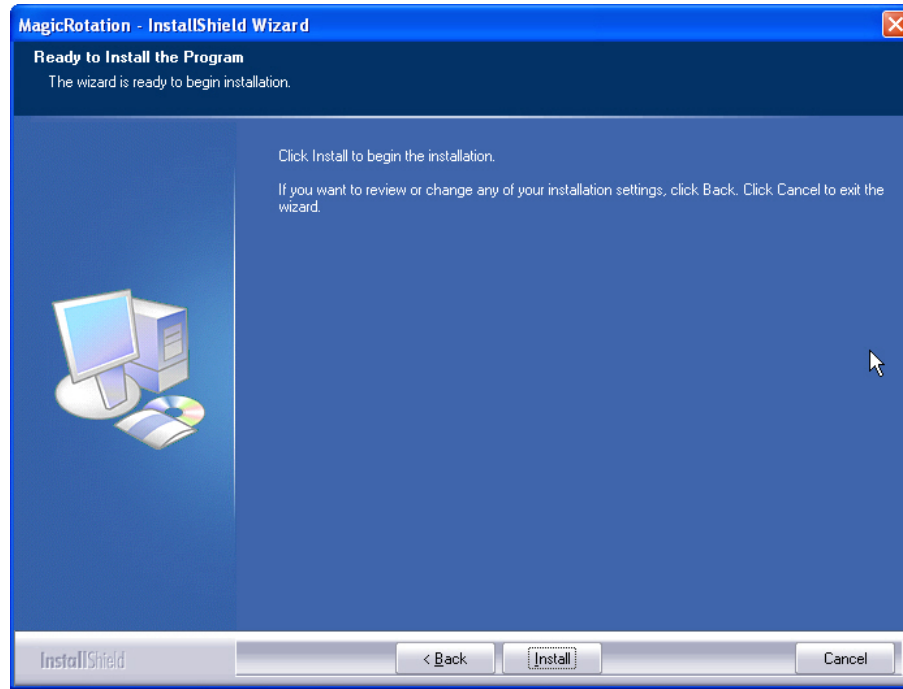
7. When the license agreement appears, click one of the radio buttons to accept or reject the terms of the agreement, and then click Next.



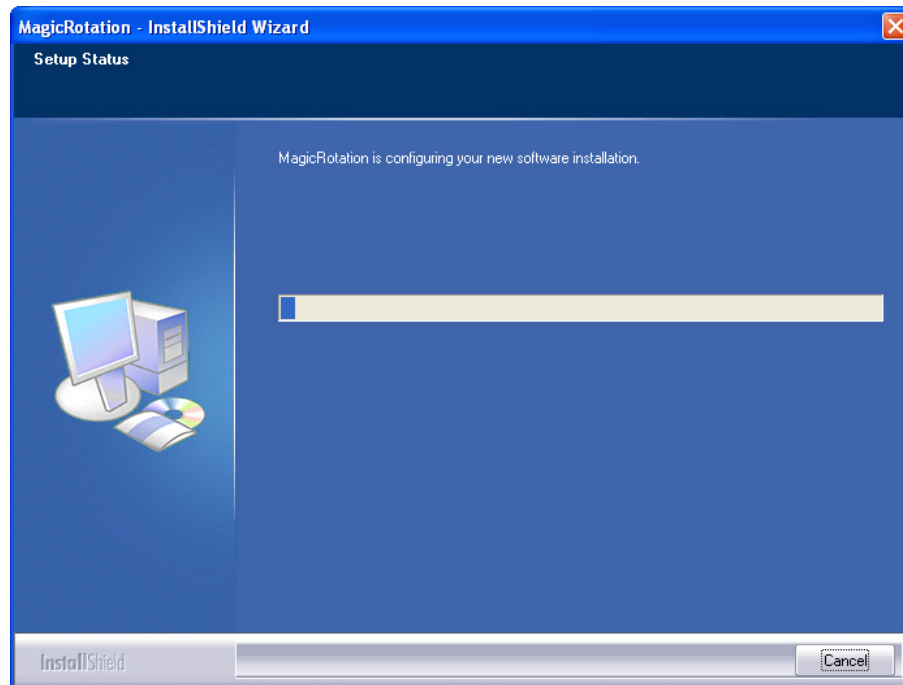
8. Choose the location for Setup to install the files. You can accept the default location C:\Program Files, or choose an alternate location via the Change button. When done, click Next.



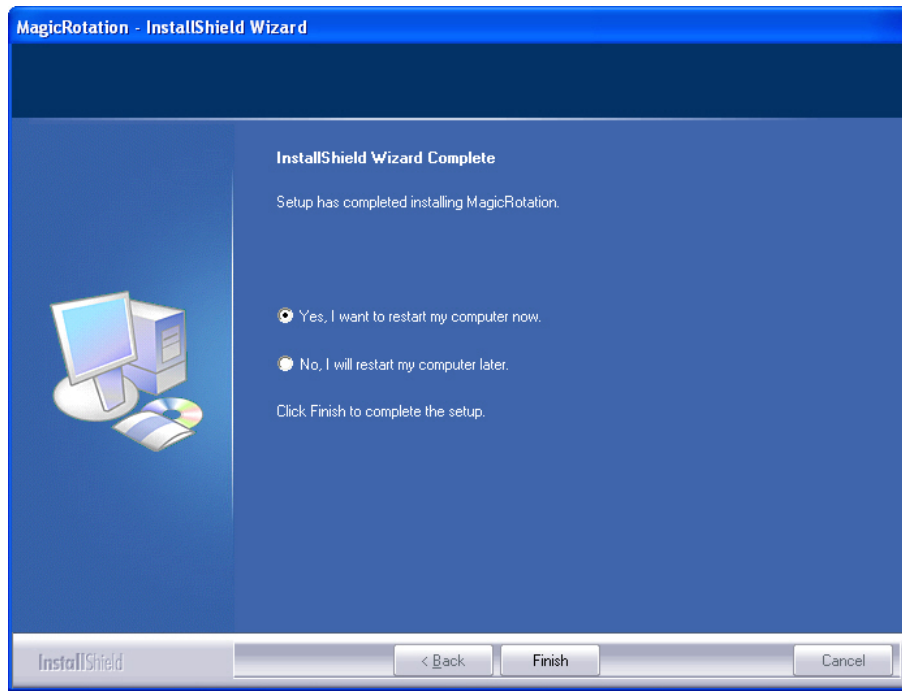
9. Before the installation begins, you're given the opportunity to go back to any of the configuration choices you've made and make changes. When done, click the Install button to begin the installation process.



10. A progress bar appears as the installation is configured



11. When the Installation Wizard completes the installation, the option is given to restart (recommended) your computer. Click one of the radio buttons, then click Finish.



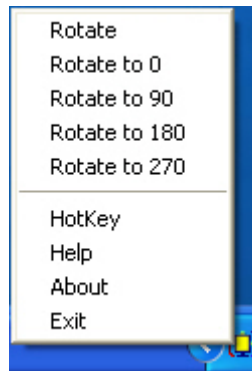
## 2.8.2 MagicRotation™ Operation

1. After completing the installation (restarting your computer is recommended), an icon appears in your taskbar tray, like the one below.



**Figure 18: Screen Rotation Software Icon**

2. To access the screen rotation program menu, right-click on the icon shown in Figure 18.



**Figure 19: Screen Rotation Program Menu**

From the menu, you can choose to rotate your desktop several different ways, assign hotkeys, or view online help.

### 2.8.3 Pivot® Pro Installation

Pivot® Pro screen rotation software *is not* included in all CYRAQ packages (see 2.8.1 MagicRotation™ Installation if your packaging doesn't contain a Pivot® Pro CD). If your package does contain a Pivot® Pro software CD, proceed with the following instruction:

**NOTE:** Close all unnecessary applications before continuing; at the end of this procedure you will be prompted to restart your computer.

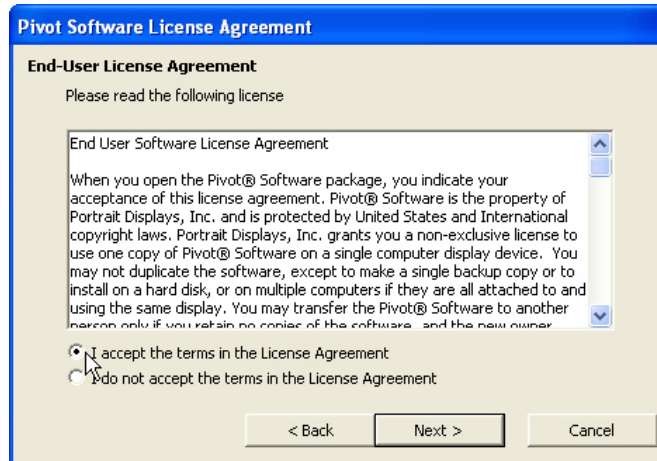
1. Insert the Pivot® Pro CD into your CD drive.
2. When the splash screen appears, choose “Install Pivot® Software.”



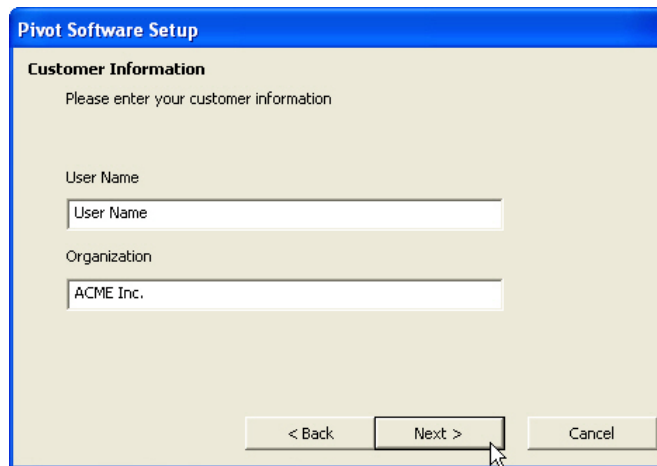
3. When the Setup Wizard appears, click Next.



