

# Gefen

## 1:4 HDMI™ CAT5 Distribution Amplifier

EXT-HDMI-CAT5-144

User Manual



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

1080P  
PROGRESSIVE

HDMI  
HIGH DEFINITION MULTIMEDIA INTERFACE

HD TV

HD DVD

Blu ray Disc™

## ASKING FOR ASSISTANCE

---

### Technical Support:

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

Fax (818) 772-9120

### Technical Support Hours:

8:00 AM to 5:00 PM Monday thru 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.

**1:4 HDMI CAT5 Distribution Amplifier** is a trademark of Gefen Inc.

# CONTENTS

---

- 1 Introduction
- 2 Operation Notes
- 3 Features
- 4 Sender Panel Descriptions
- 5 Receiver Panel Descriptions
- 6 Connecting And Operating The 1:4 HDMI CAT5 DA
- 7 Manual Equalization Procedure
- 8 Network Cable Wiring Diagram
- 9 Specifications
- 10 Warranty

# INTRODUCTION

---

Congratulations on your purchase of the 1:4 HDMI CAT5 Distribution Amplifier DA. 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 1:4 HDMI CAT5 DA**

The Gefen 1:4 HDMI Over CAT5 Distribution Amplifier allows you to distribute a single HDMI video source remotely to as many as 4 separate HDTV displays via inexpensive and standard CAT5 cables as well as HDMI cables.

## **How It Works**

Simply plug your master video source into the Gefen 1:4 HDMI Over CAT5 DA sender unit, then run your cables to the remote locations.

If you are using CAT5 cables, pair up your cables with separately purchased HDMI CAT5 DAR receivers at each video display.

If you are using HDMI cables, just attach up to 4 HDMI cables on the outputs and connect the other ends to the displays.

After connection of cables, power up (or re-start) all equipment and you will have effortless HDMI video duplication at all locations.

## OPERATION NOTES

---

### READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 1:4 HDMI CAT5 DA

- The 1:4 HDMI CAT5 DA unit is housed in a metal box for better RF shielding.
- An HDMI jumper cable (4 are included) must be connected from each of the lower board outputs to each of the upper board inputs for proper extension operation.
- The maximum cable extension is 300 feet (91 meters) for video resolutions of 1080i and below.
- The maximum cable extension is 150 feet (45 meters) for video resolutions of 1080p.
- Display information (EDID) from the display attached to the HDMI CAT5 DAR receiver, which is then routed to HDMI output port 1 (lower board), will be sent back to the source. Therefore, all other displays connected to the receivers at the remote locations must be capable of accepting the timings and resolutions of the display that is attached to HDMI output port 1. It is recommended that the display with the lowest native resolution be connected to HDMI output port 1. This is to ensure that a compatible video signal will be able to be displayed on all connected monitors.
- Shielded CAT6 with metal RJ-45 connectors is recommended to protect from random flashes caused by EMI.
- Extensions under 130 feet can use Auto EQ (which is on by default). Extensions over 130 feet will require you to manually EQ your signal (see page 5).
- Each cable is recommended to be one continuous run from one end to the other. While wall jacks and punch down blocks can be used, they may cause degraded performance or unforeseen issues.
- Do not use stranded or low/no skew cabling. Solid core cabling should be used for maximum performance.
- HDMI \ HDCP Compliant.
- The included power supply for the RECEIVER must be connected before the connection of the CAT-5 cables. Once the power LED is active on the receiver the CAT-5 cables can then be connected. Always follow this initialization procedure on the RECEIVER if power has to been cycled due to a power outage or for troubleshooting purposes.

