



DVI ELR Extender over one CAT5

EXT-DVI-1CAT5-ELR

User Manual



Release A3

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

Warranty Information

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.

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Product Registration

Register your product here: <http://www.gefen.com/kvm/Registry/Registration.jsp>

Operating Notes

- Shielded Twisted-Pair (STP) CAT-5e or CAT-6 cabling is recommended. However, Un-shielded Twisted-Pair (UTP) CAT-5e or CAT-6 cabling is acceptable. Shielded cable is preferred as it provides immunity to Electromagnetic Interference (EMI), cell phones, and A/C motors.

DVI ELR Extender over one CAT5 is a trademark of Gefen, LLC.

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



This product uses UL or CE listed power supplies.

Features

- Extends DVI up to 495 feet (150 meters) over one CAT-5e cable
- Supports resolutions up to 1080p Full HD and 1920 x 1200 (WUXGA)
- EDID management for rapid integration of source and display
- Enable/Disable switches for HPD pass-through
- Power-Save (Green Mode) selector switch
- 150m/100m range selector switch configures the extender for maximum range (150 meters) or maximum bandwidth
- Locking power supplies
- Surface-mountable



Packing List

The DVI ELR Extender over one CAT5 ships with the items listed below. If any of these items are not present in your box when you first open it, immediately contact your dealer or Gefen.

- 1 x DVI ELR Extender over one CAT5 (Sender unit)
- 1 x DVI ELR Extender over one CAT5 (Receiver unit)
- 1 x 6 ft. dual link DVI cable (M-M)
- 2 x 5V DC power supplies
- 1 x Quick-Start Guide

1 Getting Started

Introduction.....	2
Sender Unit	2
Receiver Unit.....	4
Installation	6
Connection Instructions.....	6
Sample Wiring Diagram	6

2 Basic Operation

LED Status	10
DIP Switch Configuration	11
Default Settings.....	11
EDID Management.....	12
Hot-Plug Detect (HPD).....	12
Power Mode.....	13
Long-Reach Mode.....	13

3 Appendix

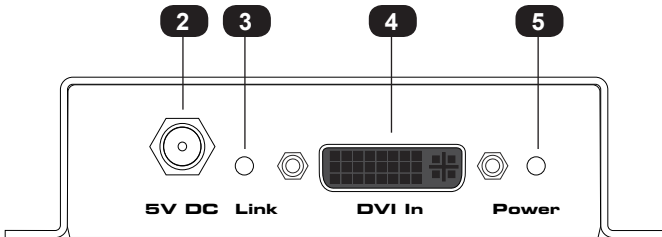
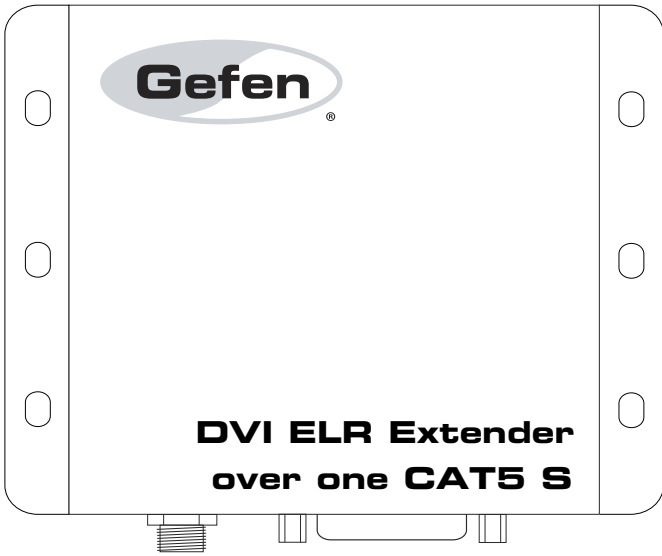
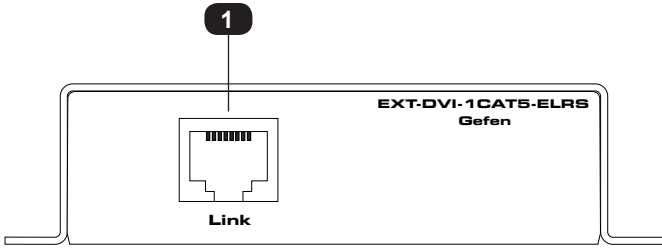
Specifications	16
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DVI ELR Extender over one CAT5