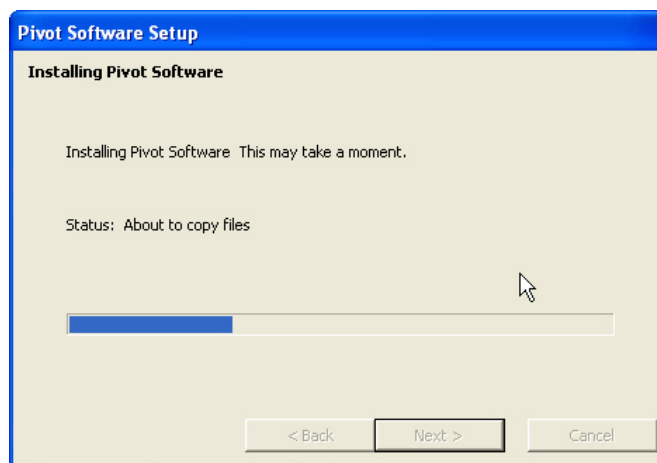
- To continue, click the “I accept” radio button, then click Next.



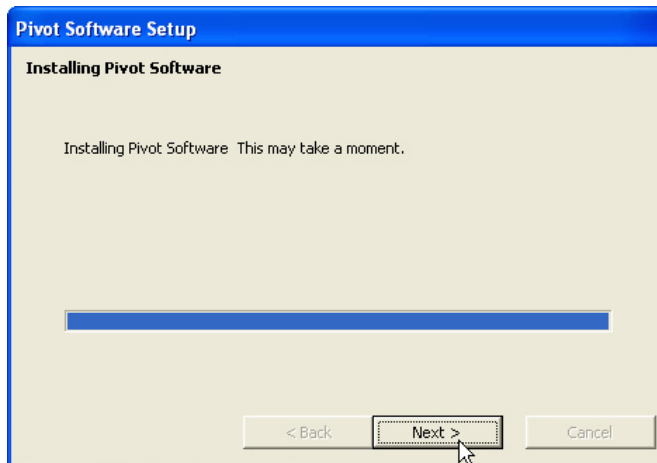
- Enter the appropriate information, then click Next.



- To install the Pivot® Pro software, click Next.



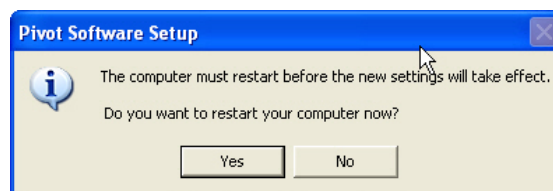
- When done, click Next.



- Then click Finish.



- You must restart your computer to begin using Pivot® Pro.



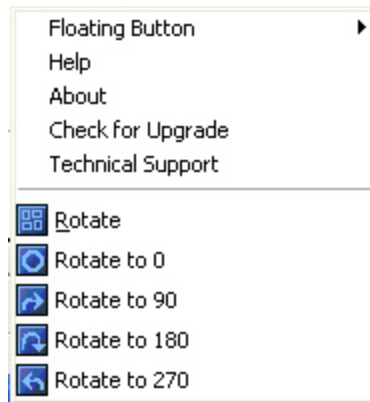
## 2.8.4 Pivot® Pro Operation

1. After completing the installation (restarting your computer is necessary), an icon appears in your taskbar tray, like the one below.



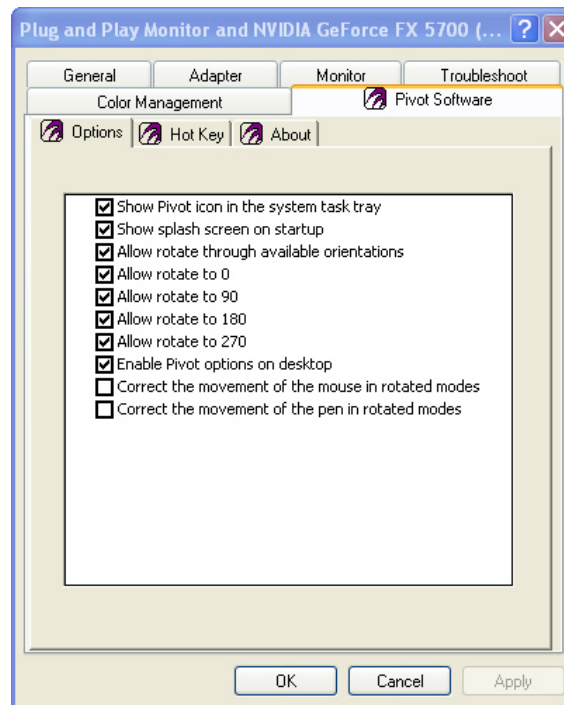
**Figure 20: Pivot Pro Icon**

2. To access the Pivot® Pro program menu, click on the icon shown in Figure 20.
3. From the menu, you can choose to rotate your desktop several different ways, view online help, or choose from other options.



4. To access Pivot® Pro options, right-click on your desktop and choose:

- a. Properties
- b. Settings
- c. Advanced
- d. Pivot Software

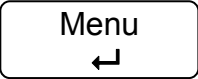
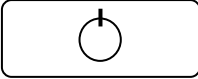
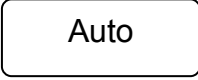
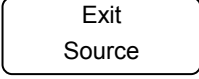



**Figure 21: Pivot Pro Option Menu**



# 3 Using the CYRAQ 21

## 3.1 User Controls

Function Button	Action
	OSD Off: <ul style="list-style-type: none"> <li>➤ Launches the OSD menu and highlights function displayed</li> </ul>
	OSD On: <ul style="list-style-type: none"> <li>➤ Selects menu items</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Turns the monitor on and off</li> <li>➤ Works in conjunction with the Status light               <ul style="list-style-type: none"> <li>○ Solid Green light indicates monitor is on</li> <li>○ Blinking Green indicates power but no signal</li> </ul> </li> </ul>
	OSD Off: <ul style="list-style-type: none"> <li>➤ Automatically adjust image quality to optimum level</li> </ul>
	OSD On: <ul style="list-style-type: none"> <li>➤ Automatically adjust image quality to optimum level</li> </ul>
	OSD Off: <ul style="list-style-type: none"> <li>➤ Toggles the display's input between VGA and DVI</li> </ul>
	OSD On: <ul style="list-style-type: none"> <li>➤ Backs out of currently selected menu item</li> </ul>
	OSD Off: <ul style="list-style-type: none"> <li>➤ Adjusts the brightness settings</li> </ul>
	OSD On: <ul style="list-style-type: none"> <li>➤ Selects tabs on the OSD menu, adjusts settings on the OSD menu</li> </ul>

## 3.2 Adjusting the Display

### 3.2.1 Auto Adjustment

The Auto Adjustment feature allows users to quickly adjust the display's settings to optimum level.

1. To initiate the Auto Adjust feature, press the Auto button.

**NOTE:** Expect the display to darken while a progress bar appears, see Figure 22. The process will take approximately 15 seconds.

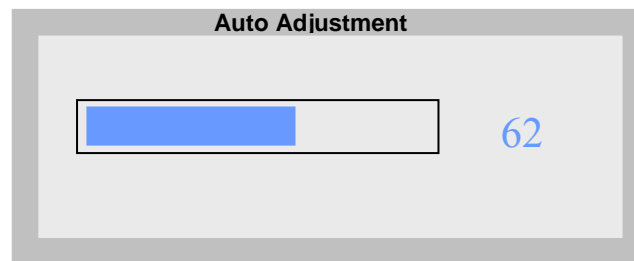


Figure 22: Auto Adjustment Progress Bar

### 3.2.2 Brightness

Adjusting the Brightness level can be accomplished without actually prompting the full OSD (using the Menu button). To adjust the display's brightness:

1. Press either the Plus or Minus button on the front of the display.
  - The Brightness indicator bar appears, see Figure 23.
2. Press either the Plus or Minus button to adjust the setting.
3. When done, press Exit.

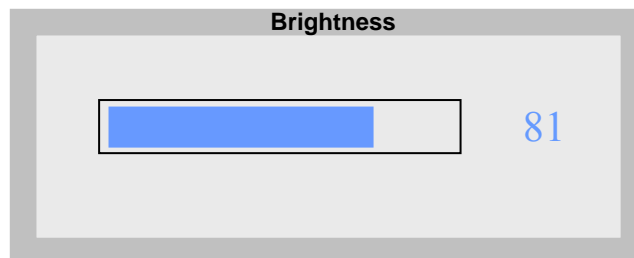



Figure 23: Brightness

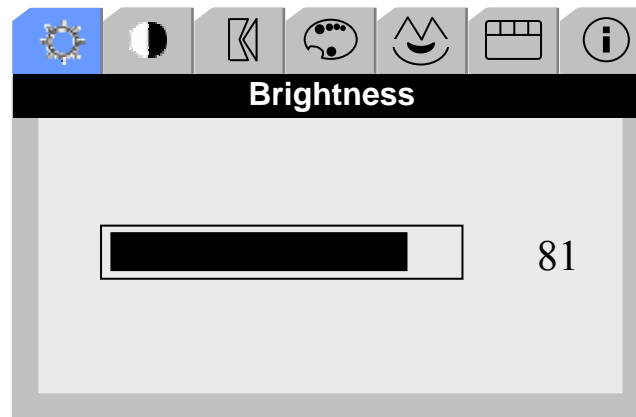
### 3.2.3 Accessing the OSD

The OSD is the GUI used to adjust the display settings. The OSD contains a menu with Brightness, Contrast, Color Control, Language, Menu Position, and Source Select options.

