



# BINARY B-660-MTRX-4X2 4K HDR HDMI Matrix Switcher Installation Guide

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## BINARY B-660-MTRX-4X2 4K HDR HDMI Matrix Switcher



### IMPORTANT SAFETY INSTRUCTIONS

To reduce the risk of fire or electric shock, read and follow all instructions and warnings in this manual. Keep this manual for future reference.

1. Do not expose this apparatus to rain or moisture. Do not expose this equipment to dripping or splashing, and ensure that no objects filled with liquids, such as vases, are placed on the equipment. Do not use this apparatus near water.
2. Do not remove the cover. No user-serviceable parts inside.
3. Clean only with a dry cloth.
4. Do not block any ventilation openings. Install according to manufacturer's instructions
5. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifier ) that produce heat.
6. Do not override the safety purpose of the polarized or grounding plug. A polarized plug has two blades, one of which is wider than the other. A grounding plug has two matching blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
7. Protect the power cord from being walked on or pinched, particularly at the plug end and where the power cord is attached to the apparatus.
8. Only use attachments and accessories specified by the manufacturer.
9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has been spilled on or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, the apparatus does not operate normally, or it has been dropped.
10. To completely disconnect this equipment from power, disconnect the power supply cord from the power outlet.

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute the risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**CAUTION:** TO REDUCE THE RISK OF ELECTRICAL SHOCK. DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

## FCC WARNINGS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## PRODUCT OVERVIEW

The B-660-MTRX-4x2 is a 4K HDR 4x2 HDMI Matrix Switcher and allows up to four Ultra High Definition 4K HDR 1080p HD inputs to be independently routed to two Ultra HD displays. For HDMI output 1, there is a 3.5mm analog and SPDIF optical audio output allowing audio to be extracted from the HDMI source connected to output 1. For HDMI output 2, there's a SPDIF optical audio output, which can come from the HDMI output 2 source or the HDMI ARC from the TV. This audio is controlled by a dip slider setting on the unit. Each output port supports independent scaling and can be 4K or 1080P, even if the source is the same. The B-660-MTRX-4x2 features a RS-232 port for third party control system connection and control.

## FEATURES

- Routes four HDMI sources to two 4K HDR Ultra HD displays
- HDCP 2.2 compliant
- Supports up to 4K Ultra HD and DCI resolutions(4096x2160@60 z)
- Each output supports scaling from 4K to 1080P independently
- Analog and digital audio de-embedded from output 1
- Digital audio de-embedded from HDMI output 2 or HDMI ARC from TV
- Supports 12-bit Deep Color, 3D, Lip Sync and loss-less HD audio formats pass-through
- Multiple control options, including RS-232, IR and push button controls

**Note:** If the input source is active, whether display device is connected or not, the audio de-embedding port will output normally.

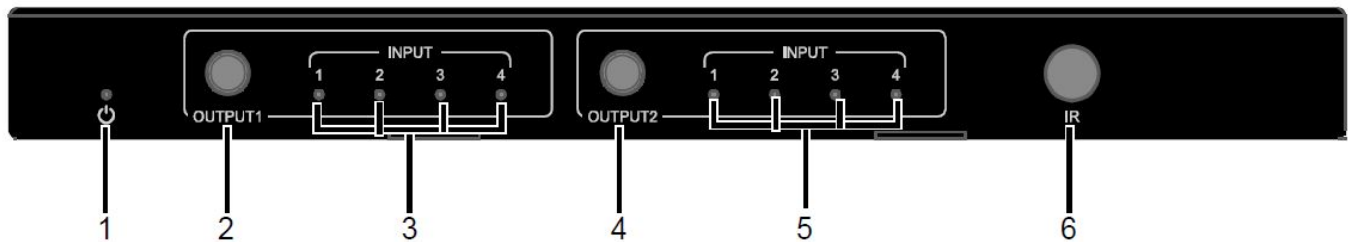
## PACKAGE CONTENTS

- 1 x B-660-MTRX-4x2 Matrix
- 1 x DC 5V Power Adapter with US Pins

- 1 x IR Remote
- 1 x Phoenix Male Connector (3.5 mm, 3 Pins)
- 2 x Mounting racks (with Screws)
- 2 x Drywall Screws
- 4 x Rubber Feet
- 1 x Power Cord Strip
- 1 x Installation manual

## DEVICE LAYOUT

### B-660-MTRX-4x2 Front Panel



#### 1. POWER LED

1. On: The device is powered on.
2. Off: The device is powered.

#### 2. OUTPUT1 SWITCH BUTTON

Press to cycle through the active sources that are connected and available for Output 1.

