

## ▶ HMXL44AB

User Manual

**Thank you for purchasing this product.**

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.



**Surge protection device recommended**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

**Best Cabling Practices**

The transmission distances of HDMI over UTP cables are measured using TE CONNECTIVITY 1427071-6

EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.

To reduce the interference among the unshielded twisted pairs of wires in LAN cable, do not run HDBaseT / Zone Cat5e/6/6a cabling with or in close parallel proximity to mains power cables.

Do not substitute or use any other Power Supply other than the enclosed unit, or a Blusteam approved Replacement Part..

Do not disassemble either the Transmitter or Receiver for any reason. Doing so will void the manufacturer's warranty.

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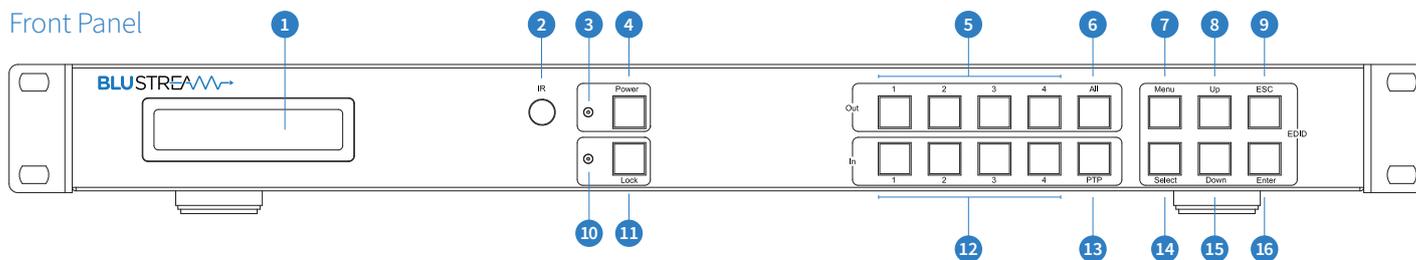
# Introduction

Our Essential 4x4 HDBaseT™ Matrix offers unprecedented performance and value for the custom installation market. The HMXL44-KIT is a 4K 4x4 matrix package, delivering HDMI, Bi-directional IR and PoH (PoE) up to lengths of 70m over a single CAT cable. The matrix also provides advanced features including Audio breakout, simultaneous HDMI outputs and RS-232 pass through to enable 3rd party control of displays. The HMXL44- KIT is supplied with 4 x HEX70ED Receivers.

## FEATURES:

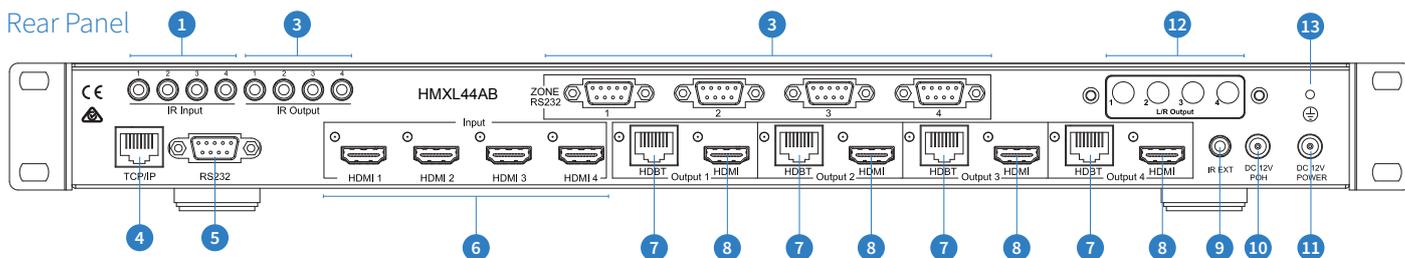
- Features 4x HDMI inputs which can be independantly routed to 4x HDBaseT™/HDMI outputs
- Simultaneous HDBaseT™ and HDMI outputs to allow connection to dual displays per zone
- HDMI audio de-embedded to associated analogue L/R audio outputs
- Extends up to distance of 70m over single CAT cable
- Supports 4K UHD video up to 40m (3840 x 2160 @30Hz 4:4:4, 4096 x 2160 @24Hz 4:4:4, and 4K @60Hz 4:2:0)
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Supports 3D signal display
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio transmission
- Supports bi-directional IR from all input and output locations
- Supplied with Blustream IR receivers and emitters
- Control via front panel, IR, RS-232 and TCP/IP
- Supports PoH (Power over HDBaseT™) to power compatible HDBaseT™ receivers
- 3rd Party drivers available for all major home control brands
- Advanced EDID management
- HDCP compliant
- Matrix kit is supplied with 4 x RX70ED HDBaseT™ receivers
- 1U Design for 19” rack mount integration - mounting kit included

