VideoEase™
Active VGA Balun Kit
(500035, 500036)

Installation Guide

MuxLab

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1.
Overview

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1.1.   Description

The VideoEase Active VGA Balun Kit allows VGA video equipment to be connected via Category 5 twisted pair cable (UTP or STP) in a point-to-point configuration. It is ideally suited to commercial and institutional users who need to send high quality VGA in a PC-based multi-room application, including boardrooms and training environments. It can easily connect a remote VGA source to a display (for example, projectors or LCD, plasma, or CRT monitors). This product features gain adjustment switches to optimize performance according to cable length, support for local monitor connection, and a compact form factor.

The kit works by converting the VGA signal from an unbalanced signal to a balanced signal and amplifying and equalizing the signal at the receiving end. It provides excellent image quality and minimizes distortions due to smearing, propagation delay and phase deviation.   There are two components as shown in the photos below: the transmitter and the receiver. Both components require an external 12 VDC power

supply (included).

1.2.   Features

- Supports up to 400 ft (122m) via Cat 5 UTP @ 1920 x 1440
- Adjustable gain control
- Support for a local monitor
- 1 year limited warranty

Transmitter   Receiver

2.
Technical Specifications

Specifications

Environment	VGA. VESA VP&D 1.0, VIP ver 2.0.
Devices	PCs, laptops, CRT monitors, LCD monitors, plasma screens, DLP projectors.
Transmission	Transparent to the user.
Bandwidth	Up to 280 MHz (1800 x 1440 resolution)
Impedance – Video Input (Coax)	75 O
Impedance – Video Out (UTP)	100 O
Connectors – Transmitter	VGA Input (PC): DB15 HD Receptacle VGA Output (Local Monitor): DB15 HD Receptacle VGA Output (Cat5): RJ45 shielded
Connectors – Receiver	VGA Input (Cat5): RJ45 shielded VGA Output (Display): DB15 HD Receptacle
Max. Distance via Cat 5 **Twisted Pair**	640 x 480 (VGA): 700 ft (213m) 800 x 600 (SVGA): 600 ft (183m) 1024 x 768 (XGA): 550 ft (167m) 1280 x 1024 (SXGA): 550 ft (167m) 1600 x 1200 (UXGA): 500 ft (152m) 1800 x 1440: 400 ft (122m) 1920 x 1440: 400 ft (122m)
RJ45 Pin Configuration *Reverse Polarity Sensitive*	Pair 1: Pin 1 (R) Pin 2 (T) Pair 2: Pin 4 (R) Pin 5 (T) Pair 3: Pin 7 (R) Pin 8 (T) Pair 4: Pin 3 (R) Pin 6 (T) Use EIA/TIA 568 A or B, straight-through wiring

Gain Adjustment	Gain control via DIP switches on receiver (factory default setting: all OFF)
LED Indicators	Transmitter: Power – One (1) green LED Receiver: Power – One (1) green LED; Switch position: Four (4) green LEDs
Cable	Category 5 or better twisted pair cable. Requires additional VGA jumper cables (not included)
Power Supplies	Two (2) 110-240V/12VDC/1.25A. Detachable AC power cords included. 12VDC power jacks
Temperature	Operating: 0º to 40º C. Storage:-10º to 70º C. Humidity: up to 95% non-condensing
Enclosure	Black. ABS fire retardant plastic
Dimensions	4.5" x 3.8" x 1.25" (11.4 cm x 9.7 cm x 3.2cm)
Weight	3 lbs., 1.38 kgs
Mounting	Desktop, rubber stand-offs.
Regulatory	FCC/CE pending
Warranty	One (1) year
Order Information	500035: Active VGA Balun Kit, 110V 500036: Active VGA Balun Kit, 220-240V (Continental Europe power cord)

