

# Specifications

|   |  |
|---|--|
| <b>Environment</b>                      | Close-Circuit TV equipment for security and surveillance.  |
| <b>Devices</b>                          | CCTV cameras , DVR, IP camera encoders, AV monitors, switchers, sequencers, multiplexers and other CCTV equipment.   |
| <b>Transmission</b>                     | Transparent to the user.   |
| <b>Bandwidth</b>                        | Video: DC to 8 MHz.  |
| <b>Maximum Input</b>                    | 1.1Vp-p  |
| <b>Insertion Loss</b>                   | Less than 2 dB per balun pair over frequencies from DC to 8 MHz  |
| <b>Return Loss</b>                      | Greater than 15 dB over the frequency range from DC to 8 MHz   |
| <b>Common Mode Rejection</b>            | Greater than 40 dB @ 8 MHz   |
| <b>Max. Distance Color</b>              | Cat 3 –1200 ft (365m); Cat 5E/6 – 2200 ft (670m).*<br>*Maximum distance when used with a DVR is typically 1,000 to 1,500 ft via Cat5.  |
| <b>Max. Distance B&amp;W</b>            | Cat 3 –1500 ft (457m); Cat 5E/6 – 2500 ft (762m)   |
| <b>Cable – UTP</b>                      | 24 gauge or lower solid copper twisted pair wire impedance: 100 ohms at 1 MHz.<br>Maximum capacitance: 20 pf/foot.<br>Attenuation: 6.6 dB/1000 ft at 1 MHz                       |
| <b>Cable – Coax</b>                     | Impedance: 75 ohms at 1 MHz (RG59/U).  |
| <b>Connectors and pin configuration</b> | 500000, 500031: RJ45 Pin 7 (Ring) & Pin 8 (Tip)<br>500000R: RJ45 Pin 8 (Ring) & Pin 7 (Tip)<br>500009, 500023: Two screw terminals.<br><i>*Reverse polarity sensitive</i>        |
| <b>Temperature</b>                      | Operating: 0 to 55 °C. Storage:-20 to 85°C. Humidity: up to 95%  |
| <b>Enclosure</b>                        | Fire retardant plastic   |
| <b>Dimensions</b>                       | 500000, 500031: 1.75”x.75 x 1” (4.4 x 1.9 x 2.54 cm)<br>500009: 1.25 x 0.5 x 0.5” (3.1 x 1.2 x 1.2 cm)<br>500023: Same as 500009 with 8” mini coax lead                          |
| <b>Warranty</b>                         | Lifetime   |
| <b>Order Information</b>                | 500000 Modular CCTV BNC Balun, R7T8<br>500000R Modular CCTV BNC Balun, R8T7<br>500009 CCTV Screw Terminal Balun<br>500023 CCTV Mini Balun<br>500031 Modular CCTV RCA Balun, R7T8 |

## MuxLab

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

Toll Free (North America): (877) 689-5228

E-mail: [videoease@muxlab.com](mailto:videoease@muxlab.com) URL: [www.muxlab.com](http://www.muxlab.com)

94-000230-H

SE-000114-H



## VideoEase CCTV Baluns (500000, 500000R, 500009, 500023, 500031) Quick Installation Guide

### Introduction

The VideoEase CCTV Baluns eliminate 75-ohm coaxial cable and allow composite baseband video to be transmitted via a single unshielded twisted pair (UTP) in a structured cabling system. The VideoEase CCTV Balun is used in pairs to transmit standard composite NTSC, PAL or SECAM video.

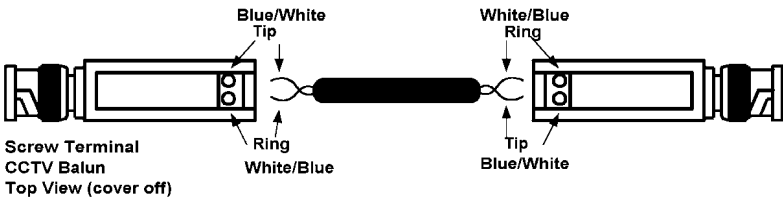
The CCTV Baluns are used with CCTV security and surveillance equipment such as CCTV cameras, monitors, DVRs, IP camera encoders, video switchers and CCTV camera servers. The CCTV Baluns may also be used with other composite baseband video equipment such as DVD players, cable boxes, media servers and audio-video monitors.

