

Gefen

DVI 3500HD Extender

EXT-DVI-3500HD

User Manual



www.gefen.com

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INTRODUCTION

Congratulations on your purchase of the DVI 3500HD. 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 3500HD

The DVI 3500HD allows you to operate a single DVI-compliant computer at two physical locations. DVI, USB, analog audio, and RS-232 are extended from the local computer to the remote workstation. USB peripherals can be operated by the computer at either location exclusively.

How It Works

The DVI 3500HD system consists of a Sender and a Receiver unit. The Sender connects to the computer's DVI-compliant video card output, analog audio jack, RS-232 port, and USB port. The DVI 3500HD Receiver connects to the remote display and peripherals. Four strands of LC fiber optic cable connect the Sender and Receiver together.

The DVI 3500HD has two modes of USB operation. When in local mode, the computer sees USB devices connected to the Sender. When in remote mode, the computer sees USB devices connected to the Receiver. Modes are switched using a switch on the front panel of the Sender.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE DVI 3500HD

- LC terminated fiber optic cables (2 pairs) are required for operation of the DVI 3500HD system.
- The DVI 3500HD relies on either Virtual DDC or a locally connected display (on the sender unit) for display information (EDID). In Virtual DDC mode the sender unit will store the remotely connected display's EDID. This EDID will need to be recorded onto the sender unit. Please see page 13 for instructions on using the Virtual DDC feature.
- When using a local display please ensure that the remote display can display common resolutions and timings that are in the EDID of the local display. The reverse applies when using the Virtual DDC mode. The local display in Virtual DDC mode must be able to accept common resolutions and timings that are in the EDID of the remote display.
- This device will accept both Single-Mode and Multi-Mode fiber optic cables.
- This device will accept both 50 μ and 62.5 μ multi-mode fiber optic cable types.
- Maximum extension with Single-Mode fiber optic cable is 6,560 feet (2 kilometers) at a maximum resolution of WUXGA (1920x1200/60Hz)
- Maximum extension with Multi-Mode fiber optic cable is 1,640 feet (500 meters) at a maximum resolution of WUXGA (1920x1200/60Hz)
- **WARNING:** Do not look directly into LC receptacles of the sending unit. This device, however, does operate under the Laser Class I specification for eye safety.

FEATURES

Features

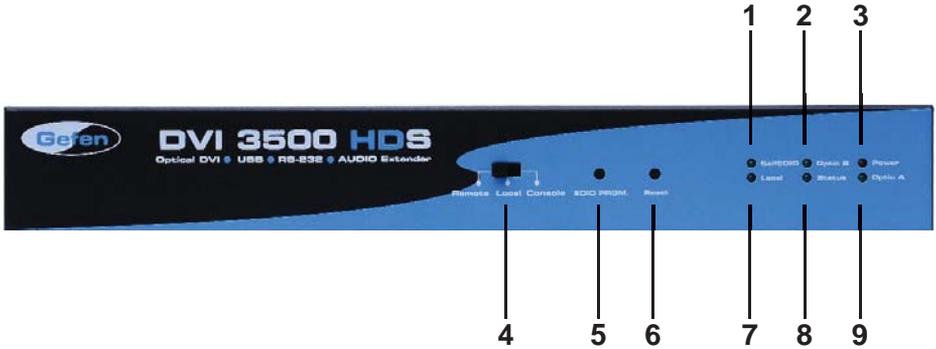
- Extends any DVI compliant computer up to 6,600 feet (2 km)
- Uses 4-strand multimode LC fiber cable
- Supports computer resolutions up to 1920x1200@60 Hz
- Supports DDWG standards for DVI compliant monitors
- Supports Virtual DDC and DDC2B protocols

Package Includes

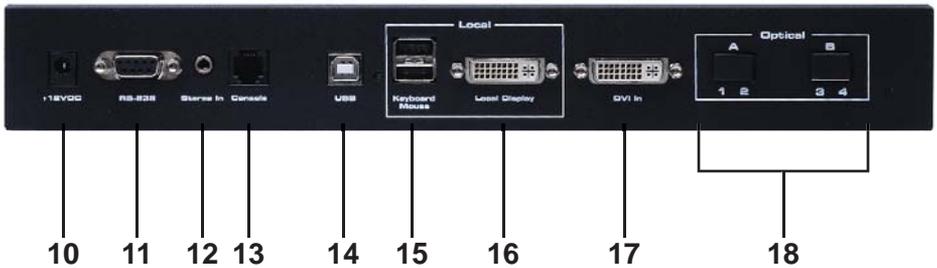
- (1) DVI 3500HD Sender
- (1) DVI 3500HD Receiver
- (2) 12V Power Supply
- (1) 6 ft USB Cable (A-B)
- (1) 6 ft DVI-DL Cable (M-M)
- (1) 6 ft DB-9 RS-232 Cable (M-F)
- (1) User's Manual

SENDER PANEL LAYOUT

Front Panel



Back Panel



SENDER PANEL DESCRIPTIONS

1 Self-EDID LED Indicator

This LED indicator will be used when recording the EDID for the Virtual DDC mode.