## Front Panel



- 1 LCD display – Shows the status of input-output selection, EDID info etc.
- 2 IR receiver window
- 3 Power LED indicator
- 4 Power button – Press to power on/off the matrix.
- 5 HDMI output selection button 1 to 4 - to select the output from 1 to 4.
- 6 All button for HDMI outputs – All outputs will work as one. (Selects all outputs)
- 7 Menu button – Press to enter EDID set mode (see page 5)
- 8 Up selection button - Press to change segment's value.
- 9 ESC – Press to quit EDID set mode.
- 10 Lock indicator
- 11 Lock button – Press to lock the buttons of the front panel.
- 12 HDMI input selection button 1 to 4 – Press to select the input from 1 to 4.
- 13 PTP button – Press to mirror all inputs and outputs (e.g. output 1 to input1, output 2 to input2)
- 14 Selection button – Press to select segment to change setting. Selected segment will blink.
- 15 Down selection button – Press to change segment's value.
- 16 Enter button – Press to set EDID to specified INPUT or copy EDID from specified OUTPUT to specified INPUT.

Rear Panel



- 1 IR inputs – 3.5mm stereo jack. Transmits IR to the zone receiver (Displays). When using the provided cable ensure the end marked matrix is used
- 2 IR outputs – 3.5mm mono jack – IR returning from extender (Room end) to supplied IR emitters.
- 3 Zone specific bidirectional RS232 ports – Connect to PC or control processor to control RS232 devices in the rooms via the HDBaseT room receivers RS232 port.
- 4 RJ45 – Connect to LAN for TCP & GUI control
- 5 RS232 port – For control of the matrix switcher from PC or control processor
- 6 HDMI inputs – Connect to HDMI sources
- 7 HDBT output – Connect to HDBaseT receivers.
- 8 HDMI output – works simultaneously with HDBaseT output.
- 9 IR input for matrix control – For hard wired IR connection. Use mono cable only. Connect to control processor or IR connecting block.
- 10 POH Power port – Use supplied 12V/5A DC adaptor to power the HDBaseT extenders.
- 11 Power port – Use supplied 12V/5A DC adaptor to power matrix.
- 12 L/R analogue audio output – 3.5mm stereo jack. Extracted audio will follow the I/O selection. Please note: input must be PCM. Bitstream cannot be decoded by matrix
- 13 GND – Connect to ground.

## Remote Control Description

### OUTPUT AND INPUT SELECTION

- A** Selects the zone OUTPUT you wish to change the source on (Numbers 1 - 4 correspond to the zone outputs 1 - 4)
- B** Selects the source INPUT you wish to change on the selected zone (Numbers 1 - 4 correspond to the source inputs 1 - 4)

### EXAMPLE

To switch source 2 to zone 4 you would press 4 in the output section (A) followed by pressing 2 in the Input section (B).

