

**Active VGA Managed Dispatcher**  
**500170 (8 Ports)**  
**500171 (16 Ports)**



## ***Installation Guide***

P/N: 94-000705-A SE-000705-A

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***MuxLab***

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# 1. System Overview

## 1.1. Description

MuxLab's family of Active VGA Managed products allows a single video source to be transmitted to various remote locations in a point-to-multipoint configuration for cost-efficient connectivity.

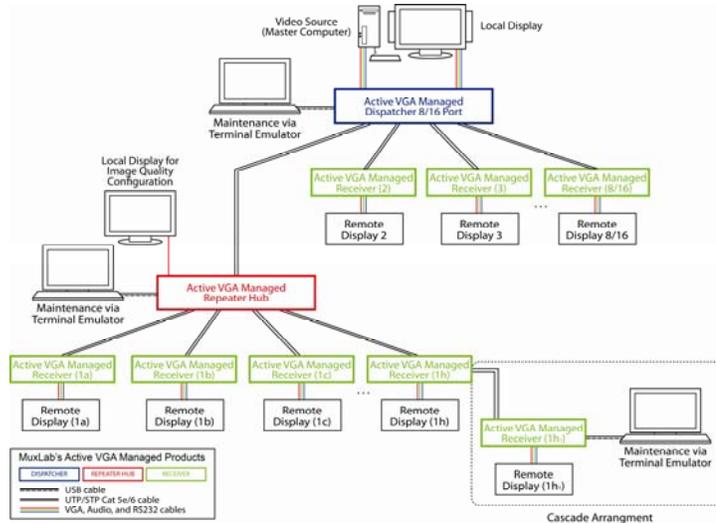
The Active VGA Managed family consists of three products:

- (1) Active VGA Managed Dispatcher
- (2) Active VGA Managed Receiver
- (3) Active VGA Managed Repeater Hub

A video source is connected to the Dispatcher, which in turn distributes the source signal to Receivers placed in locations as far as 1,000 feet (305 meters) away. Each Receiver then transmits this signal to as many as two display devices. Working alone, the Dispatcher (8 or 16 port) can distribute signals to as many as 8 or 16 remote locations.

A Repeater Hub is used whenever a source signal must be distributed to more than 8 or 16 remote locations, or over a distance of more than 1,000 feet. The Repeater Hub receives the source signal from the Dispatcher, amplifies and equalizes it, and then distributes it to as many as 8 Receivers located as far as 1,000 feet away.

Because the Repeater Hub itself can be located as far as 1,000 feet away from the Dispatcher, the effective distance from Dispatcher to Receiver is therefore doubled to 2,000 feet (610 meters). Furthermore, since the Dispatcher (8 or 16 port) can distribute signals to as many as 8 or 16 Repeater Hubs, each of which in turn can distribute signals to 8 Receivers, the number of remote locations that receive source signals increases by 7 with each Repeater Hub used.



**Figure 1: System Overview**

The Dispatcher supports up to 1920 x 1200 pixels and 1080p resolution, and is DDC compliant with all plug-and-play laptops, PCs, and displays.

Applications include commercial and residential AV systems, classroom projector systems, digital signage, boardroom systems, multi-room systems, classroom training, retail systems, collaborative PC systems, and medical information systems.

## **1.2. System Features**

- Supports VGA, Audio & RS232
- Support up to 1,000 ft (305 m)
- Support up to 1920 x 1200, 1080p (depending on cable length)
- Software and manual adjustments for brightness, sharpness & skew
- Additional 1,000 ft (305 m) via Repeater Hub
- Cascadability option from Receiver
- Structured cabling approach: Repeater Hubs have RJ45 for signal distribution
- Dual head capability on Receiver