#### 3. OUTPUT1 INPUT (1-4) LEDs

1. On: The HDMI input is selected and active for Output 1.
2. Off: The HDMI input is not selected nor active for Output 1.

#### 4. OUTPUT2 SWITCH BUTTON

Press to cycle through the active sources that are connected and available for Output 2.

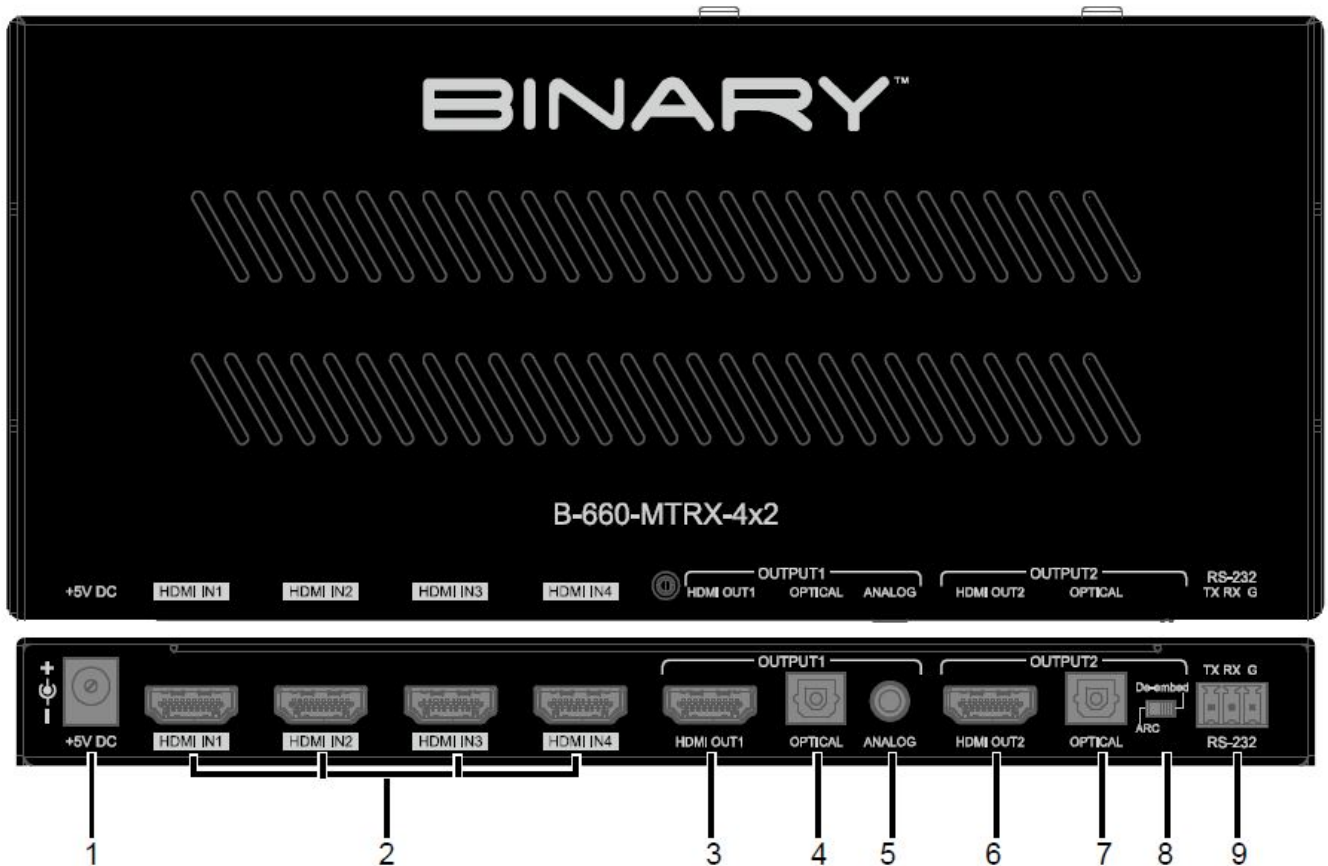
#### 5. OUTPUT2 INPUT (1-4) LED

1. On: The HDMI input is selected and active for Output 2.
2. Off: The HDMI input is not selected nor active for Output 2.

#### 6. IR SENSOR

Receives IR from handheld IR Remote, IR Emier, or IR Flasher.

## B-660-MTRX-4x2 Rear Panel



### 1. +5V DC

Connect to the provided DC 5V power adapter.

### 2. HDMI IN (1-4)

Connect to HDMI sources such as Blu-ray player, Media Player, or PC.

### 3. HDMI OUT1

Connect to an HDMI display such as a TV, Flat Panel Display, or Projector.

### 4. SPDIF OUT

Connect to audio devices such as AV system for digital de-embedded audio from HDMI OUT1.