1. To access the OSD menu, press the Menu button on the front of the display.

 **OSD Operation Tip:** When the Indicator Bar and its corresponding number are blue, they can be adjusted using the + and – buttons on the front of the display; when the Indicator Bar appears black, press the Menu button to activate the adjustment feature, then adjust level using the + and – buttons on the front of the display

2. The OSD will appear, see Figure 24.
3. Press Menu button to activate the Brightness menu; Indicator Bar will turn blue.
4. Brightness can now be adjusted using the + and – buttons.
5. When done, press Exit.



**Figure 24: View of Initial OSD**

### 3.2.4 Adjusting Contrast Level

To adjust the Contrast level:

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose the Contrast tab, see Figure 25.
3. Press the menu button to activate the Contrast menu.
4. Contrast can now be adjusted using the + and – buttons.
5. When done, press Exit.

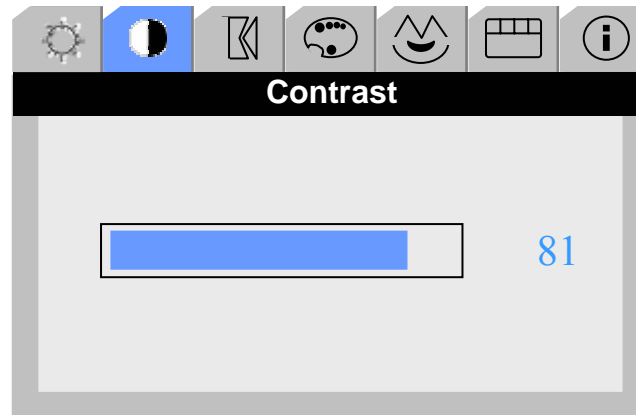


Figure 25: Contrast Tab

### 3.2.5 Adjusting the Image Levels

To adjust the Image Levels:

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose Image, see Figure 26.
3. Press the menu button to activate the Image menu.
4. Choose an item on the Image submenu using the + or – button, and then press Menu (for example, the Fine adjustment).

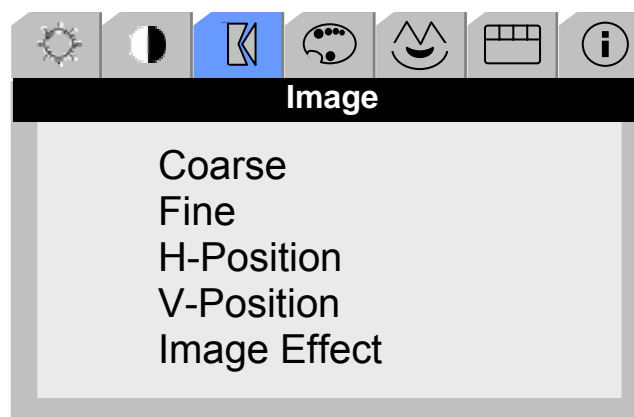
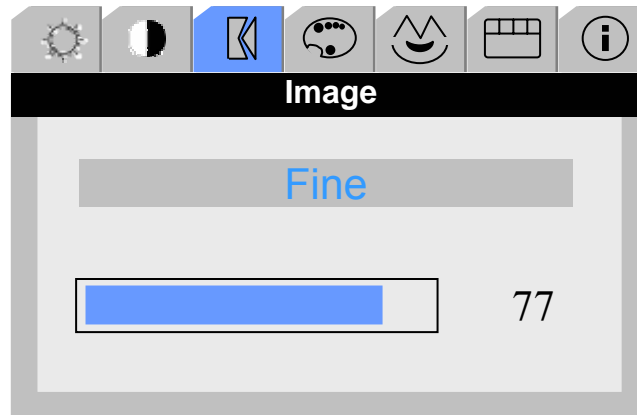


Figure 26: Image Tab

5. When the submenu choice appears, use the + or – button to adjust.
6. When done, press Exit.



**Figure 27: Fine Adjustment**

### 3.2.6 Color Control

The Color control menu allows the user to automatically add red and blue screen color, adjust the gamma setting, or manually adjust the red, green and blue color levels. To access the Color Control menu,

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose Color Control, see Figure 28.
3. Press the menu button to activate the Color Control menu.
4. Choose an item on the Color Control submenu using the + or – button, and then press Menu (for example, the Gamma adjustment).

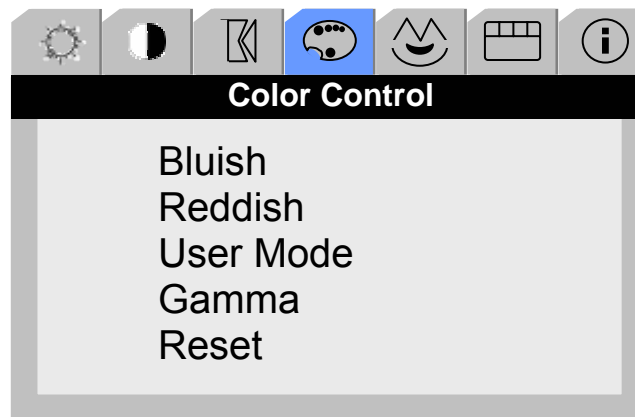


Figure 28: Color Control

5. When the submenu choice appears, use the + or – button to select adjustment, see Figure 29.
6. When done, press Exit.

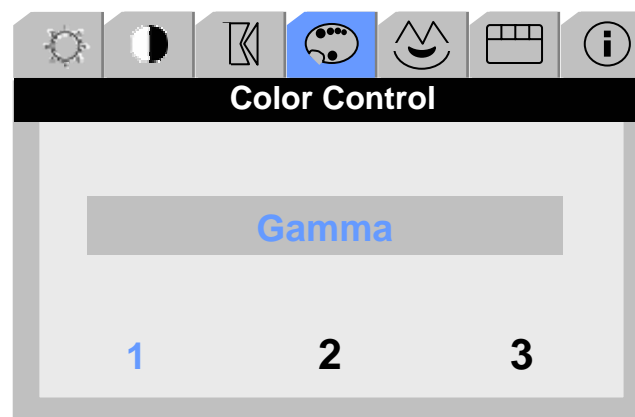


Figure 29: Gamma Adjustment

### 3.2.7 Select Language

The OSD can appear in a variety of different languages: English Dutch, Spanish, French, and several others. To choose a language:

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose the Language tab, see Figure 28.
3. Press the menu button to activate the Language menu.
4. Using the + or – button to choose desired OSD language.
5. When done, press Exit.

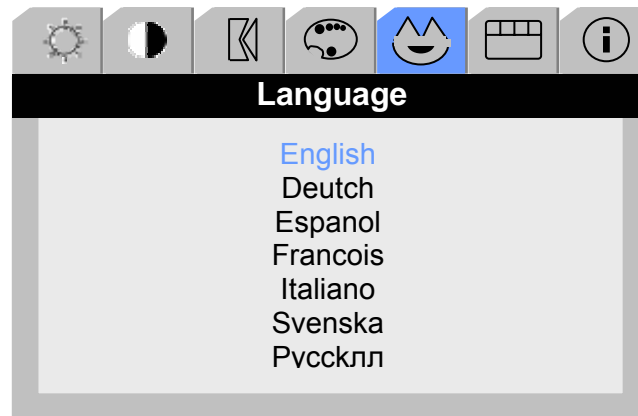



Figure 30: Language Menu

### 3.2.8 Customize OSD Menu

The OSD itself can be customized. It can be set to appear anywhere on your display. The menu color and tone can be adjusted along with the setting for how long the OSD appears onscreen. As an example of how to use one of the customizing features of the OSD menu, follow these steps to adjust the vertical position of the menu:

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose the OSD tab, see Figure 31.
3. Press the menu button to activate the OSD menu.

 **OSD Operation Tip:** When the Horizontal or Vertical position of the OSD is changed, it becomes the default location for the menu to appear.

To adjust the position of the OSD:

4. Use the + or – button to select the H-Position (horizontal) adjustment.
5. Press Menu to select.
6. When the H-Position submenu appears, use the + or – button to move the menu to the desired location.
7. When done, press Exit.

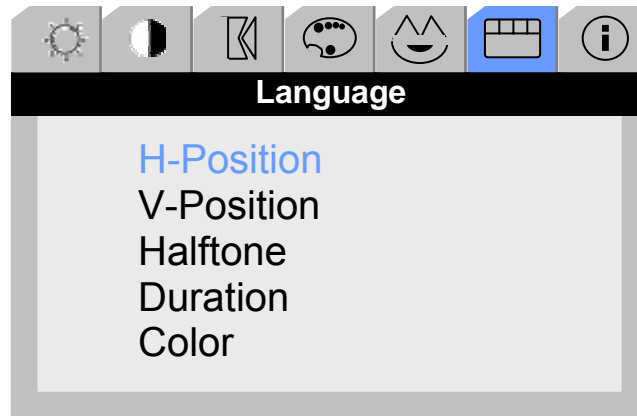


Figure 31: OSD Menu

### 3.2.9 Source Select

The Source button on the display is controlled by two choices that reside within the Source Select tab on the OSD menu (Auto and Manual). Users have the option of allowing their display to search for an input automatically, or to manually choose the input via the Source button on the display. To set the action for the Source button:

1. Press the Menu button to access the OSD.
2. Using the + or – button, choose the Source select tab, see Figure 32.
3. Press Menu to select.
4. Use the + and – button to toggle between Auto and Manual.
5. When done, press Exit.

