Gefen

®

DVI RS232 Extender

EXT-DVIRS232-CAT5N

User Manual

www.gefen.com

ASKING FOR ASSISTANCE

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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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Rev A3

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Congratulations on your purchase of the DVI RS232 Extender. Your complete satisfaction is very important to us.

Gefen

Gefen is a unique product line catering to the growing needs for innovative home theater solutions. We specialize in total integration for your home theater, while also focusing on going above and beyond customer expectations to ensure you get the most from your hardware. We invite you to explore our distinct product line and hope you find your solutions. Don't see what you are looking for here? Please call us so we can better assist you with your particular needs.

The DVI RS232 Extender

Extending state-of-the-art digital video displays, computer monitors and touch screens has never been easier. Distances up to 150 feet at 1080p resolution (300 feet at 1080i resolution) are guaranteed to perform beautifully, giving you a reliable method of all-digital extension while streamlining your installation cabling needs.

How It Works

You simply connect the DVI RS232 Extender sender unit to your DVI and RS-232 source using the supplied cables. Your RS-232 device and the DVI display plugs into the DVI RS232 Extender's receiver unit. Two CAT-5 cables connect the sender and the receiver units to each other allowing for up to 300 feet of extension (300 feet at 1080i resolution or 150 feet of extension at 1080p resolution).

Features

- Supports resolutions up to 1080p, 2K, and 1920 x 1200

- Sends video at distances of up to 300 feet (1080i) / 150 feet (1080p)

- Small and compact

- Improved compensation for cable skew

- Audio and video are transmitted digitally over the CAT-5, CAT-5e or CAT-6 cable for zero signal loss

- Eliminates equipment noise in the viewing environment

Package Includes

(1) DVI RS232 Extender Sender Unit
(1) DVI RS232 Extender Receiver Unit
(1) 6 Foot DVI Cable (M-M)
(1) 6 Foot RS-232 Cable (M-M)
(2) 5V DC Power Supply
(1) User's Manual

**READ THESE NOTES BEFORE INSTALLING OR
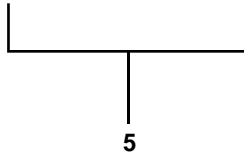OPERATING THE DVI RS232 EXTENDER**

- Use two industry standard CAT-5, CAT-5e or CAT-6 cables to operate the DVI RS232 Extender. Gefen recommends CAT-6 cabling for maximum performance.

- For 1080i video, maximum extension is 300 feet (91 meters).

- This product features the option to force the output color space to RGB and/ or use a pre-programmed EDID. These features can be used to resolve specific user issues or for troubleshooting purposes (see page 10 for more information).

Front Panel

+5 Vdc   Power   DVI In   RS-232 In

1   2   3   4

Back Panel

CAT-5

DVI RS-232 S
Made In U.S.A.
Gefen Inc.

Video   DDC/RS-232

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SENDER PANEL DESCRIPTIONS

1 **5V DC Power Supply Input**
Connect the 5V DC external power supply to this port.

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**
Connect the DVI source into this port.
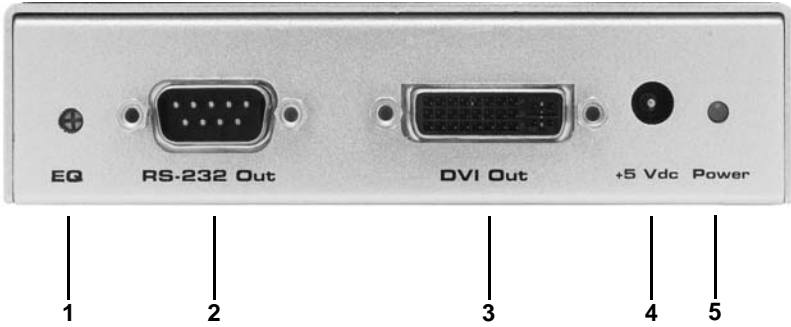
4 **RS-232 Input**
This port is used to extend the RS-232 signals. Please see page 5 for complete details on the serial communication features that are used on this product.
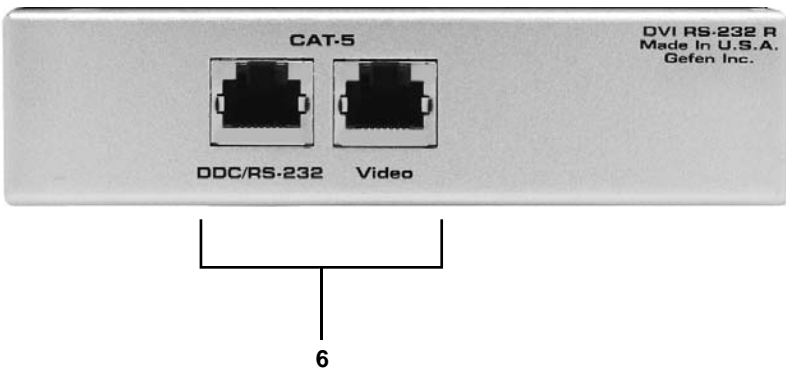
5 **RJ-45 Ports**
Use these ports to connect the Ethernet cables connecting the Sender and Receiver together and the other Ethernet channel used for the RS-232 back-channel.

