DVI 1600HD Extender

EXT-DVI-1600HD

User Manual

www.gefen.com

1080P PROGRESSIVE

HDMI HIGH DEFINITION MULTIMEDIA INTERFACE

HDTV

Blu-ray Disc

ASKING FOR ASSISTANCE

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INTRODUCTION

Congratulations on your purchase of the DVI 1600HD 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 DVI 1600HD Extender

The Gefen DVI-1600HD is a perfect solution for extending and managing control systems at great distances. The DVI-1600HD sends HDMI or DVI at distances of 200m to 2km along with Audio and RS-232C. The extension of RS232 signals helps create long-distance control systems for AV integration or touch-panel systems.

How It Works

The Gefen DVI-1600HD system uses a Sender and Receiver methodology. The DVI/HDMI/Audio/RS232C source devices are plugged into the Sender module. At the Receiver, remote devices (including an HD display) plug into the Receiver module. The proper length of fiber optic cable is connected between Sender and Receiver. Power supplies for the modules are plugged into wall sockets and a crisp, vibrant HD picture results.

When the front panel switch is in the "HDMI" position, the DVI-1600HD sends HDMI (with HDCP and DDC) at up to 1080p resolution along with Audio and RS232C signals up to 200m away.

When the switch is in the DVI position, the DVI-1600HD extends DVI at up to 1920x1200 resolution with Audio and RS-232C at distances of up to 2km (6,600 feet). This mode does not support HDCP or DDC.

(Note: Display Data Channel (DDC) and High-Bandwidth Digital Content Protection (HDCP) are used to ferry copy-protected HDTV content.)

The Gefen DVI-1600HD uses a DVI connector for video, but HDMI can be sent by using inexpensive adapters or combo cables to split the HDMI signal into separate DVI video and digital audio, both of which can be fed as combined input to the DVI-1600HD Sender unit. The result will be HDMI with embedded audio at the Receiver end.

The digital input jacks can only support D-PCM or PCM stereo audio formats.

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE DVI 1600HD EXTENDER

- The DVI 1600HD Extender uses 4 strands of LC terminated fiber optic cable.
- Single-mode and multi-mode fiber optic cable types are both supported.
- DVI and HDMI/HDCP modes are available and are selectable via a switch located on the front panel of the DVI-1600HD sender unit.
- Analog stereo RCA , digital S/PDIF, and digital TOSLINK inputs are all available for input but only one is selectable for transmission to the receiver. The selected audio input will be replicated out of all three audio outputs on the DVI-1600HD Receiver.
- HDMI mode supports HDCP/DDC with resolutions up to 1080p Full HD. Both single and multi-mode cables are supported. Extension distances of up to 660 feet (200 meters) are supported in HDMI mode.
- DVI mode does not support HDCP or DDC and supports resolutions up to 1920 x 1200. Multi-mode fiber can support distances of up to 1640 feet. Single-mode fiber can support distances of up to 6,600 feet (2 km).
- The DVI-1600HD is HDMI 1.2 compliant.

FEATURES

Features

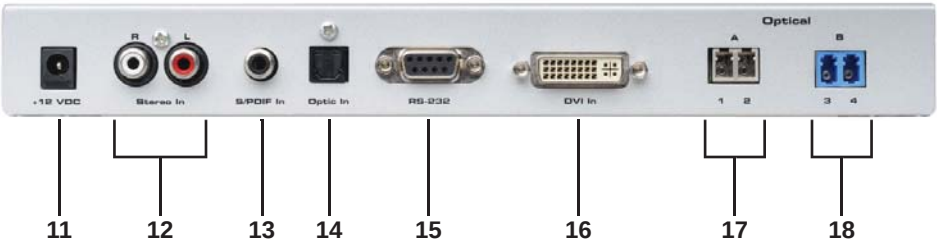
- Pure signal integrity and best image over long distances
- Fiber-optic transmission medium eliminates electromagnetic interference (EMI) during send or receive operations
- Lightweight, rugged cabling and connectors
- Cost effective per foot/meter
- Low power consumption at 72W total
- Plug and play installation ease -- no software drivers
- Can use both Single and Multimode optical fiber cables
- Maximum range of 2km for DVI, 200m if sending HDMI with HDCP/DDC.
- RS232 signal extension helps create long-distance control systems for A/V integration

