BLN-TL is a passive type video balun to allow you to send video signals through CAT5 cable and requires no power. The transmission distance is about 2300 feet, but with multiplexers, quads, and DVRs, please restrict the distance to 650 feet.   The twisted pair wires will not require to be stripped before installation with our latest TOOL LESS design and also make the connection stronger.

~Installation~
[Step 1]
Run your CAT5 cable between camera and the rest of your CCTV equipment.   There are 4 pairs of wire in the CAT5 cable and will able to carry 4 video signals, one per each pair of wire.   It is recommended running more CAT5 cable than you actually need to give tremendous flexibility to add extra cameras and audio feeds etc.

[Step 2]
Strip the CAT5 cable cover with proper length (approximate 8mm) and identify the various pairs in the CAT5 cable.

[Step 3]
Connect a pair of wires to the balun according to the diagram as below (fig.1) and connect the balun at the other end of CAT5 cable with same pair of wires to connect to your CCTV device.   It is important to connect the twisted pairs of wires in CAT5 cable with CORRECT POLARITY to the balun on both ends.

[Step 4]
Connect the baluns to your camera and the other end with the BNC connection to your control equipment or monitor.

~Important Notice for Installation~
1. There are THREE connections on the balun with our latest TOOL LESS design by IDC connection strip and should be connected as below.

2. Strip the cable with proper length will make the connection stronger and the CAT 5 cable will be protected by the housing (fig.2).

CAT5 CABLE	IDC STRIP	Note
Striped color cable (eg. white/brown)	TIP	**It is recommend to use pin 7 (white/brown) as TIP(+) and pin 8 (solid brown) as RING(-) to all GEM CCTV balun video pin configuration order.**
Solid color cable (eg. solid brown)	RING	

fig.1

fig.2

~Trouble Shooting~

[No Picture]
1. Camera is not working or not feeding power to camera.   Please make sure the camera is working normally.
2. Wrong wire colors have been used, please re-check the connection.
3. Polarity incorrect with one balun being wired opposite to the other one, please re-wire.
4. The cable is damaged or there is a short or open circuit on the wire, please replace the wire.

[Poor Picture]
1. Camera is not working properly.   Please make sure the camera is working normally and sending good quality picture.
2. Wrong wire colors have been used, please re-check the connection.
3. Polarity incorrect with one balun being wired opposite to the other one, please re-wire.
4. Cable run too long.   The picture will deteriorate if the CAT5 cable run too long.   2300 feet is the maximum distance for a passive balun to be functioned with adjustments to DVR and monitor.   HOWEVER, a maximum distance 650 feet is recommended for using with equipment such as DVRs, multiplexers and quads.

~Specification~	~Electrical Characteristic and Performance~
Cable-UTP: 24 gauge or lower solid copper twisted pair wire, Impedance: 100ohm at 1MHz Max. capacitance: 20pf/ft Attenuation: 6.6dB/1000ft at 1MHz	• Bandwidth: Video DC to 8 MHz
Cable-BNC: Impedance: 75ohm at 1MHz (RG59/U), Max. 25ft of coax allowed per end to end link	• Max. input: 1.1Vp-p • Impedance: 75ohm to 100ohm
Max. distance: Color: 1200ft/Cat.3 ; 2300ft/Cat.5 Monochrome: 1500ft/Cat.3 2500ft/Cat.5	• Insertion loss: Max. 2dB • Return loss: Greater than 15 dB • Common mode rejection: Greater than 40dB at 8MHz
Environment required: Operating temp. 0 to 55°C Storage temp. -22 to 85°C Humidity up to 95%	

~Limited Lifetime Warranty~

Gem Electronics warrants that this product is to be free from defect in materials and workmanship, for the life of the product.   The warranty given by Gem is in lieu of any other warranties, express or implied.   This warranty does not apply to units abused through misuse or subjected to improper and/or excessive voltage, beyond our control.   Gem assumes no responsibility for damages or penalties incurred resulting from the use of this product.   Gem's liability under any warranties shall be discharged by replacing or repairing, at our option, the defective product.   Gem's liability for any product shall not exceed a refund of the purchase price.   The warranty listed here is intended only as a summary of your full and complete warranty.   For a full and complete warranty of this product contact Gem Electronics.