### 5. AUDIO OUT

Connect to audio device such as Amplifier for analog de-embedded audio from HDMI OUT1.

### 6. HDMI OUT2

Connect to an HDMI display such as a TV.

### 7. SPDIF OUT

Connect to audio devices such as AV system for digital de-embedded audio output from HDMI OUT2 or ARC audio output from the TV connected to HDMI OUT2.

### 8. DIP SWITCH

De-embedded: SPDIF OUT outputs de-embedded audio from HDMI OUT2 source. ARC: SPDIF OUT outputs the ARC audio from the TV connected to HDMI OUT2.

### 9. RS-232

Connect to a control PC or control system for RS232 serial control.

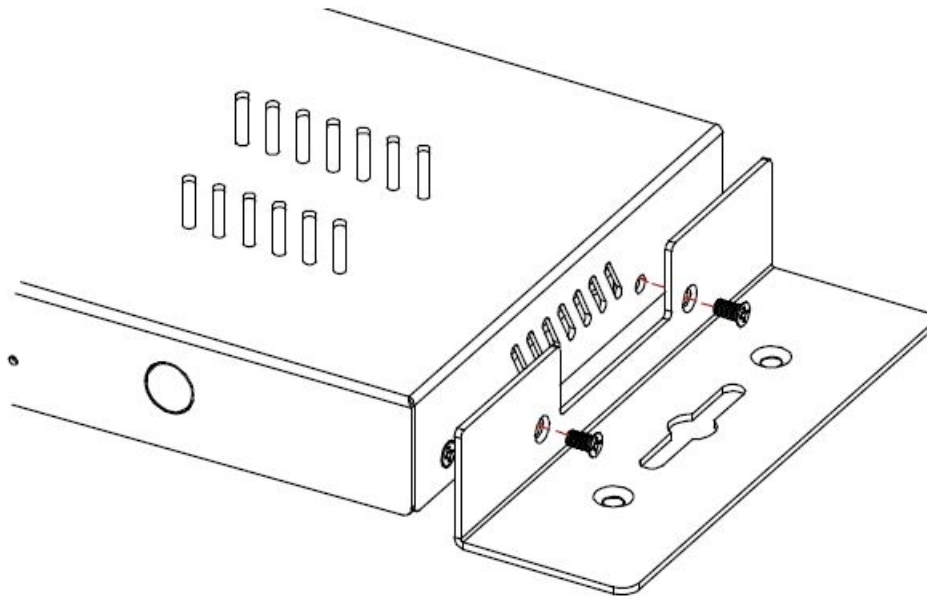
## INSTALLATION & WIRING

## Installation

The B-660-MTRX-4x2 can be placed on a solid and stable surface, installed on a standard equipment rack shelf, or mounted to a wall or distribution box. When installed on a rack shelf, wall, or distribution box we strongly recommend that the included mounting ears be used to secure the device. When installing on a solid surface the use of the mounting ears is optional.