Package Includes

(1) Gefen DVI-1600HD Sender
(1) Gefen DVI-1600HD Receiver
(1) 6 Foot DVI Video Cable (M-M)
(1) 6 Foot DB9 RS-232 Cable (M-F)
(2) 12V Power Supplies
(1) User's Manual

Front Panel

Back Panel



SENDER UNIT PANEL DESCRIPTIONS

1 DVI/HDMI Mode Selector Switch

This switch will set the video mode. DVI mode is intended for use with computers and will support resolutions of up to 1920 x 1200. HDMI mode is for use with consumer HDTV devices and supports HDCP/DDC and resolutions of up to 1080p Full HD. There are distance limitations associated with these modes. Please see page 10 for details.

2 Audio Input Selector Button

This button is used to select the audio input source. There are three input options: Audio (analog stereo), Coax (digital S/PDIF), Optical (digital TOSLINK). Each press will cycle through these selections.

3 Audio Selection LED Indicator

This LED will be active when the Audio (analog stereo) audio source has been selected.

4 Coax Selection LED Indicator

This LED will be active when the Coax (digital S/PDIF) audio source has been selected.

5 Optical Selection LED Indicator

This LED will be active when the Optical (digital TOSLINK) audio source has been selected.

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 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.

8 Status LED Indicator

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

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 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.

SENDER UNIT PANEL DESCRIPTIONS

11 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.

12 Analog Stereo Audio Input

This input will accept analog stereo audio from one pair or RCA audio cables. This input corresponds to LED labeled Audio on the front panel.

13 S/PDIF Digital Audio Input

This input will accept digital audio from a S/PDIF (coaxial) audio cable. This input corresponds to LED labeled Coax on the front panel.

14 Optic Digital Audio Input

This input will accept digital audio from a TOSLINK (optical) audio cable. This input corresponds to LED labeled Optical on the front panel.

15 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 computers serial communications port for interaction with a RS-232 serial communications device connected to the receiver.

16 DVI Input

This input will accept a DVI or HDMI (with a HDMI to DVI adapter/cable) source device.

17 Fiber Optic Input A

This connector accepts a pair 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 on the front panel of both units will become active.

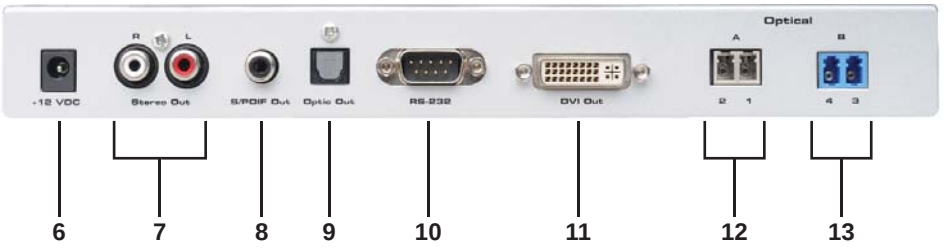
18 Fiber Optic Input B

This connector accepts a pair 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 B on the front panel of both units will become active.

RECEIVER UNIT PANEL LAYOUT

Front Panel

Back Panel



RECEIVER UNIT PANEL DESCRIPTIONS

1 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.

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 Status LED Indicator

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

4 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.

5 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.

6 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.

7 Analog Stereo Audio Output

This output will supply analog stereo audio to one pair or RCA audio inputs on a device. This input will always be active when a 2 channel source, analog or digital, is selected on the sender.

8 S/PDIF Digital Audio Output

This output will supply digital audio to a S/PDIF (coaxial) audio input device. This input will always be active when a 2 or multi-channel source, analog or digital, is selected on the sender.

9 Optic Digital Audio Output

This output will supply digital audio to a TOSLINK (optical) audio input device. This input will always be active when a 2 or multi-channel source, analog or digital, is selected on the sender.

10 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.

11 DVI Output

This output will accept a DVI or HDMI (with a DVI to HDMI adapter/cable) capable device.

12 Fiber Optic Input A

This connector accepts a pair 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 on the front panel of both units will become active.

