

# Gefen

®

## DVI Over One CAT6 Extender

**EXT-DVI-1CAT6**

**User Manual**



[www.gefen.com](http://www.gefen.com)

## ASKING FOR ASSISTANCE

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### Technical Support:

Telephone (818) 772-9100  
(800) 545-6900

Fax (818) 772-9120

### Technical Support Hours:

8:00 AM to 5:00 PM (PST) Monday thru Friday Pacific Time

### Write To:

Gefen, LLC  
c/o Customer Service  
20600 Nordhoff St  
Chatsworth, CA 91311

[www.gefen.com](http://www.gefen.com)  
[support@gefen.com](mailto:support@gefen.com)

### Notice

Gefen, LLC reserves the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

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# INTRODUCTION

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Congratulations on your purchase of the DVI over one CAT6 Extender. Your complete satisfaction is very important to us.

## **Gefen**

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

## **The Gefen DVI over one CAT6 Extender**

The Gefen DVI over one CAT6 Extender will send a 1920x1200@60Hz DVI-D signal over a single CAT-6a cable to distances of up to 200 feet (60m). Extension of high resolution computer video can now be simplified with the use of only a single CAT-6a cable. Previous solutions used 2 cables to accomplish this.

The DVI over one CAT6 extender's pure digital transmission method insures 100% signal integrity over this single cable extension solution.

## **How It Works**

The Gefen DVI over one CAT6 Extender system consists of two devices, a sender and a receiver. The single-link DVI source (set-top box, DVD player, or computer video card output) connects to the sender unit with the supplied 6-foot DVI cable. The receiver unit connects to a DVI-compliant display. One CAT-6a cable links the sender and receiver together at distances of up to 200 feet. Power is applied to both the sender and receiver with the included 5V DC power supplies. A perfect image is now displayed on the remote DVI display.

## OPERATION NOTES

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### **READ THESE NOTES BEFORE INSTALLING OR OPERATING THE DVI OVER ONE CAT6 EXTENDER**

- The DVI over one CAT6 Extender was designed for use with high quality CAT-6a (augmented) cabling. This unit will either not perform to specification or refuse to operate completely if cabling other than CAT-6a is used.
- When field terminating CAT-6a cabling please adhere to the TIA/EIA-568-B specification shown on page 12 for your convenience.
- The DVI over one CAT6 has a maximum distance rating based on the bandwidth (i.e. resolution and color) of the video being transmitted. When used with high quality CAT-6a cabling, you may expect a maximum extension range of 200 feet (60 meters) at 1920x1200 or 1080p resolution at up to a 60Hz refresh rate. Lower quality cabling or older standards such as CAT5 cables will shorten the maximum achievable extension distance.
- For CAT5e cables, the maximum distance is 150ft at 1080p or 1920x1200.
- This product features HDCP pass-through.

# FEATURES

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## Features

- Flexible extension of single-link DVI-D thanks to inexpensive and widely-available CAT6 cable
- Video is transmitted digitally over the CAT6 cable for zero signal loss
- Single Link Range (Maximum resolution): 1920x1200@60 Hz
- Compliant with HDCP 1.1 and DVI 1.1 standards
- Equalizes the DVI signal and retransmits it with optimal quality regardless of incoming signal quality
- Eliminates equipment noise in the viewing environment
- Improved compensation for CAT6 cable skew

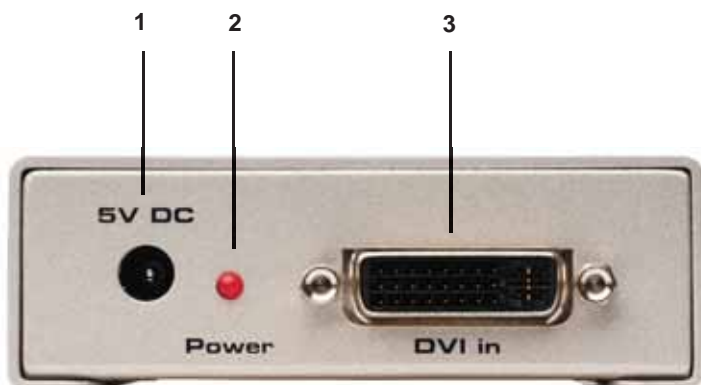
## Package Includes

- (1) DVI over one CAT6 Sender
- (1) DVI over one CAT6 Receiver
- (1) 6 ft. DVI Cable (M-M)
- (2) 5V DC Power Supply
- (1) User's Manual