### Steps to install the switch using the supplied mounting ears:

1. Attach the installation bracket to the enclosure using the screws provided in the package separately.
2. The bracket is attached to the enclosure as shown.



3. Repeat steps 1-2 for the other side of the unit.
4. Mount the switch on a solid surface, rack shelf, wall, or distribution box with the included mounting screws by screwing the mounting ears to the surface you are mounting.

## Wiring

### Warnings:

- Before beginning any wiring be sure to disconnect the power from all devices in the system.
- During wiring gently connect and disconnect the cables.

### Steps for device wiring:

#### 1. Connect HDMI IN

Connect the HDMI sources (such as PC, Blu-ray player, Apple TV, 4K media player, etc) to the HDMI IN 1-4. Ensure you are using a high-quality HDMI cable capable of supplying the maximum resolution you require.

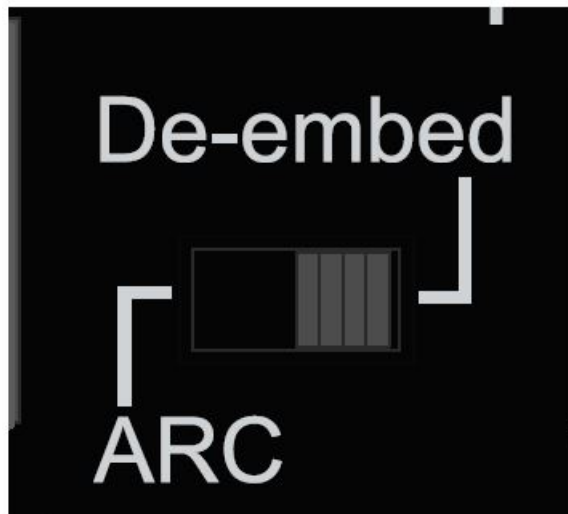
#### 2. Connect HDMI OUT

Connect the HDMI display device (such as a TV, projector, LED/LCD display or other display device) to the HDMI OUT. Ensure you are using a high-quality HDMI cable capable of supplying the maximum resolution you require.

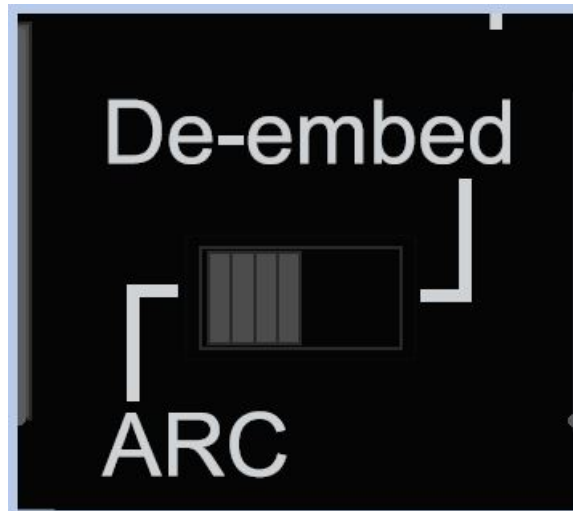
#### 3. Connect SPDIF OUT and AUDIO OUT

Connect audio devices to SPDIF OUT ports of OUTPUT1&2, and connect an audio device to AUDIO OUT port of OUTPUT1.