# FEATURES

---

## Features

- HDMI Video Distribution to up to 4 displays
- 300 ft. at 1080i; 150-ft range for 1080p
- Maintains high resolution video - beautiful, sharp HDTV resolutions up to 1080p, 2k, and computer resolutions up to 1920 x 1200 are easily achieved
- Enables greater versatility when installing multiple HDMI displays
- HDMI / HDCP compliant

## Package Includes

- (1) 1:4 HDMI CAT5 Distribution Amplifier (Sender Unit)
- (1) 6 foot HDMI Cable (M-M)
- (4) 1 foot HDMI Cable (M-M)
- (1) 24V DC power supply
- (1) User Manual

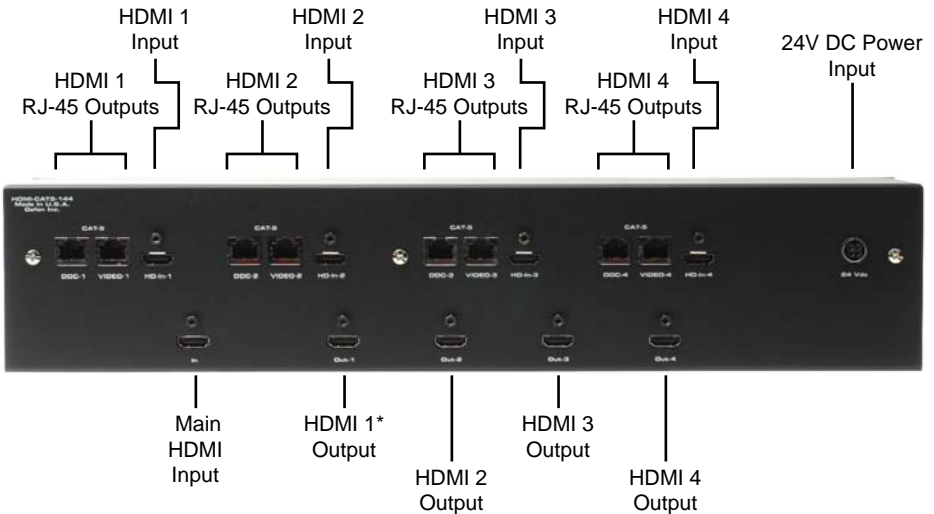
# SENDER PANEL DESCRIPTIONS

## Front Panel



Power LED  
Indicator

## Back Panel



\*NOTE: Display information (EDID) is used from whichever display is connected to this port.

# RECEIVER PANEL DESCRIPTIONS

---

## Front Panel



EQ trim pot

HDMI Output

Power LED  
Indicator

5V DC  
Power input

## Back Panel



DDC RJ-45 Port

VIDEO RJ-45  
Port



# CONNECTING AND OPERATING THE 1:4 HDMI CAT5 DA

---

## How to Connect the 1:4 HDMI CAT5 DA

1. Connect the single HDMI source to the 1:4 HDMI CAT5 DA main HDMI input using the supplied 6 foot HDMI cable.
2. Using the four supplied 1 foot HDMI jumper cables, connect each output on the lower portion of the back panel to each of the HDMI inputs on the upper portion of the 1:4 HDMI CAT5 DA.
3. Connect the remote displays (up to four) to each of the HDMI CAT5 DAR receivers using user supplied HDMI cables.
4. Connect the 5V DC power supply to each of the HDMI CAT54 DAR Receivers.

**NOTE:** The included power supply for the RECEIVER must be connected before the connection of the CAT-5 cables. Once the power LED is active on the receiver the CAT-5 cables can then be connected. Always follow this initialization procedure on the RECEIVER if power has to been cycled due to a power outage or for troubleshooting purposes.

5. Connect each of the HDMI CAT54 DAR receivers (up to four) to the 1:4 HDMI CAT5 DA sending unit using a pair of CAT-5, CAT-5e or CAT-6 cables.

**NOTE:** If field terminating network cable, please adhere to the TIA/EIA-568-B standard. Please see page 8 for more information.

6. Connect the included 24V DC power supply to the 1:4 HDMI CAT5 DA.
7. Power on the displays.
8. Power on the source.

**NOTE:** If an image is not being shown on the display, please check all cabling for proper connections and follow the steps outlined below and in the next section.

## 1:4 HDMI CAT5 DA CONFIGURATION

---

The 1:4 HDMI CAT5 DA and HDMI CAT5 DAR receivers have 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. It may be necessary to disable this feature if there is either no video being displayed on initial start-up, there is video noise in the image, or the cable run exceeds 130 feet. First, verify that all the proper connections have been made and that all devices are powered on before attempting to disable auto equalization. Please follow the section on the next page to manually equalize the video signal.

