



# Switch and Distribute Two Sources To Up to Two Displays



EXTHDMI-242

## Connect And Access Two Sources From Up To Two Displays

Gefen's 2x2 HDMI Switcher routes high definition video in multiple resolutions up to 1080p plus multichannel digital audio from any one of two sources. Both video outputs give you the choice of sending high definition audio and video signals to up to two displays. A digital audio output port is available if you need to direct the audio to an external audio receiver. The 2x2 HDMI Switcher eliminates the need to disconnect and reconnect sources to a display equipped with one input. It works with HD-DVD players, TiVo systems and satellite set top boxes that connect to an HDMI display. Either source is accessible at all times by selecting it with an IR remote.

### Features:

- Switch easily between any two HDMI sources
- Outputs are mirrored to two HDMI displays
- Additional digital optical audio output extracted from HDMI input for easy connection to multichannel audio receivers
- Extends the range of HDMI compliant device by equalizing and reclocking the HDMI signal
- Maintains high resolution video-beautiful, sharp HDTV resolutions up to 1080p, 2k, and computer resolutions up to 1920 x 1200 are easily achieved
- Discrete IR remote (included)
- Serial RS-232 remote port
- HDMI compliant
- HDCP compliant

## How It Works

You simply connect both sources to the Switcher's inputs. You have the choice of connecting up to two displays and an external audio receiver to the Switcher's outputs. Once the sources, the switcher, and the display(s) are powered and connected, you simply select which source you want to view using the included IR remote.

### 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
- HDMI Connector: Type A 19 Pin Female
- Digital Audio Output: Toslink
- Remote Control Port: RS232 female, mini-stereo
- Power Supply: 5V DC
- Power Consumption: 20 Watts (max)
- Dimensions: 10.25"W x 1.125"H x 4.25"D
- Shipping Weight: 6 lbs.



**2x2 HDMI  
Switcher  
USER MANUAL**

## ASKING FOR ASSISTANCE

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### Technical Support:

Telephone (818) 772-9100  
(800) 545-6900

Fax (818) 772-9120

### Technical Support Hours:

8:00 AM to 5:00 PM Monday through Friday.

### Write To:

Gefen Inc.  
c/o Customer Service  
20600 Nordhoff St.  
Chatsworth, CA 91311

[www.gefen.com](http://www.gefen.com)  
[support@gefen.com](mailto:support@gefen.com)

### Notice

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

**2x2 HDMI Switcher** is a trademark of Gefen Inc.  
**HDMI** is a trademark of [hdmi.org](http://hdmi.org)

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# INTRODUCTION

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Congratulations on your purchase of the Gefen 2x2 HDMI Switcher. Your complete satisfaction is very important to us.

Gefen's line of HDTV switches, extenders, and splitters are designed to make your A/V equipment use more comfortable, more productive and less expensive.

The 2x2 HDMI Switcher allows access to two HDTV devices, using two HDTV displays. Both output displays will have mirrored images. Also included is a TOSLINK output that will output the digital audio signal in audio form.

The Gefen line offers solutions for Home Theater, A/V installation, noise, space and security concerns, data center, information distribution, conference room presentation, school and corporate training environments.

## Our Commitment

Gefen will always offer the finest quality product at the best possible price. Included in that price is a lifetime support from a team of outstanding engineers.

The Gefen 2x2 HDMI Switcher allows two HDTV HDMI devices to be switched easily in to two HDTV HDMI compatible monitors or projectors. Simply connect your HDTV displays to the Switcher's display outputs. The 2x2 HDMI Switcher can also be placed at the end of a long HDMI cable to regenerate the HDMI signal.

