Specifications

Environment	Video NTSC, PAL, SECAM. CCTV equipment for security and surveillance.
Devices	CCTV cameras, DVR, IP camera encoders, monitors, switchers and multiplexers.
Transmission	Transparent to the user.
Bandwidth	DC to 8 MHz.
Maximum Input	1.2Vp-p unbalanced
Maximum Output	+/-5V balanced
Gain	100kHz: Variable from 2dB to 7dB. 5MHz: Variable from 13 dB to 40 dB
Return Loss	Greater than 15 dB @ 1 MHz.
Ground Loop Isolation	Isolation between video input and output up to ± 5V
Common Mode Rejection	15 kHz: 60 dB typ. 8 MHz: 40 dB typ
Max. Distance Color – Cat5	Up to 3,000 ft (0m to 914m) with passive balun (500009) at receiver. Up to 6,000 ft (0m to 1,828m) with active balun (500015 or 500120) at receiver.
Gain compensation switches	Four (4) settings based on cable length. Factory setting: 750 ft to 1,500 ft (229m to 457m)
Cable – UTP	24 gauge or lower solid copper twisted pair wire impedance: 100 ohms at 1 MHz. Maximum capacitance: 20 pf/foot. Attenuation: 6.6 dB/1000 ft at 1 MHz
Cable – BNC	Impedance: 75 ohms at 1 MHz (RG59/U mini coax).
Connectors *Reverse polarity sensitive*	BNC-M for video with 8" minicoax lead 2-wire red/black cable lead for input power. Two (2) screw terminals for video twisted pair
Impedance	Input: 75 ohms (BNC) Output: 100 ohms (screw terminals)
Power requirements	500100: 12VDC @ 60mA max. 500101: Floating 24VAC @ 70mA RMS max. Shares power with camera PSU. Connects camera power terminals. Overvoltage protection shut-off above 40Vp-p
Power surge protection	Surge protection on power input.
Temperature	Operating: 0° to 50° C. Storage:-20° to 85° C. Humidity: up to 95%
Enclosure	ABS fire retardant plastic, black
Dimensions	1.25" (3.1 cm) x 0.62" (1.6 cm) x 0.62" (1.6 cm) plus 8" (20.3 cm) minicoax lead
Weight	1.0 oz (28 gms)
Warranty	Lifetime
Order Information	500100 Active CCTV Transmitter Balun, 12VDC 500101 Active CCTV Transmitter Balun, 24VAC

MuxLab
8114 Trans Canada Hwy, St. Laurent, Quebec, Canada, H4S 1M5
Tel.: (514) 905-0588 Fax: (514) 905-0589
Toll Free (North America): (877) 689-5228
E-mail: videoease@muxlab.com URL: www.muxlab.com
94-000609-A SE-000593-A

Active CCTV Transmitter Balun (500100 [12VDC], 500101 [24VAC]) Quick Installation Guide

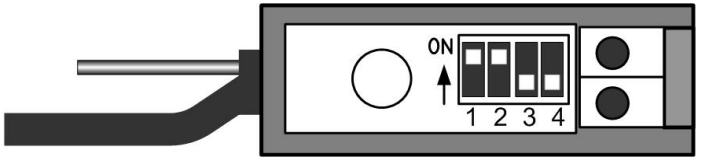
Introduction

The VideoEase Active CCTV Transmitter Balun (500100, 500101) provides enhanced performance for a single CCTV video channel via Cat5 unshielded twisted pair (UTP) cable. The balun is installed at the CCTV camera and is powered by the camera power supply. There are two (2) models; 500100 for 12VDC cameras and 500101 for 24VAC cameras. The Active CCTV Transmitter Balun features ground loop isolation and manual gain compensation adjustment based on cable length.

Installation

The Active CCTV Transmitter Balun is designed to be installed at the CCTV camera only. In order to install the Active CCTV Transmitter Balun, perform the following steps:

1. Determine the cable length between the CCTV camera and the receiver at the head end.
2. The Active CCTV Transmitter Balun has a 4-position gain adjustment DIP switch. The switch is factory set for a cable length of 750 ft (228m) to 1,500 ft (457m). If the cable length is within this range, proceed to Step 6. If the cable length is outside this range, proceed to the next step to adjust the switch setting.
3. In order to access the gain adjustment switch, slide the cover off the balun to reveal the internal components as shown in the following figure.