1 Getting Started

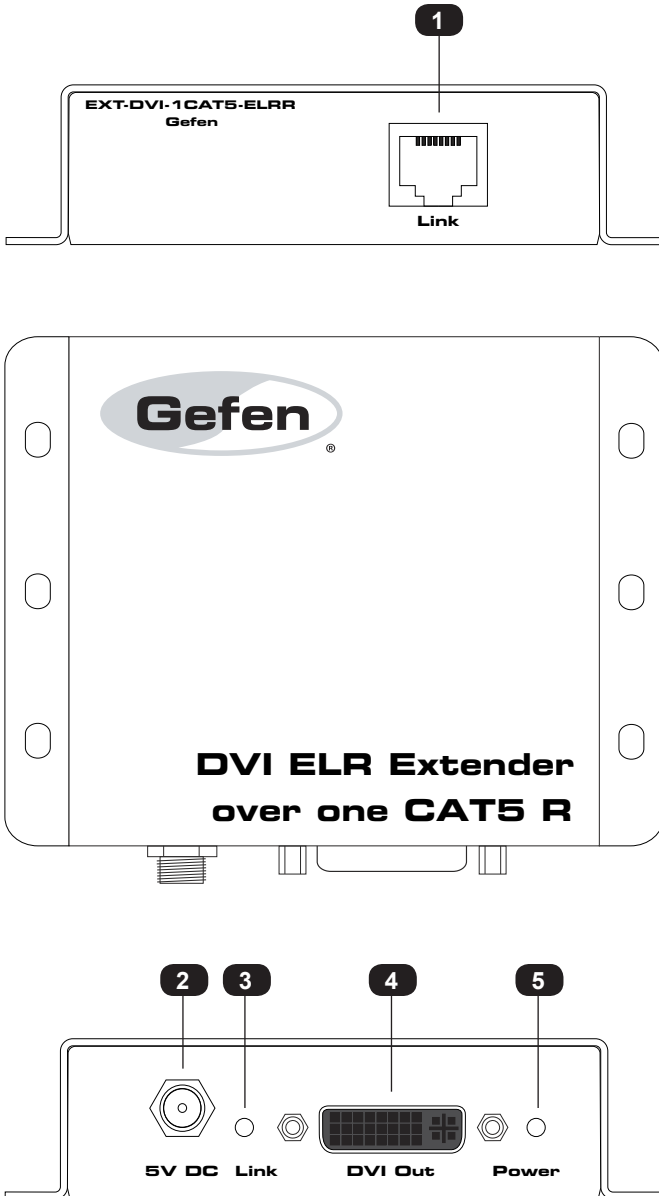
Introduction.....	2
Sender Unit	2
Receiver Unit.....	4
Installation	6
Connection Instructions.....	6
Sample Wiring Diagram	6

Sender Unit



ID	Name	Description
1	Link	Connect a CAT-5 cable from this jack to the Link jack on the Receiver unit.
2	5V DC	Connect the included 5V DC power supply to this power receptacle.
3	Link (LED)	This green LED indicates the current state of the product. See LED Status (page 10) for more information on LED status messages.
4	DVI In	Connect the DVI source to this port using the included DVI cable.
5	Power	This LED indicator will glow bright blue when the included power supply is connected between the 5V DC power receptacle and an available electrical outlet.