## 2.

# Technical Specifications

Active VGA Managed DISPATCHER																																		
<b>Environment</b>	VGA, Analog Stereo Audio, RS232																																	
<b>Devices</b>	PC, laptops, projectors, plasma, switchers, distribution amps, touchscreen																																	
<b>Transmission</b>	Transparent to the user																																	
<b>Maximum resolution</b>	1080p; 1920 x 1200																																	
<b>Connections</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;">FRONT PANEL</td> <td style="width: 30%; vertical-align: top;">Maintenance:</td> <td style="width: 40%; vertical-align: top;">One (1) Mini USB</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Link Ports:</td> <td style="vertical-align: top;">Eight (8) or Sixteen (16) RJ45S</td> </tr> <tr> <td style="vertical-align: top;">BACK PANEL</td> <td style="vertical-align: top;"><i>Local In:</i></td> <td></td> </tr> <tr> <td></td> <td style="vertical-align: top;">RS232 In:</td> <td style="vertical-align: top;">One (1) DB9F</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Audio In:</td> <td style="vertical-align: top;">One (1) 3.5 mm stereo jack</td> </tr> <tr> <td></td> <td style="vertical-align: top;">VGA In:</td> <td style="vertical-align: top;">One (1) HD15F</td> </tr> <tr> <td></td> <td style="vertical-align: top;"><i>Local Out:</i></td> <td></td> </tr> <tr> <td></td> <td style="vertical-align: top;">RS232 Out:</td> <td style="vertical-align: top;">One (1) DB9M</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Audio Out:</td> <td style="vertical-align: top;">One (1) 3.5 mm stereo jack</td> </tr> <tr> <td></td> <td style="vertical-align: top;">VGA Out:</td> <td style="vertical-align: top;">One (1) HD15F</td> </tr> <tr> <td></td> <td style="vertical-align: top;">Power:</td> <td style="vertical-align: top;">One (1) power jack</td> </tr> </table>	FRONT PANEL	Maintenance:	One (1) Mini USB		Link Ports:	Eight (8) or Sixteen (16) RJ45S	BACK PANEL	<i>Local In:</i>			RS232 In:	One (1) DB9F		Audio In:	One (1) 3.5 mm stereo jack		VGA In:	One (1) HD15F		<i>Local Out:</i>			RS232 Out:	One (1) DB9M		Audio Out:	One (1) 3.5 mm stereo jack		VGA Out:	One (1) HD15F		Power:	One (1) power jack
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<b>Power Supply</b>	110-240V/12VDC/1.25A power jacks Removable AC blades included for North America, Continental Europe & UK																																	
<b>Compatible Products</b>	500172, 500174																																	
<b>Power Consumption</b>	8 Watts																																	
<b>Temperature</b>	Operating: 0°C to 40°C Storage: -20°C to 85°C Humidity: Up to 95% non-condensing																																	
<b>Dimensions</b>	1U Rack Mountable Enclosure Dimensions: 17.15" x 4.69" x 1.72" (43.56 cm x 11.91 cm x 4.37 cm)																																	
<b>Weight</b>	4.8 lb (2.2 kg)																																	
<b>Regulatory</b>	FCC, CE-EMC Directive 89/336/EE, RoHS, WEEE																																	
<b>Warranty</b>	Two (2) years																																	
<b>Order Information</b>	500170: Active VGA Managed Dispatcher 8 Ports 500171: Active VGA Managed Dispatcher 16 Ports																																	

Active VGA Managed RECEIVER																															
<b>Environment</b>	VGA, Analog Stereo Audio, RS232																														
<b>Devices</b>	PC, laptops, projectors, plasma, switchers, distribution amps, touchscreen																														
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<b>Maximum Distance: Dispatcher to Receiver, Repeater Hub to Receiver</b>	<p>Up to 1920 x 1200 @ 60Hz; 1080P (depending on cable length)                      Up to 1,000 feet (305 meters)</p> <p><i>NOTE: STP cables must be used in an electrically noisy environment. Also, cross-connection reduces the effective distance depending on the grade of twisted cable used.</i></p>																														
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<b>Compatible Products</b>	500170, 500171, 500172																														
<b>Power Consumption</b>	6 Watts																														
<b>Temperature</b>	Operating: 0°C to 40°C Storage: -20°C to 85°C Humidity: Up to 95% non-condensing																														
<b>Dimensions</b>	Hybrid VESA 75 mm and 100 mm Mounting Surface Enclosure Dimensions: 5.68" x 4.45" x 1.04" (14.42 cm x 11.30 cm x 2.64 cm)																														
<b>Weight</b>	2.0 lb (0.9 kg)																														
<b>Regulatory</b>	FCC, CE-EMC Directive 89/336/EE, RoHS, WEEE																														
<b>Warranty</b>	Two (2) years																														
<b>Order Information</b>	500174: Active VGA Managed Receiver (Dual Head)																														