## MANUAL EQUALIZATION PROCEDURE

The HDMI CAT5 DAR receiver units have a set of dip switches located on the underside of their casings. There is a piece of silver metallic tape that must be removed to expose these dip switches. Each HDMI CAT5 DAR receiver carries one bank of 4 dip switches. All dip switches on the HDMI CAT5 DAR receiving units are used in this procedure. Dip switches 1 relates to the Auto Equalization function, while dip switches 3 and 4 control the boost strength from the 1:4 HDMI CAT5 sending unit. By default, all dip switches on the HDMI CAT5 DAR should be in the OFF position. To turn off auto equalization, turn dip switch 1 on the receiving units to the ON position (Auto EQ off). With these settings, please follow the steps below to equalize the picture.

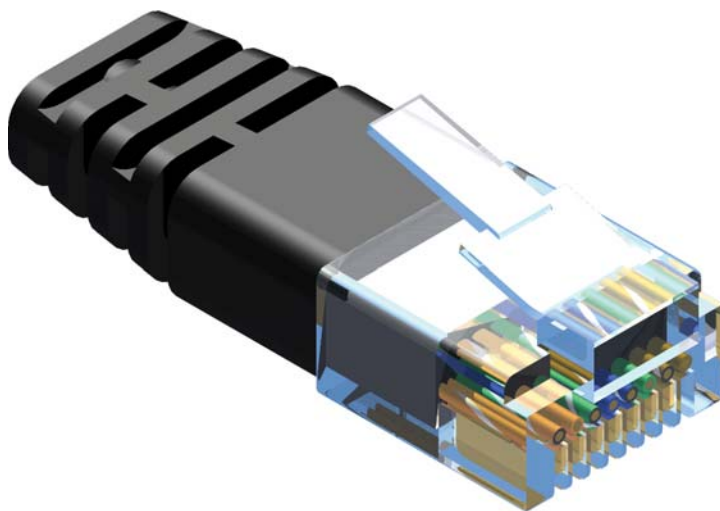
1. Insert a small flat head tool into the trim pot on the receiver unit.
2. Turn the trim pot in a clockwise fashion until it comes to a stop. Do not force the trim pot beyond this point. Doing so may render the trim pot useless.
3. Slowly turn the trim pot counter-clockwise in millimeter increments until the image stabilizes and all video noise disappears.
4. Carefully remove the adjustment tool.

**NOTE:** If your cable run is beyond 130 feet, or the steps above do not produce any video, it may be necessary to increase the boost from the sending unit. Use the chart below to increase the senders boost strength by changing the HDMI CAT5 DAR receiver's dip switches. Once a new boost setting is set, repeat steps 1 through 4 from above. The required boost setting will largely be dependant on the quality and length of cabling. Experiment with all boost settings until the image stabilizes and all video noise has been eliminated.

Receiver Auto EQ Dip Switch Settings		
Setting	Switch 1	Switch 2
Manual EQ	ON	Not Used
Auto EQ (Default)	OFF	Not Used

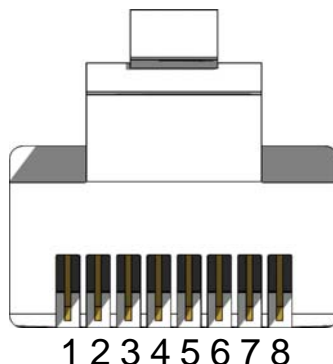
Receiver Boost Dip Switch Settings		
Setting	Switch 3	Switch 4
No Boost (Default)	OFF	OFF
Medium Boost	OFF	ON
High Boost	ON	OFF
Very Low Boost	ON	ON

## NETWORK CABLE WIRING DIAGRAM



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



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.

## 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 Video Connector .....	Type A, 19 Pin Female
Power Supply .....	24V DC
Power Consumption .....	60 watts (max)
Dimensions .....	17.125" W x 3.50" H x 4.125" D
Shipping Weight .....	5 lbs.