Receiver Unit

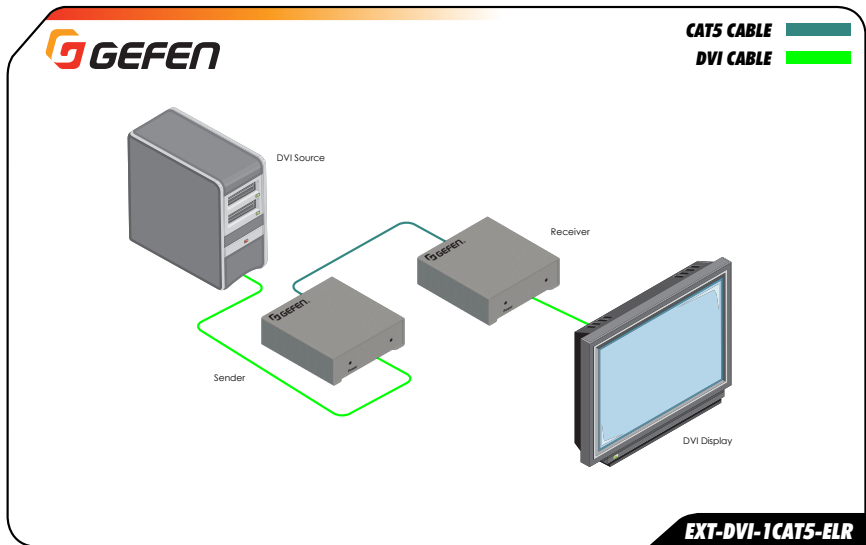


ID	Name	Description
1	Link	Connect a CAT-5 cable from this jack to the Link jack on the Sender unit.
2	5V DC	Connect the included 5V DC power supply to this power receptacle.
3	Link (LED)	This green LED indicates the current state of the product. See LED Status (page 10) for more information on LED status messages.
4	DVI Out	Connect the DVI source to the display using a DVI cable.
5	Power	This LED indicator will glow bright blue when the included power supply is connected between the 5V DC power receptacle and an available electrical outlet.

Connection Instructions

1. Use the included DVI cable to connect the **DVI In** port on the Sender unit.
2. Connect the Receiver unit to the DVI display using another DVI cable.
3. Connect a CAT-5 (CAT-5e or better is recommended) cable, up to 495 feet (150 meters) from the **Link** jack on the Sender unit to the **Link** jack on the Receiver unit.
4. Connect the included 5V DC locking power supplies to the Sender and Receiver unit. Do not overtighten the locking power connectors.
5. Connect the AC power cord from the power supply to an available electrical outlet.

Sample Wiring Diagram








DVI ELR Extender over one CAT5

2 Basic Operation

LED Status	10
DIP Switch Configuration	11
Default Settings	11
EDID Management.....	12
Hot-Plug Detect (HPD).....	12
Power Mode	13
Long-Reach Mode.....	13

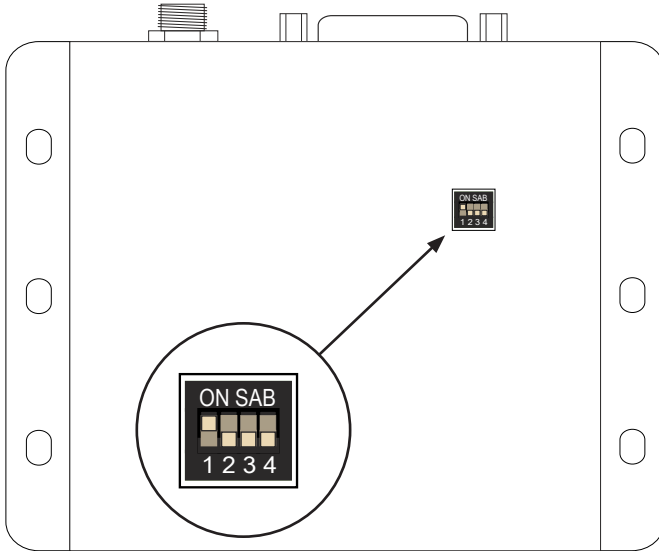
The **Power** and **Link** LED indicators on the Sender and Receiver unit provide basic information on the current status of the DVI ELR Extender over one CAT5.

The information, in the table below, applies to both the Sender and Receiver unit.

LED	Status	Description
Power	Solid blue 	<ul style="list-style-type: none"> Power connected to Sender / Receiver unit.
	Off 	<ul style="list-style-type: none"> No power supplied to the Sender / Receiver unit. Make sure each power supply is connected to the Sender and Receiver unit. Make sure that the outlet is "live".
Link	Solid green 	<ul style="list-style-type: none"> Link integrity between the Sender and Receiver unit is good. Source is connected to the Sender unit. Display (or other sink device) is connected to the Receiver unit.
	Flashing green 	<ul style="list-style-type: none"> No source is connected to the Sender unit. Display (or other sink device) is not connected to the Receiver unit.
	Off 	<ul style="list-style-type: none"> Link integrity is compromised. Check the cable between the Link port on the Sender and Receiver unit.

