



4x4 DVI Extender S

EXT-DVI-CAT5-4X
User Manual



www.gefen.com

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Notice

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INTRODUCTION

Congratulations on your purchase of the 4x4 DVI Extender S 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 4x4 DVI Extender S

The 4x4 DVI Extender S Extender is the perfect solution for anyone who needs to send multiple (up to four) DVI video sources to multiple (up to four) DVI displays in remote locations at the same time.

The 4x4 DVI Extender S Extender has 4 DVI video inputs. The DVI sources are sent to up to four DVI CAT5 MS receivers via industry standard CAT-5, CAT-5e or CAT-6 cables. Distances of up to 300 feet for 1080i video, and 150 feet for 1080p video are possible. Signal auto-equalization is set by default and will provide optimal image reproduction for cable runs of 130 feet or less. Manual equalization is available for cable runs at greater distances.

How It Works

Connect your DVI video sources to the 4x4 DVI Extender S inputs using the supplied DVI cables. Run two CAT-5, CAT-5e or CAT-6 network cables from the 4x4 DVI Extender S Extender to each of the DVI CAT5 MS Receivers. Lastly, connect up to four DVI displays to the DVI CAT5 MS receivers at the remote locations.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 4X4 DVI EXTENDER S

- The *4x4 DVI Extender S* Extender and DVI CAT5 MSR units are housed in a metal box for better RF shielding.
- The maximum cable extension is 300 feet (91 meters) for video resolutions of 1080i and below.
- The maximum cable extension is 150 feet (45 meters) for video resolutions of 1080p.
- If EMI is present anywhere near the RJ-45 video cable runs, it may be necessary to use shielded RJ-45 cable. This is to prevent possible interference from degrading the video signal. Using shielded cable, however, will reduce the maximum distance that the RJ-45 cable can be run.
- Extensions under 130 feet can use Auto EQ (which is on by default). Extensions over 130 feet will require you to manually EQ your signal (see page 8).
- Each cable run must be one continuous run from one end to the other. No splices or use of punch down blocks.
- High quality CAT-6a cabling should be used for maximum performance.
- Do not use stranded or low/no skew cabling. Solid core cabling should be used for maximum performance.

