



# Extend DVI over CAT5

## Optional Accessories



CAT-5 Cables



DVI Cables



DVI Detective (discontinued)

## DVI CAT-5 Extreme

### Extends DVI up to 200 feet (60 meters) over two CAT-5 cables.

The DVI CAT-5 Extreme extends your DVI display up to 200 feet away from your HDTV DVI or HDMI™ source using cost effective CAT-5 cables.

### How It Works

The DVI CAT-5 Extreme sender unit sits next to your computer, DVD player or any set-top box. The cable supplied with the DVI CAT-5 Extreme connects your DVI source to the sender. The DVI CAT-5 Extreme receiver sits next to your DVI display - up to 200 feet away. The display plugs into the back of the DVI CAT-5 Extreme receiver. Two CAT-5e cables connect the sender and the receiver units to each other.

**Note: The DVI CAT-5 Extreme is HDCP compliant.**

DVI, HDCP & HDMI Defined

### Features:

- Improved compensation for cable skew
- Uses CAT-5e cable for DDC and control signals
- Extends any DVI (digital visual interface) compliant device up to 200 from the computer
- 200 ft extension at 1280x1024
- 150 ft extension at 1920x1200
- Saves space on your desktop and increases productivity
- Eliminates computer noise where you work
- Supports VESA Standard resolutions and HDTV resolution
- Supports DDWG standard for DVI compliant monitors
- Installs in minutes

### Specifications:

- Video Amplifier Bandwidth: 165 MHz
- Single Link Range: 1080P/1920 x 1200
- Input Video Signal: 1.2 volts p-p
- Input DDC Signal: 5 volts p-p (TTL)
- Input/Output DVI Connector: DVI-I (29 pin) female (Digital Only)
- Link Connector: RJ-45
- Power Supply: 5V DC
- Power Consumption: 20 Watts (max)
- Dimensions: 3.4"D x 3.25"W x 1.25"H
- Shipping Weight: 3 Lbs.

### Package Includes:

- DVI CAT-5 Extreme-S
- DVI CAT-5 Extreme-R
- One 6 foot DVI cable
- Two 5V Power Supply



EXT-DVI-CAT5X



**DVI CAT-5**  
**Extreme**  
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 Monday thru Friday.

### Write To:

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

support@gefen.com  
www.gefen.com

### Notice

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

**The DVI CAT-5 Extreme** is a trademark of Gefen Inc.

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## OPERATION NOTES

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### READ THESE NOTES BEFORE INSTALLING OR OPERATING THE DVI CAT-5 EXTREME EXTENDER

- The DVI CAT-5 Extreme is housed in a metal box for better RF shielding.
  - Your CAT-5 cable should not exceed 200 feet.
  - If you do not need DDC data you can use a single CAT-5 cable for the video only. The DDC will not be connected.
  - If the source requires EDID present, you can use the Gefen DVI Detective to provide EDID information.
- \* CAT6 cable is suitable for high resolutions at 50 meters.