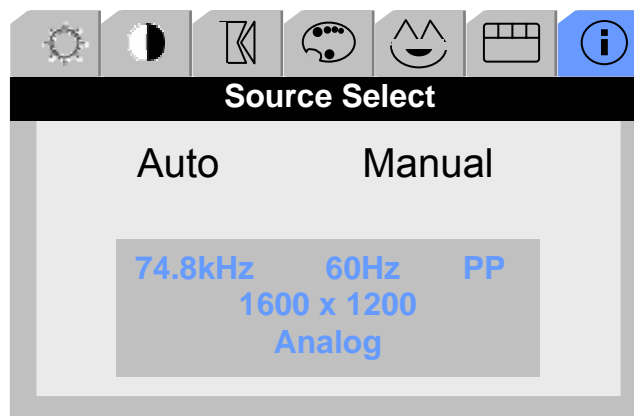


Figure 32: Source Select Menu



## 4 Touchscreen

Touchscreens are the ultimate human/machine interface. In a touchscreen system, touching what you see onscreen makes the computer respond. The touchscreen system is logical, intuitive and simple. Using touchscreens, workers can precisely control complicated processes without being tethered to a keyboard and mouse. People who have never used a computer before can immediately interact successfully with a touchscreen-based computer system allowing airline customers to access flight information, CNC machinists to quickly change programs, and wait staff can instantly send your order to the kitchen—all with the touch of their finger.

### 4.1 Installation

The Touchscreen and internal controller board inside your CYRAQ display have already been installed for you by the engineers at CyberResearch, Inc. You should never need to open the case of this unit to install/change any of the internal connections or for any other reason. If you think there is an internal connection problem, contact CyberResearch Inc. immediately.

#### 4.1.1 Serial Cable Connection

1. Shutdown your computer.
2. Plug the DB9 male end of the supplied serial cable into the DB9 female connector on the back of the CYRAQ enclosure.
3. Plug the DB9 female end of this cable into the computer's DB9 serial port. If you have a 25-pin serial port, use the optional DB9 male to DB25 female adapter.

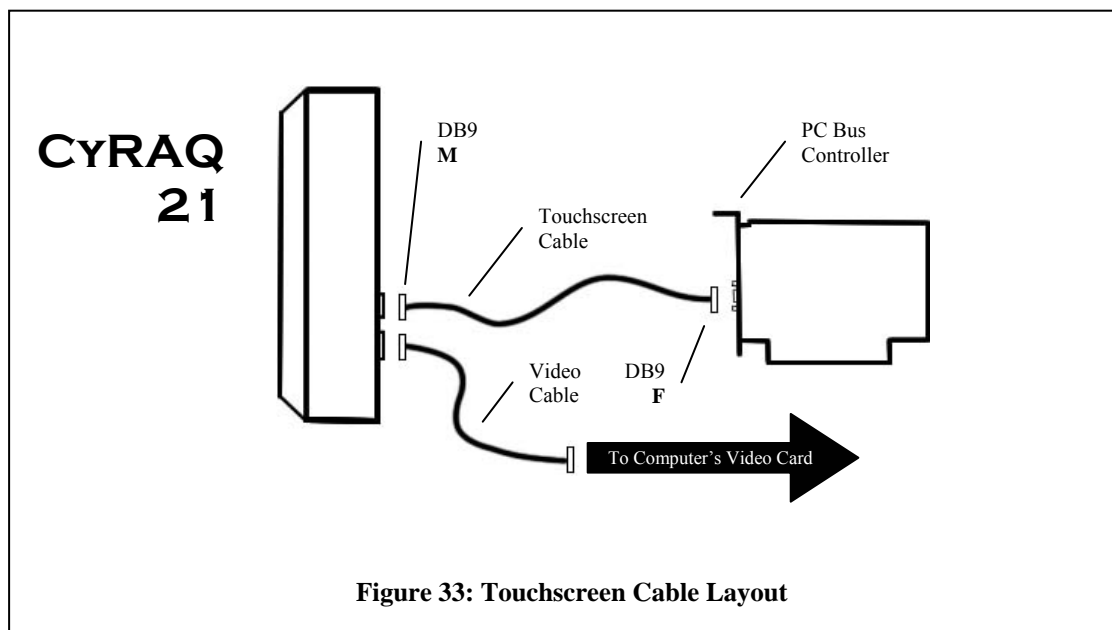


Figure 33: Touchscreen Cable Layout

#### 4.1.2 USB Cable Connection

1. Shutdown your computer.
2. Plug the USB cable into the CYRAQ's USB connector on the back of the enclosure.
3. Plug the other end of the USB cable into a free USB port on the back of the computer.

#### 4.1.3 Touchscreen Driver Installation

1. Reboot your computer.
2. After Windows loads, put the CyberResearch Software and Utilities CD into the CD drive.



Figure 34: Splash Screen

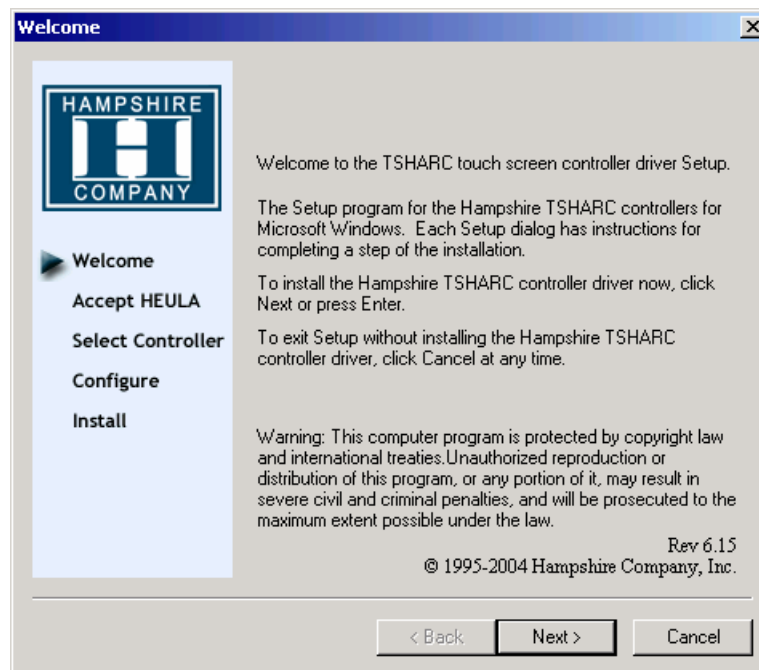
3. When the splash screen appears (Figure 34) click on Install Drivers

4. Then click TouchScreen (Figure 35)

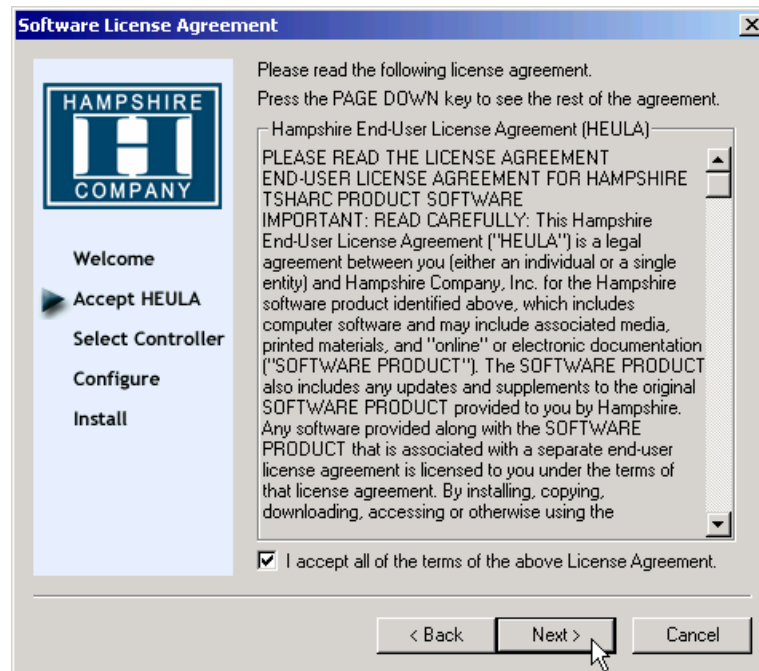


Figure 35: Install Products

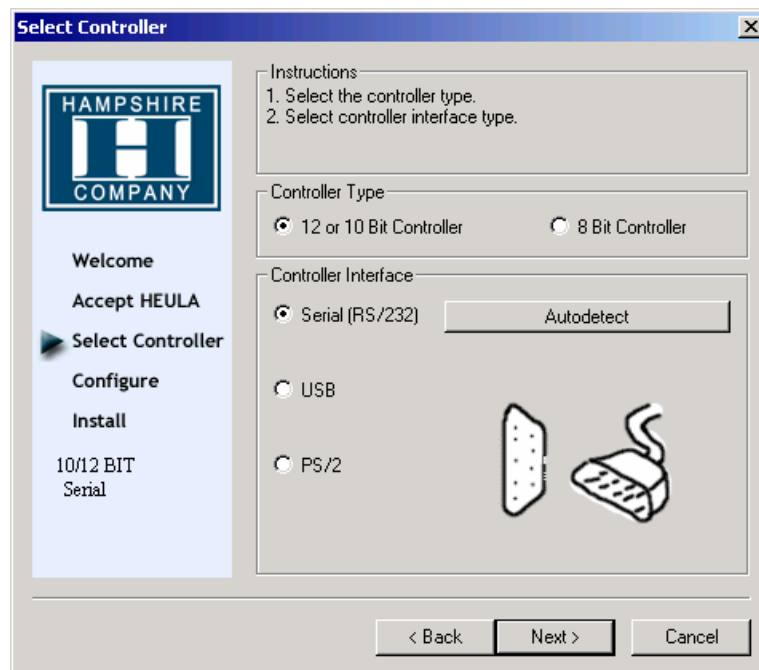
5. After the Welcome window appears, click Next to continue



