

# Linear®

*Building On Innovation.*

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

Model # HDMI-DA-2X8M

USER MANUAL



**1080P**  
PROGRESSIVE

**HDMI**  
HIGH DEFINITION MULTIMEDIA INTERFACE

**EDTV**

**HD DVD**

**Blu-ray Disc™**

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





## ASKING FOR ASSISTANCE

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**Notice**

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

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## INTRODUCTION

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The Linear 2:8 Distribution Amplifier For HDMI 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 DISTRIBUTION AMPLIFIER FOR HDMI

- **Display information (EDID) is sent from the display connected to HDMI Output Port 1 to both sources connected to the 2:8 Distribution Amplifier for HDMI. If there is no display connected to HDMI Output Port 1, the remaining HDMI Output Ports will be scanned in succession and use the first EDID that it detects. (See note on page 4 for additional information)**
- The 2:8 Distribution Amplifier for HDMI 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) 2x8 Distribution Amplifier For HDMI
- (1) 6' HDMI cable (M-M)
- (1) 24V DC Power Supply
- (1) RMT2-IR remote
- (1) Set of Rack Ears
- (1) Users Manual

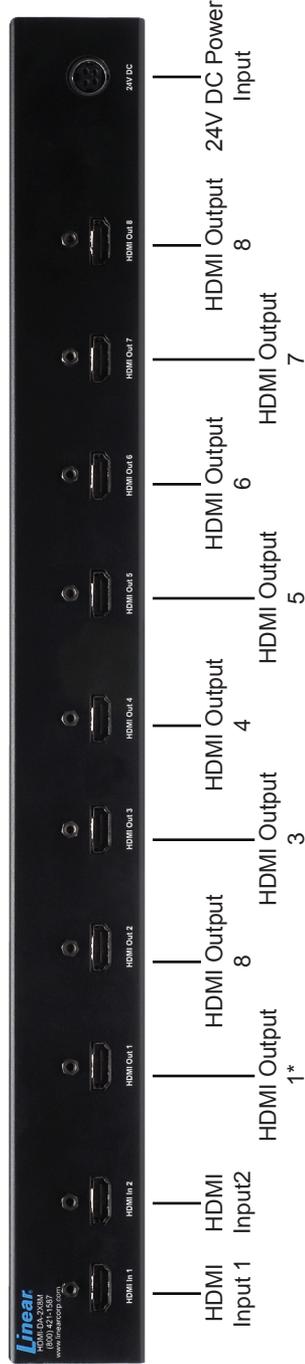


**NOTE:** \*When used with a HDMI to DVI Adapter

Front Panel



Back Panel



\*See Note on page 4

## **CONNECTING THE 2:8 DISTRIBUTION AMPLIFIER FOR HDMI**

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

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

**NOTE:** \*Display information (EDID) is sent from the display connected to HDMI Output Port 1 to both of the sources connected to the 2:8 Distribution Amplifier for HDMI. If there is no display connected to HDMI Output Port 1, the remaining HDMI Output Ports will be scanned in succession and use the first EDID that it detects. The source will output resolutions and timings according to the EDID that is being fed by the 2:8 Distribution Amplifier for HDMI. Therefore, all of the connected displays must be capable of accepting the timings and resolution output by the source. 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.

## **OPERATING THE 2:8 DISTRIBUTION AMPLIFIER FOR HDMI**

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Switching between the inputs on the 2:8 Distribution Amplifier for HDMI 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.

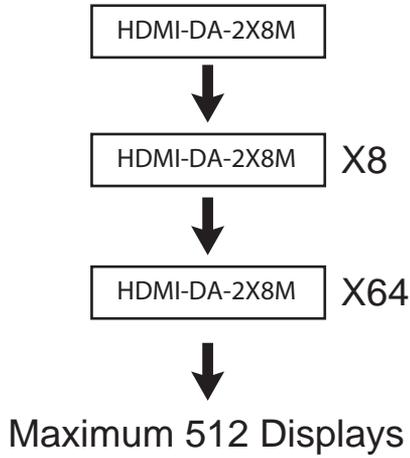
### **RJ11 To Serial Control Interface**

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

## APPLICATION DIAGRAM

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Multiple HDMI-DA-2X8 devices can be daisy chained together to distribute a single HDMI signal to a maximum of 73 units, for a total of 512 displays.



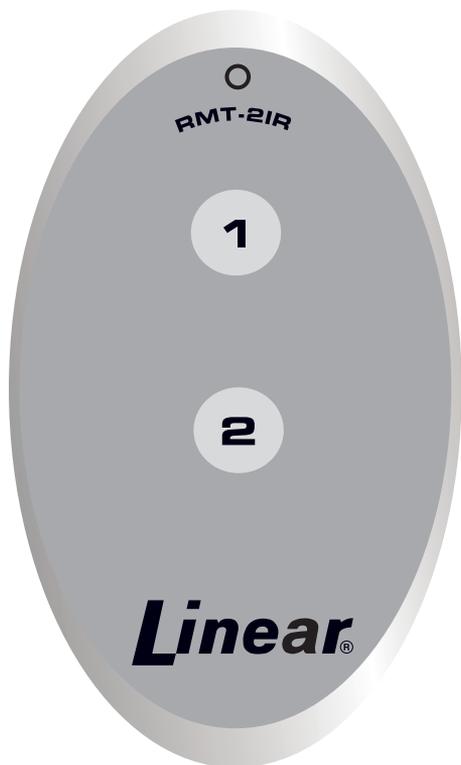
## RMT2-IR INSTALLATION

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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. Linear part# IR-EXTENDER

# 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 Distribution Amplifier for HDMI 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 Distribution Amplifier for HDMI 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 Distribution Amplifier for HDMI.