3.
Installation Procedure
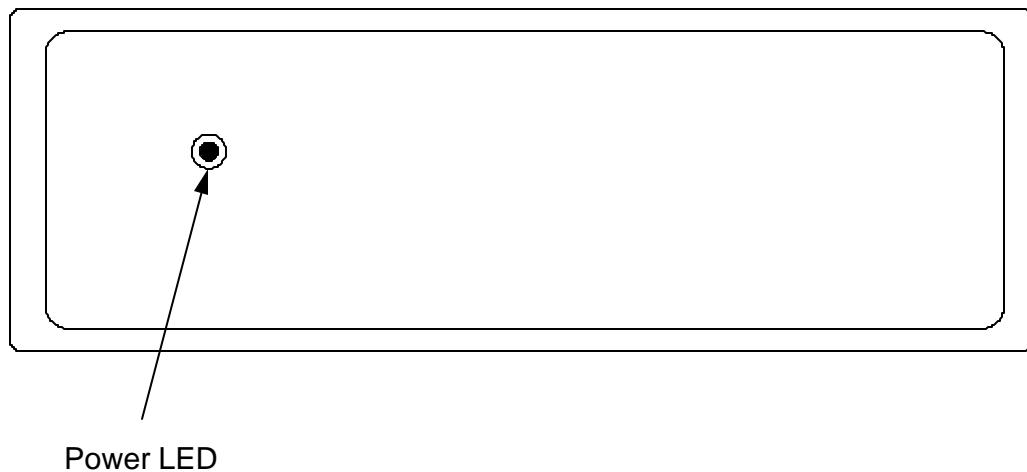
3.1. Parts List

The VideoEase Active VGA Balun Kit comes with the following parts. Please verify that all pieces are present before proceeding.

- Transmitter

- Receiver

- Two (2) External Power Supplies (12 VDC, 1.25A)

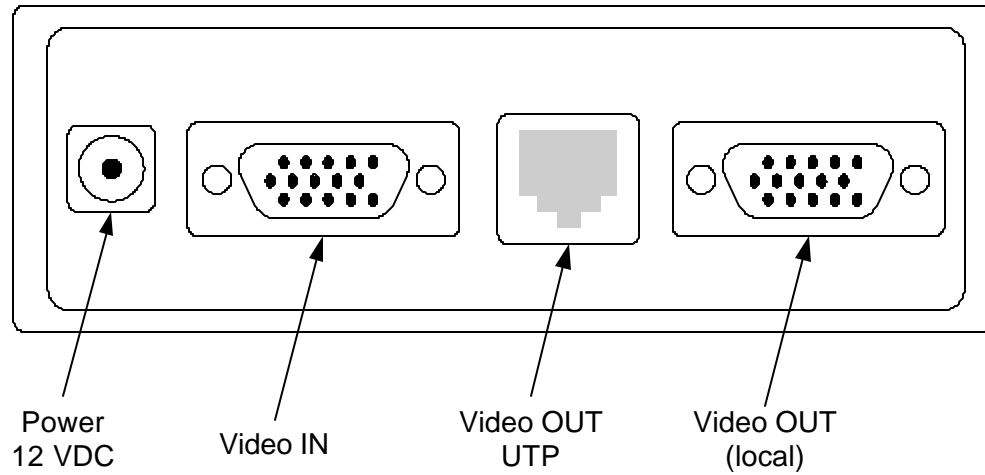- Two (2) AC Power Cords

- Installation Guide

VGA jumper cables and Category 5 cable are not included.
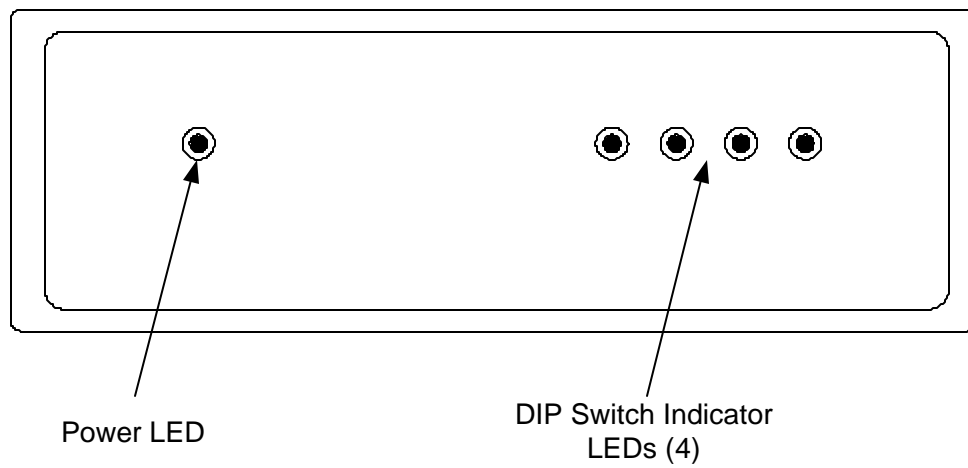
3.2. Product Overview

The external connections and diagnostic indicators of the VideoEase Active VGA Balun Kit are detailed in the following diagrams. Please familiarize yourself with them before installing the components of this kit.