Active VGA Managed REPEATER HUB																						
<b>Environment</b>	VGA, Analog Stereo Audio, RS232																					
<b>Devices</b>	PC, laptops, projectors, plasma, switchers, distribution amps, touchscreen																					
<b>Transmission</b>	Transparent to the user																					
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<b>Compatible Products</b>	500170, 500171, 500174																					
<b>Power Consumption</b>	15 Watts																					
<b>Temperature</b>	Operating: 0°C to 40°C Storage: -20°C to 85°C Humidity: Up to 95% non-condensing																					
<b>Dimensions</b>	1U Rack Mountable Enclosure Dimensions: 17.15" x 4.69" x 1.72" (43.56 cm x 11.91 cm x 4.37 cm)																					
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<b>Warranty</b>	Two (2) years																					
<b>Order Information</b>	500172: Active VGA Managed Repeater Hub (8 Port)																					

## 3. Installation Procedure

### 3.1. Parts List

The Active VGA Managed Dispatcher 8/16 Port (500170/500171) comes with the following parts:

- Base Unit
- One (1) 110-240V/12VDC, 1.25A Power Supply with three interchangeable blades
- One (1) RS232 DB9 to DB9 cable
- One (1) VGA DB15 to DB15 cable
- One (1) Audio cable
- Quick Reference Support Sheet
- Four (4) rubber feet

Please verify that all parts are present before proceeding.

### 3.2. Product Overview

The external connections and connection indicators of the Active VGA Managed Dispatcher are detailed in Figures 2 and 3. Please familiarize yourself with them before installing the unit.

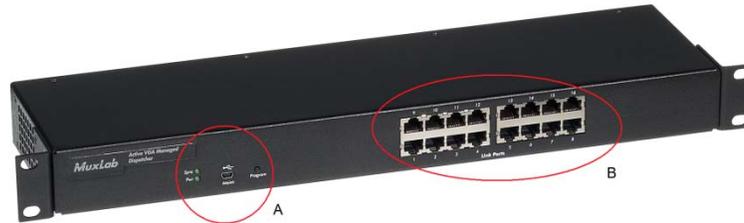
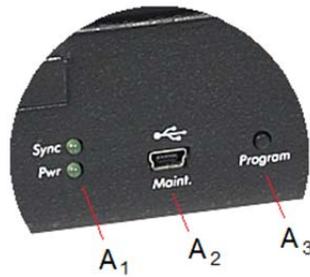
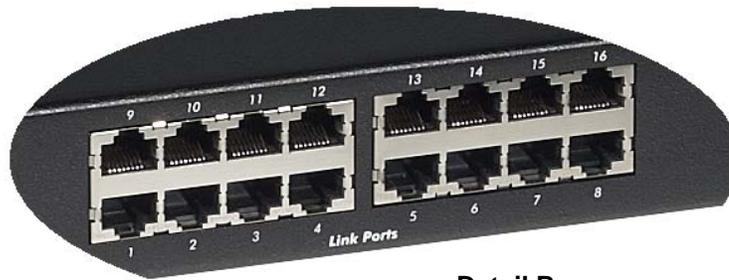


Figure 2: Front Panel of Dispatcher



#### Detail A

- A<sub>1</sub> = Status LEDs
- A<sub>2</sub> = Maintenance Port (Mini USB)
- A<sub>3</sub> = Push Button

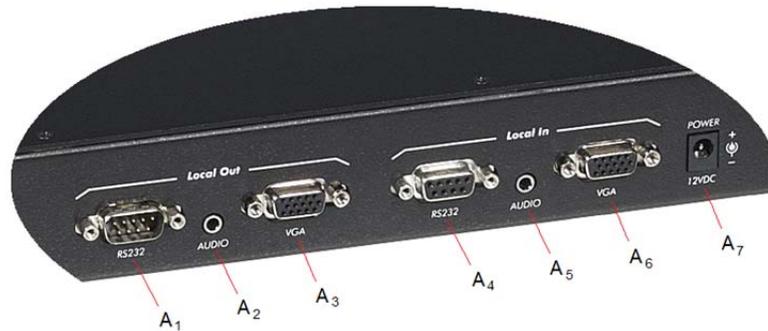


#### Detail B

RJ45 Output Link Ports



Figure 3: Back Panel of Dispatcher



**Detail A**

- A1 = RS232 Local Out
- A2 = Audio Local Out
- A3 = VGA Local Out
- A4 = RS232 Local In
- A5 = Audio Local In
- A6 = VGA Local In
- A7 = Power Supply Port