FEATURES

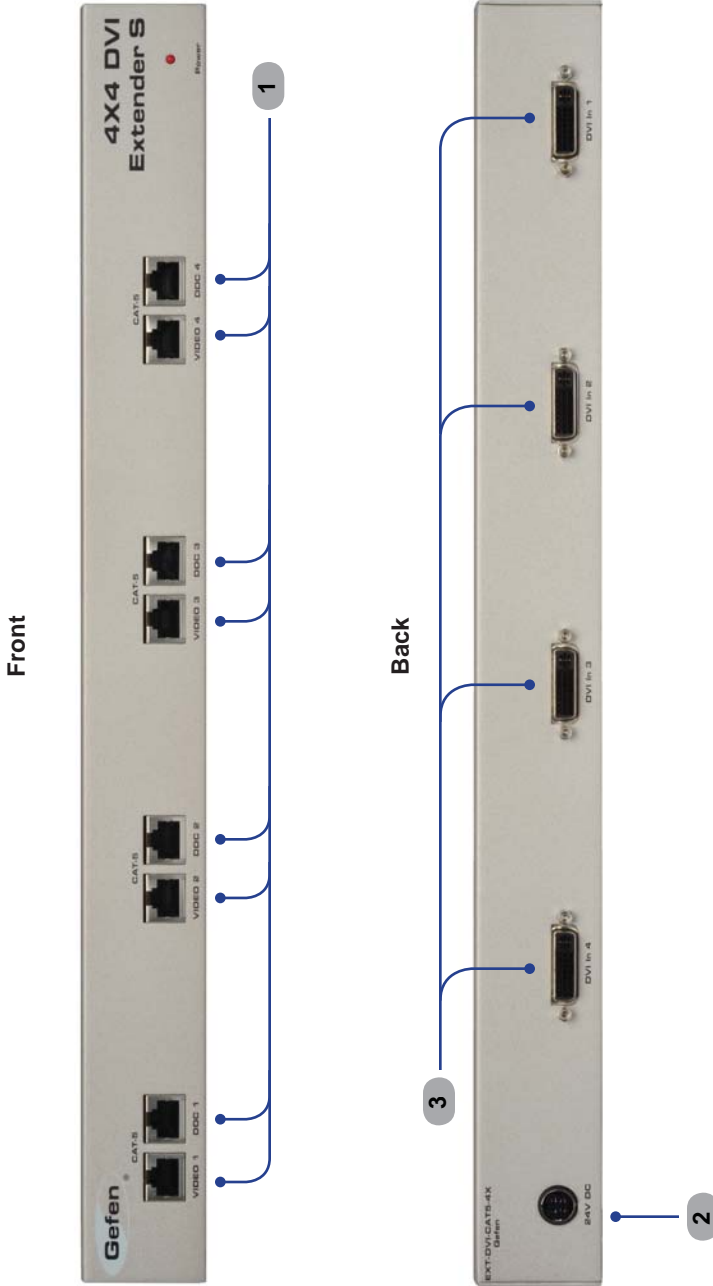
Features

- Easily distribute four DVI sources to four remote DVI displays
- Extends video signals up to 300 feet over CAT-5, CAT-5e or CAT-6a network cable
- Maintains 1920 x 1200, 1080p, and 2k resolution video
- HDCP-compliant

Package Includes

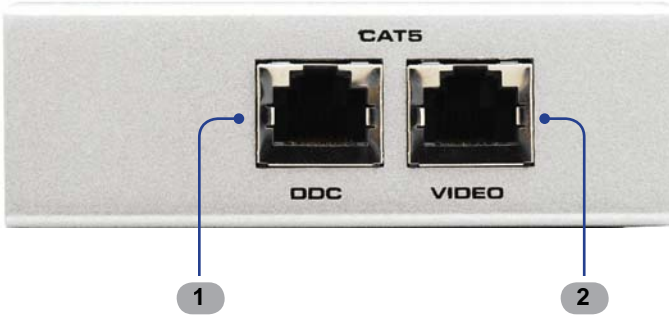
- (1) 4x4 DVI Extender S - Sender unit
- (4) DVI CAT5 MS - Receiver unit
- (4) 6 ft. DVI cable (M-M)
- (4) 5V DC Power Supplies
- (1) 24V DC power supply
- (4) Mounting Plates
- (1) Set of Rack Ears

SENDER PANEL LAYOUT

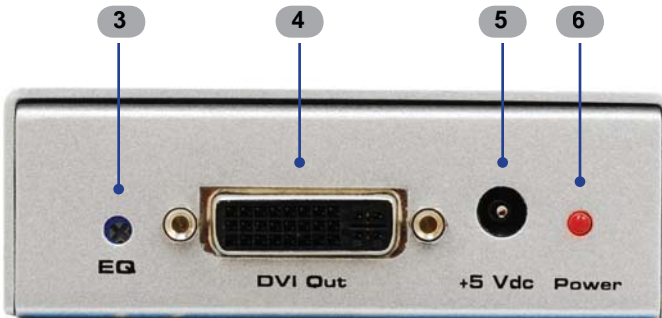


RECEIVER PANEL LAYOUT

Front



Back



PANEL DESCRIPTIONS

Sender Unit

- 1 CAT-5 Video / DDC (1 - 4)**
Connect a pair of CAT-5 cables from each set of RJ-45 jacks (Video/DDC) on the Sender unit to the respective RJ-45 jacks on the DVI CAT5 MS Receiver unit.
- 2 24V DC**
Connect the included 24V DC power supply to this power receptacle and connect the AC power cord to an available electrical outlet.
- 3 DVI In (1-4)**
Connect up to four computers (or other DVI sources) to each of these DVI ports on the Sender unit.