Power LED

Figure 1: Front panel, transmitter

Power
12 VDC   Video IN   Video OUT
UTP   Video OUT
(local)

Figure 2: Rear panel, transmitter

Power LED   DIP Switch Indicator
LEDs (4)

Figure 3: Front panel, receiver

Power
12 VDC   DIP
Switches   Video IN
UTP   Video OUT
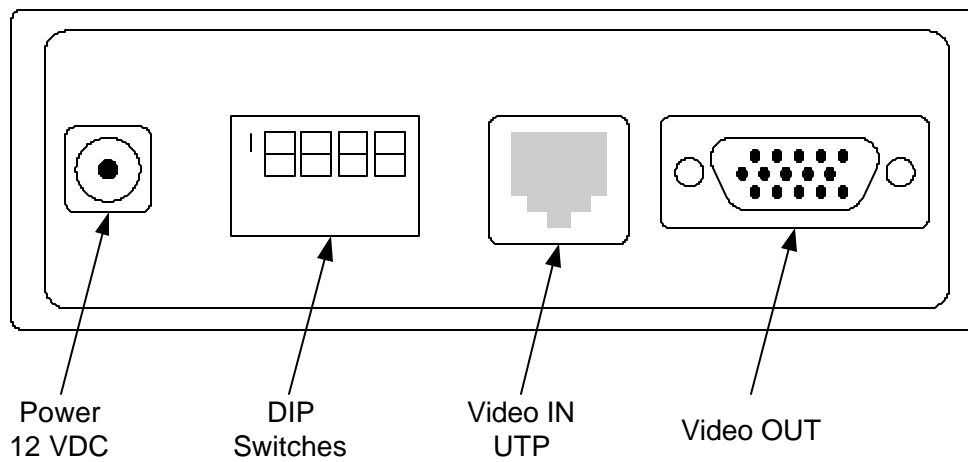
3.3.   Pre-Installation Checklist

There are two components: the transmitter and the receiver.

1. The transmitter is connected to the video source, usually a PC, by a VGA jumper cable (not included).

2. The transmitter is connected to the receiver by Category 5 (or higher) UTP cable (not included).

3. A monitor can be connected to the transmitter by a VGA jumper cable (not included).

4. The receiver is connected to the display equipment, usually a projector or screen, by a VGA jumper cable (not included).

5. The both transmitter and receiver must be powered by a 12 VDC external power supplies (included).

6. Verify that the desired image resolution is supported by the VGA source and VGA display.

3.4.   Installation Procedure

Verify that the distance between the VGA transmitter and receiver are within MuxLab specifications (see Technical Specifications). In order to install the transmitter, please follow the steps below:

1. Connect the transmitter to the video source with a VGA jumper cable.

2. Connect a length of Category 5 (or higher) UTP cable to the transmitter.

3. (Optional) Connect a local monitor to the transmitter with a VGA jumper cable.

4. Connect the 12 VDC power supply first to the transmitter and then plug the power supply into an AC power outlet. If power is present, then the green power LED will be ON.

To install the receiver, please follow the steps below:

5. Connect the receiver to the display equipment with a VGA jumper cable.

6. Connect the UTP cable to the Video IN/UTP connector of the receiver.

7. Connect the 12 VDC power supply first to the receiver and then plug the power supply into an AC power outlet. If power is present, then the green power LED will be ON.