### **3.3. Pre-Installation Checklist**

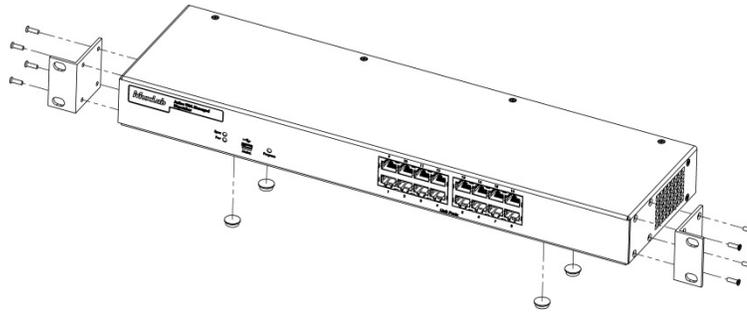
The Active VGA Managed Dispatcher provides a centralized VGA dispatching center by means of copper UTP/STP cables.

1. The Dispatcher is connected to the VGA video source, usually a PC or Laptop computer, via video, audio cables and RS232 cables (included).
2. The Dispatcher is typically installed in a remote telecom room and is connected to remote display devices via Cat 5e/6 UTP/STP cables. Each remote display device is connected to one MuxLab Active VGA Managed Dual Head Receiver, which in turn is connected to the Dispatcher via Cat 5e/6 cables. A MuxLab Active VGA Managed Repeater Hub may also be used in conjunction with the Dispatcher to increase the distance between the VGA source and remote display devices.
3. The maximum cable distance between the Dispatcher and any given Receiver may be up to 1,000 feet. This distance may effectively be doubled by connecting MuxLab's Active VGA Managed Repeater Hub between the Dispatcher and Receivers. When cascading Receivers (see MuxLab's *Active VGA Managed Receiver Installation Guide*), the *combined* cable length of all segments comprising the cascade cannot exceed a maximum distance of 1,000 feet.

### 3.4. Physical Installation

MuxLab's Active VGA Managed Dispatcher comes with mounting brackets for standard 19" rack mounting. Select the final destination for the product and install the unit using standard rack-mount screws.

For set-top installation, the L-brackets on the side of the unit may be removed and the included rubber feet placed on the bottom of the unit. When removing the L-brackets, be careful to keep and reinstall the four screws on each side of the unit.



**Figure 4: Procedure for Set-Top Installation**

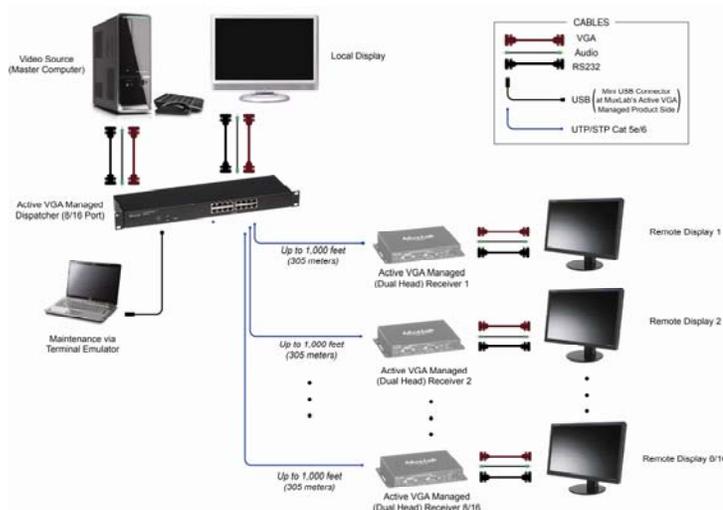
### **3.5. Installation Procedure**

In order to install the product, please follow the steps below:

1. Place the Active VGA Managed Dispatcher in its final location.
2. Connect the source to the Dispatcher via the RS232, Audio, VGA ports located on the back panel (Local In). Ensure that the power is turned OFF at the source. NOTE: Do not connect the power supply to the Dispatcher at this point.
3. Optional: Connect a local display to the Dispatcher via the RS232, Audio, VGA ports located on the back panel (Local Out).
4. In order to distribute the VGA source to remote displays, each remote display must be connected to one (1) Active Managed Receiver (500174). To install a Receiver, please refer to MuxLab's *Active VGA Managed Receiver Installation Guide*.
5. Complete the connection between the Dispatcher and each remote display using standard straight-thru Cat 5e/6 UTP/STP cables and connecting hardware, terminated on RJ45 plugs at both ends. Ensure that there are no split pairs or taps.
6. Optional: MuxLab's Active VGA Managed Repeater Hub (500172) may be connected to the Dispatcher to increase the distance of remote displays by up to an additional 1,000 ft (305 m). For installing a Repeater

Hub, please refer to MuxLab's *Active VGA Managed Repeater Hub Installation Guide*.