Receiver Unit

- 1 DDC**
Connects a CAT-5 cable between a DDC jack on a DVI CAT5 MS Receiver unit and a DDC jack on the Sender unit.
- 2 Video**
Connects a CAT-5 cable between a Video jack on a DVI CAT5 MS Receiver unit and a Video jack on the Sender unit.
- 3 EQ**
Used to adjust the output signal. Refer to the *DVI CAT5 MS User Manual* for more information.
- 4 DVI Out**
Connect a DVI display to the DVI Out port.
- 5 +5 Vdc**
Connect the included 5V DC power supply to this power receptacle and connect the power cord to an available electrical outlet.
- 6 Power**
This LED indicator will glow bright red when the included 5V DC power supply is connected to the *DVI CAT5 MS Receiver unit*.

CONNECTING THE 4X4 DVI EXTENDER S

How to Connect the 4x4 DVI Extender S

1. Connect your sources (up to four) to the *4x4 DVI Extender S* DVI inputs using the supplied DVI cables.
2. Connect up to four displays to the DVI output ports on each DVI CAT5 MS Receiver unit.
3. Connect both CAT-5 (CAT-5e or CAT-6) cables (DDC and Video) between the *4x4 DVI Extender S* Extender and each DVI CAT5 MS Receiver unit.

NOTE: If field terminating network cable, please adhere to the TIA/EIA-568-B standard. Please see page 10 for more information.

4. Connect the 24V DC power supply to the *4x4 DVI Extender S*.
5. Connect the 5V DC power supplies to each of the *DVI CAT5 MS Receiver unit*.
6. Power on the displays.
7. Power on the sources.

NOTE: If an image is not being shown on the display, please check all cabling for proper connections and follow the steps outlined below and in the next section.

4X4 DVI EXTENDER S CONFIGURATION

The 4x4 DVI Extender S and DVI CAT5 MSR receivers have built-in auto equalization that will automatically tune out any unwanted video noise. This feature is reliable with premium cable runs up to a maximum of 130 feet. It may be necessary to disable this feature if there is either no video being displayed on initial start-up, there is video noise in the image, or the cable run exceeds 130 feet. First, verify that all the proper connections have been made and that all devices are powered on before attempting to disable auto equalization. Please follow the section on the next page to manually equalize the video signal.

MANUAL EQUALIZATION PROCEDURE

The *4x4 DVI Extender S* Extender and DVI CAT5 MSR receiver units both have sets of DIP switches located on the underside of their casings. There is a piece of silver metallic tape that must be removed to expose these DIP switches. The *4x4 DVI Extender S* Extender unit carries 4 banks of 4 DIP switches. Each DVI CAT5 MSR receiver carries one bank of 4 DIP switches. Dip switches 1 and 2 on both the sending and receiving units are used in this procedure. Dip switches 3 and 4 are not used. By default, DIP switch 2 on each bank of the *4x4 DVI Extender S* Extender should be in the ON position, and all DIP switches on each DVI CAT5 MSR receiving unit should be in the OFF position (Auto EQ On). To turn off auto equalization, turn DIP switch 1 on the receiving units to the ON position (Auto EQ off). With these settings, please follow the steps below to equalize the picture.

1. Insert a small flat head tool into the trim pot on the receiver unit.
2. Turn the trim pot in a clockwise fashion until it comes to a stop. Do not force the trim pot beyond this point. Doing so may render the trim pot useless.
3. Slowly turn the trim pot counter-clockwise in millimeter increments until the image stabilizes and all video noise disappears.
4. Carefully remove the adjustment tool.