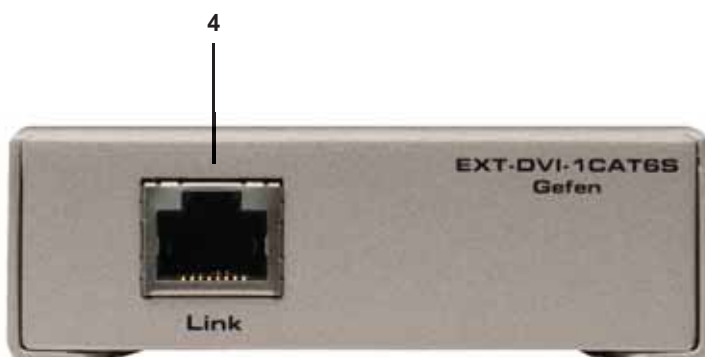
# SENDER PANEL LAYOUT

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## Front Panel



## Back Panel



## SENDER PANEL DESCRIPTIONS

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**1 5V DC Power Receptacle**

Connect the included 5V DC power supply between this input and an open wall power socket.

**2 Power LED Indicator**

This LED will become active once the included 5V DC power supply is properly connected between the unit and an open wall power socket.

**3 DVI Input Connector**

This input will accept a single DVI-D (digital only) source for extension. Attach the cable coming from your DVI source here.

**4 Link RJ-45 Port**

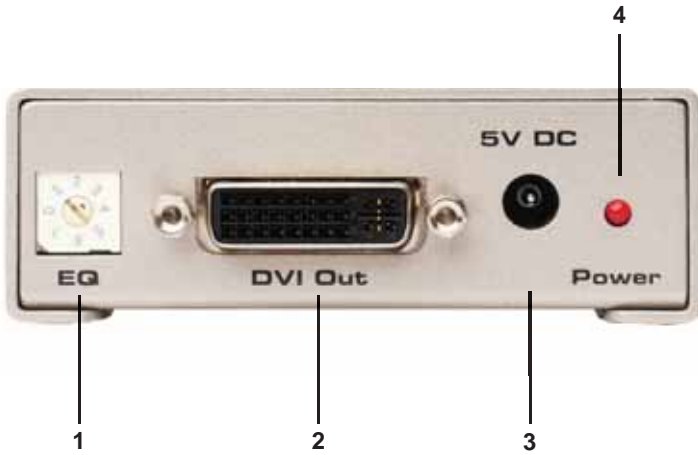
This port is used to connect the sending and receiving units together using a CAT-6a cable.



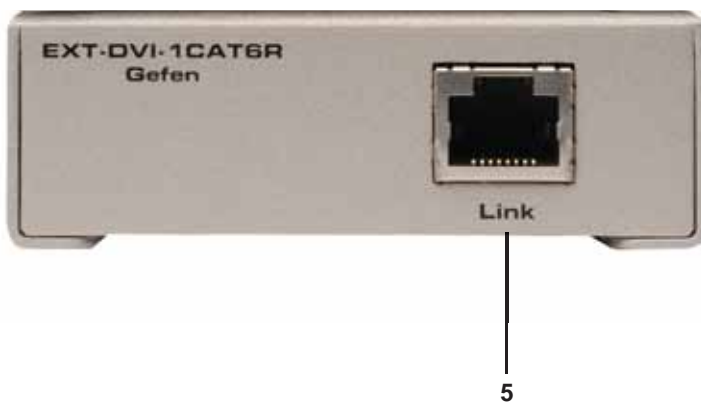
# RECEIVER PANEL LAYOUT

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## Front Panel



## Back Panel



## RECEIVER PANEL DESCRIPTIONS

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**1 Equalization Adjustment (Trim Pot Control)**

The EQ adjustment or Trim Pot is used to equalize the signal to compensate for the extension distance and the quality/skew variances that are found in different CAT6a cabling brands.

**2 DVI Output Connector** This connector hooks up the Receiver to a DVI-D compliant monitor at the remote destination.

**3 5V DC Power Receptacle**

Connect the included 5V DC power supply between this input and an open wall power socket.

**4 Power LED Indicator**

The LED power indicator will become active once the included 5V DC power supply is properly connected between the unit and an open wall power socket.

