

## User Manual

# SD/HD-SDI Video Extender over CAT5/6 Kit

## HD-SDE-UTPK

Tx – Camera Side



**HD-SDE-UTPT**  
SD-12a

Rx – DVR Side



**HD-SDE-UTPR**  
SD-12b

This kit allows HD-SDI to be transmitted up to 50m / 160ft via CAT6 and 60m / 200ft via CAT5 cable in a point-to-point configuration. The SDI-UTP Extender supports transmission of up to 1.485 Gbps uncompressed, un-encrypted digital video (optionally including embedded Audio and/or Time Code) within television facilities and between professional video equipment.

Applications: Video production, broadcasting, camcorder, studio-to-studio, post-production, live events, medical imaging displays, mobile video, HD/SD routing, HD CCTV, and medical imaging.

## Features

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- Up to 50m / 160ft via CAT5 cable
- Up to 60m / 200ft via CAT6 cable
- Supports SDI-SMPTE 259M-C (270Mbps);  
HD-SDI-SMPTE 292M (1.485, 1.485 / 1.001 Gbps)
- LED diagnostics: sync, SDI detect
- 5V~24V DC



Please read the Manual before attempting to use this product.  
Specifications and appearance are subject to change without notice.



## CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN!



TO REDUCE THE RISK OF ELECTRICAL SHOCK,  
DO NOT OPEN COVERS (OR BACK).  
NO USER SERVICEABLE PARTS INSIDE.  
REFER SERVICING TO QUALIFIED  
SERVICE PERSONNEL.



### Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



### Caution

#### 1. Handle this product with care

Avoid any shock or bumping of the product. Improper handling could damage the product. Do not handle the unit with wet hands. Provide proper ventilation and air circulation and do not use near water.

#### 2. Requires a proper operating environment

This product is not waterproof and is designed for indoor use. The allowable temperature range for operation of this product is between 0°C~75°C / 32°F~167°F.

#### 3. Check the power source voltage

The power source voltage should be within the specified range. (Product must meet the specifications).

#### 4. Objects and liquid entry

Never push objects of any kind into this product as this may touch dangerous voltage points of short out parts that could result in a fire or electric shock. Never spill any kind of liquid on the product.

#### 5. Cleaning

Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

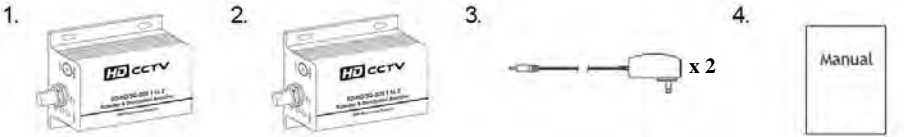
#### 6. Servicing

Do not attempt to service this product by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all service to qualified servicing personnel.

## Package Contents

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1. One (1) Transmitter Unit
2. One (1) Receiver Unit
3. Two (2) 12V DC 1Amp Power Adapter w/ Locking Power Connector
4. One (1) User Manual



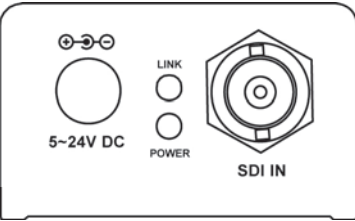
For any returns, please include all components listed above with original packaging in **Resalable Condition**. **Absolutely No Returns** will be accepted if any component is missing/damaged.

## Parts & Functions

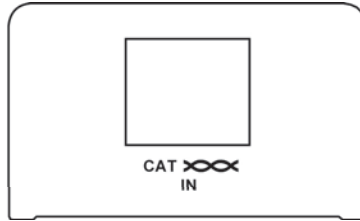
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### Tx – Camera Side HD-SDE-UTPT

Left Side View:

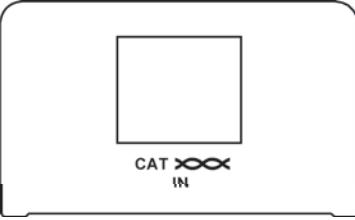


Right Side View:

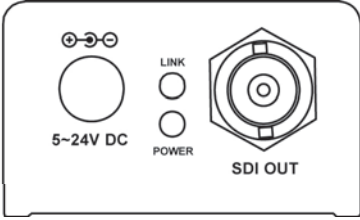


### Rx – DVR Side HD-SDE-UTPR

Left Side View:



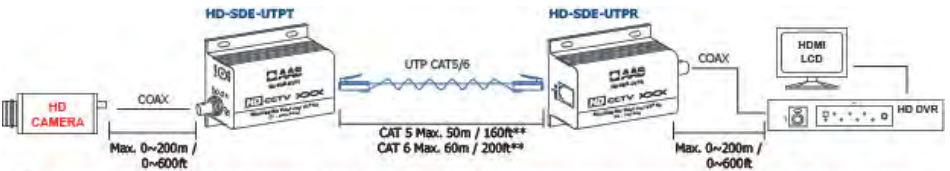
Right Side View:



## Application Diagram

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\* The distance depends on the quality of the SDI signal from the HD camera source and also the Coax Cable & Connector



\* The distance depends on the quality of the SDI signal from the HD camera source and also the CAT5/6 Cable & RJ45 Jack

\*\* In order to achieve the **Best Quality** and **Long Range** cable run of up to 50m / 160ft for CAT5 and 60m / 200ft for CAT6, you will need **Good Quality Cable, Good Quality RJ45 Jack, and Good Quality Installation**. All these 3 points are important because it affects the transmission distance.