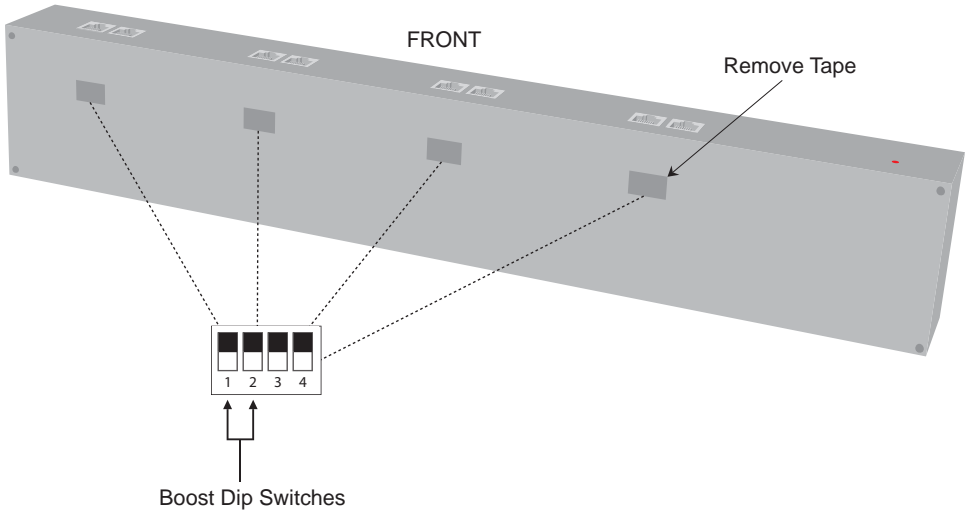
NOTE: If your cable run is beyond 130 feet, or the steps above do not produce any video, it may be necessary to increase the boost from the sending unit. Use the chart below to increase the senders to medium boost by changing the *4x4 DVI Extender S* Extender's DIP switches. Once a new boost setting is set, repeat steps 1 through 4 from above. If this still does not produce and image, increase the boost to high and repeat the EQ process.

Sender Dip Switch Settings		
Setting	Switch 1	Switch 2
Medium Boost	OFF	OFF
No Boost (Default)	OFF	ON
High Boost	ON	OFF
NOT USED	ON	ON

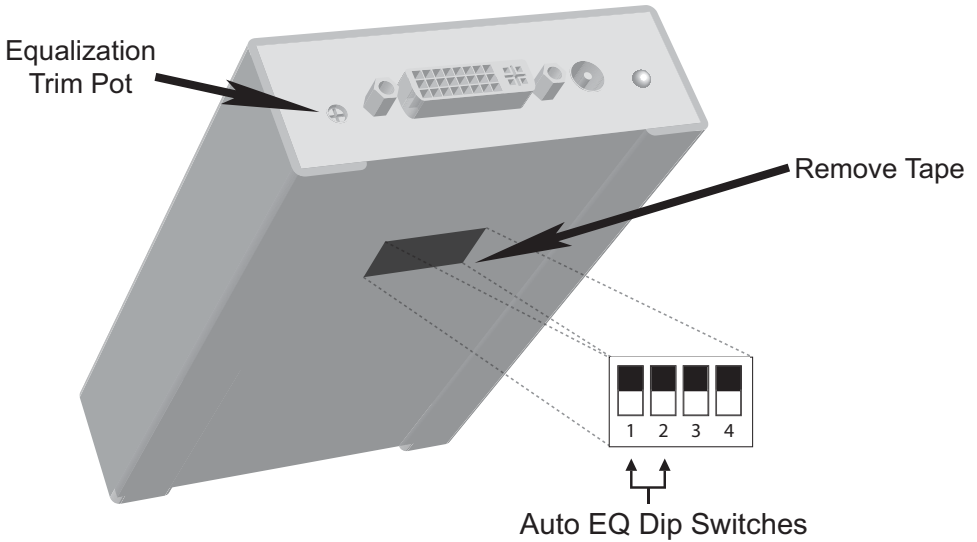
Receiver Dip Switch Settings		
Setting	Switch 1	Switch 2
Manual EQ	ON	OFF
Auto EQ (Default)	OFF	OFF

