



***HDMI® over Twisted Pair  
Long Distance Extender  
Over (SINGLE) CAT-5e/6/7 cable  
with EDID Sync***

**GRCAT01GB  
PRODUCT MANUAL**

## Introduction

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Thank you for purchasing the HDCable.co.uk GRCAT01GB.

Your **HDMI over SINGLE CAT-5e/6/7 Extender Kit** enables long distance HDMI transmission over a single 5e/6/7 Ethernet cable.

The kit consists of a HDMI Transmitter and a HDMI Receiver allowing the transmission of full HD 1080p for up to 50 metres.

***Note: For optimal performance we recommend using good quality CAT5e/6/7 cabling for 1080p transmission.***

Thank you for purchasing this HDCable.co.uk product. Please read this manual to be able to safely install, use and maintain the product at maximum performance. Please keep this manual for future reference. The information in this manual is subject to change without notice.

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## Technical Features and Package Contents

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### Technical Features:

- HDMI version 1.3 device support
- 1080p at 50m can be achieved
- 1080i at 100m can be achieved
- EDID sync technology
- No minimum cable distance
- Automatic signal equalization
- Full HD 1080p digital transmission over Ethernet cabling
- 2.25 GHz bandwidth
- 6.75 Gbps aggregate data rate
- Dolby TrueHD & DTS-HD 7.1 support
- No loss of picture quality
- Power and video status LED indicator
- HDCP compliant
- ESD protection

### Package Contents:

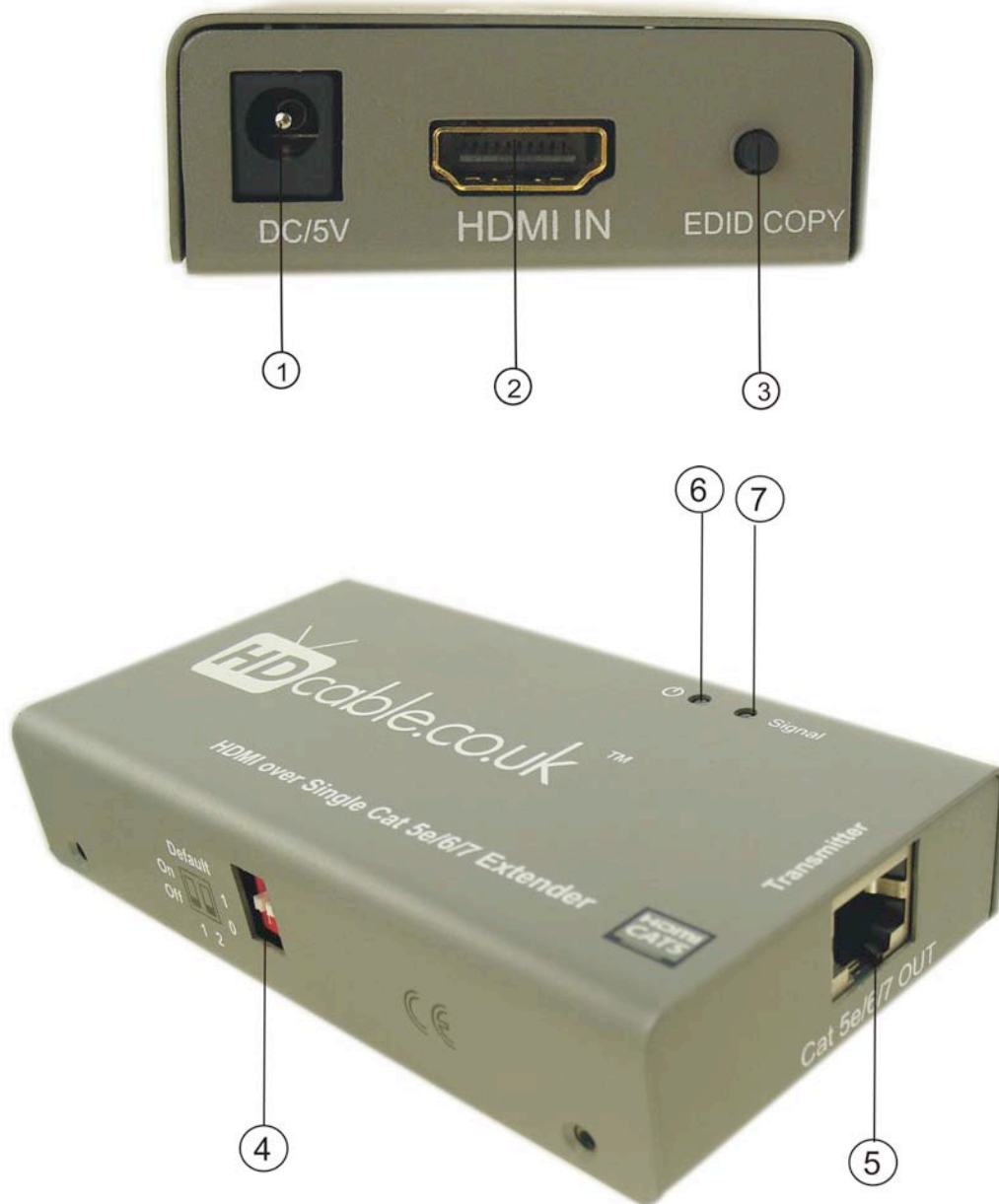
- HDMI Extender Transmitter Unit
- HDMI Extender Receiver Unit
- Mounting Ears
- 5VDC Power Supply
- Product Manual

