

# Linear®

*Building On Innovation.*

## 4X1 Switcher For **HDMI™ 1.3**

Model # HDMI-SW-4X1

USER MANUAL



**1080P**  
PROGRESSIVE

**HDMI**  
HIGH DEFINITION MULTIMEDIA INTERFACE

**HDTV**

**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.

## TABLE OF CONTENTS

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- 1 Introduction / Operation Notes
- 2 Features
- 3 Panel Descriptions
- 4 Connecting and Operating the 4X1 Switcher For HDMI 1.3
- 5 RMT4-IR Installation
- 6 IR Code Conflicts
- 7 RS-232 Serial Control Interface
- 8 Wiring Diagram
- 9 Specifications
- 10 Warranty

## INTRODUCTION

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The Linear 4x1 Switcher for HDMI 1.3 routes high definition video in multiple resolutions up to 1080p plus multichannel digital audio from any of four sources to one display. Four HDMI inputs accommodate the simultaneous connection of up to four high definition video sources, such as satellite systems, Blu-ray and HD-DVD players. The output sends the high definition audio/video signals to a high definition display.

### How It Works

You simply connect all your sources to the switcher's HDMI inputs. Then connect your display to the switcher's HDMI output. Once the sources, the switcher and the display are powered and connected, you simply select which source you want to view using the IR remote, the selector buttons on the front panel, or by the RS-232 serial control interface.

## OPERATION NOTES

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### **READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 4X1 SWITCHER FOR HDMI 1.3**

- When powering the sources, the display needs to point to the source input.
- The 4X1 Switcher For HDMI 1.3 works with all DVI\* and HDMI displays.
- The 4X1 Switcher For HDMI 1.3 is HDCP compliant.
- The 4X1 Switcher For HDMI 1.3 is HDMI 1.3a compliant.

**NOTE** \*Using a DVI to HDMI adapter

# FEATURES

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## Features

- Switches easily between any four HDMI sources
- Supports resolutions up to 1080p, 2K and 1920 x 1200
- Inputs can be switched with the IR remote control, the selector buttons on the front of the unit, or by RS-232 serial control interface
- Extends the range of HDMI compliant devices by equalizing and re-clocking the HDMI signal control interface
- HDMI 1.3/HDCP compliant

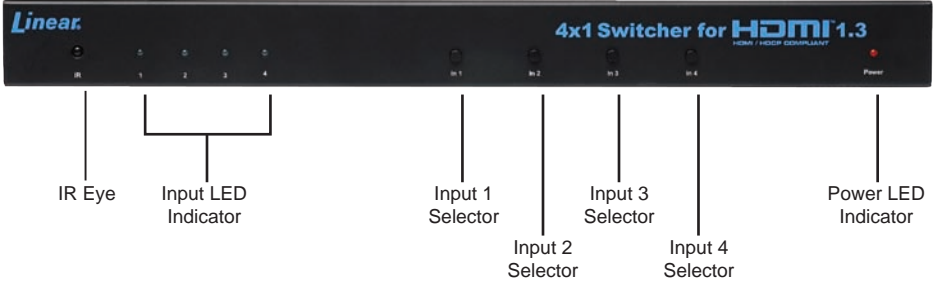
## Includes:

- (1) 4X1 Switcher For HDMI 1.3
- (4) 6' HDMI cables (M-M)
- (1) 5V DC Power Supply
- (1) RMT4-IR Remote Control
- (1) User's Manual

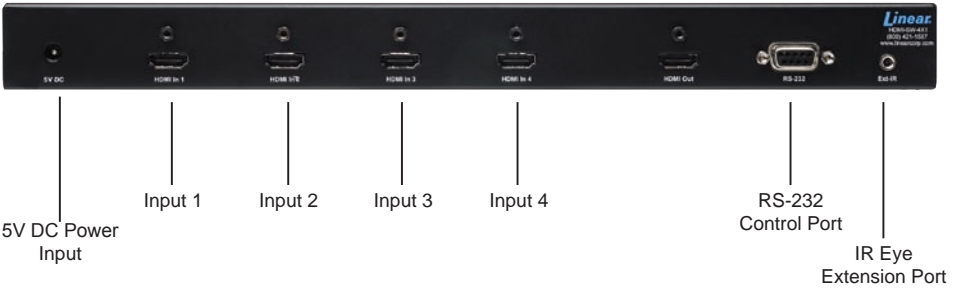


# PANEL DESCRIPTIONS

## FRONT



## BACK



## DIP SWITCH LOCATION



4 Bank Dip Switch

## **CONNECTING AND OPERATING THE 4X1 SWITCHER FOR HDMI 1.3**

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### **How to Connect the 4X1 Switcher For HDMI 1.3 to your devices**