**5 RJ-45 Link Port**

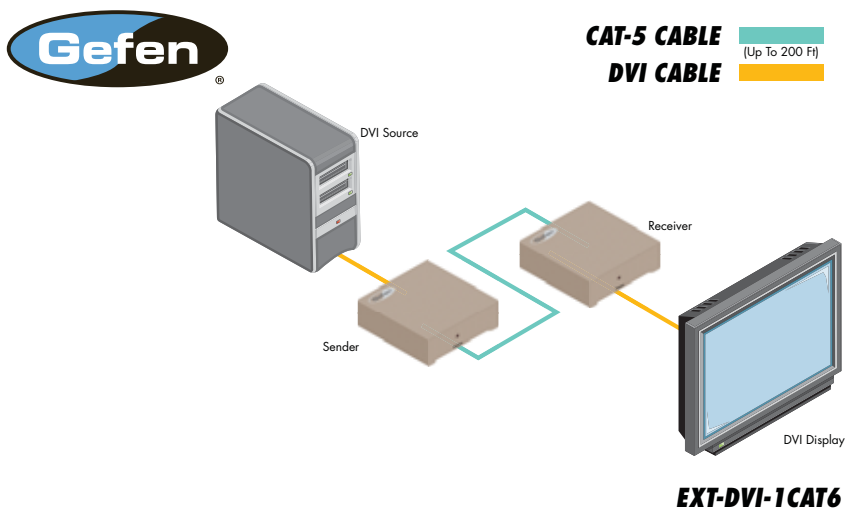
This port is used to connect the DVI Extender Sender and Receiver units together using a CAT6a cable.

# CONNECTING AND OPERATING THE DVI OVER ONE CAT-6 EXTENDER

## How to Connect the DVI over one CAT6 Extender

1. Connect a DVI-D cable (one is supplied) between the DVI output on a source device and the DVI input connector on the *DVI over one CAT6 Extender sender unit*.
2. Connect a single CAT6a cable between the sending and receiver units.  
**NOTE:** When field-terminating CAT6a cabling please adhere to the TIA/EIA-568-B specification. Please see page 12 for more information.
3. Connect a DVI-D cable (user-supplied) between the DVI input on a DVI-compliant output device (i.e. computer display) and the DVI output on the *DVI over one CAT6 Extender receiver unit*.
4. Connect the included 5V DC power supplies (two are included) between the sender and receiver units and available power outlets.
5. Power up the DVI output device (i.e. DVI computer monitor) first and the DVI source device (i.e. computer) last.

## Wiring Diagram for the DVI over One CAT-6 Extender



# CONNECTING AND OPERATING THE DVI OVER ONE CAT-6 EXTENDER

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## Adjusting the Signal Quality

The *DVI over one CAT6 receiver unit* has a equalization device called a Trim Pot (trim potentiometer) to compensate for the extension distance and the quality/skew variances that are found in different CAT6a cabling brands. If there is no output video or if output video contains video artifacts and/or video noise such as snow, please use the steps below to adjust the Trim Pot.

1. Insert a small flat-headed tool into the Trim Pot on the front panel of the **receiver unit**.
2. The Trim Pot has 8 set positions. Turn the Trim Pot in a clockwise fashion until it clicks into the next position. Continue adjusting the Trim Pot by trying all 8 positions until the issue is resolved.
3. Carefully remove the adjustment tool.



Trim Pot

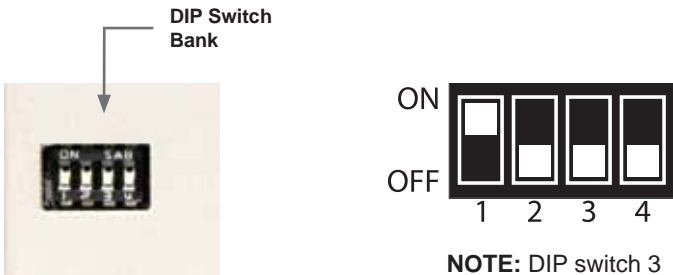
# DIP SWITCH CONFIGURATION

## DIP Switch Location

On the bottom of the Receiver Unit, there are four (4) DIP switches. Each DIP switch performs a different function.

Before modifying DIP switch settings, disconnect the power from the Receiver unit. After the DIP switches have been configured, reconnect the power.

