



# Switch And Distribute Two HDMI Sources To Up To Eight Displays



EXT-HDMI-248

## Two HDMI Inputs, Eight HDMI Outputs

The 2:8 HDMI Distribution Amplifier is the perfect solution for anyone who needs to send one or two sources of digital high definition video to multiple displays at the same time. It supports all HDMI equipment, such as DVD players and satellite set top boxes and all HDMI displays. HDMI (High-Definition Multimedia Interface) is a digital point to point interface for audio and video signals. In operation, the digital source is connected to the distribution amplifier on one side. On the other side, eight HDMI outputs are available to be used in part or in full. Once the unit is connected and powered, your source is routed to up to eight digital displays at the same time.

### Features:

- Switch easily between any two HDMI/DVI sources
- Outputs are mirrored to eight HDMI/DVI displays simultaneously
- 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

Simply connect your HDMI video source to the 2:8 HDMI Distribution Amplifier's input using the supplied HDMI cable. Then connect up to eight HDMI displays to the unit's eight HDMI outputs. Once connected and powered, your source will be seen on all eight displays at the same time.

### 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
- Power Supply: 24V DC
- Power Consumption: 60 Watts (max)
- Dimensions: 17"W x 1.75"H x 5.5"D
- Rackmountable: 1U rack space
- Shipping Weight: 8 lbs.

# Gefen

## 2:8 **HDMI**™ Distribution Amplifier

Model # EXT-HDMI-248

USER MANUAL



[www.gefen.com](http://www.gefen.com)

**1080P**  
PROGRESSIVE

**HDMI**  
HIGH DEFINITION MULTIMEDIA INTERFACE

**iDTV**

**HD DVD**

**Blu-ray Disc**

## ASKING FOR ASSISTANCE

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### Technical Support:

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### Notice

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

**2:8 HDMI Distribution Amplifier** is a trademark of Gefen Inc.

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# INTRODUCTION

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The Gefen 2:8 HDMI Distribution Amplifier is the perfect solution for anyone who needs to send one or two sources of digital high definition video to multiple displays at the same time. It supports HDMI equipment, such as DVD players, satellite set top boxes, and HDMI displays. In operation, the digital source is connected to the distribution amplifier's input while eight HDMI outputs are available to be used in part or in full. Once the unit is connected and powered, your source can be distributed up to eight digital displays at the same time.

## How It Works

Simply connect your HDMI video source to the 2:8 Distribution Amplifier's input using the supplied HDMI cable. Then connect up to eight HDMI displays to the unit's eight HDMI outputs. Once connected and powered, your source will be seen on all eight displays at the same time. When two or more 2:8's are connected together, you can create a larger distribution system.

# OPERATION NOTES

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## READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 2:8 HDMI DISTRIBUTION AMPLIFIER

- The 2:8 HDMI Distribution Amplifier can only mirror one input video signal at a time to all eight display outputs. The user can choose which of the two HDMI inputs will be displayed on all eight HDMI outputs.
- HDMI/HDCP compliant
- Compatible with all HDMI and DVI\* displays

**NOTE:** \*When used with a DVI to HDMI adapter

# FEATURES

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## Features

- Switch easily between any two HDMI/DVI sources
- Outputs are mirrored to eight HDMI/DVI\* displays simultaneously
- Supports resolutions up to 1080p, 2K and 1920 x 1200
- Extends the range of HDMI compliant devices by equalizing and re-clocking the HDMI signal
- HDMI/HDCP compliant

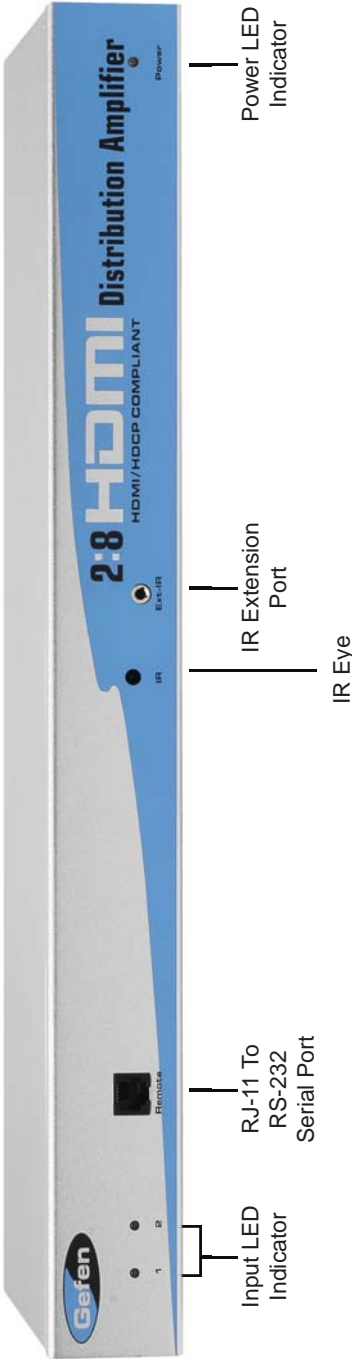
## Includes:

- (1) 2:8 HDMI Distribution Amplifier
- (1) 6' HDMI cable (M-M)
- (1) 24V DC Power Supply
- (1) RMT2-IR remote
- (1) Set of Rack Ears
- (1) Users Manual

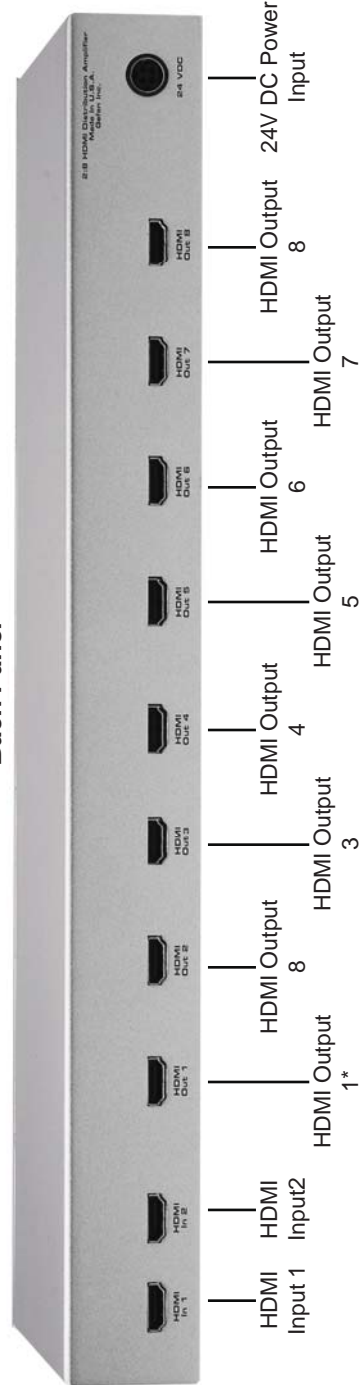


# PANEL DESCRIPTIONS

## Front Panel



## Back Panel



## CONNECTING THE 2:8 HDMI DISTRIBUTION AMPLIFIER

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### How to Connect the 2:8 HDMI Distribution Amplifier

1. Connect the supplied cable from the HDMI source into the HDMI input port 1 of the 2:8 HDMI Distribution Amplifier.
2. Connect a second HDMI source to HDMI input port 2 on the 2:8 HDMI Distribution Amplifier using a user supplied HDMI cable.
3. Connect the display(s) (up to eight) to the HDMI output port(s) of the 2:8 HDMI Distribution Amplifier using user supplied cable(s)
4. Plug the 24V DC power supply into the 2:8 HDMI Distribution Amplifier.

## OPERATING THE 2:8 HDMI DISTRIBUTION AMPLIFIER

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Switching between the inputs on the 2:8 HDMI Distribution Amplifier is done using either the supplied RMT2-IR remote or the RJ11 to serial interface.

### IR Remote

Pressing button one on the remote will select the HDMI source that is connected to HDMI input port one. Pressing two on the remote will select the HDMI source that is connected to HDMI input port two.

### RJ11 To Serial Control Interface

Please see the diagram on page 7 for the RJ11 serial control interface pin configuration.



## 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. (See page 6)
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.



The optional IR extender allows you to relocate your HDMI Switcher and still retain IR control. Gefen part# EXT-RMT-EXTIR

# IR CODE CONFIGURATION

## How to Resolve IR Code Conflicts

In the event that IR commands from other remote controls conflict with the supplied RMT-2IR remote control, changing the remote channel will alleviate this issue. The RMT-2IR remote control and the 2:8 HDMI Distribution Amplifier have Dip Switches for configuring the remote channel that both units use to communicate. These settings must match each other for proper operation. The 2 Dip Switch bank on the RMT-2IR is located underneath the battery cover. The 8 Dip Switch bank for the 2:8 HDMI Distribution Amplifier is located inside of the unit. \*Dip Switch 1 and 2 on the RMT-2IR correspond to Dip Switch 3 and 4 on the 2:8 HDMI Distribution Amplifier.

**NOTE:** \*Dip Switches 1, 2, and 5 through 8 are not used on the 2:8 HDMI Distribution Amplifier.

Because the procedure for changing channels requires the main unit to be disassembled, this procedure should only be done if there are IR conflicts present in your setup.

Disconnect power from unit before starting. Remove all cabling from unit.

To open the 2:8 HDMI Distribution Amplifier Unit, remove all screws from the sides and underside of the unit. Remove the hex nuts above each HDMI connector. Slide the unit apart carefully to expose the internal PCB and the 8 Dip Switch bank.