2 Optic B LED Indicator

This LED will indicate the status of the connection between the sender and receiver's 2 pair of LC fiber optic cables labeled Optic B. This LED will be active when a valid link between the sender and receiver has been established.

3 Power LED Indicator

This LED will become active once the included 12V DC power supply has been properly connected between this unit and an available wall power socket.

4 Control Switch

This switch will allow the user to select which location (local or remote, console is not used) has USB control. Please see page 14 for more information.

5 EDID Programming Button

This button will begin the EDID recording process for use of the Virtual DDC mode. Please see page 13 for information on Virtual DDC mode.

6 Reset Button

This button is used to cycle the power off and on. In most cases this will force the source to re-establish a link with the endpoint device. This will also force the source to re-read the EDID.

7 Local Control LED Indicator

This LED will be active when USB control is set to the LOCAL setting. When this LED is active, the USB ports located on the rear panel of the sending unit will be active while the USB ports on the receiver unit will not be active.

8 Status LED Indicator

This LED will indicate the status of the unit and will be active when all devices are properly connected. This indicates that the unit is working properly and within specification limits.

9 Optic A LED Indicator

This LED will indicate the status of the connection between the sender and receiver's 2 pair of LC fiber optic cables labeled Optic A. This LED will be active when a valid link between the sender and receiver has been established.

10 12V DC Power Input

Connect the included 12V DC power supply to this input. The Power LED will become active when the 12V DC power supply has been properly connected to the unit and an open wall power socket.

SENDER PANEL DESCRIPTIONS

11 RS-232 Serial Communications Input

This port is capable of 2-way serial communication between RS-232 devices connected to the sender and receiver. This port can be connected to a computer's serial communications port for interaction with a RS-232 serial communications device connected to the receiver.

12 3.5mm Analog Stereo Audio Mini-Jack Input

This port is capable of accepting a 3.5mm mini-jack analog stereo audio source for output at the receiver unit.

13 Console Control Switch Port

This port is currently not used. This port is intended for future feature implementations.

14 USB 1.1 B Input

This port will accept a USB 1.1 host device, such as a computer. USB devices can be connected to the local and remote USB ports. While all ports are available for device input, only one location, local or remote, can be active at any given time. To switch control between locations, use the control switch located on the front panel of the sender unit. This connector is the USB B type. A LED indicator is located next to this input to indicate that a good connection has been made between the unit and the host device.

15 Local USB A Device Input

This input is intended for use by local USB devices. These inputs (2 are available) are only active when the control switch on the front panel of the sender unit is set to LOCAL.

16 Local DVI Output

This port is will accept a single digital DVI capable display. This port is always active, unlike the USB ports which are selectable by the control switch. This port will replicate the video signal that is input through the DVI input on the sender unit.

17 DVI input

This port is will accept a single digital DVI capable source. The digital video signal that is input on this port will be replicated and output through the local DVI output on the sender and also over the fiber optic cable to the DVI output on the receiver unit.

18 Fiber Optic Input A and B

This connector accepts 2 pairs of LC terminated fiber optic cable that will link the sending and receiving unit together. When the cables between this port and the corresponding ports on the receiver are properly connected, the LED indicator labeled Optic A and Optic B on the front panel of both units will become active.

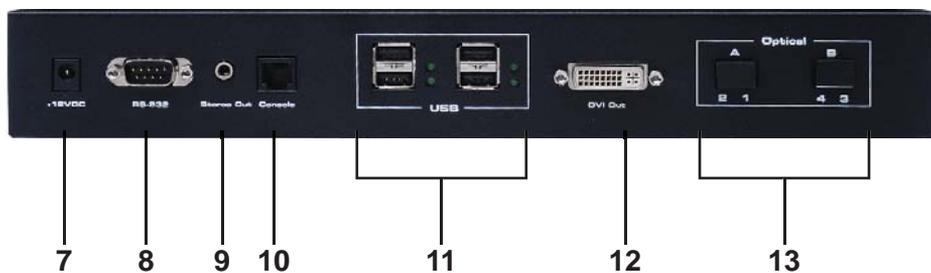
NOTES

RECEIVER PANEL LAYOUT

Front Panel



Back Panel



RECEIVER PANEL DESCRIPTIONS

1 Optic B LED Indicator

This LED will indicate the status of the connection between the sender and receiver's 2 pair of LC fiber optic cables labeled Optic B. This LED will be active when a valid link between the sender and receiver has been established.