# FEATURES

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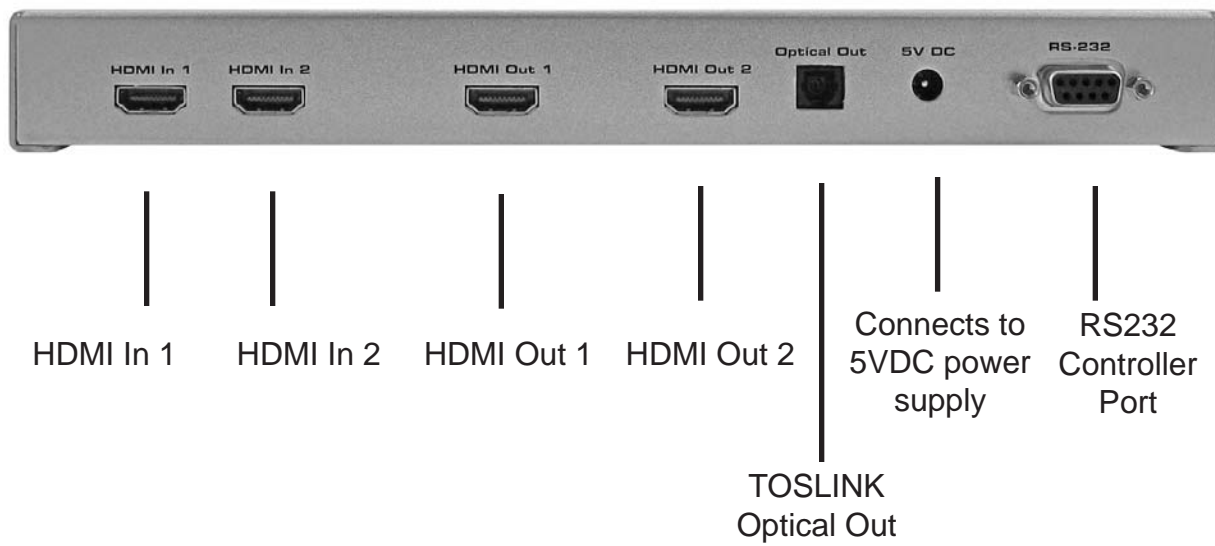
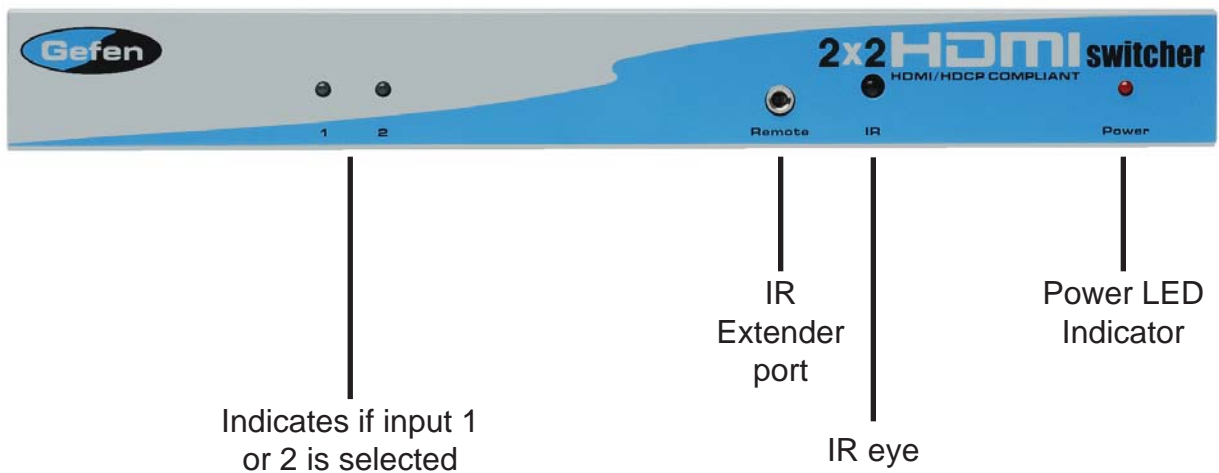
## Features

- Switches easily between any two HDMI sources
- Maintains 480p, 720p, 720i, and 1080i, 1080p resolutions
- Maintains highest HDMI single link video resolution
- Maintains highest HDMI digital audio signal
- Includes Toslink output for easy hookup to digital audio systems
- Supports HDCP compliant devices
- Fully HDMI 1.2 compliant
- HDMI or DVI to HDMI cables are used to connect the inputs and switcher output
- Inputs can be switched with the IR remote control
- RS-232 Controllable
- Installs in seconds

## Includes:

- (1) 2x2 HDMI Switcher
- (2) 6' HDMI cables (M-M)
- (1) 5VDC Power Supply
- (1) RMT2-IR

# PANEL DESCRIPTIONS



# **CONNECTING AND OPERATING THE 2x2 HDMI SWITCHER**

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## **How to Connect the 2x2 HDMI Switcher to your devices**

- 1** Connect the supplied cables from the HDTV sources into the 2x2 HDMI Switcher inputs.
- 2** Connect the cable from your display (monitor or projector) into the HDMI outs of the 2x2 HDMI Switcher.
- 3** Connect any Digital Audio System into the OPTICAL out of the 2x2 HDMI Switcher
- 3** Plug the 5VDC power supply into the 2x2 HD Switcher.

## **How to Control the 2x2 HDMI Switcher**

Use the RMT2-IR remote control to toggle between sources.



## RMT2-IR INSTALLATION

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1. Remove battery cover from the back of the RMT2-IR remote.
2. Verify that dip switches 1 & 2 are in the down (OFF) position.
3. Insert the battery, hold the battery so that you can see the positive side facing up. The side that is not marked must be facing down.
4. Test the RMT2-IR remote by pressing ONLY one button at a time. The indicator light on the remote will flash once each time you press a button. **WARNING:** Do not press multiple buttons simultaneously and do NOT press buttons rapidly. These actions will cause the remote to reset and steps 1-4 will have to be repeated.

Note: The RMT2-IR ships with two batteries. One battery is required for operation, the second battery is complimentary.



# IR CODE CONFLICTS

## How to Resolve IR Code Conflicts

There are matching pairs of dip switches underneath the Switcher unit and under the remote battery cover. Switch 1 & 2 on the Remote and Switch 3 & 4 underneath the unit are the matching switches. These switches need to be matched for the remote to communicate with the switcher. There are 4 possible sets of IR codes and at least one of these sets should be able to resolve any IR conflicts with other home theater devices.