# INTRODUCTION

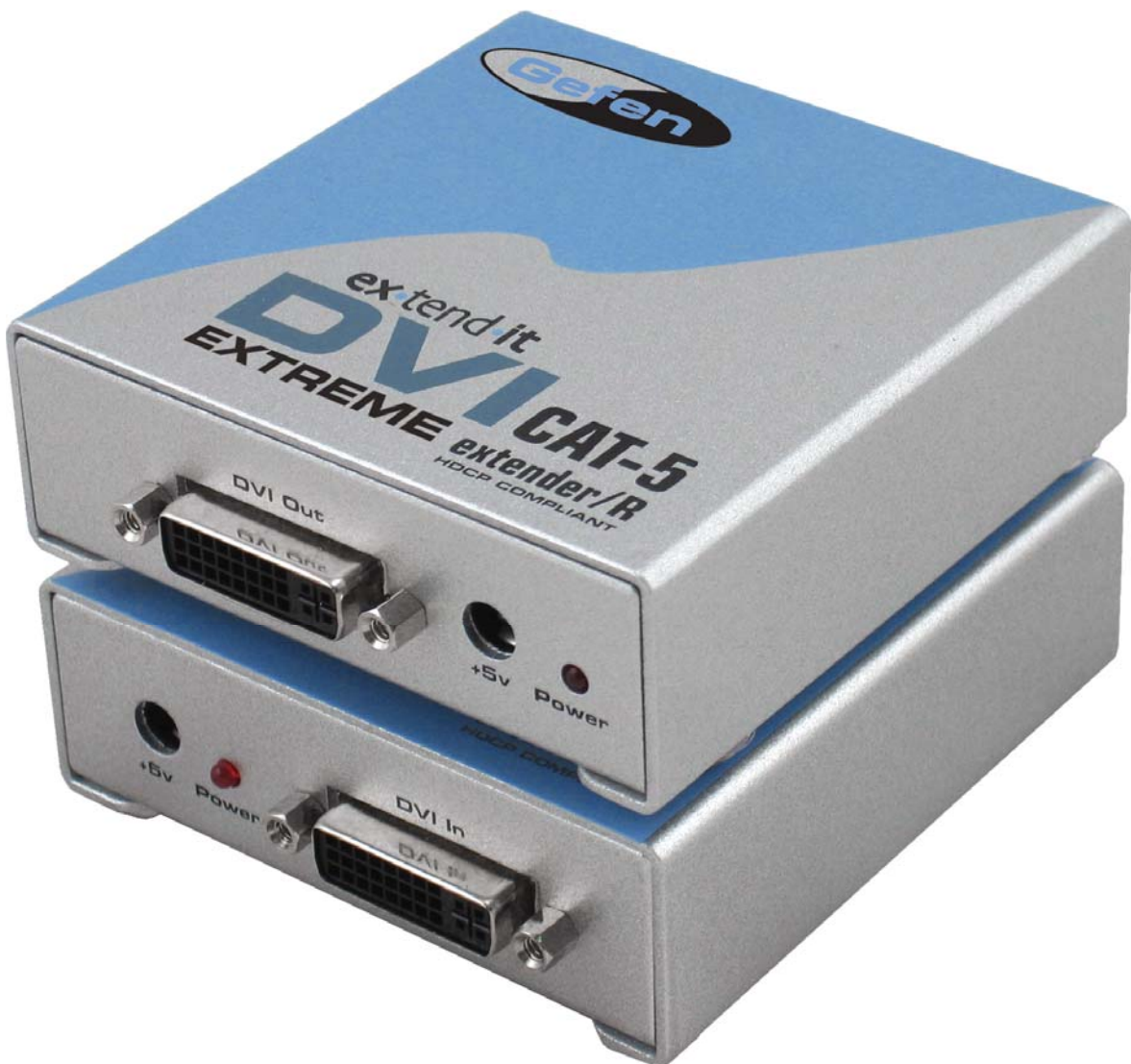
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The DVI CAT-5 Extreme sender unit sits next to your computer, DVD player or any set-top box with a DVI output. The cable supplied with the DVI CAT-5 Extreme connects your DVI source to the send unit. The DVI CAT-5 Extreme receiver unit sits next to your DVI display - up to 150 feet away. The display plugs into the back of the DVI CAT-5 Extreme receiver unit. Two CAT-5 cables connect the DVI CAT-5 Extreme-S and the DVI CAT-5 Extreme-R units to each other.

## CONTENTS

The DVI CAT-5 Extreme system consists of:

- (1) DVI CAT-5 Extreme-S
- (1) DVI CAT-5 Extreme-R
- (1) 6 ft DVI to DVI Cable M-M
- (2) DVI CAT5 Wallmounts
- (2) 5V DC power supply