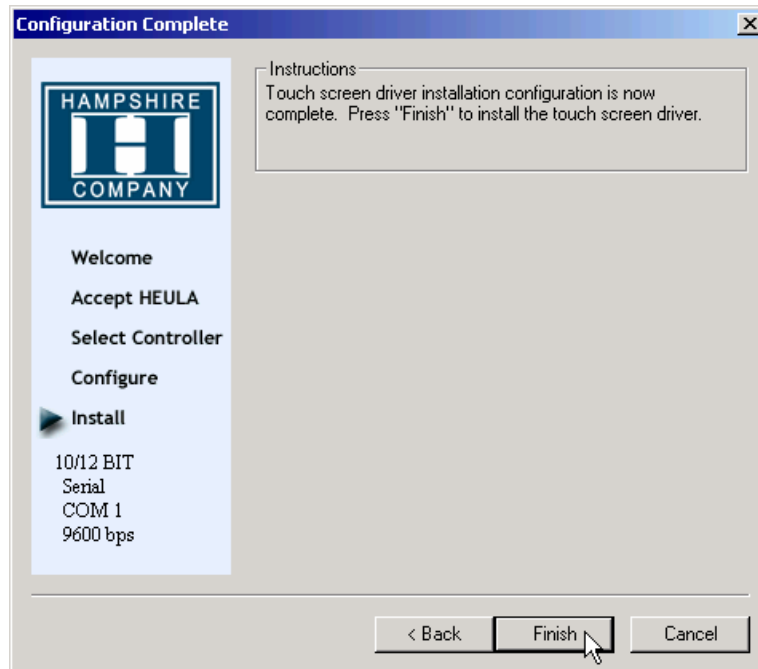
6. After accepting the license agreement, click Next



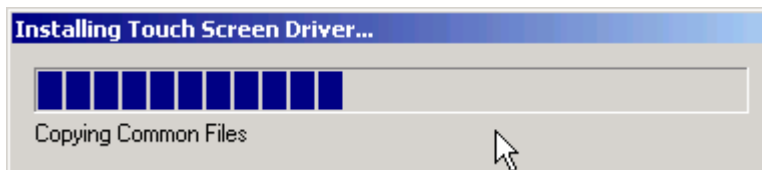
7. Select controller type, interface, and then click Next



8. Click Finish to install touch screen driver



9. After touch screen driver is installed, you will be prompted to restart the computer



10. The driver you are installing is compatible with Windows. Click Continue Anyway (you may need to do this more than once).



11. Click OK



12. Restart your computer before continuing with section 4.2.

## 4.2 Calibration

### 4.2.1 Calibration Options:

**Three point calibration:** Quick calibration of a known good touchscreen overlay. May be used to evaluate, test or verify actual touchscreen linearity.

- No correction.

**Four Point Calibration (Default):** Will compensate for skew, and some edge linearity anomalies.

- Best for general calibration.

**Seven Point Calibration:** More accurate than 3 point calibration. Helps calibrate screen to the edges.

- No correction.

**Twenty Point Calibration:** Provides the highest level of touchscreen linearization and skew correction. Should be used to get the best possible calibration

- May be used to extend the life of a failing touchscreen.

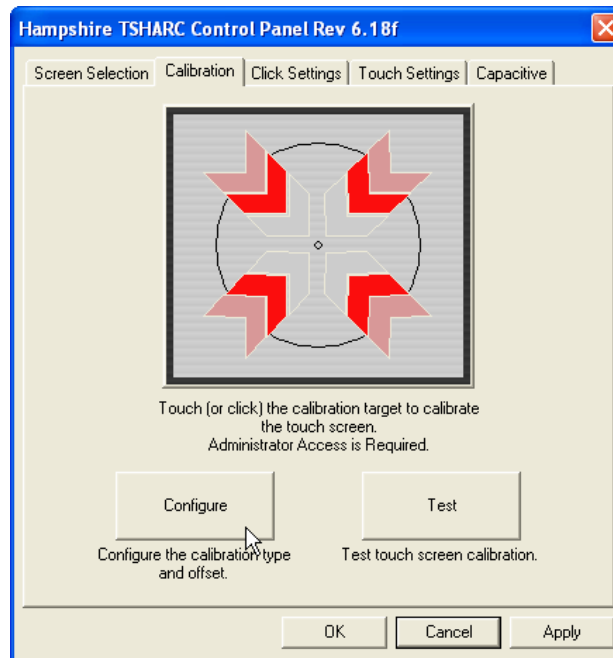
**Calibration Offset:** Because of the varied linearity that exists between touchscreen types, you may want to calibrate the edges of the touchscreen more precisely. Experiment with this setting to find the best result.

- Default is 20%.
- Select the large target to calibrate.

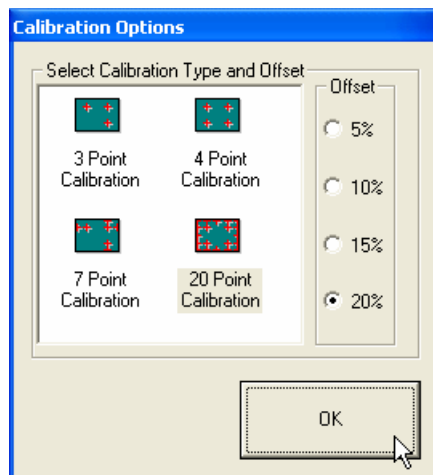
### 4.2.2 Configure Calibration Settings

Generally speaking, the default setting of 4 Point Calibration is quite accurate for most applications. ***It is recommended the user try this default setting before configuring calibration with a different setting.*** If adjustments need to be made, use the procedure on the next page:

1. Open the Hampshire TSHARC Control Panel (Start\All Programs\ Hampshire TSHARC Control Panel). Click the Calibration tab.



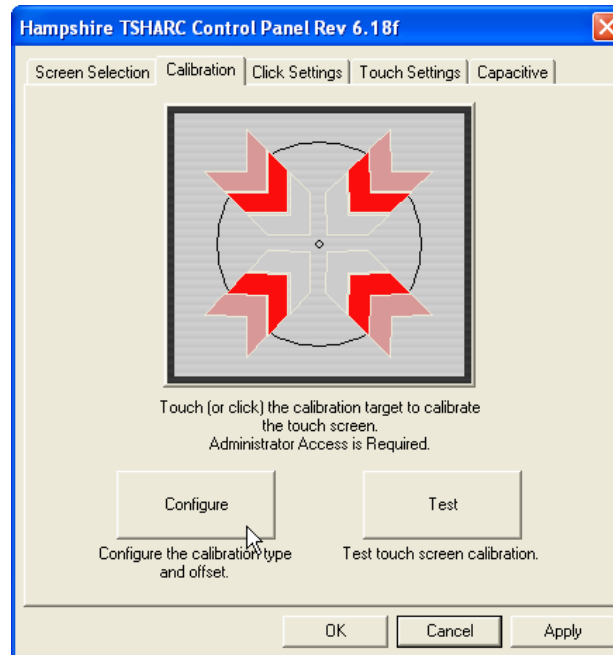
2. Click/touch on the Configure button.



3. When the Calibration Options window appears:
  - a. Click/touch on a **Calibration Type** icon
  - AND-
  - b. Choose an Offset radio button.
4. Then click/touch OK.

### 4.2.3 Calibration Routine

1. Click/touch the calibration target seen in Figure 36 to begin calibration routine.



**Figure 36: Calibration Target**

2. Follow the on-screen prompts to complete calibration process.

Once you have selected the large calibration target from the control panel, the calibration program will begin.

3. As each target is displayed on the screen TOUCH and hold the center of each target as directed by the text located adjacent to each target.
4. Touch the center of each target as accurately as possible.

Hampshire calibration targets have been specially developed to assist you in calibrating your touchscreen as accurately as possible.

5. As each target is displayed, touch and hold the center of each calibration target until it shrinks and the “Hold” text changes to “Release”.

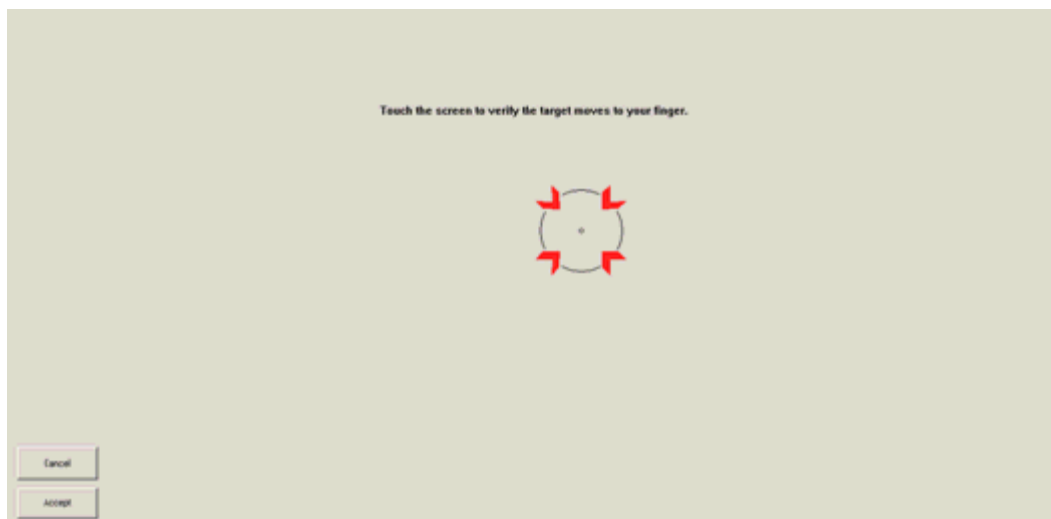
The calibration screen will automatically time out and return you to the control panel if the first point is not touched within 10 seconds. This time-out feature has been added to the calibration program to insure that you can exit the calibration screen in the event that you have a damaged or disconnected touchscreen. This time-out feature may also be configured for other time-out values.