DIP SWITCH LOCATION DIAGRAM

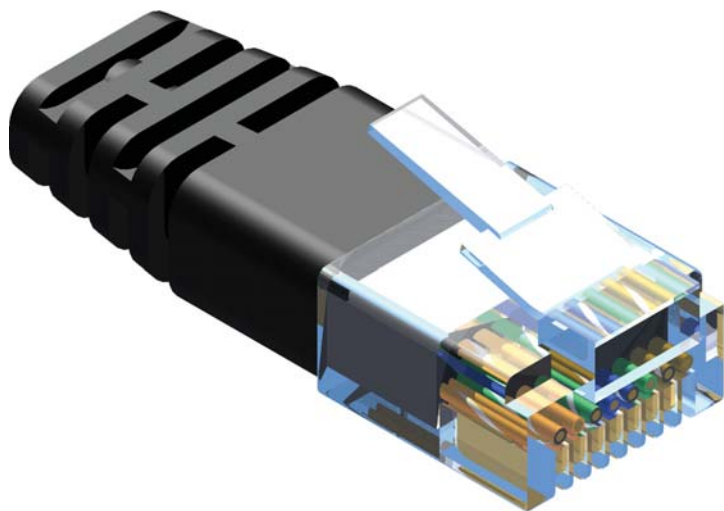
4x4 DVI Extender S



DVI CAT5 MSR

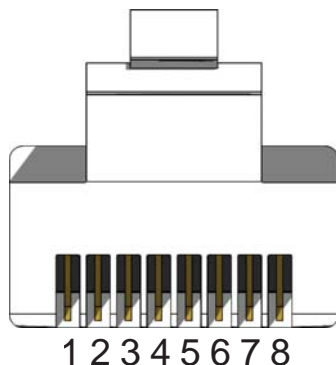


NETWORK CABLE WIRING DIAGRAM



Gefen has specifically engineered their products to work with the TIA/EIA-568-B specification. Please adhere to 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



CAT-5, CAT-5e, and CAT-6 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling. CAT-6 cable is also recommended for best results.

Each cable run must be one continuous run from one end to the other. No splices or use of punch down blocks.

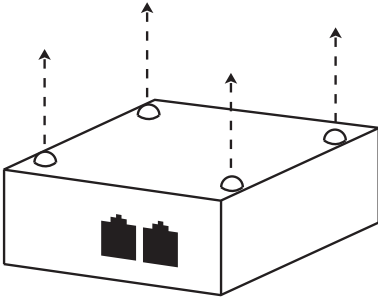
RACK MOUNT INSTALLATION

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.

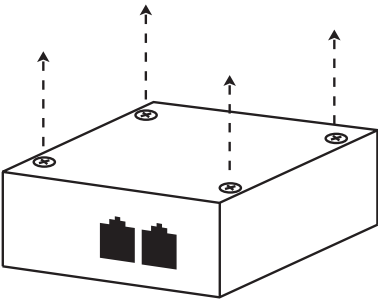


Mounting Plate Installation



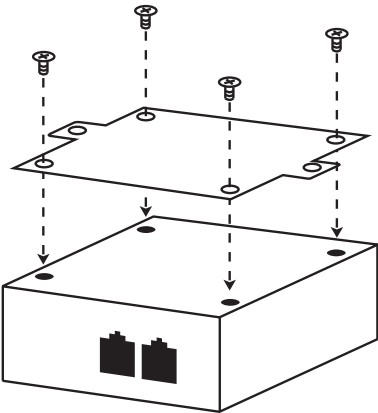
1

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.

SPECIFICATIONS

Video Amplifier Bandwidth	4 x 165 MHz
Input Video Signal	1.2 V p-p
Input DDC Signal	5V 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	60W (max)
Transmitter Power Supply	24V DC
Receiver Power Supply	5V DC
Dimensions	17" W x 1.75" H x 5.875" D
Shipping Weight	10 lbs.

WARRANTY

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, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.



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This product uses UL or CE listed power supplies.