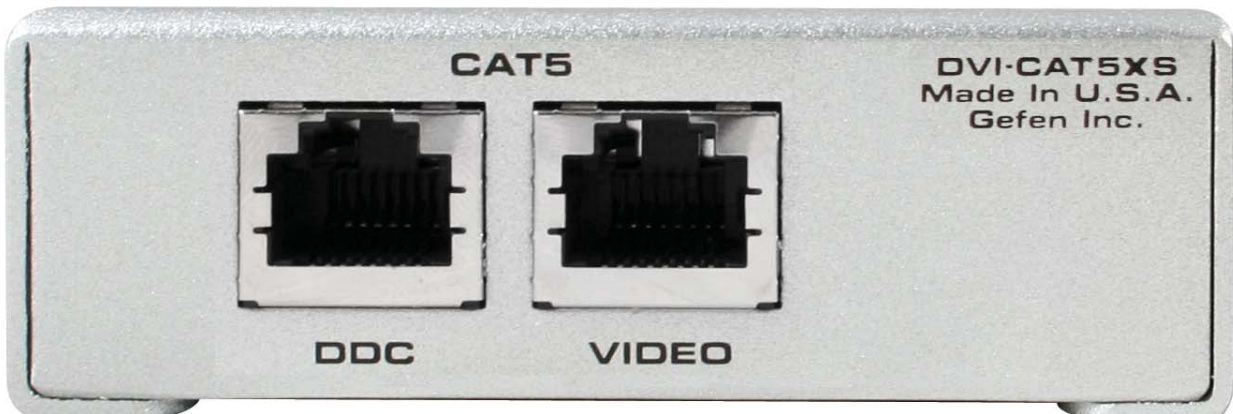


# DVI CAT-5 EXTREME SENDER FRONT PANEL DESCRIPTIONS



Connects to 5 volt power supply

DVI input connects to DVI source



CAT-5 carries DDC/HDCP signals

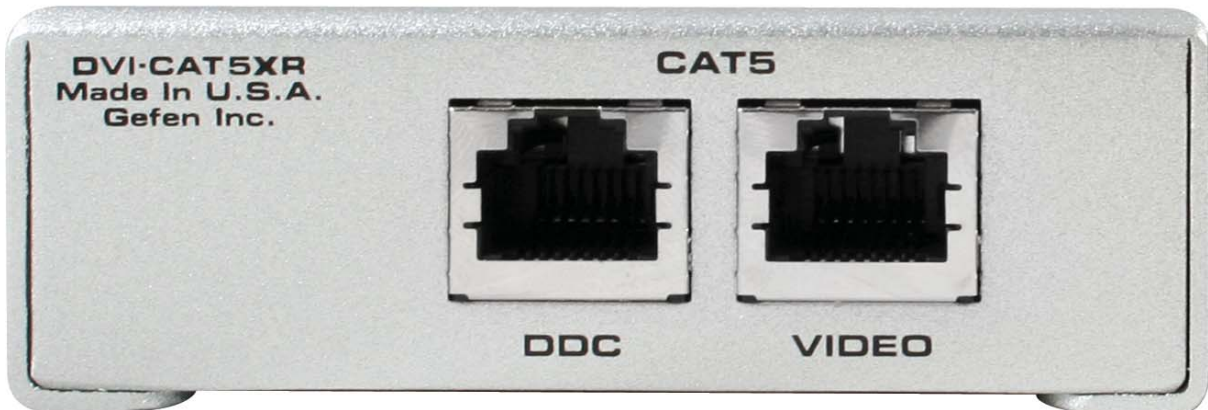
CAT-5 carries TMDS signals

# DVI CAT-5 EXTREME RECEIVER FRONT PANEL DESCRIPTIONS



Connects to DVI display

Connects to 5 volt power supply



CAT-5 carries DDC/HDCP signals

CAT-5 carries TMDS signals

## HOW TO CONNECT THE DVI CAT-5 EXTREME

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- 1 Connect your display to the DVI CAT-5 Extreme receiver unit.
- 2 Connect your source to the DVI CAT-5 Extreme sender unit
- 3 Connect your CAT-5 cables between the sender and the receiver
- 4 Plug the 5V power supply into the DVI CAT-5 Extreme sender and receiver unit
- 5 You should now have picture. If you do not see a picture, try unplugging and re-plugging the DVI input on the DVI sender unit. Make sure your CAT-5 cables are not crossed. Recycle the power on the unit.

\* If problems persist try adjusting the Dip Switches by following the Dip Switch Usage Guide.

## SERVICE SWITCH USAGE GUIDE

The Senders and Receivers of the Gefen CAT5 Extreme products both contain a set of service switches (also called dip switches) located underneath each unit. Peeling back the silver sticker will reveal the service switch bay. These service switches are used to boost and equalize the signal to best match the conditions in your setup. (\*Note: Adjustments should be done with sources and display on. Switches 3 and 4 are not used.)