#### 4.2.4 Calibration Test

This is the last screen displayed in the calibration process.

1. Touch the screen and notice if the calibration target is displayed under your finger or stylus. If the target appears directly under your finger, select the “Accept” button.
2. If the target does not appear directly beneath your finger or stylus, select the “Cancel” button, reconfigure your calibration options and recalibrate until you get an acceptable calibration. You may adjust the “Offset”, or try a different calibration scheme.
3. Select “Accept” to apply and record your calibration data.
4. Select “Cancel” to return to the calibration tab. Once you return to the calibration tab, select, “OK” or “Apply” to save your settings.
5. If you have multiple monitors return to the “Screen Selection” tab and select another monitor to calibrate.

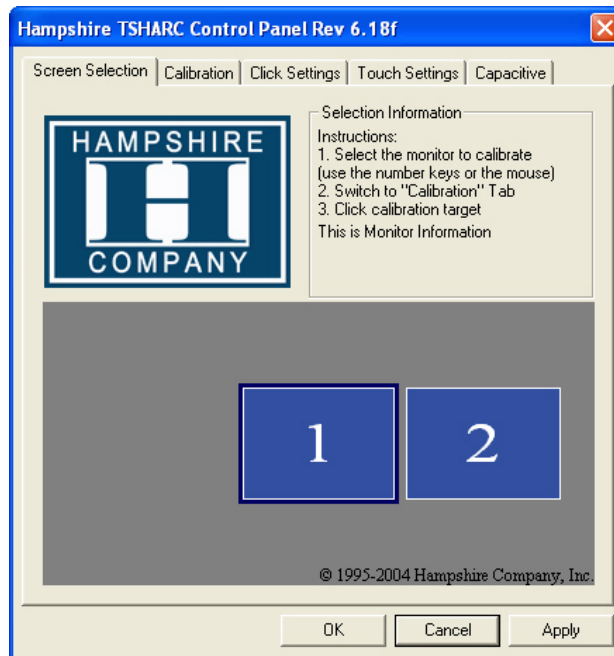


**Figure 37: Calibration Target**

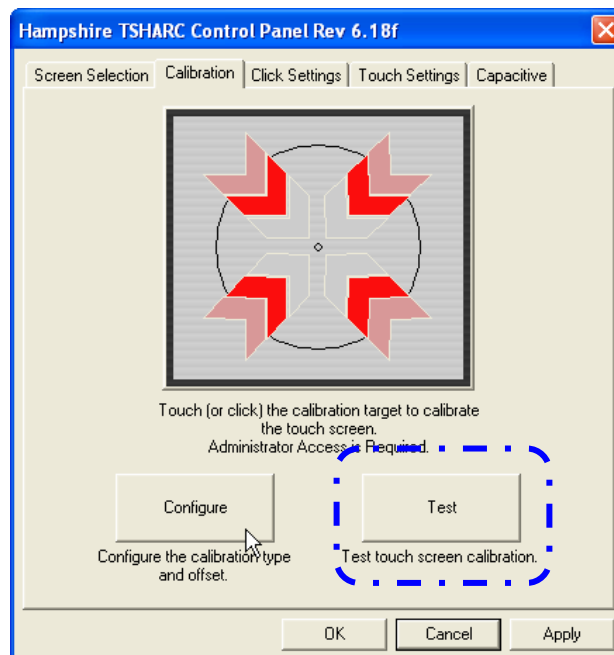
## 4.2.5 Drawing Test

Use the Test Feature to ensure calibration is accurate. Once you have calibrated your touchscreen, you may select the “Test” button located on the calibration tab of the control panel. This is a simple drawing program that you may use to determine if you touchscreen is working properly.

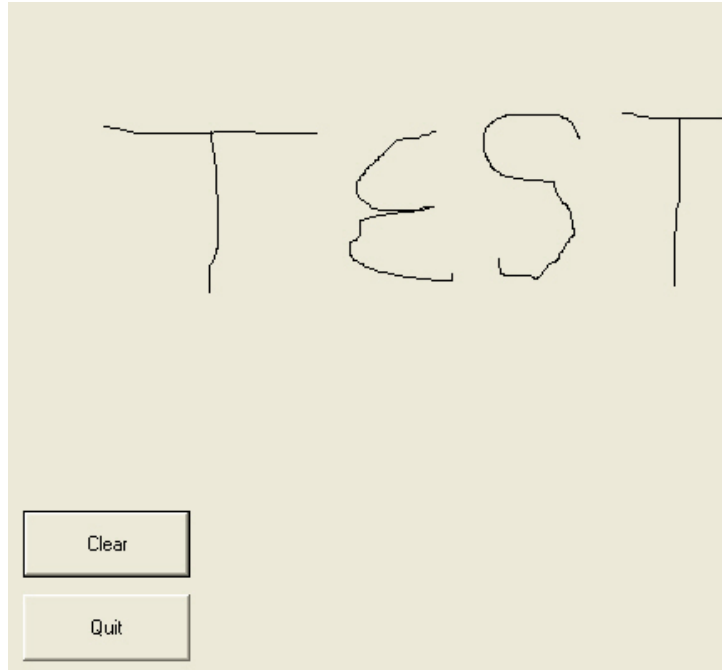
1. Open the Hampshire TSHARC Control Panel (Start\All Programs\ Hampshire TSHARC Control Panel).



2. Click/touch the Calibration Tab, then click/touch the Test button



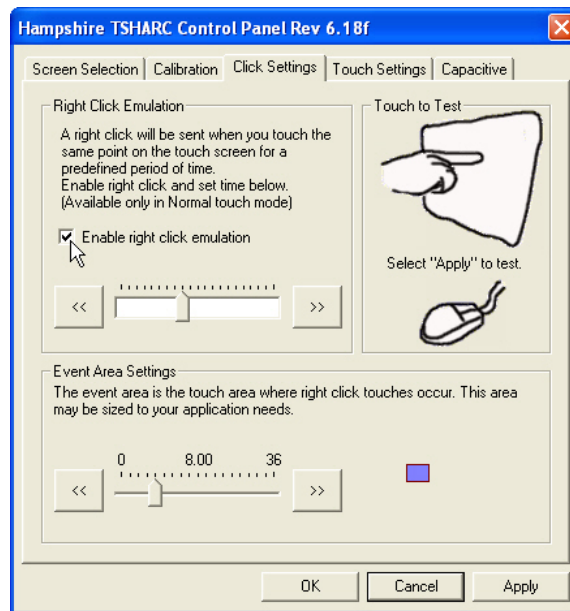
3. Tap some points on the screen, or, write a word to ensure the program renders the contact points correctly.



4. When done, click/touch Quit.

## 4.2.6 Right Click Emulation

The TSHARC Control Panel permits users to enable Right Click Emulation, which simulates functionality (where applicable) of a right mouse click. It works by touching the same point on the touchscreen for a specific amount of time predetermined on the Click Settings tab of the TSHARC Control Panel. You can enable this functionality and define the amount of time necessary on the Click Settings tab, as seen in Figure 38.



**Figure 38: Click Settings Tab**

1. Click the Enable right click emulation checkbox to activate this feature.
2. The slider below the checkbox is used to determine the amount of time necessary when holding down a touchpoint to generate the right click event.

### **Event Area Settings:**

Since it may be difficult to touch and hold an exact point on any touchscreen for a length of time, an event area is used to establish the size of the area in which a “hold” is acceptable.

3. The event area should be set to at least the same size as your finger tip.
4. Click or touch “Apply” to apply your selection. “OK” to apply and exit the control panel

## 4.2.7 Touch Settings

**Touch Sound:** Check “Enable touch sound” to enable a beep when the touchscreen is touched.

**Normal:** Emulates a standard mouse. Selecting “Normal” will allow for singleclick, double click, drawing, dragging and right click option (if right click is enabled).

**Touch down:** Touch down will allow for a click event to take place at touch down. You will not be able to draw or drag if this option is selected.

**Touch up:** Touch sent only at touch up. Disables right click and double click functions. Click or touch “Apply” to apply your selection. “OK” to apply and exit the control

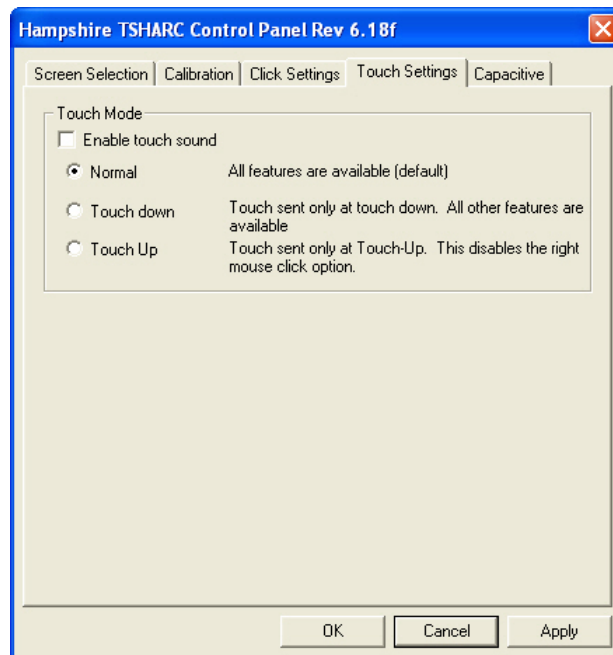


Figure 39: Touch Settings Tab

## 5 Product Care

The CYRAQ unit is basically a maintenance-free product. It does require occasional cleaning to keep it looking and performing its best. Additionally, please make sure the unit is placed with consideration for environmental temperature, humidity shock and vibration tolerances noted in the Specifications section of this manual. Those specifications are listed again below for your convenience.