When Dip Switch adjustments are complete, carefully slide the unit back together. Being careful not to over tighten the hex nuts, screw them back in above each HDMI connector. Screw all of the screws from the sides and underside of the unit back into the unit, again being careful not to over tighten the screws. Plug all cabling back into its proper location on the unit. Reconnect power to the unit and test for IR conflicts.

### Remote



Remote Channel 1:  
Default



Remote Channel 2:



Remote Channel 3:



Remote Channel 4:



### 2:8 HDMI Distribution Amplifier

Remote Channel 1:  
Default



Remote Channel 2:



Remote Channel 3:



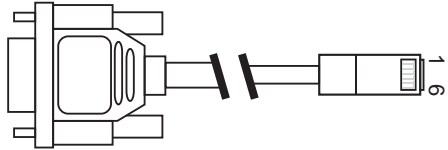
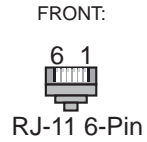
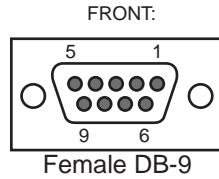
Remote Channel 4:



# RJ-11 TO SERIAL CONTROL INTERFACE

## DB-9 to RJ-11

DB-9 Pin	Description	Connects To RJ-11 Pin
1	Carrier Detect	N/A
2	Receive Data	3
3	Transmitted Data	2
4	Data Terminal Ready	N/A
5	Ground	1 & 6
6	Data Set Ready	N/A
7	Request To Send	N/A
8	Clear To Send	N/A
9	Ring Indicator	N/A



Connectors not to scale

### 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

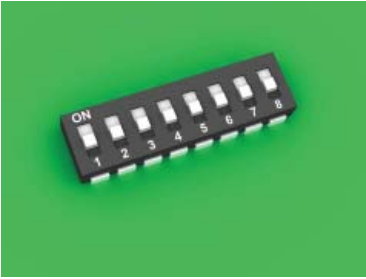
Parity ..... None

Stop bits ..... 1

Flow Control ..... None

## 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. 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

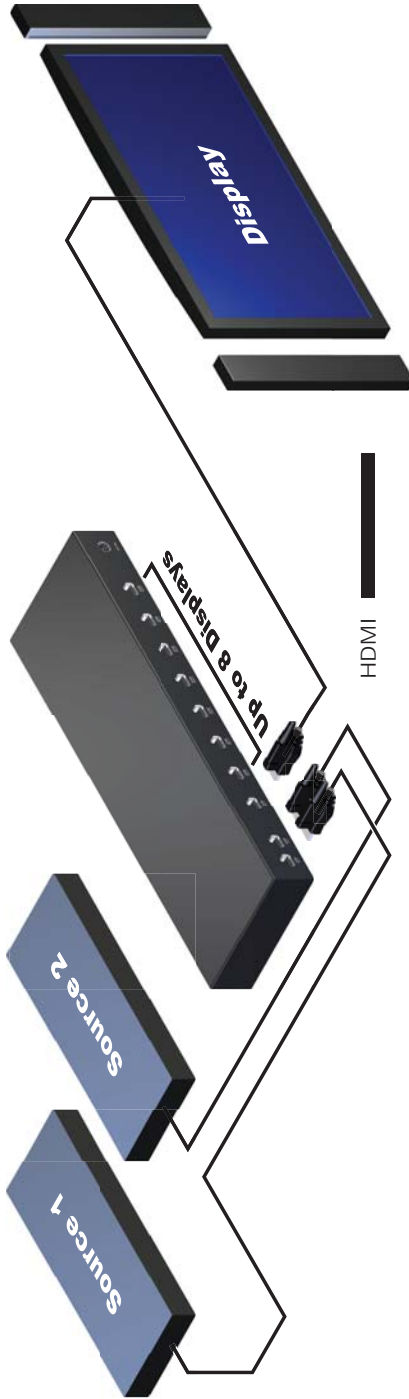
## RACK EARS INSTALLATION DIAGRAM

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.



# WIRING DIAGRAM



HDMI cable maximum distance is 15 ft at 1080p resolution without a EXT-HDMI-141SBP or EXT-HDMI-CAT5-MS

## SPECIFICATIONS

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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
Input Connector Type .....	HDMI Type A 19 Pin Female
Output Connector Type .....	HDMI Type A 19 Pin Female
Remote Control Port .....	RJ11 Jack For Serial Control
Power Consumption .....	60 Watts (max.)
Power Supply .....	24V DC
Rack Mountable .....	1U Rack Space
Dimensions .....	17"W x 1.75"H x 5.5"D
Shipping Weight .....	5 Lbs

\* MA - HDMI - 248 \*



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