DIP Switch Configuration

There is a bank of four DIP switches on the bottom of the Sender and Receiver unit. Remove the piece of colored tape to reveal the DIP switch bank. These DIP switches provide control over EDID management, HPD pass-through, power modes, and range selection.



Bottom of Sender / Receiver unit

Default Settings

Description	Sender unit	Receiver unit
Default settings for Sender and Receiver unit.		
<ul style="list-style-type: none">External (downstream) EDIDHPD is highGreen mode is enabledLong-Reach mode is disabled		

Each of the following sections describe the DIP switch settings that control each feature. DIP switches that are not related to a specific feature have been grayed-out. Note that DIP switch settings can be used independently or in conjunction with other features, as desired.

EDID Management

When switching between different EDID modes, the Sender unit must be power-cycled in order for the changes to take effect.



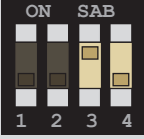
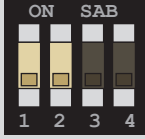
Description	Sender unit	Receiver unit
<ul style="list-style-type: none"> Copies the downstream EDID locally and modifies it to limit TMDS bandwidth to 225 Mhz support. Disables xvYCC. Modifies manufacturer name to "GFN". 		
<ul style="list-style-type: none"> Downstream EDID is used. Both DDC and HPD (Hot-Plug Detect) are passed through, allowing the full audio/video capabilities of the display to be used. This is the default setting. 		

Hot-Plug Detect (HPD)

When switching between different HPD modes, the Sender unit must be power-cycled in order for the changes to take effect. DIP switch 1 must be in the OFF position.



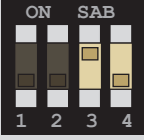
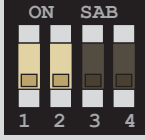
Description	Sender unit	Receiver unit
<ul style="list-style-type: none"> Forces HPD high. This is the default setting. 		
<ul style="list-style-type: none"> HPD is passed through from the sink to the source. 		

Power Mode

Description	Sender unit	Receiver unit
<ul style="list-style-type: none"> Power-Save (Green) mode. The Receiver unit is powered only when a video signal is present on the DVI (or HDMI) cable. Sleep Mode consumes less than 1 Watt of power. This is the default setting. 		
<ul style="list-style-type: none"> Normal mode. In this mode, the Receiver unit is always powered. 		

Long-Reach Mode

When set to “Long-Reach” mode, both audio and video can be extended up to 495 feet (150 meters). However, the color depth is limited to 8-bit.

Description	Sender unit	Receiver unit
<ul style="list-style-type: none"> Long-Reach mode. Audio and video can be extended up to 495 feet (150 meters). Video color depth is limited to 8-bit. 		
<ul style="list-style-type: none"> Normal mode. Audio and video can be extended up to 330 feet (100 meters). Color depth up to 12-bit is supported. This is the default setting. 		

DVI ELR Extender over one CAT5

3

Appendix

Specifications 16

Supported Formats

Resolutions (max.)	<ul style="list-style-type: none"> • 1920 x 1200 (WUXGA) • 1080p Full HD
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Connectors, Indicators, and Controls

DVI In (Sender)	• 1 x DVI-I, 29-pin, female (digital only)
DVI Out (Receiver)	• 1 x DVI-I, 29-pin, female (digital only)
IP control (Sender / Receiver)	• 1 x RJ-45
Power (Sender / Receiver)	• 1 x 5V DC, locking
Power Indicator (Sender / Receiver)	• 1 x LED, blue
Link Indicator (Sender / Receiver)	• 1 x LED, green
DIP Switches (Sender / Receiver)	• 4 x SPDT

Operational

Maximum Pixel Clock	• 165 MHz
Power Consumption (Sender / Receiver)	• 10W per unit (max.)
Operating Temperature	• +32 to +140 °F (0 to +45 °C)
Operating Humidity	• 0 to +90% RH, non-condensing

Physical

Dimensions (W x H x D) (Sender / Receiver)	• 4.3" x 1" x 3.4" (110mm x 26mm x 86mm)
Unit Weight (each)	• 0.36 lbs (0.16 kg)



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