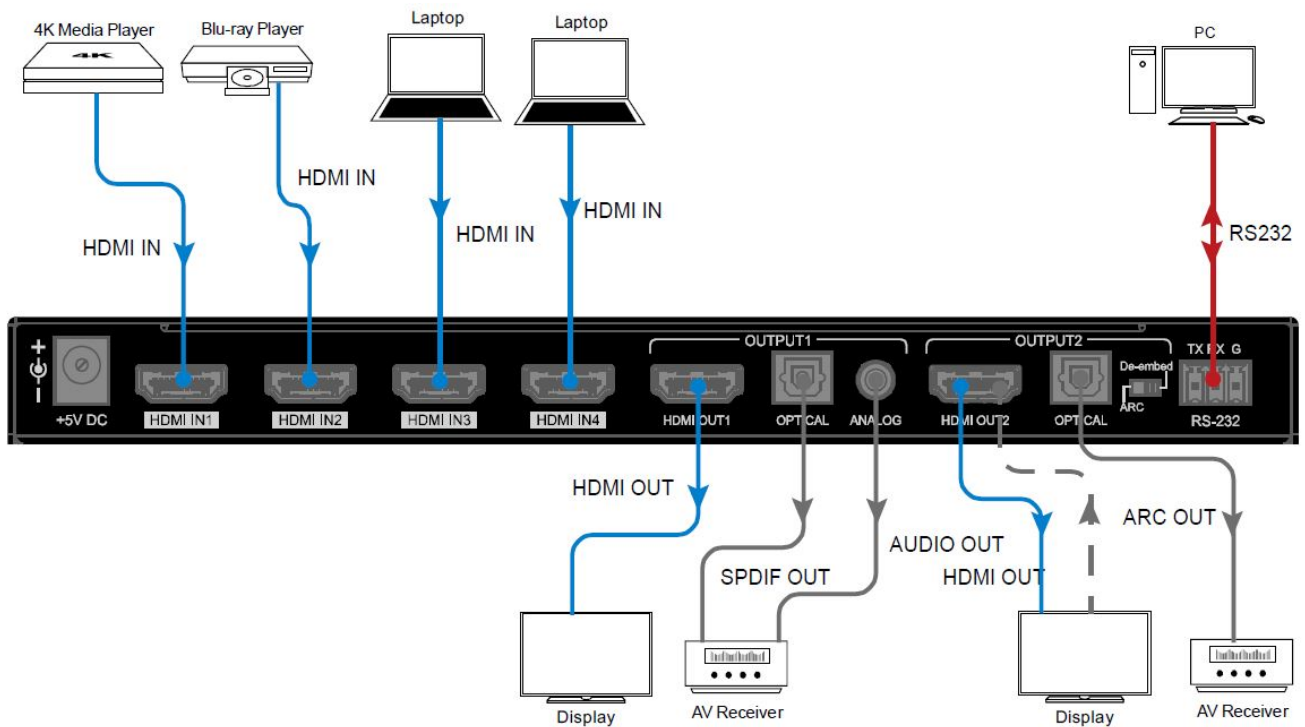
1. Slide the DIP switch to De-embedded mode, the SPDIF OUT of OUTPUT2 will output the digital de-embedded audio from HDMI OUT2.



2. Slide the DIP switch to ARC mode, the SPDIF OUT of OUTPUT2 will output the ARC audio from the TV connected to HDMI OUT2.



4. Connect for additional control options:
  1. RS232 control: Connect a control PC or control system to RS232 port of the Matrix.
  2. IR control: The IR Remote provided is for controlling the Matrix through IR signal.
5. Connect the DC 5V power cord provided.
6. Power on all attached devices.