**ALL button:** The all button selects all the inputs or outputs in its corresponding box. Example: (The “All” button in the Output box selects all the zones so all zones will change to what source input is selected next)

**PTP:** This button will align all the zone outputs with the like numbered source inputs. Example: Input 1 to output 1, input 2 to output 2, etc

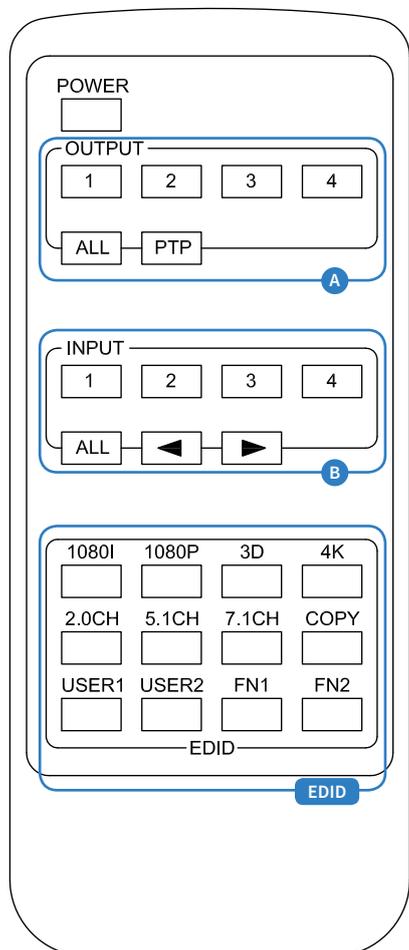
### EDID SET UP

The MX44AB provides a comprehensive range of EDID settings. Below are three

examples of how to deploy the desired EDID setting when using the supplied remote.

- A. Fix EDID to an INPUT or ALL inputs:** Press the desired video resolution button (1080I / 1080P / 3D / 4K), then select the desired audio format (2.0CH / 5.1CH / 7.1CH), then select the source input you want this EDID information allocated to by pressing the INPUT 1 – 4 or the ALL button
- B. Copy EDID of OUTPUT-X to an INPUT or ALL:** Press the COPY button then select the OUTPUT you wish to copy the EDID information from, then select the source input you want to copy this EDID to by selecting the INPUT 1-4 or the ALL button.
- C. User defined EDID to an INPUT or ALL inputs:** Press USER1 / USER2 button then select the source you wish to assign this EDID to by selecting INPUT 1-4 or the ALL button

**NOTE:** The button press sequence should be finished in 5 seconds, otherwise the operation is discarded.



## EDID Control

EDID (Extended Display Identification Data) is a data structure that is used between a display and a source. This data is used by the source to find out what audio and video resolutions are supported by the display then from this information the source will determine what the best resolution is to output.

While the objective of EDID is to make connecting a digital display to a source a simple plug and play procedure issues do arise when multiple displays or video matrix switching is introduced because of the increased number of variables.

By pre-determining the video resolution and audio format of the source and display device we can remove the need for EDID hand shaking thus making switching quicker and more reliable

Three EDID segments will display on the LCD panel:

INPUT	VIDEO	AUDIO	NOTE
IN1	1080I	2.0CH.	
IN2	1080P	5.1CH	
IN3	3D	7.1CH	
IN4	D1024		D1024=DVI 1024 x 768
IN5	D1080		D1080=DVI 1920 x 1080
IN6	D1200		D1200=DVI 1920 x 1200
IN7	OUT1		OUT1=Copy OUTPUT1 EDID to INPUTx
ALL	OUT2		ALL=Set EDID to ALL INPUTs OUT2=Copy OUTPUT2 EDID to INPUTx
	OUT3		OUT3=Copy OUTPUT3 EDID to INPUTx
	OUT4		OUT4=Copy OUTPUT4 EDID to INPUTx
	OUT5		OUT5=Copy OUTPUT5 EDID to INPUTx
	OUT6		OUT6=Copy OUTPUT6 EDID to INPUTx
	OUT7		OUT7=Copy OUTPUT7 EDID to INPUTx
	OUT8		OUT8=Copy OUTPUT8 EDID to INPUTx

