

# Specifications

<b>Environment</b>	CCTV HD-SDI
<b>Device Targeted</b>	HD-SDI (up to 1080i) CCTV equipment that need to bring power and control using a single UTP cable.
<b>Compatible RX Unit</b>	M500720, M500720-CL, M500721
<b>Compatible mounting hardware</b>	M500902, M500900, M500910, M500915
<b>Signal Transmission</b>	Signal: SDI (no analog), Power: 12VDC or 24VAC 2A max, Control signal: any signal using a balanced pair, 1A max.
<b>Cabling Requirement</b>	Any 4-pair straight cable Cat5e or 6, 24 AWG or lower.
<b>Connectors</b>	One 75 ohm BNC connector, female. One 4 pin terminal block for power and signal.
<b>RJ45 Pin Configuration</b>	Pin 7-8 for SDI signal Pin 1+3, 2+6 for power (1&3 in parallel, 2&6 in parallel) Pin 4-5 for control
<b>Maximum distance</b>	Combine with M500721: SD: more than 120m (400ft) for CAT 5E UTP, More than 150m (500ft) for CAT 6 UTP. HD: Up to 30m (100ft) using Cat 5E UTP, up to 45m (150ft) for CAT 6 UTP.  Combine with another M500720 or -CL: SD: Up to 120m (400ft) for CAT 5E UTP, up to 150m (500ft) for CAT 6 UTP. HD: Up to 30m (100ft) using Cat 5E UTP, up to 35m (120ft) for CAT 6 UTP.  Note: Maximum distance is function of the receiving equipment and cable. Dedicated Cat5E/6 cables are recommended with no patch panels. <b>This balun will not work in 3G (1080p).</b>
<b>Temperature</b>	Operating: -40° to 60°C (-40° to 140°F) Storage: -40° to 85°C (-40° to 185°F)
<b>Humidity</b>	Maximum 95% (non-condensing)
<b>Enclosure</b>	ABS UL94HB fire retardant plastic
<b>Dimensions</b>	6 x 5.5 x 2.5 cm (2.4" x 2.25" x 1.0")
<b>Weight</b>	60g (2 oz.)
<b>Warranty</b>	Lifetime
<b>Order Information</b>	M500720 HD CCTV Pass-Thru Balun



## HD CCTV Pass-Thru Balun 500720 Quick Installation Guide

### Overview

The Balun (M500720) allows one HD-SDI signal with power and control lines to be transmitted up to 150 ft. (45m) via a Cat5E or Cat6 cable at HD resolution (720p, 1080i) in a point-to-point configuration. The balun supports transmission of SDI digital video (including embedded Audio and/or Time Code) within facilities and between video equipment. This balun can be combined with another M500720 or M500720-CL. For the maximum distance use the M500721.

### Applications

HD-CCTV surveillance system

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## Installation

One pair of HD-SDI balun is needed to complete one connection via UTP cable. This balun can be operated with another pass-thru balun (M500720 or -CL) or an active rx balun (M500721). To install the balun, perform the following steps:

**Caution:** Do not attempt to open the housing. There are no user-serviceable parts inside the balun. Opening the unit will void your warranty.

Do not connect the HD-SDI Balun to a telecommunication outlet wired to unrelated equipment. Making such a connection may damage the equipment and/or the balun. Verify that the desired twisted pairs are not being used for other LAN or telephone equipment.

1. Use a dedicated 4-pair Cat5e/6 cable between the source-side HD-SDI Balun and the receiver-side HD-SDI Balun and no patch panel.
2. Verify that wiring are “straight-through”, have 4 twisted pairs and have the standard Ethernet RJ45 plug.
3. Connect the balun to the SDI video port of the source equipment (*i.e.*, HD camcorder or HD-CCTV camera). Use a very short 75 ohm coax, 1m (3ft), for the SDI signal. Connect all wires using gauge 24 AWG or smaller.
4. At the destination point, connect the passive or active balun to a HD-SDI receiver (*i.e.* monitor or DVR).
5. If using the active balun at receiver end and no power is available from any source, connect the external power supply and check the power led.
6. Power on the video equipment at both ends. If active balun is used, check power and signal present LEDs.

## Troubleshooting

The following tables describe some of the symptoms, probable causes and possible solutions regarding the HD-SDI Balun:

Video Symptom	Probable Cause	Possible Solutions
No video	No continuity in video link	Check continuity on each pair. Check if pairs are not swapped or reversed. Check if the four pairs are present.
	Power off	Check power supplies of video equipment. If using an active rx balun check power.
	Improper connection and/or wrong equipment	Check that baluns are connected to the correct inputs and outputs. Check if equipment are both digital (SDI).
	SDI in 3G speed (1080p)	Try lower speed (1080i).
Part of picture missing or intermittent. Missing frame or freezing.	Exceeded distance	Verify cable length and grade. Use higher grade cable if necessary. If source is using 1080p (this use the 3G-SDI rate) the distance is greatly reduced.
	EMI interference	Try turning off (or move) nearby wireless LANs, switching power supplies, radio transmission to see if problem disappear.
	SDI in 3G speed (1080p)	Try lower speed (1080i).
No power or no control on remote source	Defective cable or equipment incorrectly connected. Too much power needed by the source.	Change cable and verify wiring interface. Check voltage drop in wiring. Note: Power available at 12V is very limited. Use different equipment.

If you still can't diagnose the problem, please call MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).