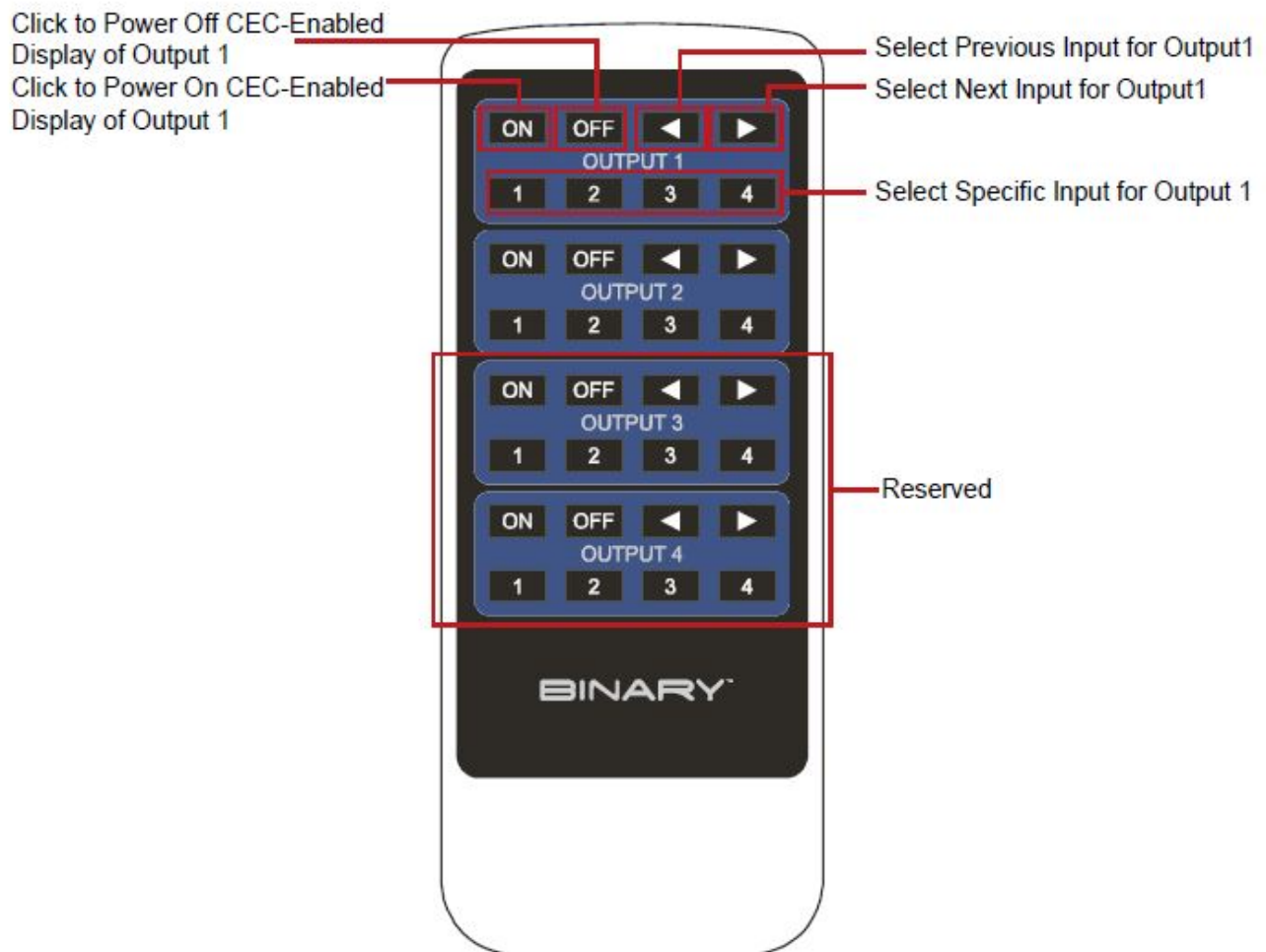
## IR REMOTE CONTROL

The Matrix can be controlled by the IR Remote provided by pointing it directly at the IR sensor on front panel. This allows for selecting inputs source) for each output (display) as well as power On and O for connected CEC-enabled displays.

### Note:

- While the battery is installed it is isolated from the internal contacts via a plastic tab. e sure to remove this tab before operating the emote.
- While the remote contains Output 3 and 4 these have no function on this m Trix.





### Assigning Inputs (sources) to Outputs (display):

1. On the remote locate the output to assign an input to, these are in order vertically from top to bottom labeled in the middle of the remote.
2. Press the desired Input # or use the Previous or Next button to scroll through the available inputs.

### Virtual IR Code Supported by Default (Matrix Switching Code)

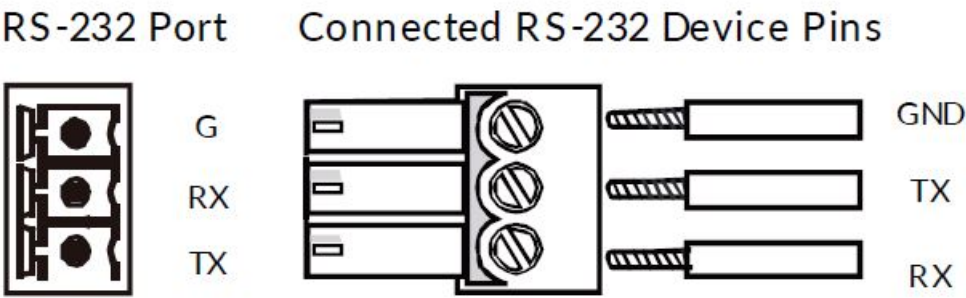
Code	Left ( )	Right ( )	In1	In2	In3	In4
Out1	0x57	0x41	0x09	0x1D	0x1F	0x0D
Out2	0x1B	0x11	0x17	0x12	0x59	0x08