## Technical Specifications

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Kit Model	HD-SDE-UTPK	
Model	HD-SDE-UTPT	HD-SDE-UTPR
Type	Transmitter	Receiver
Standard Supported	SMPTE 259M (270Mb/s), SMPTE 292M	
Speed	270Mb/s, 1.485Gb/s (automatic selection)	
Format Tested	<b>SD:</b> 525i@59.94Hz & 625i@50Hz <b>HD:</b> 720p@23.98Hz, 720p@24Hz, 720p@25Hz, 720p@29.97Hz, 720p@30Hz, 720p@50Hz, 720p@59.94Hz, 720p@60Hz; 1080i@50Hz, 1080i@59.94Hz, 1080i@60Hz; 1080p@23.98Hz, 1080p@24Hz, 1080p@25Hz, 1080p@29.97Hz, 1080p@30Hz	
Indicators	Power on (on both end) Synchronisation detect (on both end) Link between the two unit working (on both end)	
Input /Output	1x BNC 75 ohm female 1x RJ45S for CAT5e/6 unshielded or shielded twisted pair 1x power connector, 2.1mm	
Maximum Distance	All resolutions CAT5e UTP/STP: 50m / 160ft CAT6 UTP/STP: 60m / 200ft	
Power Supply	2x 5V~24V DC Power Adapter w/ Locking Power Connector	
Power Consumption	6W	
Dimensions	145 x 80 x 25mm / 5.7 x 3.2 x 1 inches	
Weight	300 g / 0.66 lbs	

\*Specifications are subject to change without notice

Note: Camera image setting should be set to 1080p30, 1080i30 or 720p60.

## Absolutely Maximum Ratings

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Parameter	Symbol	Values		Units
		Min.	Max.	
Power Input Voltage	VCC	5	24	Volts DC
Operating Temperature	Top	0 / 32	75 / 167	°C / °F
Storage Temperature	Hst	-20 / -4	60 / 140	°C / °F
Operating Ambient Humidity	Hop	10	90	%RH
Storage Humidity	Hst	10	90	%RH

## Key Components

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### Components Made in USA for this product:

Name of Component	Manufacturer
Multi-Rate SDI Adaptive Cable Equalizer	Mindspeed & Gennum
Multi-Rate SDI Automatic Reclocker	Mindspeed & Gennum
Multi-Rate Dual Slew-Rate Cable Driver	Mindspeed & Gennum & National Semiconductor

### Components Made in Taiwan for this product:

Name of Component	Manufacturer
DC/DC Converter	Richtek

\*Key components are listed by the manufacturer and are subject to change without notice

## Eye Diagram & Jitter Performance

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### SD Mode

Generator

In: 525159 Out: 525159 Lock: Free Log 00:06

Standard: SD, YCbCr-422-10, 525i, 59.94

Output: 1-On

Output Image: [Color Bars]