Environmental Specifications	
Operating Temperature	50°F....113°F (10°C....45°C)
Storage Temperature	-4°F....122°F (-20°C....50°C)
Relative Humidity, non-condensing	10%....80%
Shock Resistance	Operating 30g half-sine for 11ms
Vibration Resistance	Operating 15 to 57Hz: 0.006" peak-to-peak; 57 to 640Hz sine: 1.0g peak-to-peak
Altitude, Max.	1.89mi (3.05km)

### 5.1 Cleaning

Prior to cleaning the CYRAQ unit, disconnect power to the device.

#### 5.1.1 Touchscreen

Clean the touchscreen with household glass cleaner or just plain water, and soft cloth.

- We do not recommend using paper products to clean the touchscreen.
- Always dampen the towel *first*, and then clean the touchscreen to reduce abrasion from the cleaning applicator.
- Glass cleaner sprayed directly onto the CYRAQ's screen could possibly be over sprayed leak into the back of a unit if not mounted correctly, and cause damage.

#### 5.1.2 LCD

Clean the LCD screen with household glass cleaner or just plain water, and soft cloth

- Do not spray cleaner or water directly on any part of the unit—front or back.
- We do not recommend using paper products to clean your display screen
- Always dampen a soft cloth *first*, and then clean the LCD screen to reduce abrasion from the cleaning applicator.
- Do not use or store flammable substances near the monitor.

### 5.1.3 Fan Filters

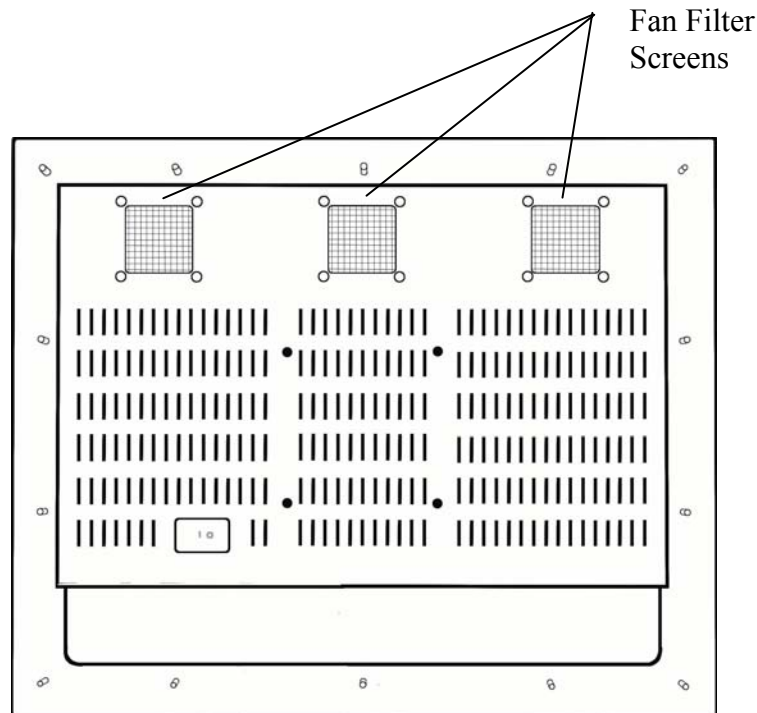
Periodically, you may find it necessary to clean fan filters built into the back of the CYRAQ's enclosure. Cleaning frequency is largely based on environmental and other conditions immediately surrounding the unit. Since most applications require the CYRAQ to be rack or panel-mounted, the engineers at CyberResearch, Inc. designed a filter system users can maintain without dismounting the display, disassembling the unit, or removing the fan filters from the enclosure.



**Disconnect power to the unit before beginning the subsequent steps**

To clean the fan filters:

1. Power off the unit using the On/Off switch.
2. Unplug the unit's AC power.
3. Gain access to the rear of the unit.
4. Carefully run a vacuum hose (using a crevice attachment is ideal) over the protective fan filter screens (Figure 40) to remove dust and debris from the protective covers and underlying fan filters themselves.
5. When done, restore power to unit.