13 Fiber Optic Input B

This connector accepts a pair 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 B on the front panel of both units will become active.

CONNECTING THE DVI 1600HD EXTENDER

How to Connect the DVI 1600HD Extender

1. Connect the DVI or HDMI (using a HDMI to DVI adapter/cable) to the DVI 1600HD Extender sending unit using a user supplied cable.

2. Connect up to 3 audio sources to the sending unit using user supplied cables. Input options are as follows:

   Analog stereo using one pair of RCA analog stereo cables.

   Digital coaxial using one S/PDIF digital coaxial audio cable.

   Digital optical using one TOSLINK digital optical audio cable.

3. Optionally, connect an RS-232 device to the sender unit using a user supplied RS-232 cable.

   NOTE: The DVI 1600HD Extender system will not cross the transmit and receive lines as a null-modem adapter would. All pins will pass straight through from one point to the other.

4. Connect 2 pairs (4 strands) of LC terminated single or multi-mode fiber optic cables to the sender unit. Connect the opposite ends of the fiber optic cabling to the receiver unit's fiber optic receptacles.

5. Connect a DVI or HDMI (using a DVI to HDMI adapter/cable) capable device to the DVI output of the DVI 1600HD Extender receiving unit using a user supplied cable.

6. Connect up to 3 of the audio outputs to audio receiving devices. Available outputs are as follows:

   Analog stereo using one pair of RCA analog stereo cables.

   Digital coaxial using one S/PDIF digital coaxial audio cable.

   Digital optical using one TOSLINK digital optical audio cable.

   NOTE: All outputs are active regardless of the selected input on the sender. However, multi-channel content that is being sent by the digital connectors will not be output by the analog stereo output.

7. Optionally, connect an RS-232 device to the receiver unit using a user supplied RS-232 cable.

8. Connect the included 12V DC power supplies to both the sending and receiving units and open wall power sockets.

9. Power on the endpoint device first and then the source device.

Operating the DVI 1600HD Extender

If the source device is a HDMI device that requires HDCP, please set the DVI/HDMI mode selector switch to HDMI. The extension distance will be limited to 660 feet (200 meters) on 4 LC single or multi-mode fiber optic cables while in this mode.

If the source device is a DVI device, please set the DVI/HDMI mode selector switch to DVI. The extension distance can be up to 2km with single-mode fiber optic cable and 500 meters (1640 feet) with multi-mode fiber optic cables while in this mode. DVI mode does not support HDCP.

The audio source used for transmitting to the receiver can be selected from the front panel of the DVI 1600HD Extender sending unit. Use the audio input selector button to cycle between the 3 available inputs. The inputs are cycled as follows:

All audio outputs on the receiver are constantly active. This means that analog signal are converted to digital and digital signal are converted to analog. The only exception to this is multi-channel digital audio, which will not be output through the analog stereo output.

SPECIFICATIONS

Video Amplifier Bandwidth ..... 165 MHz

Maximum Resolution 1920x1200/1080p

Input Connector (analog audio) ..... 1 x Pair RCA L+R stereo

Input Connector (digital audio) ..... 1 x S/PDIF coaxial digital audio

Input Connector (digital audio) ..... 1 x TOSLINK optical digital audio

Input Connector (digital video) ..... 1 x DVI, 29-pin Female

Output Connector (analog audio) ..... 1 x Pair RCA L+R stereo

Output Connector (digital audio) ..... 1 x S/PDIF digital audio

Output Connector (digital audio) ..... 1 x TOSLINK optical digital audio

Output Connector (digital video) ..... 1 x DVI, 29-pin Female

RS232 Connectors (Input, Output) ..... 9-pin Serial, Female

Link Connectors ..... 4-strand LC-LC fiber optic cable (single or multi-mode)

Input Video Signal Voltage ..... 1.2 Volts p-p

Input DDC Signal Voltage ..... 5 Volts p-p (TTL)

Power Supply/Power Consumption ..... 12V DC x 2 / 72 Watts total

Dimensions ..... 10.3”W x 1.2”H x 5.1”D

Operating Temperature ..... 0 to 50 C

Relative Humidity 10-85%

Shipping Weight ..... 5 lbs.