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

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 Distribution Amplifier for HDMI 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:

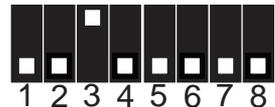


### 2:8 Distribution Amplifier for HDMI

Remote Channel 1:  
Default



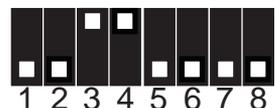
Remote Channel 2:



Remote Channel 3:



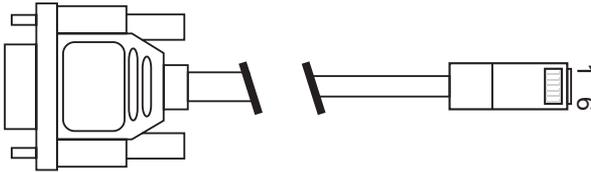
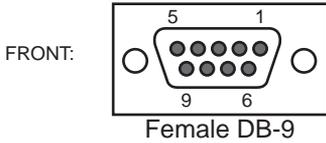
Remote Channel 4:



# 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

### Terminal Settings

Bits per second ..... 19200

Data bits ..... 8

Parity ..... None

Stop bits ..... 1

Flow Control ..... None

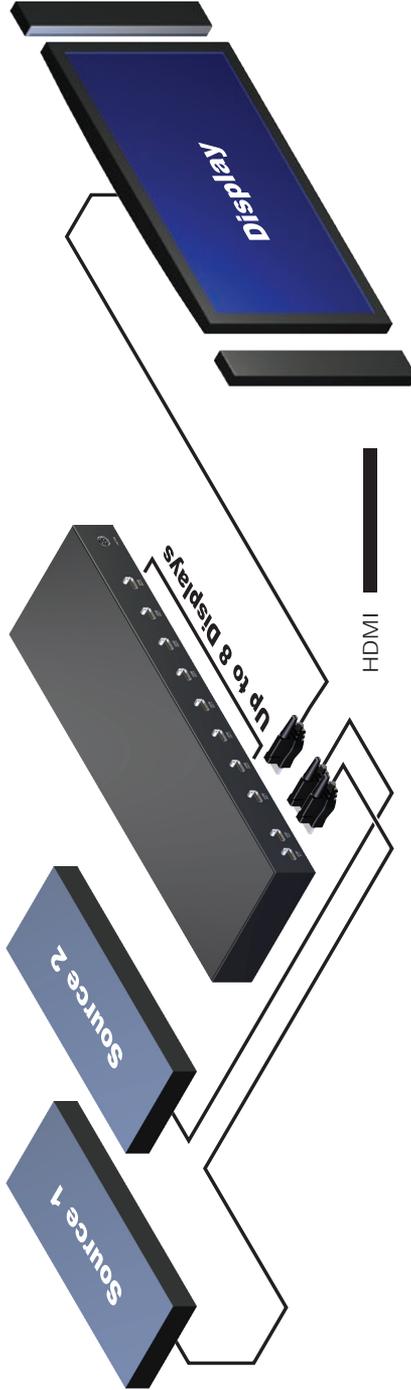
## RACK EARS INSTALLATION DIAGRAM

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 HDMI-SB or HDMI-CAT5-EXT

## 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

## WARRANTY

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**Note: These products are designed to be installed and serviced by trained professional installation companies.**

Linear LLC warrants this product to be free from defects in material and workmanship. For the term of the warranty, see the list of products below. The Warranty Expiration Date is reflected by a date code that is affixed to all of Linear's products. This warranty extends only to wholesale customers who buy direct from Linear or through Linear's normal distribution channels. Linear does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer's warranty. There are no obligations or liabilities on the part of Linear LLC for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation or reinstallation. All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until warranty expiration date as labeled on the product. This Linear LLC Warranty is in lieu of all other warranties express or implied. Some states and countries do not allow limitations or how long an implied warranty lasts or the exclusion or limitation or incidental or consequential damages, so the above exclusions may not apply. The Linear LLC warranty gives specific legal rights in addition to other rights, which may exist and vary from state to state and country to country.

All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Technical Services at 1-800-421-1587 for an RPA# and other important details.

Consumers: If you have trouble locating your installing company, please contact Linear LLC at 1-800-421-1587 and we will assist you with locating a service and Installation Company.

The following warranty period applies to this set of Linear branded products.

1. Linear High Definition Video products — Two (2) years. There is no warranty offered on the batteries supplied with the IR remote Control.

**The warranty is limited to repair or replacement of products returned, freight prepaid, to Linear LLC. There is NO PROVISION FOR LABOR COST OR OTHER REIMBURSEMENTS OF ANY KIND.**

1. Failures due to product abuse, negligence, improper installation, improper use, and electrical surge including damage from lightning, water damage or other damage due to natural disasters are not covered by the warranty.
2. The warranty shall also be voided by any tampering with the date code, labels or other markings on the product.
3. Products that are damaged in transit to Linear LLC due to improper packaging or by the carrier (shipping company) will not be covered under the warranty. If the product was damaged or lost by the carrier, it is the sender's responsibility to create a claim against the carrier.
4. The user is responsible for all labor costs associated with removing, reinstalling and returning the product to Linear LLC.
5. Linear LLC, at its option, will repair or replace the defective product.
6. Replacements will be made from B-Stock. If an exact replacement is not available Linear LLC, at its option will select the nearest equivalent product. The user is responsible for freight charges to Linear LLC.
7. Linear LLC will return warranted repaired or replacements by UPS Ground or an equivalent service. A customer may pay the additional costs for second day or next-day service.







**HDMI-DA-2X8M**



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Rev A