**Figure 40: Cleaning Fan Filters**

# 6 Mechanical Drawings

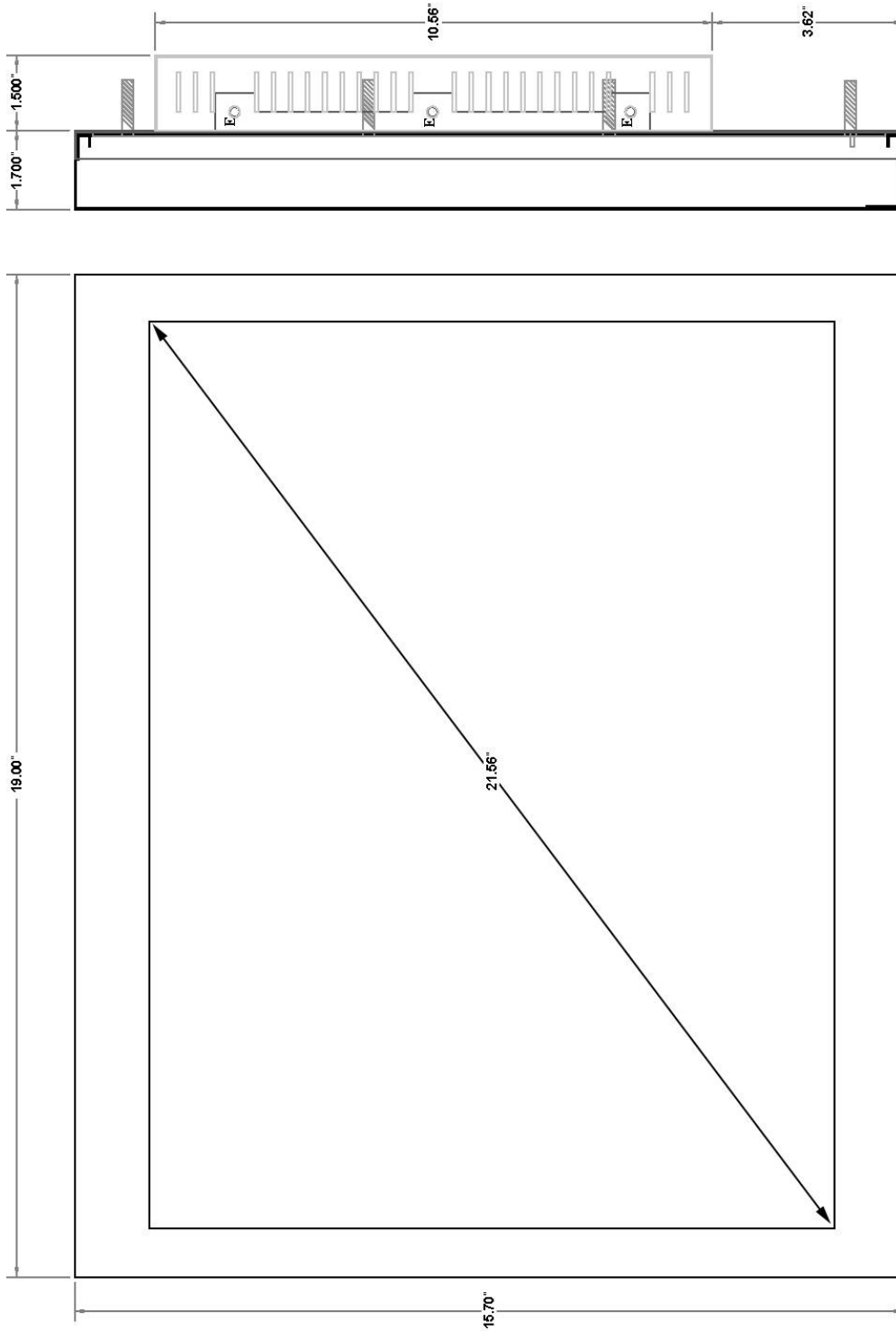


Figure 41: Display and Enclosure Dimensions



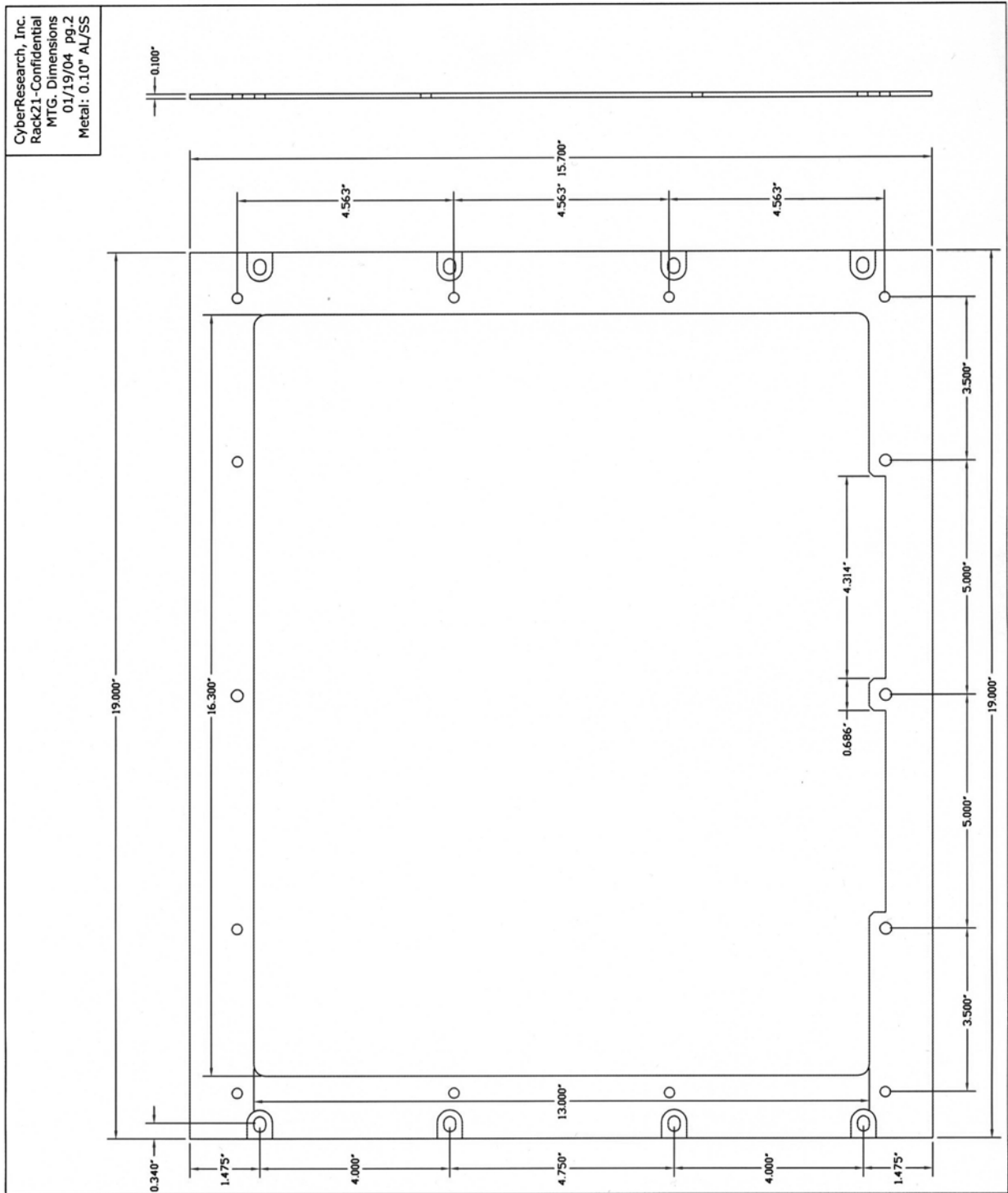


Figure 42: Landscape Mounting Plate Dimensions

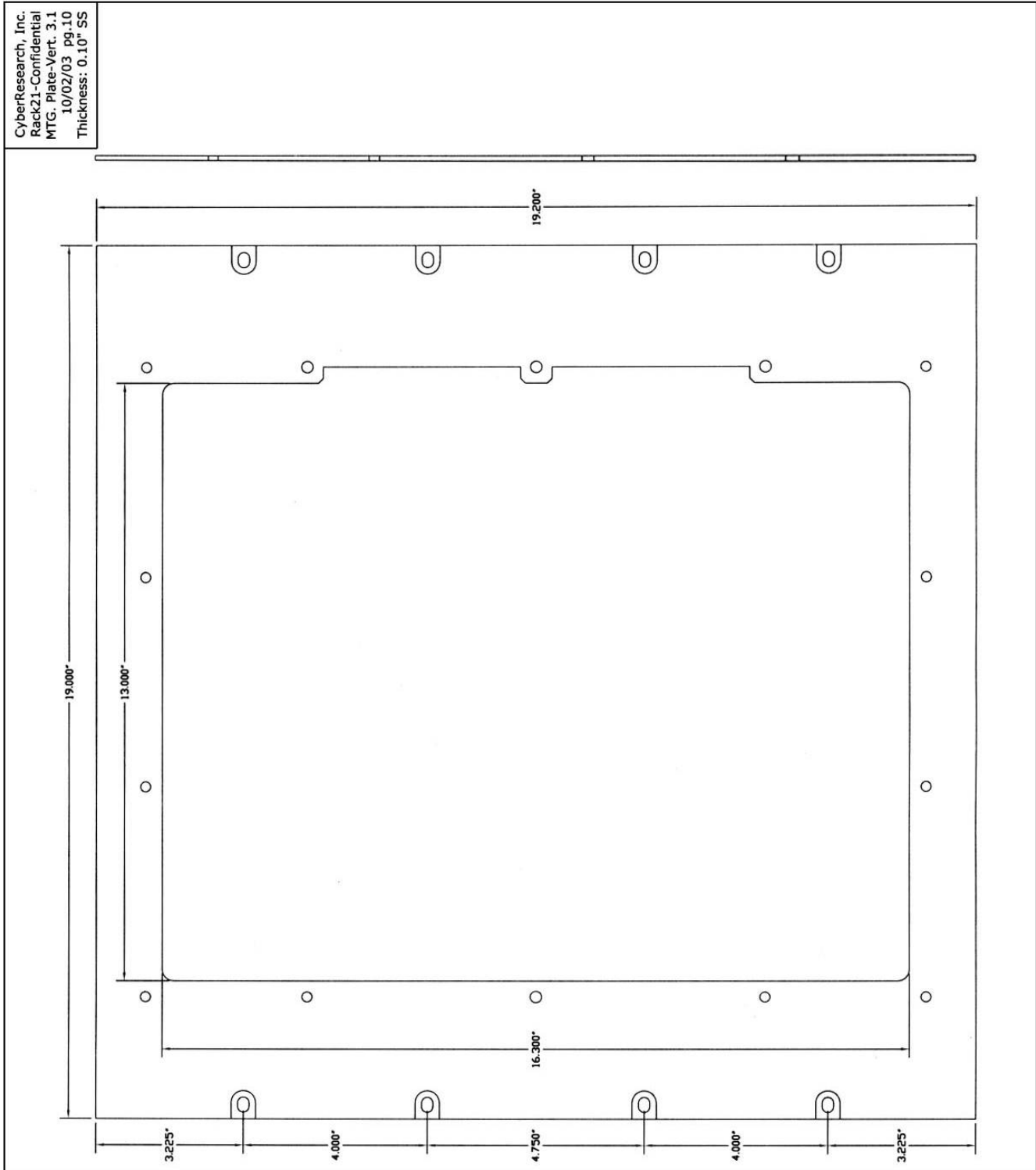


Figure 43: Portrait Mounting Plate Dimensions

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## Product Service

### Diagnosis and Debug

CyberResearch, Inc. maintains technical support lines staffed by experienced Applications Engineers and Technicians. There is no charge to call and we will return your call promptly if it is received while our lines are busy. Most problems encountered with data acquisition products can be solved over the phone. Signal connections and programming are the two most common sources of difficulty. CyberResearch support personnel can help you solve these problems, especially if you are prepared for the call.

To ensure your call's overall success and expediency:

- 1) Have the phone close to the PC so you can conveniently and quickly take action that the Applications Engineer might suggest.
- 2) Be prepared to open your PC, remove boards, report back-switch or jumper settings, and possibly change settings before reinstalling the modules.
- 3) Have a volt meter handy to take measurements of the signals you are trying to measure as well as the signals on the board, module, or power supply.
- 4) Isolate problem areas that are not working as you expected.
- 5) Have the source code to the program you are having trouble with available so that preceding and prerequisite modes can be referenced and discussed.
- 6) Have the manual at hand. Also have the product's utility disks and any other relevant disks nearby so programs and version numbers can be checked.

Preparation will facilitate the diagnosis procedure, save you time, and avoid repeated calls. Here are a few preliminary actions you can take before you call which may solve some of the more common problems:

- 1) Check the PC-bus power and any power supply signals.
- 2) Check the voltage level of the signal between SIGNAL HIGH and SIGNAL LOW, or SIGNAL+ and SIGNAL- . It CANNOT exceed the full scale range of the board.
- 3) Check the other boards in your PC or modules on the network for address and interrupt conflicts.
- 4) Refer to the example programs as a baseline for comparing code.

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## Warranty Notice

CyberResearch, Inc. warrants that this equipment as furnished will be free from defects in material and workmanship for a period of one year from the confirmed date of purchase by the original buyer and that upon written notice of any such defect, CyberResearch, Inc. will, at its option, repair or replace the defective item under the terms of this warranty, subject to the provisions and specific exclusions listed herein.

This warranty shall not apply to equipment that has been previously repaired or altered outside our plant in any way which may, in the judgment of the manufacturer, affect its reliability. Nor will it apply if the equipment has been used in a manner exceeding or inconsistent with its specifications or if the serial number has been removed.

CyberResearch, Inc. does not assume any liability for consequential damages as a result from our products uses, and in any event our liability shall not exceed the original selling price of the equipment.

The equipment warranty shall constitute the sole and exclusive remedy of any Buyer of Seller equipment and the sole and exclusive liability of the Seller, its successors or assigns, in connection with equipment purchased and in lieu of all other warranties expressed implied or statutory, including, but not limited to, any implied warranty of merchant ability or fitness and all other obligations or liabilities of seller, its successors or assigns.

The equipment must be returned postage prepaid. Package it securely and insure it. You will be charged for parts and labor if the warranty period has expired.

### Returns and RMAs

If a CyberResearch product has been diagnosed as being non-functional, is visibly damaged, or must be returned for any other reason, please call for an assigned RMA number. The RMA number is a key piece of information that lets us track and process returned merchandise with the fastest possible turnaround time.

### **PLEASE CALL FOR AN RMA NUMBER!**

#### ***Packages returned without an RMA number will be refused!***

In most cases, a returned package will be refused at the receiving dock if its contents are not known. The RMA number allows us to reference the history of returned products and determine if they are meeting your application's requirements. When you call customer service for your RMA number, you will be asked to provide information about the product you are returning, your address, and a contact person at your organization.

***Please make sure that the RMA number is prominently displayed on the outside of the box.***

• Thank You •

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***CyberResearch, Inc.***

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