8. To adjust the picture quality, toggle the gain adjustment DIP switches on the rear panel of the receiver. The factory default position is "all OFF" (up position).
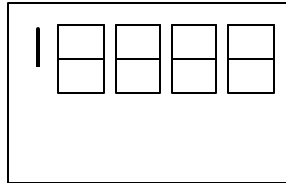
	OFF	OFF	OFF	OFF
	OFF	OFF	OFF	OFF
100	OFF	OFF	OFF	ON
150	OFF	OFF	OFF	ON
200	OFF	OFF	ON	OFF
250	OFF	ON	OFF	OFF
300	ON	OFF	ON	ON
350	ON	ON	OFF	ON
400	ON	ON	ON	OFF
450	ON	ON	ON	ON
500+	ON	ON	ON	ON

Note: For display equipment with automatic gain control (for example, certain models of projectors), complete all installation procedures and ensure that all DIP switches are OFF before turning the display equipment on. Otherwise, the display could override the adjustable gain feature of the VideoEase Active VGA Balun Kit.

The following diagram shows the final configuration.
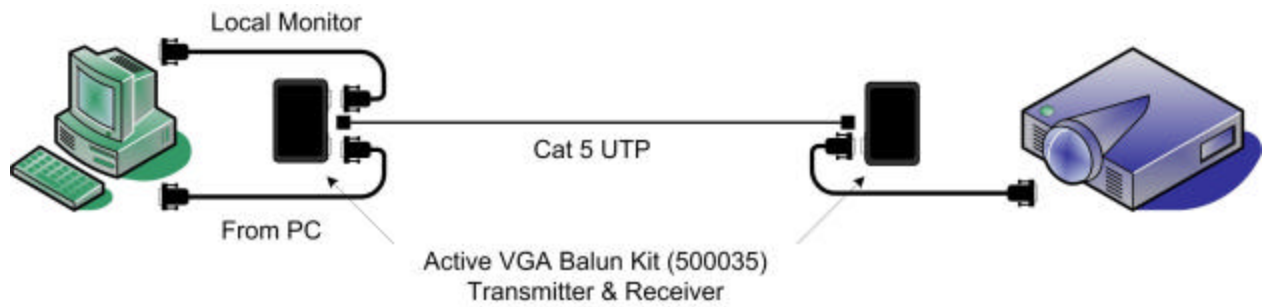
Figure 6: Typical Configuration

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.

Picture	Power LED	Probable Cause	Possible Solution
No Image	OFF	No power	Check power connections
No Image	ON	Wiring	Check continuity Check correct wiring
Smearing	ON	Exceed cable length	Reduce cable length Adjust contrast and brightness
Ghosting	ON	Impedance mismatch	Check cabling Try different VGA card or display
Wrong colors	ON	Swapped pairs	Check wiring
Loss of detail	ON	Exceed cable length	Reduce cable length Adjust contrast and brightness
Image shakes	ON	Too much gain	Reduce the gain by setting the DIP switches to OFF, starting with SW4 (far right).

When contacting your nearest MuxLab dealer or MuxLab Technical Support please have the following information ready:

- Unit model number.

- Cabling layout. Include model of camera and DVR used, cable length and type.

- Description of problem.

- List of tests performed.

5.
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 number (RMA#) 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.

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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 receiving any returned product. The customer must provide MuxLab with the serial number and proof of purchase of the defective unit being returned. All R.M.A.'s issued are subject to inspection by MuxLab, and will be returned to customer if not properly package – units must be returned in original container or equivalent. MuxLab will not accept any such product for repair without an authorization for its Technical Support department and without a return authorization number issued by MuxLab Customer Service department. For credit & replace R.M.A., customer will be liable to pay replacement invoice if defective products are not returned.

Product more than six months old, including shelf life.

The defective unit must be returned prepaid to MuxLab and then the unit will be repaired or if repair is not possible, replaced by an equivalent unit and returned to the customer within one (1) month of receiving any returned product. There is no charge for repair (parts and labor) during the full warranty period.

Items Defective and not under Warranty

For products which are no longer under warranty the policy is repair and return. An amount of 25% of the products published list price at the time of purchase will be charged. Customer must issue a purchase order to cover the cost of repair.

Each unit will be returned to the customer within one (1) month from receipt of the unit 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 Inc.

Tel.: +1 (514) 905-0588 Fax: +1 (514) 905-0589

Toll Free (North America): 877 689-5228

URL: www.muxlab.com

E-mail: videoease@muxlab.com