### RS-232 CONTROL

Advanced users may need to control the matrix through RS232 serial communication. Connect a control PC or control system to the RS232 port of the receiver. API command for RS232 control is available in the separate document "API Command Set\_ B-660-MTRX-4x2". A professional RS232 serial interface software (e.g. Serial Assist) may be needed as well. Before executing the API command through RS232 serial connection, please ensure the RS232 interface of the device and the control PC are configured correctly.

Parameters	Value
Baud Rate	115200 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

RS-232 Port Connection Pin out



SPECIFICATIONS

Technical

Input/Output Port	4 x HDMI IN, 2 x HDMI OUT, 1 x RS-232 (RJ45), 2 x SPDIF OUT ( Digital), 1 x AUDIO OUT (Analog) 1 x DC 5V IN
Input/Output Signal Type	HDMI with 4K@60Hz 4:4:4, HDR 10, HLG & Dolby Vision, HDCP 2.2
	VESA:
	800×6008, 1024×7688, 1280×7688,
	1280×8008, 1280×9608, 1280×10248,
	1360×7688, 1366×7688, 1440×9008,
	1600×9008, 1600×12008, 1680×10508,
Input/Output Resolution upported	1920×12008 SMPTE:
	720x576P6, 1280x720P6,7,8,
	1920x1080P2,5,6,7,8, 3840×21602,3,5,6,8,
	4096×21602,3,5,6,8
	2 = at 24 Hz, 3 = at 25 Hz, 5 = at 30 Hz, 6 = at
	50 Hz, 7 = at 59.94 Hz, 8 = 60 Hz
Audio Format	HDMI IN/OUT: Fully supports audio formats in HDMI 2 .0 specific tion, including PCM 2.0/5.1/7.1, Dolby True HD, Dolby Atmos, DTS-HD Master Audio and DTS:X  AUDIO OUT: Only support PCM 2.0; S/PDIF OUT: Sup port PCM 2.0/5.1, Dolby digital and DTS up to 5.1 Channel.
Maximum Data Rate	HDMI IN & HDMI OUT: 18Gbps
Control Method	IR, RS-232, Front Panel Bu on

## General

Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	10% to 90%, non-condensing
ESD Protectio	Human-body Model: ±15kV (Air-gap discharge)
Power Supply	DC 5V 1A
Power Consumption ( ax)	3.3W
Device Dimension (W x H x D)	220mm x 21mm x 100.2mm/8.66" x 0.83" x 3.94" (With out mounting b ackets)"
Product Weight	0.54kg/1.19lb

## Transmission Distance

Cable Type	Range	Supported Video
HDMI	Input: 15m/50 Output: 10 m/33	1080P@60Hz 24bpp
	Input/Output: 10m/33	4K@30Hz 4:4:4 24bpp 4K@60Hz 4:2:0 24bpp
	Input/Output: 5m/16	4K@60Hz 4:4:4 24bpp

## WARRANTY

Find details of the product's Limited Warranty and other safety, patent, and legal resources at [snapone.com/legal](https://snapone.com/legal) or request a paper copy from Customer Service at 866.424.4489

## SUPPORT

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## Documents / Resources



[BINARY B-660-MTRX-4X2 4K HDR HDMI Matrix Switcher](#) [pdf] Installation Guide  
B-660-MTRX-4X2, 4K HDR HDMI Matrix Switcher, B-660-MTRX-4X2 4K HDR HDMI Matrix Switcher

## References

- [Policies](#)
- [tech.control4.com](#)

Manuals+.