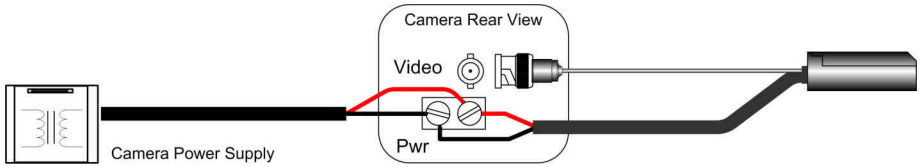
4. Consult the following gain adjustment switch table to determine the correct switch setting according to cable length. ON=Up. OFF=Down

Length - ft (*m*)	**SW1**	**SW2**	**SW3**	**SW4**
0 to 750 (*0 to 228*	OFF	OFF	ON	ON
750 to 1,*500 (228 to 457)*	ON	OFF	OFF	ON
1,500 to 2,250 *(457 to 685*	OFF	ON	ON	OFF
2,250 to 3,*000 (685 to 914)*	ON	ON	OFF	OFF

5. With a pointed tool, slide the gain switches into the correct position as shown in the following diagram. The UP position is ON. The DOWN position is OFF.

6. Connect the red/black power lead to the power input terminals of the CCTV camera. Connect the CCTV power supply to the same terminals. If 24VAC is used, ensure that it is floating with respect to ground. Caution: Using a non-floating 24VAC PSU may cause permanent damage to the balun.

7. Connect the balun's coax video lead to the BNC video output of the CCTV camera. The following diagram shows the completed connection.

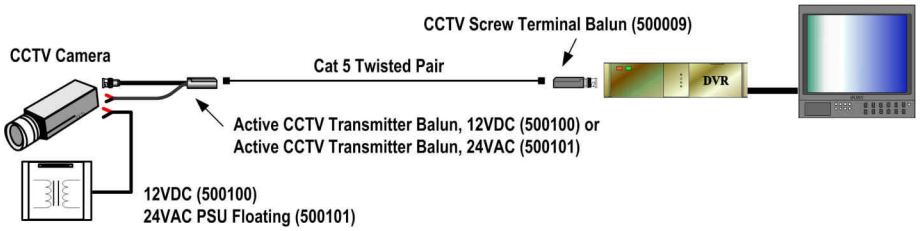


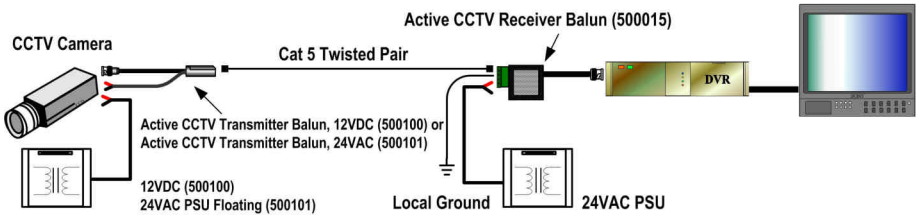
8. Identify the pin configuration of the balun on the twisted pair side. One twisted pair is required per camera video signal. Note: The CCTV Balun video output is reverse polarity sensitive. Please ensure that "Ring" is connected to "Ring" and "Tip" is connected to "Tip".

9. At the head-end connect a passive CCTV Balun (i.e. 500009, 500023, 500130) or Active CCTV Receiver Balun (500015) into the BNC connector of the CCTV receiver equipment (i.e.; DVR, IP encoder or monitor).

10. Complete the connection between the two baluns, using standard UTP cable, connector blocks and modular wall outlets.

11. 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 couple of typical installations.





Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in respect to the installation of the Active CCTV Transmitter Balun. If you still cannot diagnose the problem, please call MuxLab Customer Technical Support at 1-877 689-5228.

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.
	4. Ground loop voltage greater than 5V	Equalize ground loop differences.
No video image	1. Power-off.	Check power supplies of CCTV equipment.
	2. No power	Check power leads from balun
	3. Wrong pin configuration	Check pin configuration and verify straight-through wiring.
	4. Defective CCTV Balun	Change CCTV baluns for another pair.
	5. Power overvoltage	Reset balun by turning camera power off and on.
Picture over-compensated	1. Too much gain	Adjust gain switch to lower setting
Picture faded, weak or no color	2. Not enough gain	Adjust gain switch to higher setting.