Front Panel

EQ   RS-232 Out   DVI Out   +5 Vdc Power

1   2   3   4   5

Back Panel

CAT-5

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DDC/RS-232   Video

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1   ***Equalization Trimpot***
With auto-equalization switched off, use this adjustment trimpot for equalizing and stabilizing the video signal over the distance selected (see instructions on page 9).

2   ***RS-232 Output***
This port outputs RS-232 signals that have been received from the Sender unit. Please see page 5 for complete details on the serial communication features that are used on this product.

3   ***DVI Output***
Connect the display to this port.

4   ***5V DC Power Supply Input***
This LED will become active once the included 5V DC power supply is properly connected between the unit and an open wall power socket.

5   ***Power LED Indicator***
The LED lights red when power is applied to the Receiver unit.

6   ***RJ-45 Ports***
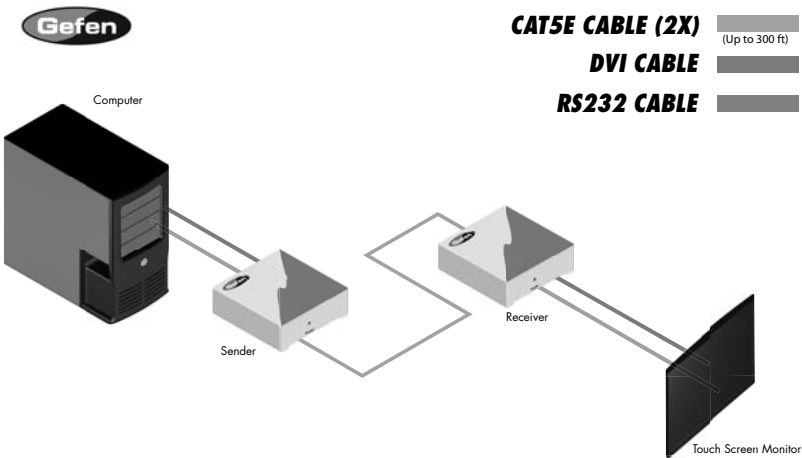Connect both the Ethernet cables arriving from the Sender unit here.

1. Connect the DVI source to the DVI RS232 Extender sending unit's DVI input port using the supplied DVI cable.

2. Connect the RS-232 source to the DVI RS232 Extender sending unit's RS-232 input port using the supplied DB-9 serial cable.

3. Connect the DVI RS232 Extender sending and receiving units together using two user supplied CAT-5, CAT-5e or CAT-6 cables.

NOTE: If field terminating network cable, please adhere to the TIA/EIA568B specification. Please see page 12 for more information.

4. Connect the display to the DVI output port of the DVI RS232 Extender receiving unit using a user supplied DVI cable.

5. Connect the RS-232 device to the RS-232 output port of the DVI RS232 Extender receiving unit using a user supplied DB-9 serial cable.

6. Plug the 5V DC power supply into the DVI RS232 Extender sending unit.

NOTE: In most scenarios, the 5V DC external power supply for the receiving unit will not be required. Operational power is supplied by the sending unit via the connected CAT-5, CAT-5e or CAT-6 cable. If the power LED indicator on the receiving unit is not on, please check to make sure that the RJ-45 cables are not crossed (DDC to video and video to DDC). At extreme distances, it may be necessary to apply power to the receiving unit.

7. Power on the display. Power on the source.

Gefen

CAT5E CABLE (2X) (Up to 300 ft)
DVI CABLE
RS232 CABLE

Computer

Sender

Receiver

Touch Screen Monitor

EXT-DVIRS232-CAT5N

The DVI RS232 Extender has 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. If your cable run is beyond 130 feet, it may be necessary to use manual equalization.

The sender and receiver units both have sets of DIP switches located on the underside of their enclosure. Remove the silver metallic tape to expose these DIP switches. By default, all DIP switches on the sending and receiving units should be in the OFF position (Auto EQ On). To turn on manual equalization, set DIP switch 1 on the receiver to the ON position then follow the instructions below (see page 10 for additional DIP switch information).

1.   Insert a small flat head tool into the trimpot on the receiver unit.

2.   Turn the trimpot in a clockwise fashion until it comes to a stop. Do not force the trimpot beyond this point. Doing so may break the trimpot.

3.   Slowly turn the trimpot counter-clockwise in millimeter increments until the image stabilizes and all video noise disappears.

NOTE: If the following steps still do not produce any video, it may be necessary to increase the boost from the sending unit. Use the chart below to increase the boost by changing the sender DIP switches. Once a new boost setting is set, repeat steps 1 through 3 from above.