## Technical Specification

	Transmitter Unit	Receiver Unit
<b>Input/Output Connector</b>	<b>HDMI Type A 19 Pin</b>	
<b>Source Input Port</b>	<b>HDMI Single Link 1</b>	<b>N/A</b>
<b>Display Output Port</b>	<b>N/A</b>	<b>HDMI Single Link 1</b>
<b>Link Connector</b>	<b>RJ-45 Shielded</b>	
<b>Amplifier Bandwidth</b>	<b>2.25 GHz / 6.75 Gbps aggregate data rate</b>	
<b>Single Link Range</b>	<b>480i, 480p, 720p, 1080i, 1080p</b>	
<b>HDCP Function</b>	<b>HDCP Compliant</b>	
<b>Power Adapter</b>	<b>5VDC</b>	
<b>Enclosure</b>	<b>Metal</b>	
<b>Dimension (mm)</b>	<b>115(W) x 60(D) x 23(H) mm</b>	
<b>Net Weight (g)</b>	<b>220g</b>	

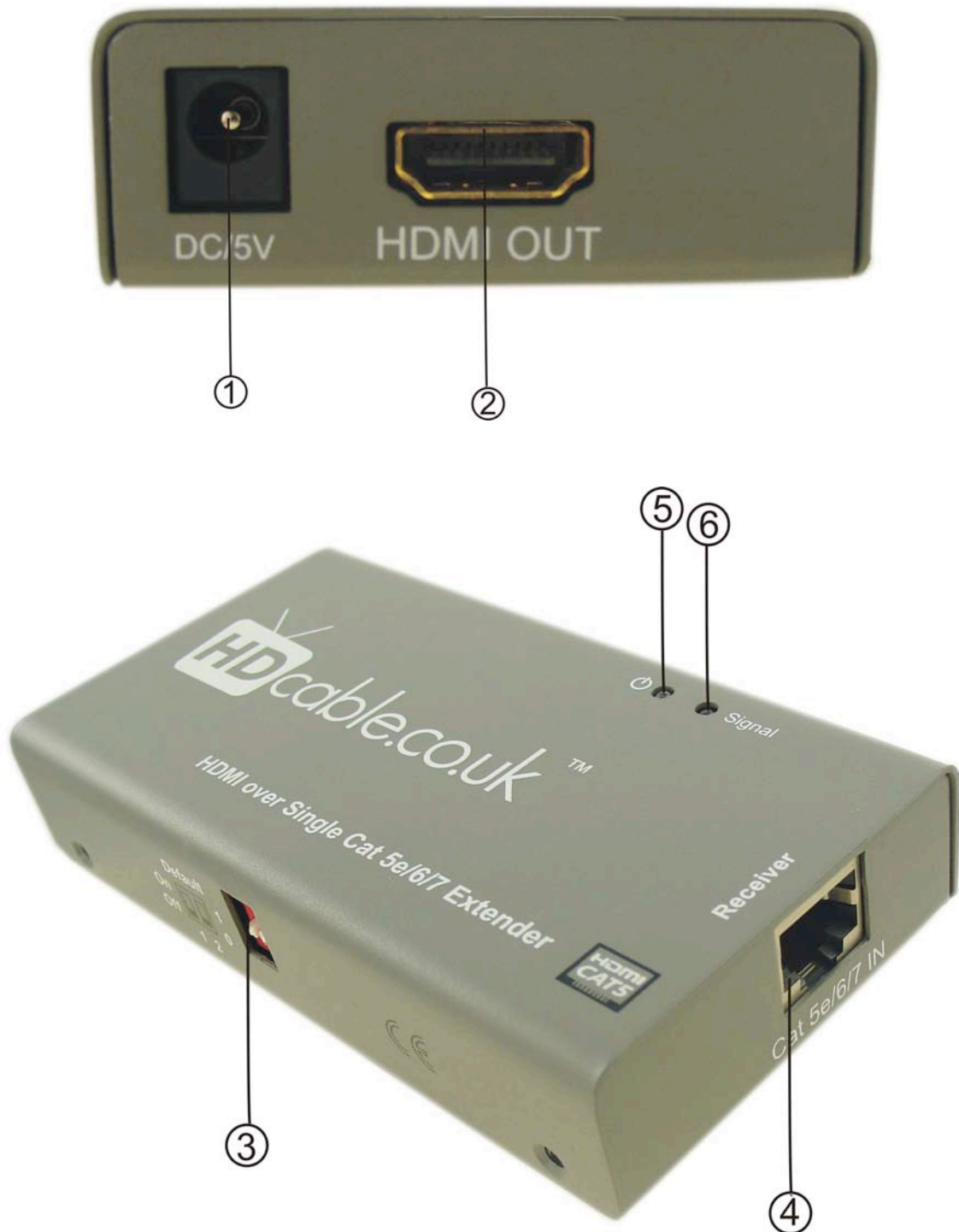
# Panel Descriptions

## Transmitter Unit



1. Power input, 5VDC
2. HDMI cable input
3. EDID copy button. After connecting the TX unit with the HDMI cable to the display device (e.g. LCD TV) power on the TX then press this button to read and save the EDID information from the display.
4. DIP switch
5. CAT-5e/6/7 RJ45 Ethernet cable output
6. Power indicator status LED
7. Signal connection status LED

## Receiver Unit



1. Power input, 5VDC
2. HDMI cable output
3. DIP switch
4. CAT-5e/6/7 RJ45 Ethernet cable input
5. Power indicator status LED
6. Signal connection status LED

# Installation

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## Transmitter and Receiver Units:

1. Connect an HDMI cable between the HDMI source device and GRCAT01GB Transmitter unit.
2. Connect an HDMI cable between the HDMI display and GRCAT01GB Receiver unit.
3. Connect your CAT-5e/6 cable between the Transmitter and Receiver.
4. Make your DIP switch EDID sync selection.
5. Plug the 5V power supply into the Receiver unit.
6. Turn on your display and source.
7. The video should now be displayed on the screen, if you do not see a picture, try disconnecting and reconnecting the HDMI source. Make sure your CAT-5e/6 cables are terminated correctly (straight - not crossed).