<b>Sender Dip Switch Settings</b>		
<b>Setting</b>	<b>Switch 1</b>	<b>Switch 2</b>
No Boost	OFF	ON
Normal Boost (Default)	OFF	OFF
Strong Boost	ON	OFF
Undefined	ON	ON

<b>Receiver Dip Switch Settings</b>		
<b>Setting</b>	<b>Switch 1</b>	<b>Switch 2</b>
No EQ (Default)	OFF	OFF
EQ Setting 2	ON	OFF
EQ Setting 3	OFF	ON
Maximum EQ	ON	ON

### Adjustment Guidelines:

- 1) Strong boost should not be used on stranded cables. Strong boosting will cause pixels or no picture on these cables.
- 2) Using the wrong settings will not damage the units; it will either produce no image or a noisy image.
- 3) To eliminate the possibility of cross talk and interference, cables must be terminated with 568B scheduling. (See page 6 for details)

**RJ-45 Jack**



**White/Orange**

**Orange**

**White/Green**

**Blue**

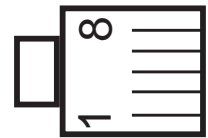
**White/Blue**

**Green**

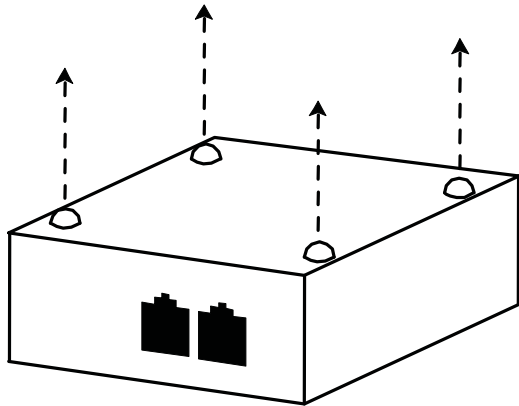
**White/Brown**

**Brown**

**RJ-45 Jack**

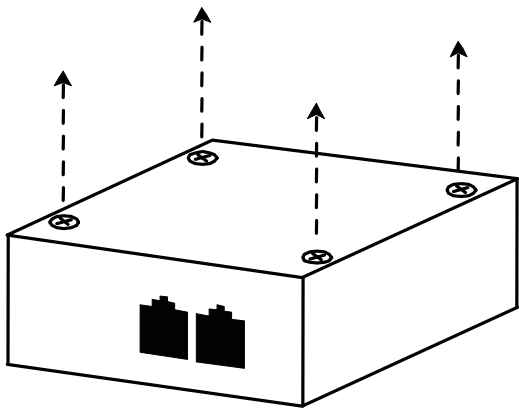


# Mounting Plate Installation



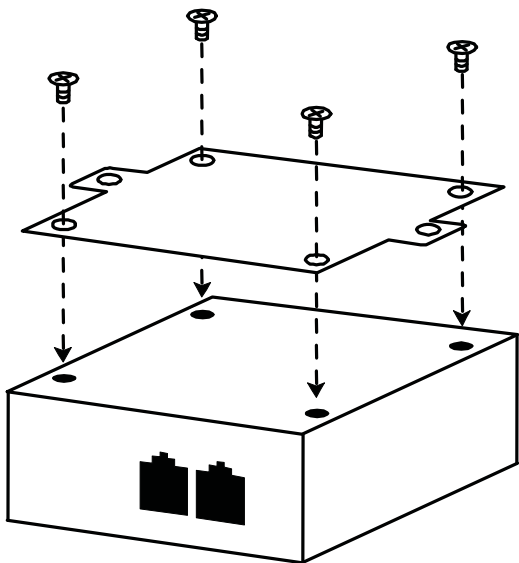
**1**

Remove the rubber feet covering the screws off the bottom of the unit.



**2**

Remove the screws.



**3**

Line up the mounting plates and screw it on to the unit.

## Frequently Asked Questions

### ***What kind of CAT-5e cable should I be using?***

Solid core CAT-5e cable rated at 350 Mhz and terminated in 568a or 568b is the minimum requirement. For resolutions greater than 1280x1024 or 1080i, Gefen recommends solid CAT-6 cables.