7. Power up the Receivers and local displays.
8. Connect the external 12VDC power supply to the Dispatcher and plug the power supply into an AC power outlet. If power is available, the power LED will be ON.
9. Ensure that the source and appropriate displays are on. Images should appear on the displays. Check the image quality and refer to the troubleshooting table in Section 4 if image quality is unsatisfactory.
10. Figures 5 and 6 show some typical configurations:



**Figure 5: Simple Dispatcher/Receiver Configuration**

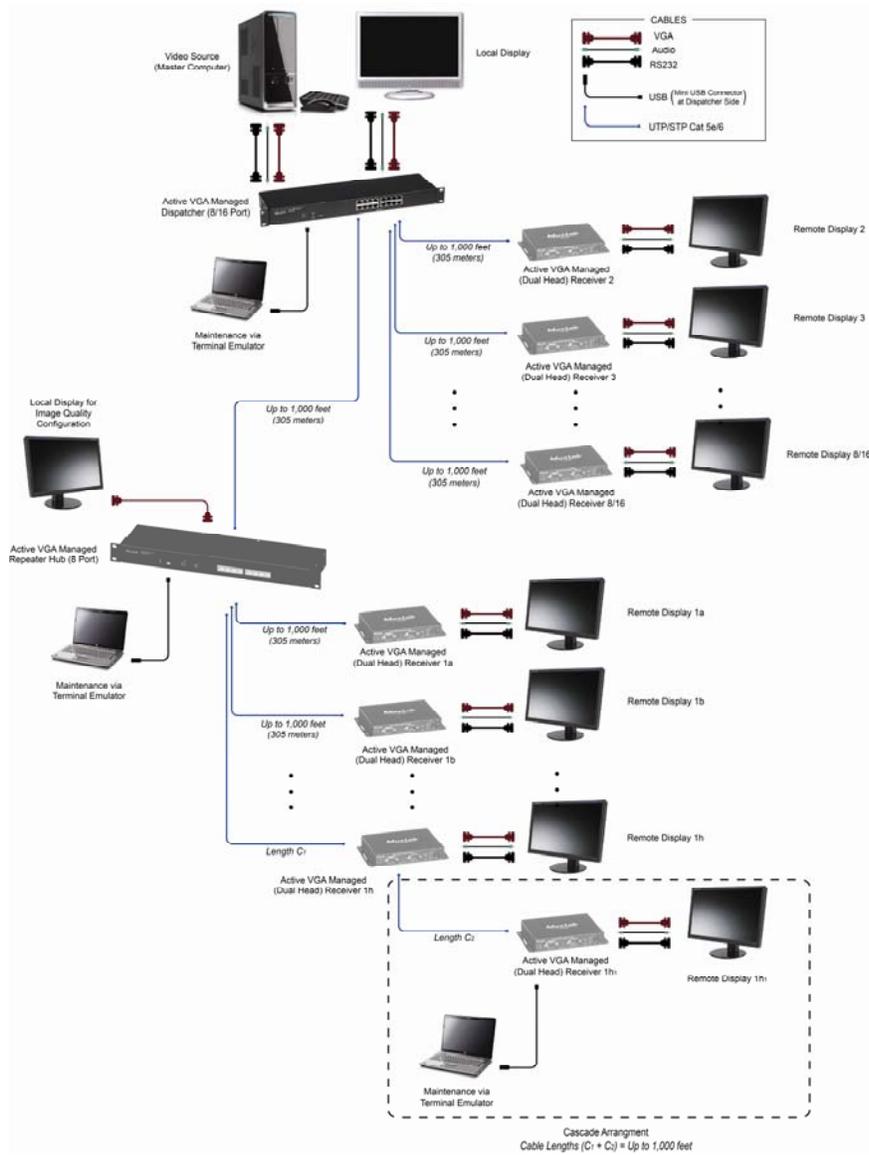


Figure 6: Dispatcher/Receiver & Repeater Hub Configuration

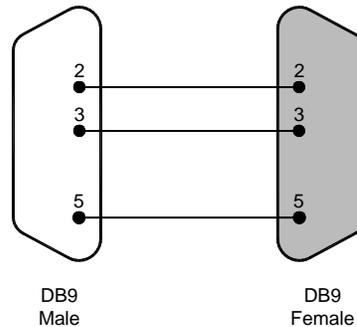
## 3.6. Port Control Operations

MuxLab's Active VGA Managed Dispatcher may be controlled in any one of two different ways:

1. RS232 Control
2. USB Control

### 1. RS232 Control

The Active VGA Managed Dispatcher features built-in firmware that allows commands from the computer unit running MuxLab's Control Central software to be sent directly to the Dispatcher via an RS232 connection. If connecting with an RS232 cable, ensure that the cable has the straight-through configuration shown in Figure 6.



**Figure 7: RS232 Cable Configuration**

Port Control is performed with MuxLab's Active VGA Managed Software, described in the *Active VGA Managed Software Installation Guide*.

Please note that USB to RS232 converter cables could result in problems, depending on the quality of the converters.

## **2. USB Control**

The Active VGA Managed Dispatcher features built-in firmware that allows commands from an ASCII terminal to be sent directly to the Dispatcher via a USB connection only for maintenance purposes.