## EDID Sync Function

The GRCAT01GB TX unit has an in-built NVRAM storage memory chip. This enables users to effectively manage and control EDID data. The device has a number of pre-stored EDID settings as well as the ability to store a display device or AV Receiver's EDID data via the EDID COPY function.

### *Transmitter Unit*

Position 1	Position 2	Function
0	0	The EDID data is passed from the display or AVR
1	1	Records and stores the display's EDID data
0	1	EDID will state Dolby TrueHD, DTS-HD 5.1 support
1	0	EDID will state stereo audio support

**The EDID data is passed from the display or AVR (0:0)** – This is the normal operation mode. Only set to this mode after initially programming the EDID COPY function in 1:1 position.

**Records and stores the display's EDID data (1:1)** - Operation:

- Firstly power down the unit and set DIP switch to 1:1
- Connect the HDMI output of the TX unit to the HDMI input of the display or AVR
- Power on both the display and the TX unit
- Press the “EDID COPY” button. The device will read EDID data from display or AVR and store it into its NVRAM.
- The status LED will start to flicker, the operation is complete once the status LED stops flickering and becomes solid.
- After performing this operation the extenders can be used without further settings adjustment.

**EDID will state Dolby TrueHD, DTS-HD 5.1 support (0:1)** - the TX unit will use the NVRAM embedded 1080p, Dolby TrueHD, DTS-HD 5.1 EDID data key. EDID COPY button will be inactive when DIP in this mode.

**EDID will state stereo audio support (1:0)** - the TX unit will use the NVRAM embedded 1080p, stereo audio EDID data key. The EDID COPY button will be inactive when DIP is in this mode.

## Receiver Unit

Position 1	Position 2	Function
0	0	Normal mode
0	1	Forces signal output
1	0	Long cable mode
1	1	Reserved

**Normal mode** - as the HDMI transmission passes through the RX unit, it is continuously checked for 100% signal integrity. If the signal integrity is not good enough, the RX will halt the output HDMI transmission. Only when the signal integrity is restored to a satisfactory level will it resume the HDMI output to active again.

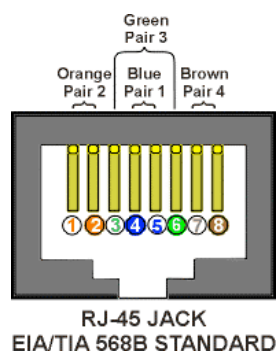
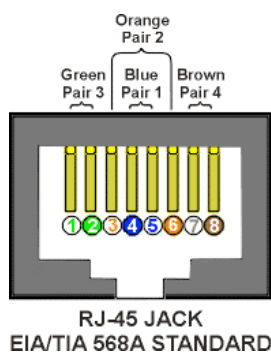
**Forces signal output mode** – the signal integrity is not checked and the HDMI output transmission is active at all times. (Picture break up will be shown in this mode if the Ethernet cabling cannot handle the bandwidth requirements)

**Long cable mode** – the signal equalization processing power is strengthened. (Not recommended for short cable lengths)

**Reserved** – no function

*Note: the DIP switch should be set before powering on the unit.*

## CAT-5e/6/7 cable pin assignment options:



## Troubleshooting

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### What kind of Ethernet cabling should I be using?

We recommend a minimum spec of solid core CAT-5e cable rated at 350MHz and terminated in **T568a** or **T568b** fashion. For higher resolutions and challenging distances (30m +) we strongly recommend you to use CAT-6 or CAT-7 cabling.

### I'm getting no video on the display, what can I check?

Test using a shorter length of cable to help diagnose whether it is an issue with the CAT cabling. If it is, re-terminate and test again. If the problem still persists, upgraded Ethernet cabling is required.

Now try this power on process.

