Specifications

Environment	Baseband composite video; NTSC, PAL, SECAM		
Devices	12VDC analog CCTV cameras		
Transmission	Transparent to the user.		
Video			
Bandwidth	DC to 8 MHz.		
Impedance	Input: 75 ohms (BNC); Output: 100 ohms (RJ45)		
Maximum Input	1.1Vp-p		
Insertion Loss	Less than 2 dB per pair over the frequency range from DC to 8 MHz		
Return Loss	Greater than 15 dB over the frequency range from DC to 8 MHz		
Common Mode Rejection	Greater than 40 dB @ 8 MHz		
Max. Distance – Colour	Cat 3 –1,200 ft (365m); Cat 5e/6 – 2,200 ft. (670m)* **Certain models of DVR may yield shorter distances of 1,000 to 1,500 ft*		
Max. Distance – Black & White	Cat 3 –1,500 ft (457m); Cat 5e/6 – 2,500 ft (762m)		
Remote Power (i.e.; 24 VAC, 28 VAC)			
Wiring	Remote low voltage power supported via three (3) twisted pairs. A Class II power supply is recommended.		
Input Voltage	13 to 30VAC/DC		
Output Voltage	12 VDC		
Output Current	400 mA		
Max. Distance – Colour	795 ft. (242m) with 24VAC or 1,113 ft. (339m) with 28VAC* **With a Maximum Consumption of 400mA*		
Max. Distance – Black & White	1,586 ft. (478m) with 24VAC or 2,220 ft. (677m) with 28VAC* **With a Maximum Consumption of 200mA*		
Mechanical & Environmental			
Cable – UTP	24 AWG 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 – Coax	Impedance: 75 Ω at 1 MHz. (RG59/U). Max. 25 ft. of coax allowed end to end.		
Connectors	Combined signals: RJ45 Video: BNC-male 8" mini-coax lead Power: 2-wire lead		
Pin Configuration* **Reverse polarity sensitive*	**Signal**	**RJ45 Pin**	**Cable Lead Color**
	Power A	1 (common with 3&5)	Red
	Power B	2 (common with 4&6)	Black
	Power A	3 (common with 1&5)	Red
	Power B	4 (common with 2&6)	Black
	Power A	5 (common with 1&3)	Red
	Power B	6 (common with 2&4)	Black
	Video BNC Center (Tip)	7 [T] opposite to 500000	Mini-coax
	Video BNC Ground (Ring)	8 [R] opposite to 500000	Mini-coax
Temperature	Operating: 0° to 55°C. Storage:-20° to 85°C. Humidity: up to 95%		
Enclosure	ABS fire retardant plastic		
Dimensions	2.4" (6.1cm) x 2.25" (5.5cm) x 1.0" (2.5cm) plus cable leads; 8" (20cm) for video; 10" (25.4cm) for power lead		
Weight	3.0 oz (85 gms)		
Warranty	Lifetime		
Order Information	500024-CNV CCTV Power-Thru Converter Balun		

MuxLab
Tel.: +1 (514) 905-0588 Fax: +1 (514) 905-0589
Toll Free (North America): (877) 689-5228
E-mail: videoease@muxlab.com URL: www.muxlab.com

94-000732-A SE-000732-A

CCTV Power-Thru Converter Balun (500024-CNV) Quick Installation Guide

Introduction

The CCTV Power-Thru Converter Balun (500024-CNV) allows video and remote power to be transmitted via one 4-pair Cat 5e/6 cable, thus eliminating the need to install multiple cables for more efficient cabling in the analog CCTV security and surveillance environment. Furthermore the product converts 24VAC to 12VDC @ 400mA to allow 12VDC cameras to be remotely powered from a central 24VAC CCTV power supply. The CCTV Power-Thru Converter Balun works in conjunction with MuxLab's CCTV Power-Thru Balun (500024), Passive CCTV Power Integrator Hub (500136), Passive CCTV Hub (500130) and LongReach II Active Balun (500124) and Hub (500126, 500127) for a complete cabling solution.