Maintenance is performed with a terminal emulator, such as the one available under Windows with the ASCII Command Set described in the Appendix.

### 3.7. Driver Setup

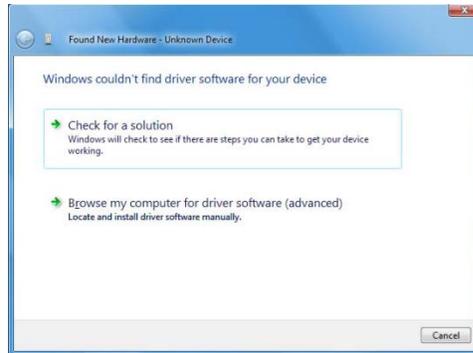
When interfacing a MuxLab device with Windows 2000 (or more recent) operating system, a driver setup file will be required.

To install the MuxLab Control Center software, go to [www.muxlab.com](http://www.muxlab.com) and download the SC-000032-A USB to Serial Driver. Plug the USB cable between the device and the PC, and power up the device. The **Found New Hardware** wizard will open (Figure 8). Select **Locate and install driver software**.



Figure 8: Found New Hardware Wizard

A new dialog box will open (Figure 9). Select **Browse my computer for driver software**.



**Figure 9: Found New Hardware Dialog Box**

Another dialog box will open (Figure 10). Click **Browse** and locate the SC-000032-A file that you downloaded. Once found, click **Next**.



**Figure 10: Browsing for Unknown Device**

A security window will now appear, indicating that the driver software is unsigned (Figure 11). Select **Install this driver software anyway**.



**Figure 11: Windows Security**

A window will appear instructing that the software for the driver has been successfully installed (Figure 12). Click **Close**. You are now ready to launch the MuxLab Control Center software.



**Figure 12: Successful Installation Dialog Box**

## 4. Troubleshooting

The following table describes some of the problem symptoms, the probable causes and possible solutions. If the information below does not solve the problem, the technical support contact information can be found at the end of this section.