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

First thing to check is make sure that the video CAT5 is linked to the other video CAT5 port and the same with the DDC ports. Try removing the power supply from the receiver side, if the power light turns off then you have your CAT-5 cables crossed. In some setups with grounding issues you will not get a picture with the receiver powered. Test to make sure the units are working with short CAT-5e cables 15-20 feet. You can also make sure you have the correct boost setting configured (refer to page 5).

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

Flickering or a blinking image is the result of a loss of sync between the display and the source. Try lowering the resolution to see if that helps, if it does, the CAT-5 cables you are using are unable to handle the bandwidth of the higher resolution and thus you are losing sync. Try a shielded CAT-6 cable on the video line to reduce interference. You can also try adjusting the service switches. Usually this is caused by EMI and a shielded CAT-6 with metal RJ-45 connectors with the drain wire soldered to the connectors will resolve the issue. Please refer to the service switch guide on page 5 for the different combinations.

### ***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 colorspace being transmitted. This can be resolved by recycling power on your devices including the extender. If this does not help, the DDC data containing the colorspace is not being transmitted correctly due to loss in the CAT5 cable, try replacing the DDC cable.

## TERMINOLOGY

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### ***CAT-5***

Category 5 cable, commonly known as Cat 5, is an unshielded twisted pair type cable designed for high signal integrity. The actual standard defines specific electrical properties of the wire, but it is most commonly known as being rated for its Ethernet capability of 100 Mbit/s. Its specific standard designation is EIA/TIA-568. Cat 5 cable typically has three twists per inch of each twisted pair of 24 gauge copper wires within the cable.

### ***CAT-5e***

Similar to Cat 5 cable, but is enhanced to support speeds of up to 1000 megabits per second.

### ***DDC***

Short form for Display Data Channel. It is a VESA standard for communication between a monitor and a video adapter. Using DDC, a monitor can inform the video card about its properties, such as maximum resolution and color depth. The video card can then use this information to ensure that the user is presented with valid options for configuring the display.

### ***DDWG***

Digital Display Working Group DDWG are the creators of the DVI specification.

### ***DVI***

Digital Visual Interface. Connection standard developed by Intel for connecting computers to digital monitors such as flat panels and DLP projectors. A consumer electronics version, not necessarily compatible with the PC version, is used as a connection standard for HDTV tuners and displays. Transmits an uncompressed digital signal to the display. The latter version uses HDCP copy protection to prevent unauthorized copying.

### ***HDCP***

High-Bandwidth Digital Content Protection. Created by Intel, HDCP is used with HDTV signals over DVI and HDMI connections and on D-Theater D-VHS recordings to prevent unauthorized duplication of copy written material.

### ***HDTV***

High-Definition Television. The high-resolution subset of our DTV system. The ATSC defines HDTV as a 16:9 image with twice the horizontal and vertical resolution of our existing system, accompanied by 5.1 channels of Dolby Digital audio. The CEA defines HDTV as an image with 720 progressive or 1080 interlaced active (top to bottom) scan lines. 1280:720p and 1920:1080i are typically accepted as high-definition scan rates.

### ***VESA***

Video Electronic Standards Association, a consortium of manufacturers formed to establish and maintain industry wide standards for video cards and monitors. VESA was instrumental in the introduction of the Super VGA and Extended VGA video graphics standards with a refresh rate of 70 Hz, minimizing flicker and helping to reduce user eyestrain and fatigue.

## SPECIFICATIONS

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Video Amplifier Bandwidth .....	1.65 Gbps
Input Video Signal .....	1.2 volts p-p
Input DDC Signal .....	5 volts p-p (TTL)
Single Link Range .....	1080p / 1920 x 1200
DVI Connector Type .....	DVI-I 29 pin female (digital only)
Link Connector .....	RJ-45
Power Consumption .....	20 watts (max)
Power Supply .....	5V DC
Dimensions .....	3.4" W x 1.25" H x 3.25" D
Shipping Weight .....	3 lbs.

## WARRANTY

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

If equipment fails because of such defects and Gefen Inc. is notified within two (2) year from the date of shipment, Gefen Inc. 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 cable must be free from any scratches, markings, and neatly coiled.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen Inc. assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen Inc., 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 DVI CAT-5 Extreme features and specifications is subject to change without notice.