1. Power down the display, extender and source device at the mains.
2. Power on the display device.
3. Power on the extender.
4. Finally, power on the source device.
5. Now the HDCP handshake process should complete successfully and images should appear on the screen.

Ensure that the Ethernet cabling does not run within 15cm of any power cabling. Interference from the power cabling will seriously affect the performance of the extenders, possibly resulting in bad picture break-up or no picture at all.

*If connecting a PC to DVI monitor with a HDMI to DVI adapter, please set your PC video output frequency to 60Hz*

### Occasionally the picture blanks out, how do I fix this?

Flickering or blinking images are often caused by a loss of sync between the display and the source. Firstly, try lowering the source resolution to see if that helps, if it does, the CAT cabling being used are unable to handle the required bandwidth. Try upgrading the CAT cabling to shielded CAT-5 or CAT-6 cable to reduce interference.

NB. In some circumstances after the HDMI signal becomes active and extender initializes, it can take up to ten minutes for the signal equalization processing within the unit to adjust and stabilize video playback so that it is completely glitch free.

The HDMI transmission running along the Ethernet cabling is particularly susceptible to electro magnetic interference (EMI). This can be caused by being in close proximity to power cabling, fluorescent lighting or by spikes on the circuit generally caused by electrical motors such as those found in washing machines, fridges and dishwashers.

Firstly, try lowering the source resolution to see if that helps, if it does, the CAT cabling being used are unable to handle the required bandwidth or the termination is at fault. Firstly, re-terminate and test again. If the problem still persists, upgraded Ethernet cabling is required. Try upgrading the CAT cabling to shielded CAT-5 or CAT-6 cable to reduce interference.

### **Why is there a green or pink tint to my picture?**

A tint of green or pink in the picture is a result of incorrect colour space being transmitted. This can be resolved by recycling the devices to re-sync by powering off and on the source equipment. If this does not help, the DDC data containing the colour space is not being transmitted correctly due to loss in the CAT cable, try replacing the cable with shielded CAT cabling.

### **When I turn on the light/power socket switch, the picture drops out momentarily?**

This is caused by a power arc/spike in the circuit that is caused when you flick the switch. If the Ethernet cabling runs close or across any power cabling at any point in the cable run, the momentary jump in power will cause a burst of electromagnetic interference (EMI) to occur. This affects the HDMI signal transmission over the extender. However, this is only for a fraction of a second and the connection is quickly re-established. Unfortunately there is no an easy fix for this problem other than re-routing the Ethernet cabling a sufficient distance away from the power cabling.

This issue can also be caused by an 'earth leak' somewhere on the electrical circuit. A qualified electrician should be able to locate and repair the fault.

## Safety and Precautions

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**Mains Supply** – operate this product only from the type of power supply indicated on the marking label. Disconnect this product from the mains before you start any maintenance or installation procedures.

**Overloading** – do not overload a wall outlet, extension cord or adapter as this may result in electric fire or shock.

**Liquid** – this product should not be exposed to liquid of any kind.

**Cleaning** – disconnect the product from the power before cleaning.

**Attachments** – do not use any unsupported attachments as these may be hazardous or cause damage to the product.

**Connection to the display** – disconnect the product from the mains before connecting or disconnecting the cable from the TV. Failure to do so can damage the product or the TV.

**Location** – place the product indoors to avoid exposing it to lightning, rain or sun. Do not place it near a heat source. We recommend that the product has 10cm clearance from any other appliances susceptible to electromagnetic influences.

**Lightening, storm or not in use** – unplug the product from the wall outlet during a thunderstorm or when left unattended and unused for long periods of time. This will prevent damage to the product due to lightening and power-surges.

**Extraneous objects** – do not insert anything through the openings in the unit where they can touch dangerous voltage points or damage parts.

**To avoid electrical shock** – do not open the product casing, do not insert metal or inflammable objects inside the product, do not touch the power plug with wet hands.



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### Warranty

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