Problem	Possible Solutions
No Image	<ul style="list-style-type: none"> <li>• Check that the Power LED is ON. (If not, check the power supply.)</li> <li>• Check that the source PC is ON.</li> <li>• Check that the local monitor is ON.</li> </ul>
No Image	<ul style="list-style-type: none"> <li>• Check that the Sync LED of the Dispatcher is ON.</li> </ul>
No Image	<ul style="list-style-type: none"> <li>• Check that the Sync LED of the Receivers is ON. (Otherwise, check UTP/STP cables.)</li> </ul>
No Image	<ul style="list-style-type: none"> <li>• Check that the source is plugged into the Dispatcher's input, not into the local monitor out.</li> <li>• Power down, and then power up the Dispatcher.</li> </ul>
No Image	<ul style="list-style-type: none"> <li>• Check that the Receivers are powered up and that the Power LED is ON.</li> <li>• Check that the power supplies are not mixed up (Dispatcher &amp; Repeater Hub require 1.25A power supply. Receiver requires 0.5A power supply).</li> </ul>
Choppy Sound	<ul style="list-style-type: none"> <li>• Check cable lengths.</li> <li>• Use STP cables if equipment is located in electrically noisy environment.</li> <li>• When cascading multiple Receivers, ensure that the combined cable length of all segments comprising the cascade does not exceed 1,000 feet (305 meters).</li> </ul>
Smeared Picture	<ul style="list-style-type: none"> <li>• Check cable lengths.</li> <li>• Adjust Sharp and Gain controls.</li> <li>• When cascading multiple Receivers, ensure that the combined cable length of all segments comprising the cascade does not exceed 1,000 feet (305 meters).</li> </ul>
Not All Display Devices Work	<ul style="list-style-type: none"> <li>• Check cable lengths.</li> <li>• Check that video source is outputting a signal that is compatible with all the display devices (try 480p or 720p).</li> </ul>

When contacting your nearest MuxLab dealer or MuxLab Technical Support at 877-689-5228 (toll free in North America) or (+1) 514-905-0588 (International), please have the following information ready:

- Unit model number.
- Cabling layout. Please include the model of the video card and display monitor(s), as well as cable types and lengths.
- Description of problem.
- List of tests performed.

**5.**  
**Appendix**

[Awaiting Input from Kefil]

## 6. Product Warranty Policy

### Items Under Warranty – Company Policy

MuxLab guarantees its products to be free of defects in manufacturing and workmanship for the warranty period from the date of purchase. If this product fails to give satisfactory performance during this warranty period, MuxLab will either repair or replace this product at no additional charge, except as set forth below. Repair and replacement parts will be furnished on an exchange basis and will be either reconditioned or new. All replaced parts and products become the property of MuxLab. This limited warranty does not include repair services for damage to the product resulting from accident, disaster, misuse, abuse, or unauthorized modifications or normal decay of battery driven devices. Batteries, if included with the product, are not covered under this warranty.

Limited warranty service can be obtained by delivering the product during the warranty period to the authorized MuxLab dealer from whom you purchased the product, or by sending it to MuxLab. MuxLab will not accept any such product for repair without a Return Material Authorization (RMA) number issued by its Customer Service Department and a proof of purchase date. If this product is delivered to MuxLab by mail, you agree to assume risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or equivalent.

THE ABOVE LIMITED WARRANTY IS THE ONLY WARRANTY COVERING YOUR MUXLAB PRODUCT. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER, YOUR SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED FOR ABOVE. IN NO EVENT SHALL MUXLAB BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOSS OF PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT, EVEN IF MUXLAB OR AN AUTHORIZED MUXLAB DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES; NOR WILL MUXLAB BE LIABLE FOR ANY CLAIM BY ANY OTHER PARTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

**Warranty Periods**

*Any product found to be defective within three (3) months of invoice, including one (1) month shelf life, may be returned for replacement by a new unit or a satisfactory repair within one (1) month of having been received by MuxLab. The customer must provide MuxLab with the serial number and proof of purchase of the defective unit being returned. All RMAs issued are subject to inspection by MuxLab, and will be returned to the customer if not properly packaged – units must be returned in their original container or equivalent. MuxLab will not accept any such product for repair without an authorization for its Technical Support department and without an RMA number issued by MuxLab's Customer Service department. For credit and replacement RMAs, the customer will be liable to pay the replacement invoice if defective products are not returned.*

**Products More than Six Months Old, Including Shelf Life**

The defective unit must be returned prepaid to MuxLab, and the unit will be repaired. If repairing the unit is not possible, it will be replaced by an equivalent unit and returned to the customer within one (1) month of having been received by MuxLab. There is no charge for repair (parts and labor) during the full warranty period.

**Products Defective and Not Under Warranty**

*MuxLab's policy is to repair and return any defective MuxLab products that are no longer under warranty. An amount of 25% of the unit's published list price at the time of purchase will be charged. The customer must issue a purchase order in order to cover repair costs.*

*Each unit will be returned to the customer within one (1) month of having been received by MuxLab. The defective unit must be returned prepaid to MuxLab. The repaired unit will be returned to the customer FOB MuxLab. The repaired unit has a 90-day warranty.*

## ***MuxLab***

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