Installation

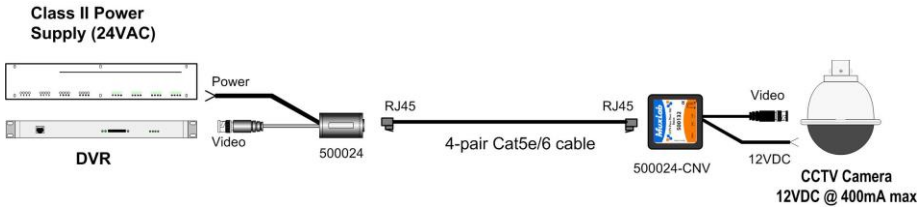
Pre-Installation Checklist:

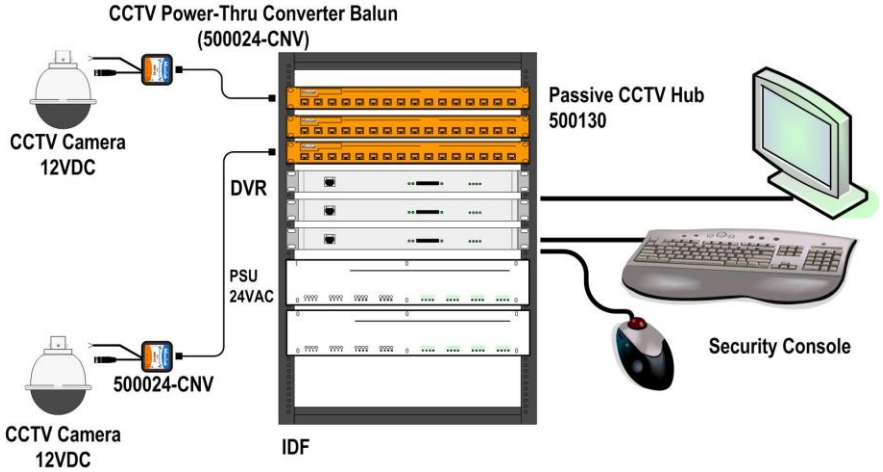
Note: For regulatory reasons, use of a Class II power supply is recommended and may be required with the use of this product in some regions.

1. **The CCTV Power-Thru Converter Balun (500024-CNV) is designed to be installed at the camera side.**
2. Ensure the CCTV equipment and remote power supply is turned off.
3. One (1) twisted pair is required for the camera video signal. Three (3) twisted pairs are required for remote power.
4. **Verify that the cable length is within MuxLab specifications. The maximum distance for 24VAC and remote power is 795 ft. (242m) at the maximum allowable power consumption of 400mA.**
5. Identify the pin configuration of the balun by checking the product label or the specification section of this installation guide.

Installation:

1. At the camera side, connect the coaxial cable lead of the 500024-CNV into the BNC-F connector of the CCTV camera.
2. At the camera side, connect the balun's red and black wires to the 12VDC power input terminals of the camera.
3. Connect a 4-pair Cat5e/6 cable to the balun. The cable must be terminated straight-through with an RJ45 modular plug according to either the EIA 568A or 568B wiring standard. Cross-connection hardware such as wall outlets and patch panels may be used as required.
4. **<u>Note:</u> The CCTV Power-Thru Converter Balun is reverse polarity sensitive. When connecting the baluns, ensure that "Ring [R]" is connected to "Ring [R]" and "Tip [T]" is connected to "Tip [T]". Verify that there are no split pairs or crossed wires.**
5. At the head end (DVR or IP encoder), repeat steps 1 to 3 for the receiver side balun or hub (i.e. 500024, 500130, 500124, 500126, 500127, 500136).
6. Power-on the CCTV equipment and central CCTV power supply. Verify image quality.
7. The following diagrams show typical configurations using the 500024-CNV.





Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions regarding the CCTV Power-Thru Converter Balun. If you still cannot diagnose the problem, please call MuxLab Technical Support at 514-905-0588.

Symptom	Probable Causes	Possible Solutions
Poor picture quality, distortion, interference	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. Check power supply fuse.
	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 or replace cable by higher grade.
No power or intermittent power at camera	1. Wrong pin config.	Check wiring
	2. Distance exceeded	Verify distance specifications for remote power. Move power closer to camera.