## Specifications

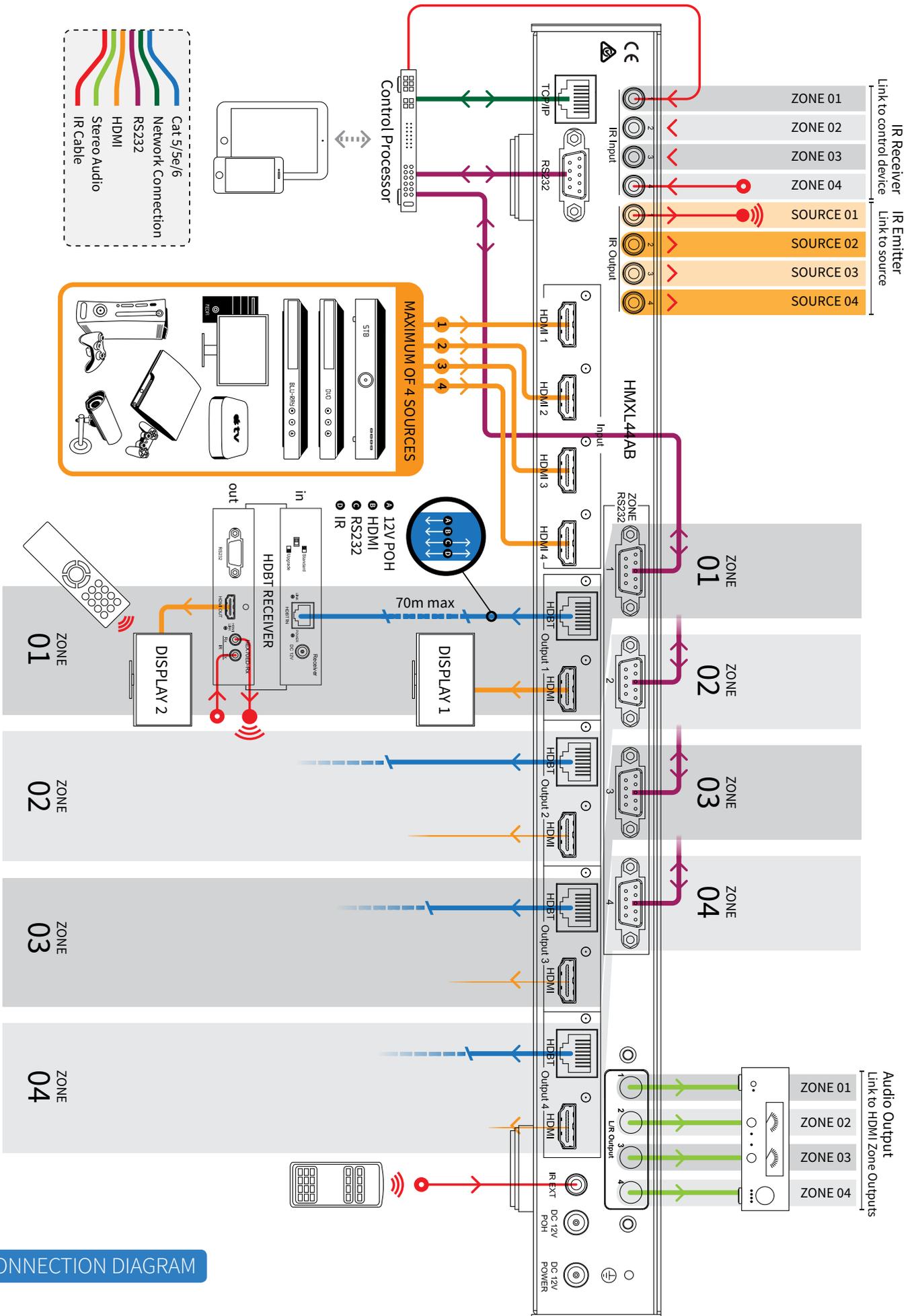
- Video Input Connectors: 4x HDMI Type A, 19-pin, female
- Video Output Connectors: 4x HDMI Type A, 19-pin, female, 4x HDBaseT™ RJ45 connector
- Audio Output Connectors: 4x 3.5mm stereo jack
- RS-232 serial port: 5x DB-9, female
- TCP/IP Control: 1x RJ45, female
- IR Input Ports: 5x 3.5mm stereo jack
- IR Output Ports: 4x 3.5mm mono jack
- Rack-Mountable: 1U rack height, rack ears included
- Dimensions (WxDxH): 428x235x43mm, without feet
- Shipping Weight: 2.7kg
- Operating Temperature: 32°F to 104°F (0°C to 40°C)
- Storage Temperature: -4°F to 140°F (-20°C to 60°C)
- Power Supply: 12V/5A DC (main), 12V/5A DC (POH), screw type connectors