Sender DIP Switch Settings		
Setting	**Switch 1**	**Switch 2**
No Boost (Default)	OFF	OFF
Very Low Boost	ON	ON
Medium Boost	OFF	ON
High Boost	ON	OFF

Note: DIP Switches 3 and 4 have no function on this unit

| Receiver DIP Switch Settings			
Setting	**Switch 1**	**Switch 2**	**Switch 3**
Manual EQ	ON	N/A	N/A
Auto EQ (Default)	OFF	OFF	N/A
Force RGB on Output	N/A	ON	N/A
Pre-Programmed EDID	N/A	N/A	ON

Note: DIP Switch 4 has no function on this unit

ADDITIONAL DIP SWITCH FUNCTIONS

FORCE RGB AND PRE-PROGRAMMED EDID FEATURES

DIP switch 1 on the 4-bank DIP switch located on the underside of receiver unit enables and disables the automatic equalization function. Additional features can be enabled by using the other DIP switches on this bank.

Enabling DIP switch 3 will force the use of a pre-programmed HDMI 1.2 EDID
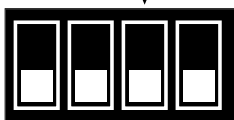
Enabling DIP switch 2 will force RGB on the output

FORCING THE RGB COLOR SPACE

In some cases, the output video may have a pink or green tint. This usually is attributed to the output device (e.g. display) not supporting the color space being used by the source device. All digital displays will handle the standard RGB color space. DIP switch 2 can be enabled to force the output color space to RGB. If the input color space is YCbCr, the color space will be converted to RBG prior to output on the receiver unit.

USING THE PRE-PROGRAMMED EDID

In some cases it may be necessary to force an EDID for troubleshooting purposes. Enabling DIP switch 3 will force the use of a pre-programmed EDID to be sent to the source instead of the connected output device (e.g. display). The EDID specifics are listed below.

Resolution	Timing
640x480	60Hz
720x480i/p	59.94/60Hz
720x576i/p	50Hz
1280x720p	50Hz
1280x720p	59.94/60Hz
1920x1080i/p	50Hz
1920x1080i/p	59.94/60Hz
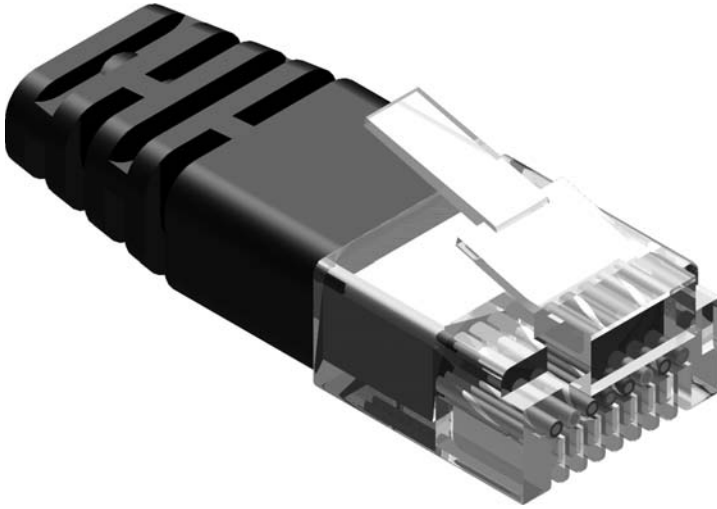
Gefen has specifically engineered their products to work with the TIA/EIA-568-B specification. Please adhere to the table below when field terminating cable for use with Gefen products. Failure to do so may produce unexpected results and reduced performance.

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

1 2 3 4 5 6 7 8
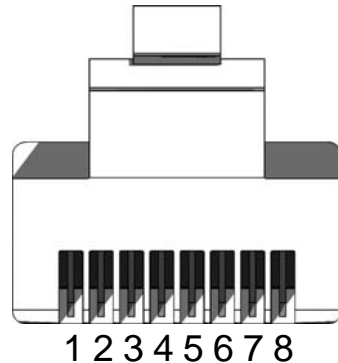
CAT-5, CAT-5e, and CAT-6 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling. CAT-6 cable is also recommended for best results.

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

What features are available via the RS-232 serial communications port?

The DVI RS-232 Extender can accept commands through the RS-232 serial communications port located on the rear panel.

What pins are used for communication with the DVI RS-232 Extender?

Only pins 2 (Receive), 3 (Transmit), and 5 (Ground) are used for communication. A null-modem adapter should not be used with this product.

Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

RS232 Settings

Bits per second 19200

Data bits 8

Parity .... None

Stop bits 1

Flow Control .... None

SPECIFICATIONS

Video Amplifier Bandwidth .... 165 MHz

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 .... DVI-I (29 Pin) Female (Digital Only)

RS232 Input Connector .... DB-9 Female

RS232 Output Connector .... DB-9 Male

RS-232 Standard RS-232C

Link Connector .... RJ-45 Shielded

Power Supply .... 5V DC

Power Consumption .... 10 Watts (max)

Dimensions ....3.2" D x 4.6"W x 1.25"H

Shipping Weight .... 4 lbs.

WARNANTY

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