2 Power LED Indicator

This LED will become active once the included 12V DC power supply has been properly connected between this unit and an available wall power socket.

3 Reset Button

This button is used to cycle the power off and on. In most cases this will force the source to re-establish a link with the endpoint device. This will also force the source to re-read the EDID.

4 Remote Control LED Indicator

This LED will be active when USB control is set to the REMOTE setting. When this LED is active, the USB ports located on the rear panel of the receiver unit will be active while the USB ports on the sender unit will not be active.

5 Status LED Indicator

This LED will indicate the status of the unit and will be active when all devices are properly connected. This indicates that the unit is working properly and within specification limits.

6 Optic A LED Indicator

This LED will indicate the status of the connection between the sender and receiver's 2 pair of LC fiber optic cables labeled Optic A. This LED will be active when a valid link between the sender and receiver has been established.

7 12V DC Power Input

Connect the included 12V DC power supply to this input. The Power LED will become active when the 12V DC power supply has been properly connected to the unit and an open wall power socket.

8 RS-232 Serial Communications Input

This port is capable of 2-way serial communication between RS-232 devices connected to the sender and receiver. This port can be connected to a serial communications device for interaction with a computer via an RS-232 serial communications cable connected to the sender.

9 3.5mm Analog Stereo Audio Mini-Jack Output

This port is capable of accepting a 3.5mm mini-jack analog amplified stereo device.

10 Console Control Switch Port

This port is currently not used. This port is intended for future feature implementations.

RECEIVER PANEL DESCRIPTIONS

11 Remote USB A Device Input

This input is intended for use by remote USB devices. These inputs (4 are available) are only active when the control switch on the front panel of the sender unit is set to remote. This connector is the USB B type. A LED indicator is located next to each input to indicate that a good connection has been made between the unit and the USB device.

12 DVI Output

This port will accept a single digital DVI capable display. This port is always active, unlike the USB ports which are selectable by the control switch. This port will replicate the video signal that is input through the DVI input on the sender unit.

13 Fiber Optic Input A and B

This connector accepts 2 pairs of LC terminated fiber optic cable that will link the sending and receiving unit together. When the cables between this port and the corresponding ports on the receiver are properly connected, the LED indicator labeled Optic A and Optic B on the front panel of both units will become active.

CONNECTING AND OPERATING THE DVI 3500HD

SECTION 1

Connecting Devices to the DVI 3500HD Sender Unit

1. If using the Virtual DDC mode, please go to page 13 to record the EDID before proceeding.
2. Connect the DVI capable source device to the DVI input on the DVI 3500HD sender unit using the supplied DVI cable.
3. Connect the USB host device to the USB B port on the sender unit using the supplied USB A to B cable.
4. Connect an analog audio source to the 3.5mm stereo mini-jack port on the sender unit using the supplied audio cable.
5. Connect an RS-232 serial communications host device to the RS-232 port on the sender unit using the supplied DB-9 serial communication cable.
6. Optional - Connect a DVI capable display to the local DVI output on the sender unit.

NOTE: Display information (EDID) is used from the DVI capable display attached to the local DVI output. The display connected to the receiver must be capable of accepting the resolutions and timings in the local DVI display's EDID. If a local display is not being used, the Virtual DDC mode (page 13) will be needed to record and supply EDID information to the source device.

7. Optional - Connect a USB device, such as a keyboard and mouse, to the local USB inputs on the sender unit.

NOTE: These USB ports will only be active when the control switch, located on the front panel of the sender unit, is set to LOCAL. When the control switch is set to REMOTE, these USB ports will be inactive.

SECTION 2

Connecting Devices to the DVI 3500HD Receiver Unit

1. Connect a DVI capable display device to the DVI output on the DVI 3500HD receiver unit using a user supplied DVI cable.

NOTE: If there is no locally connect DVI capable display to supply an EDID, the Virtual DDC mode can be used to record the EDID from the display connected to the DVI out port of the receiver unit.

2. Connect up to 4 USB devices to the USB A ports on the receiver unit using user/device supplied USB A cables.

NOTE: These USB ports will only be active when the control switch, located on the front panel of the sender unit, is set to REMOTE. When the control switch is set to LOCAL, these USB ports will be inactive.

CONNECTING AND OPERATING THE DVI 3500HD

3. Connect a user supplied 3.5mm analog stereo amplified audio device to the stereo output on the receiver unit.
4. Connect a RS-232 serial communications device to the RS-232 port on the receiver unit using a user/device supplied DB-9 serial communication cable.