1. Connect the HDMI sources to the 4X1 Switcher for HDMI 1.3 input ports using the supplied HDMI cables.
2. Connect the display (monitor or projector) to the 4X1 Switcher for HDMI 1.3 output port using a user supplied cable.
3. Plug the 5V DC power supply into the 4X1 Switcher for HDMI 1.3.

## **SWITCHING INPUTS ON THE 4X1 SWITCHER FOR HDMI 1.3**

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Input switching on the 4X1 Switcher for HDMI 1.3 can be done using either the supplied IR remote control, the selector buttons on the front panel, or by RS-232 serial control interface.

### **IR Remote**

The supplied IR remote control is labeled with four buttons that correspond to the four inputs on the 4X1 Switcher for HDMI 1.3. Pressing any of the four buttons will switch the 4X1 Switcher for HDMI 1.3 to that numbered input.

### **Selector Buttons**

There are selector buttons on the front of the 4X1 Switcher for HDMI 1.3 for each of the four inputs. Pressing any of these buttons will switch the 4X1 Switcher for HDMI 1.3 to the corresponding numbered input.

### **RS-232 Serial Control Interface**

Please see page 7 for more information on the RS-232 serial control interface.



## RMT-4IR INSTALLATION

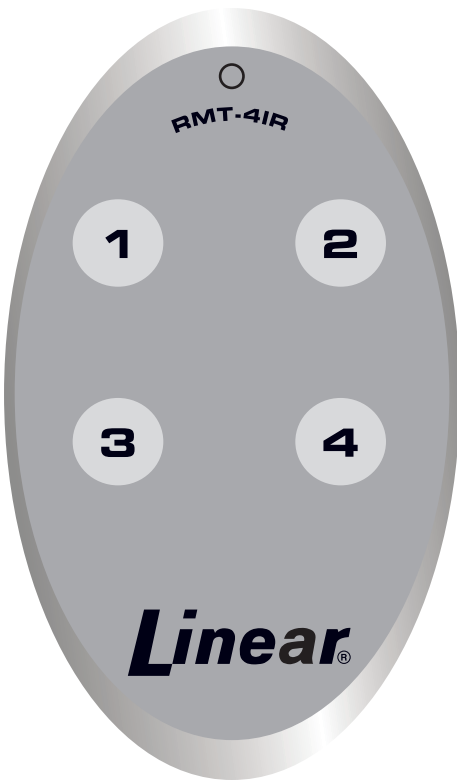
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1. Remove battery cover from the back of the RMT-4IR remote.
2. Verify that dip switches 1 & 2 are in the down (OFF) position. (See page 6)
3. Insert the battery, hold the battery so that you can see the positive side facing up. The side that is not marked must be facing down.
4. Test the RMT-4IR 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 RMT-4IR ships with two batteries. Only one battery is required for operation, the other 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-4IR remote control, changing the remote channel will alleviate this issue. The RMT-4IR remote control and the 4X1 Switcher for HDMI 1.3 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-4IR is located underneath the battery cover. The 4 DIP SWITCH bank for the 4X1 Switcher for HDMI 1.3 is located on the underside of the unit beneath a black piece of metallic tape. DIP SWITCH 1 and 2 on the RMT-4IR correspond to \*DIP SWITCH 1 and 2 on the 4X1 Switcher for HDMI 1.3.

**NOTE:** \*DIP SWITCHES 3 and 4 are not used on the 4X1 Switcher for HDMI 1.3.

### Remote



Remote Channel 1:  
Default



Remote Channel 2:



Remote Channel 3:



Remote Channel 4:



### 4X1 Switcher For HDMI 1.3

Remote Channel 1:  
Default



Remote Channel 2:



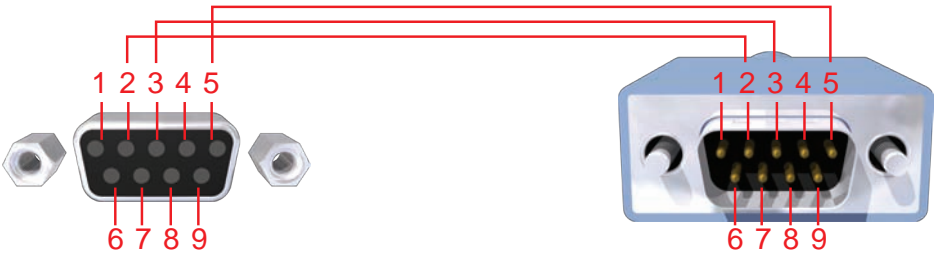
Remote Channel 3:



Remote Channel 4:



# RS-232 SERIAL CONTROL INTERFACE



Only Pins 2 (RX), 3 (TX), and 5 (Ground) are needed to operate RS-232 Interface

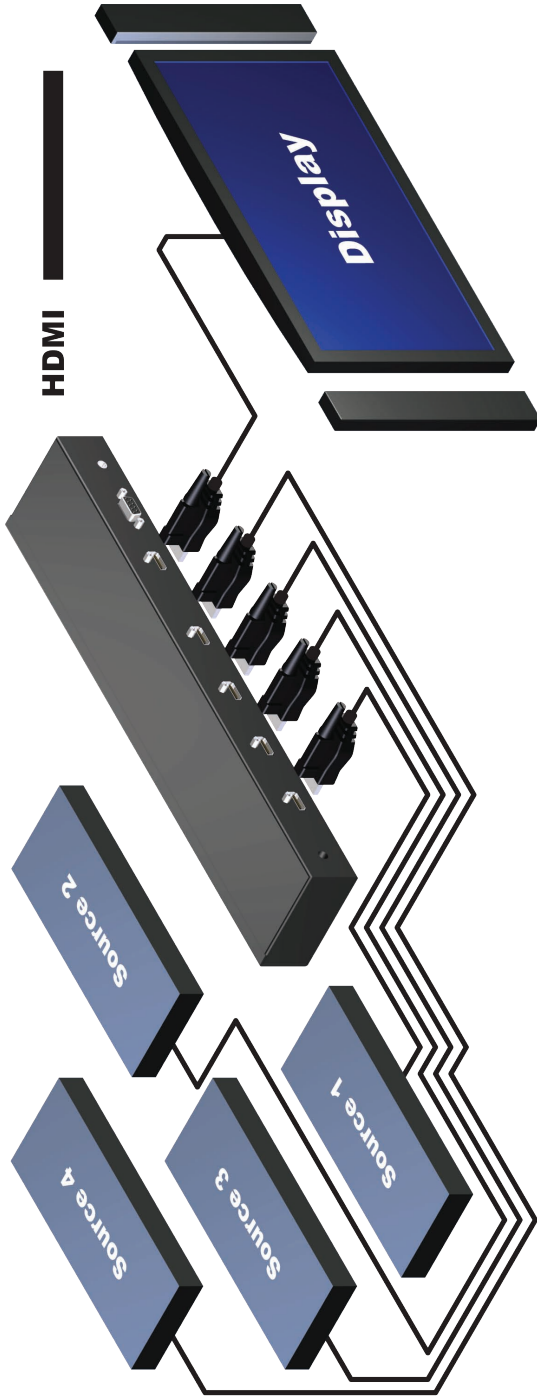
## Binary Table

ASCII	Input	Binary
1	1	0011 0001
2	2	0011 0010
3	3	0011 0011
4	4	0011 0100

## Terminal Settings

Bits per second ..... 19200  
Data bits ..... 8  
Parity ..... None  
Stop bits .....1  
Flow Control ..... None

# WIRING DIAGRAM



Maximum HDMI cable length is 15 ft at 1080P resolution without the use of an HDMI-SB or HDMI-CAT5-EXT

## SPECIFICATIONS

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Video Amplifier Bandwidth .....	340 MHz
Input Video Signal .....	1.2 volts p-p
Input DDC Signal .....	5 volts p-p (TTL)
Single Link Range .....	1080p/60 10 bit color depth, 1920x1200
HDMI Connector .....	Type A 19 Pin Female
Remote Control Port .....	RS-232, mini-stereo
Power Supply .....	5V DC
Power Consumption .....	10 watts (max)
Dimensions .....	13.25"W x 1"H x 2.75"D
Shipping Weight .....	6 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-SW-4X1



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Rev A