### Installation

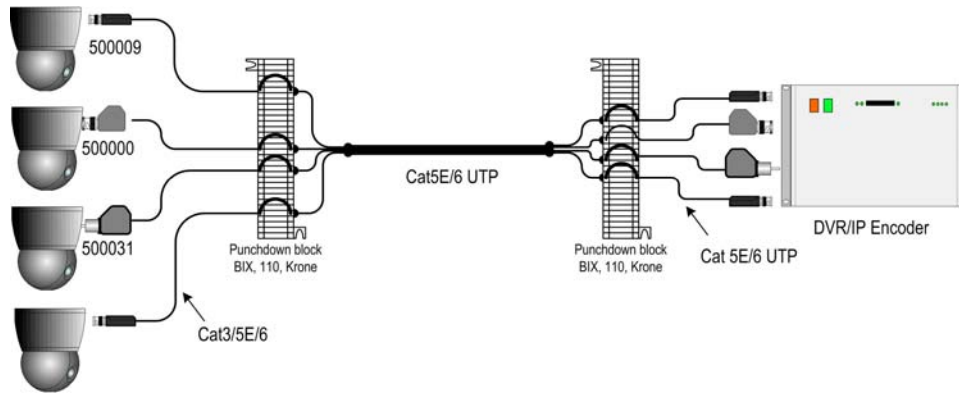
To install a VideoEase CCTV Balun, perform the following steps:

1. Identify the pin configuration of the baluns depending on the model used. One twisted pair is required for each camera signal. Note: The CCTV Balun is reverse polarity sensitive. Please ensure that “Ring” is connected to “Ring” and “Tip” is connected to “Tip”. See diagram below.
2. The CCTV Balun works in pairs. Plug one CCTV Balun into the coaxial connector of the CCTV camera.
3. Plug a second CCTV Balun into the coax connector of the CCTV monitoring equipment (i.e.; DVR, mux, IP camera server, monitor) at the other end.
4. If the Modular CCTV Balun is used, connect an RJ45 line cord to each balun.
5. If the CCTV Screw Terminal Balun is used, use UTP cable with the outer jacket spliced to expose the twisted pair. See diagram below.
6. Complete the connection between the two baluns, using standard UTP cable, connector blocks and modular wall outlets. The CCTV Balun is reverse polarity sensitive. Please ensure that straight-through wiring is maintained. See diagram below.

**Pin Configuration - Reverse Polarity Sensitive**  
 Spare cable pairs may be used for additional CCTV signals



- Power-on the CCTV equipment and check the picture quality. The video should be clear and sharp within the maximum specified distances. The following diagram shows a typical application.



## Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in respect to the installation of the CCTV Balun. If you still cannot diagnose the problem, please call MuxLab Technical Support at (514) 905-0588 or toll-free in North America at 877-689-5228.

| Symptom   | Probable Causes   | Possible Solutions   |
|---|---|--|
| Poor picture quality, distortion, interference, etc.  | 1. EMI interference.  | Check that wiring is not too close to transformers and ballasts.   |
|   | 2. Wires reversed on signal pair on one side                | Make sure that the wires on the signal pair are not reversed on one side.  |
|   | 3. Split pair   | Check if the UTP pairs are split and correct. Each signal pair must be twisted.  |
| No video image  | 1. Power-off.   | Check power supplies of CCTV equipment.  |
|   | 2. Wrong pin configuration                                  | Check pin configuration and verify straight-through wiring.  |
|   | 3. Defective CCTV Balun                                     | Change CCTV baluns for another pair.   |
| Picture faded or weak                                 | 1. Exceeded distance specifications                         | Check DC loop resistance and verify if distance spec is exceeded. Reduce cable length or eliminate high-loss components.                                 |
|   | 2. Lower grade UTP cable is introducing high signal losses. | Use signal repeater for extended distance.   |
|   |   | Replace cable by higher grade.   |
| Horizontal bars or lines moving up or down the screen | 1. Possible ground loop.                                    | Lift AC ground or install ground loop blocker. Alternatively, install MuxLab's CCTV Ground Loop Isolation/Pass-Thru Balun (500132) at the DVR or camera. |