SECTION 3

Connecting the DVI 3500HD Sender and Receiver Units Together

1. Connect 2 pairs of user supplied LC terminated fiber optic cabling to the optical inputs A and B on the DVI 3500HD sender unit. Please note the numbering on the rear panel of the sender unit and be sure to match the cabling to the proper numbering pattern when connecting them to the receiver unit.
2. Connect the opposite ends of the 2 pairs of LC terminated fiber optic cabling to the optical inputs A and B on the DVI 3500HD receiver unit. Please note the numbering on the rear panel of the receiver unit and be sure to match the cabling to the proper numbering pattern that was on the sender unit.

SECTION 4

Connecting Power and Power-up Sequence

1. Connect one of the supplied 12V DC power supplies to the DVI 3500HD sender unit's power receptacle. Connect the opposite end to an open wall power socket.
2. Connect one of the supplied 12V DC power supplies to the DVI 3500HD receiver unit's power receptacle. Connect the opposite end to an open wall power socket.
3. Power on the display(s).
4. Power on all source devices.
5. Confirm that the power LED is active on both the sender and receiver units. Also confirm that the status LED is also on.
6. If using USB devices, ensure that the status LED's by each of the USB inputs and outputs are active.

LOCAL AND VIRTUAL DDC MODES

EDID MODES

Display information, or EDID, is needed by most sources to determine the capabilities of an attached display. This is provided by the EDID of an attached display. The DVI 3500HD uses one of two methods to read and transmit an EDID to the DVI source device.

Local Mode

The local display output on the DVI 3500HD sender unit is the primary source for an EDID. Whenever this port has a display attached, its EDID will be transmitted to the DVI source device. It is critical that the display attached at the remote location, on the DVI 3500HD receiver unit, have the ability to accept the timings and resolutions listed in the local monitors EDID.

Virtual DDC Mode

When there is no local display attached to the DVI 3500HD sender unit, the Virtual DDC mode will automatically be used. In this mode, an EDID is recorded into the DVI 3500HD sender unit and transmitted to the DVI source device. Please follow the instructions below for EDID recording.

These instructions assume that the EDID from the remote display is being used for recording into the DVI 3500HD sender unit.

1. Ensure that no cables or power supplies are plugged into either the DVI 3500HD sender or receiver unit.
2. Bring the DVI 3500HD sender unit to the display at the remote location.
3. Connect the display to the local display output.
4. Power on the display.
5. Connect one of the included 12V DC power supplies to the DVI 3500HD sender unit.
6. Using a small pin, push the EDID PRGM. button located on the front panel of the DVI 3500HD sender unit. The Self-EDID LED will blink rapidly for approximately 8 second while the EDID is being recorded. Once the EDID is recorded, the LED will turn off.
7. Disconnect the display and power from the DVI 3500HD sender unit and proceed to install the units at their proper locations.

SWITCHING ACTIVE USB CONTROL

CONTROL SWITCH

The front panel of the DVI 3500HD sender unit has a control switch that will determine the location of the active USB ports. This switch will allow the user to activate the USB ports on either the sender (local) unit or receiver (remote) unit. This does not affect the DVI outputs which are permanently active on both units.

To select a location, move the switch to the desired position. The settings are as follows:

- | | |
|---------|--|
| LOCAL | USB ports on the DVI 3500HD sender unit are active. USB ports on the DVI 3500HD receiver are inactive. |
| REMOTE | USB ports on the DVI 3500HD receiver unit are active. USB ports on the DVI 3500HD sender unit are inactive. |
| CONSOLE | This switch is currently not used. This switch and the console outputs on the rear panel of the DVI 3500HD sender and receiver units are intended for future feature implementation. |

SPECIFICATIONS

Video Amplifier Bandwidth	165 MHz
Input Video Signal	1.2Volts p-p
Input DDC Signal	5 Volts p-p (TTL)
DVI Connectors	DVI-D 24-pin female (Sender & Receiver)
USB Input	USB "B" male (Sender)
USB Outputs	2 x USB "A" female (Sender)
USB Outputs	4 x USB "A" female (Receiver)
RS-232 Connectors	Female 9-pin DB9 (Sender) / Male 9-pin DB9 (Receiver)
Link Connector	LC Fiber (Sender & Receiver)
Audio Connector	3.5mm mini-stereo (Sender & Receiver)
Power Supply	2 x 12V DC
Power Consumption	36 watts (max per side)
Dimensions	3.25"D x 4.25"W x 1"H
Shipping Weight	9 lbs.