## Receiver Unit (bottom)



**NOTE:** DIP switch 3 and DIP switch 4 are not used.

## Default settings for DIP switches

DIP Switch	Position
1	ON
2	OFF
3	OFF (Not Used)
4	OFF (Not Used)

# DIP SWITCH CONFIGURATION

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## DIP Switch Settings

### DIP 1 - EDID Management

- *OFF - Local EDID*

When Local EDID mode is used, the EDID will be assembled by copying all video and audio features of the connected output device. Deep Color support will be manually controlled using DIP switch 2 (see DIP 2 - Deep Color, below).

- *ON - Pass-through EDID*

Allows all video and audio features of the connected devices to be passed to the source device without control over Deep Color. By default, the unit is shipped with DIP 1 in the ON position.

### DIP 2 - Deep Color

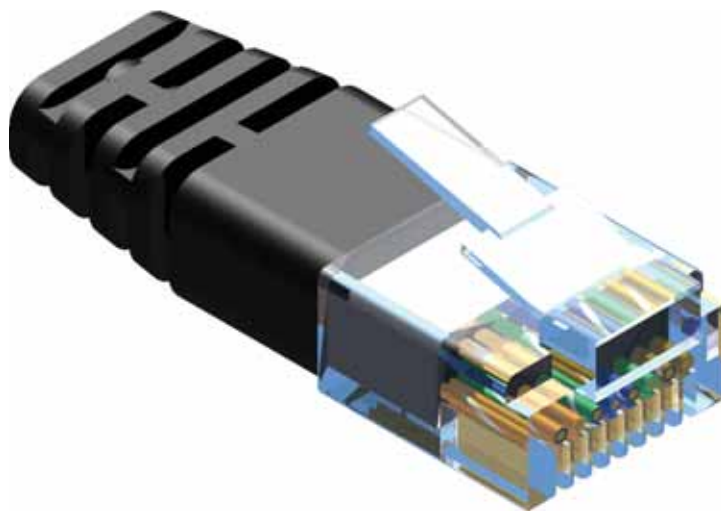
- *OFF - Disables Deep Color support*

Disables Deep Color in the EDID. Deep Color management is only available when Local EDID is being used (DIP 1 = ON).

- *ON - Enables Deep Color support*

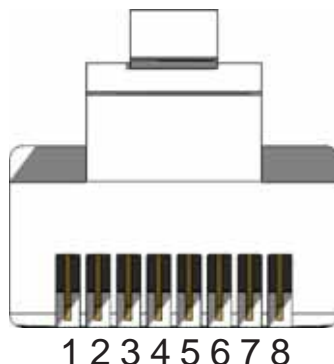
Enables Deep Color support. In Pass-through EDID Mode, setting DIP 2 = ON has no effect since all EDID information is passed through.

## NETWORK CABLE WIRING DIAGRAM



Gefen has specifically engineered products to work with the TIA/EIA-568-B specification. Please follow the table below when field terminating cable for use with Gefen products. Failure to do so may produce unexpected results and reduced performance.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown



This product was designed for use with CAT-6a (augmented) cabling only. This unit will either not perform to specification or refuse to operate completely if cabling other than CAT-6a is used.

Each cable run must consist of a single undivided segment of CAT-6a cabling from Sender to Receiver. Punch-down blocks or splices will not work.

## SPECIFICATIONS

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Maximum Pixel Clock .....	225 MHz
Maximum Video Resolution .....	1920x1200
Input DDC Signal .....	5 Volts p-p (TTL)
Input Video Signal .....	1.2 Volts p-p
DVI Connector .....	DVI-I, 29-pin, female (digital only)
Link Connector .....	RJ-45 Shielded
Power Supply .....	5V DC
Power Consumption .....	10 Watts (max. per unit)
Dimensions .....	3.3" W x 1.3" H x 3.4" D
Shipping Weight .....	4 lbs.



## WARRANTY

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Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, please visit Gefen's Warranty web page at <http://www.gefen.com/kvm/aboutus/warranty.jsp>

## PRODUCT REGISTRATION

**Please register your product online by visiting Gefen's web site at <http://www.gefen.com/kvm/Registry/Registration.jsp>**





**20600 Nordhoff St., Chatsworth CA 91311**  
**1-800-545-6900 818-772-9100 fax: 818-772-9120**  
**www.gefen.com support@gefen.com**