Remote



Remote Channel 1:



Remote Channel 2:



Remote Channel 3:

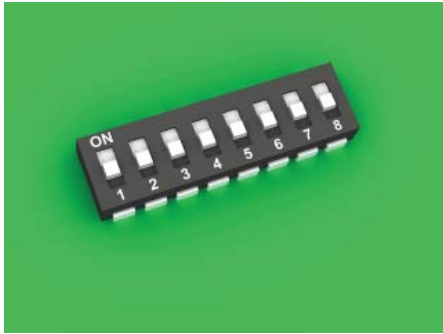


Remote Channel 4:



# DIP SWITCH GUIDELINES

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## DIP SWITCH EDID GUIDE

Extended display identification data (EDID) is a data structure provided by a display to describe its capabilities to any source that asks for it. The EDID includes manufacturer name, product type, timings supported by the display, display size, luminance data, (for digital displays only) pixel mapping data, supported audio channels and formats. This information is used by the source to cater its output to resolutions and audio formats that are supported by the display.

Additional EDID modes are available and configured using a combination of dip switches 1, 2, and 5. Please refer below for the different EDID modes.

To access the Dip Switches, remove all screws from the bottom and sides of the Gefen unit. Remove the hex screw heads from each side of the RS-232 port. Carefully slide the unit apart. The 8 Bank of Dip Switches are located on the main PCB. Once adjustments are complete, slide the unit back together and replace all removed screws.

EDID Mode 0 (Switch 1=OFF Switch2=OFF Switch5=ON)

-EDID is copied from the first HDMI port

EDID Mode 1 (Switch 1=ON Switch2=OFF Switch5=ON)

-Same as Mode 0 and adds basic audio support

EDID Mode 2 (Switch 1=OFF Switch2=ON Switch5=ON)

-Same as Mode 0 and adds full audio support

EDID Mode 3 (Switch 1=ON Switch2=ON Switch5=OFF)

-EDID is generated based on the common video and audio features of all of the connected devices

EDID Mode 4 (Switch 1=OFF Switch2=ON Switch5=OFF)

-Same as Mode 3 and adds basic audio support

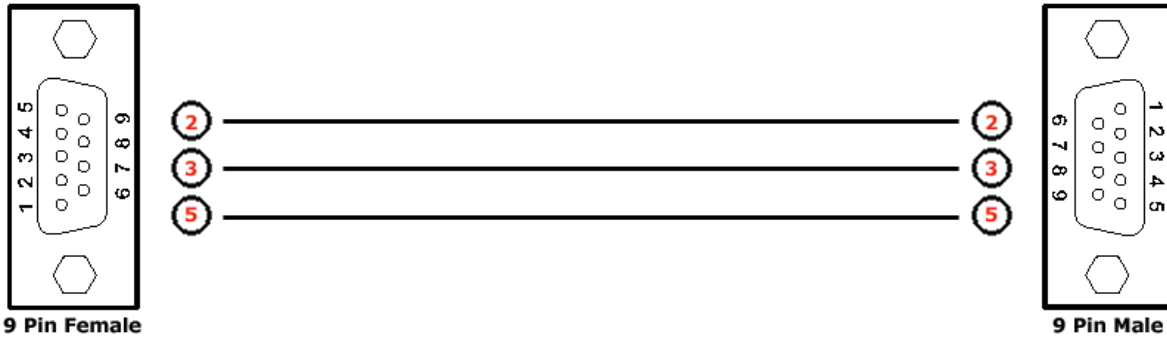
EDID Mode 5 (Switch 1=ON Switch2=OFF Switch5=OFF)

-Same as Mode 3 and adds full audio support

EDID Mode 6 (Switch 1=OFF Switch2=OFF Switch5=OFF) **DEFAULT**

-EDID is generated based on the common video features of all of the connected devices and the combined audio features of all of the connected devices

# RS-232 INTERFACE



## Binary Table

ASCII	Input	Binary
1	1	0011 0001
2	2	0011 0010

Additional control of the EDID modes and IR channel are possible using the RS-232 interface. For any of these modes to be successfully written to the EEPROM, all Dip Switches must be in the OFF position.

ASCII	EDID Mode
m0	0
m1	1
m2	2
m3	3
m4	4
m5	5
m6	6

ASCII	Remote Channel
r1	1
r2	2
r3	3
r4	4

OK is printed out on screen when a mode has successfully been changed.

## Terminal Settings

Bits per second ..... 19200

Data bits ..... 8

Parity ..... None

Stop bits ..... 1

Flow Control ..... None

## SPECIFICATIONS

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Video Amplifier Bandwidth .....	1.65 GHz
Input Video Signal .....	1.2 volts p-p
Input DDC Signal .....	5 volts p-p (TTL)
Single Link Range .....	...1080p / 1920 x 1200
Input Connector Type .....	HDMI
Output Connector Type .....	HDMI
Output Audio Connector Type.....	...TOSLINK
Power Consumption .....	15 Watts (max.)
Power Supply .....	5VDC
Dimensions .....	10.25"W x 1.125"H x 4.25"D
Shipping Weight .....	6 Lbs