## Package Contents:

- 1 x HMXL44AB
- 4 x HEX70ED-RX
- 1x Rack mounting kit for HMXL44AB
- 4 x Mounting kit for HEX70B-RX
- 2 x 12V/5A power supply
- 1 x Remote control
- 4 x IR control cable - 3.5mm-3.5mm cable
- 4 x IR emitter
- 5 x IR receiver
- 1 x User manual

## Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.



CONNECTION DIAGRAM

## RS232 Pin Assignment

MT0404-QFI		REMOTE CONTROL CONSOLE	
PIN	Assignment	PIN	Assignment
1	NC	1	NC
2	Tx	2	Rx
3	Rx	3	Tx
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

**Baud Rate:** 57600 bps

**Data Bit:** 8-bit

**Parity:** None

**Stop Bit:** 1-bit

**Flow Control:** None

## RS232 and Telnet Commands

NO.	COMAND	ACTION
1	?	Print Help Information
2	HELP	Print Help Information
3	STATUS	Print System Status And Port Status
4	PON	Power On, System Run On Normal State
5	POFF	Power Off, System Run On Power Save State
6	IR ON/OFF	Set System IR Control On Or Off
7	KEY ON/OFF	Set System KEY Control On Or Off
8	APM ON/OFF	Set Advanced Process Mode On Or Off
9	BEEP ON/OFF	Set Onboard Beep On Or Off
10	RESET	Reset System To Default Setting, (Should Type \"Yes\" To Confirm, \"No\" ToDiscard)
11	OUT xx ON/OFF	Set OUTPUT:xx On Or Off, xx=[01...04]
	OUT 01 ON/OFF	Set OUTPUT 1 ON or OFF
	OUT 02 ON/OFF	Set OUTPUT 2 ON or OFF
	OUT 03 ON/OFF	Set OUTPUT 3 ON or OFF
	OUT 04 ON/OFF	Set OUTPUT 4 ON or OFF
12	OUT xx FR yy	Set OUTPUT:xx From INPUT:yy, xx=00: Select All OUTPUT Port,xx=[01...04]: SelectOne OUTPUT Port,yy=[01...04]: Select One INPUT Port
	OUT 01 FR 01	OUTPUT 1 to INPUT 1
	OUT 01 FR 02	OUTPUT 1 to INPUT 2
	OUT 01 FR 03	OUTPUT 1 to INPUT 3
	OUT 01 FR 04	OUTPUT 1 to INPUT 4
	OUT 02 FR 01	OUTPUT 2 to INPUT 1
	OUT 02 FR 02	OUTPUT 2 to INPUT 2
	OUT 02 FR 03	OUTPUT 2 to INPUT 3
	OUT 02 FR 04	OUTPUT 2 to INPUT 4
	OUT 03 FR 01	OUTPUT 3 to INPUT 1
	OUT 03 FR 02	OUTPUT 3 to INPUT 2
	OUT 03 FR 03	OUTPUT 3 to INPUT 3
	OUT 03 FR 04	OUTPUT 3 to INPUT 4
	OUT 04 FR 01	OUTPUT 4 to INPUT 1
	OUT 04 FR 02	OUTPUT 4 to INPUT 2
	OUT 04 FR 03	OUTPUT 4 to INPUT 3
OUT 04 FR 04	OUTPUT 4 to INPUT 4	



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