Pattern-1: SMPTE 219-100, Box

Payload ID: SMPTE 352 On

EDH: On

Errors: None

Ident: On-1, Text: newbridge 3G TEST

Main Menu Video Out GenLock Audio Audio Group 1/2 Group 3/4

Analyser

In: 525159 Out: 525159 Lock: Free Log 00:06

A 1kHz 0.09UI

Jitter-1: Align

Eyes 3

Setup

A 861mV 1504ps 1475ps 229ps 0.0% 0.0% L On

Main Menu Picture Audio Meters Waveform Monitor Vector Scope Eye and Jitter

## HD Mode

In: 720p23      Out: 720p23      Lock: Free      Log 00:07

Generator

Standard: HD      VCbCr-422-10      Output:  1-0n

720p      23.98

Pattern-1: SMPTE 219-100       Box      Payload ID:  SMPTE 352 On

Errors: None

Ident:  On-1      Edit      Text: newbridge 3G TEST

Main Menu   Video Out   GenLock   Audio   Audio

Group 1/2   Group 3/4

In: 720p24      Out: 720p24      Lock: Free      Log 00:08

Generator

Standard: HD      VCbCr-422-10      Output:  1-0n

720p      24

Pattern-1: SMPTE 219-100       Box      Payload ID:  SMPTE 352 On

Errors: None

Ident:  On-1      Edit      Text: newbridge 3G TEST

Main Menu   Video Out   GenLock   Audio   Audio

Group 1/2   Group 3/4

In: 1080i60      Out: 1080i60      Lock: Free      Log 00:12

Generator

Standard: HD      VCbCr-422-10      Output:  1-0n

1080i      60

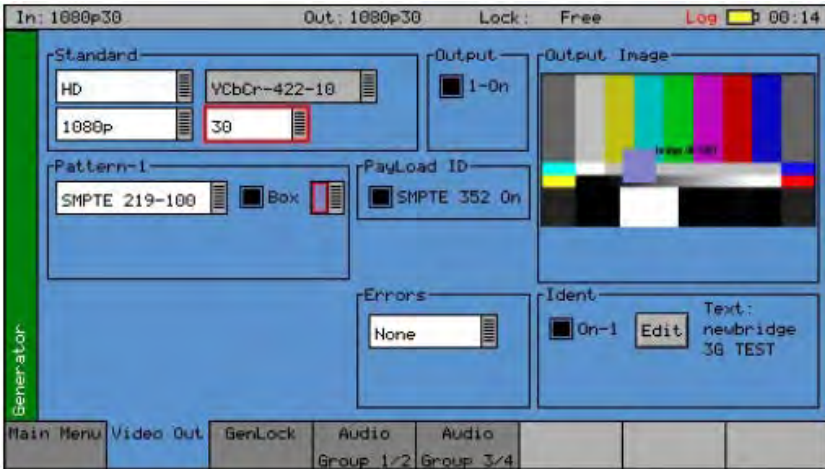
Pattern-1: SMPTE 219-100       Box      Payload ID:  SMPTE 352 On

Errors: None

Ident:  On-1      Edit      Text: newbridge 3G TEST

Main Menu   Video Out   GenLock   Audio   Audio

Group 1/2   Group 3/4



## Limited Warranty

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### **LIMITED ONE (1) YEAR WARRANTY AND EXCLUSIONS**

Manufacturer warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Manufacturer is free of defects in materials and workmanship under normal and proper use for one (1) year from the purchase date. Manufacturer's only obligation is to correct such defects by repair or replacement, at its option, if within such one (1) year period the product is returned prepaid, with proof of purchase date, and a description of the problem. This warrant excludes and there is disclaimed liability for labor for removal of this product or reinstallation.

**This warranty is voided if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. There are no other implied warranties of any kind, including merchantability and fitness or a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warrant, including merchantability and fitness of or a particular purpose, is limited to one (1) year.**

**Manufacturer is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, loss sales or profits or delay or failure to perform this warranty obligation.** The remedies, provided therein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

[www.AAS.com.tw](http://www.AAS.com.tw)

# CAUTION!!!

**Failure to read this notice may result in damaging the camera or device in which the warranty will be voided due to installation error.**

When using any type of RJ45 jack powered balun, a **Cable Tester** must be used to ensure proper connection. Many individuals can make RJ45 connections easily, however mistakes can be made. When making connections for powered baluns, make sure to test the connectivity and ensure proper alignment on both sides.

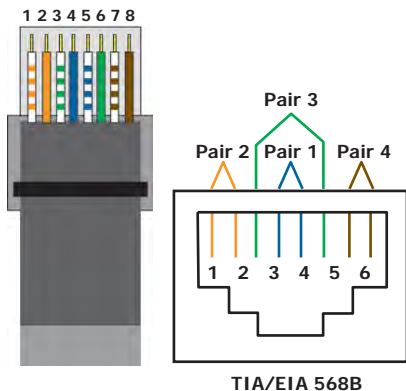


Cable Tester

When using passive or active baluns, the alignment of the cable is imperative to the success of the operation. Use a Cable Tester because it is a very simple, yet easy to find tool that can save a huge headache. For example, if one of the video wires accidentally gets crimped into the power side, and the powered balun is then hooked up to the camera, both the camera and the balun have just burned out. This is an extremely costly mistake, not only in dollars but time as well. How long does it take to test the RJ45 using a Cable Tester? **Less than one minute.**

**The new terms and conditions state: When an RMA is requested and the product has been burned by bad RJ45 connections, the product is NO LONGER covered under warranty.**

**Note:** Whichever way the RJ45 is terminated on one end of the cable, IT MUST BE THE SAME ON THE OTHER SIDE for either TIA/EIA 568A or TIA/EIA 568B. Below is an example of TIA/EIA 568B.



Pin	Pair	Color	Character
1	2	Orange / White	Video +
2	2	Orange	Video -
3	3	Green / White	Power -
4	1	Blue	Power -
5	1	Blue / White	Power -
6	3	Green	Power +
7	4	Brown / White	Power +
8	4	Brown	Power +



HD-SDE-UTPK

MADE IN CHINA