HMXL88 V2
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.

Safety And Performance Notice

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

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

To minimise interference of the unshielded twisted pairs in the CAT5e/6 cable do not run the HDBaseT / 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 Blustream approved replacement.

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

Contents

Introduction

Our essential 8x8 HDBaseT™ Matrix offers unprecedented performance and value for the custom installation market. The HMXL88 V2 is a 4K HDCP 2.2 8x8 matrix with a combination of 6 x HDBaseT™ and 2 x HDMI outputs. This allows for cost-effective integration of local displays or AV receivers within an installation. The matrix delivers HDMI, Bi-directional IR and PoH (PoE) up to lengths of 70m over a single CAT cable. The HMXL88 V2 Matrix features a web browser interface for control and configuration and can also be seamlessly integrated into 3rd party control systems using RS-232, TCP/IP and InfraRed.

FEATURES:

- Features 8x HDMI inputs which can be independently routed to 6x HDBaseT™ outputs and 2x independent HDMI outputs

- Extends HDMI up to a distance of 70m 1080p 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 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 on all HDBaseT outputs

- Web browser interface for control and configuration of Matrix

- 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 2.2 compliant

- 1U Design for 19" rack mount integration - mounting kit included

Front Panel

① LCD display – Shows the status of input-output selection, menu and EDID info.

② IR receiver window – Receives IR from a hand held remote control or processor.

③ Power LED indicator – Indicates the power status of the matrix.

④ Power button – Press to toggle the power of the matrix on/off.

⑤ HDMI output selection button 1 to 8 – Press to select the output from 1 to 8.

⑥ All button for HDMI outputs – Press to select all of the outputs from 1 to 8.

⑦ Menu button – Press to enter EDID setup mode. Three EDID segments will display on the LCD panel listed as: INPUT, VIDEO and AUDIO, for example: IN1 1080P 2.0CH, means to set 1080P 2.0CH EDID to INPUT1. The blinking segment is the adjustable parameter.

⑧ Up – Press to change up through the adjustable values.

⑨ ESC – Press to quit EDID setup menu.

⑩ Lock LED indicator – Indicate the status of the key lock.

⑪ Lock button – Press to lock the buttons on the front panel.

⑫ HDMI input selection button 1 to 8 – Press to select the input from 1 to 8.

⑬ PTP – Press to mirror all inputs and outputs (e.g. output 1 to input 1, output 2 to input 2 and so on).

⑭ Select – Press to select an EDID parameter to change. Selected segment will blink.

⑮ Down – Press to change down through the adjustable values.

⑯ Enter – Press to set EDID to specified INPUT or copy EDID from specified OUTPUT to specified INPUT.

Rear Panel
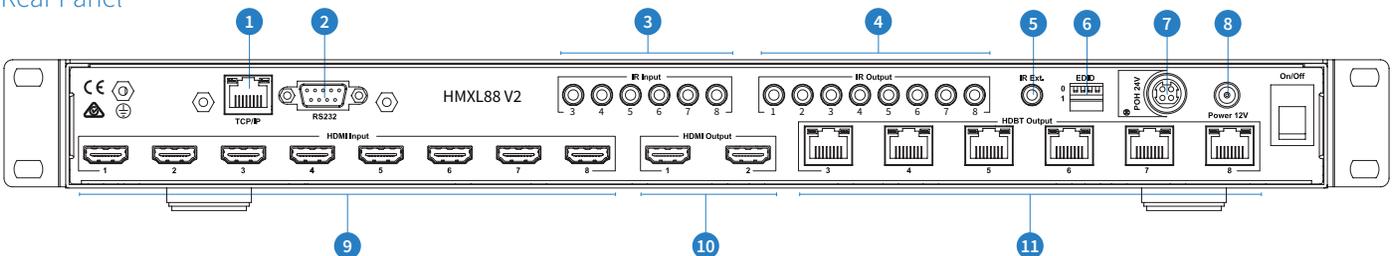
① RJ45 – TCP/IP control (Connect to LAN)

② RS232 port – Connect to this port for the control of the matrix from a computer or control processor.

③ IR inputs 3 to 8 – 3.5mm stereo jack (IR sensor or control processor input). Sends 5V IR out to corresponding zones HDBT IR Tx port to control the zones TV/local hardware.

④ IR outputs 1 to 8 – 3.5mm stereo jack for routed IR 5V emitter outputs for discrete source control, determined by the source input selected in that zone.

⑤ IR extension receiver input – 3.5mm stereo plug input for connection of a remote IR 5V sensor or control processor for remote IR control of the matrix.

⑥ EDID DIP switch – Used for global EDID settings

⑦ POH power port – Use included 24V/6A DC adaptor to power the remote HDBaseT receivers.

⑧ Power port – Use included 12V/5A DC adaptor to power the matrix switcher.

⑨ HDMI inputs 1 to 8 – Connect HDMI sources.

⑩ HDMI outputs 1 to 2 – Output for displays.

⑪ HDBT outputs 3 to 8 – Output for remote displays.

HMXL88 V2 Control Ports

The HMXL88 V2 main communication ports are located on the rear panel and includes the following connections:-
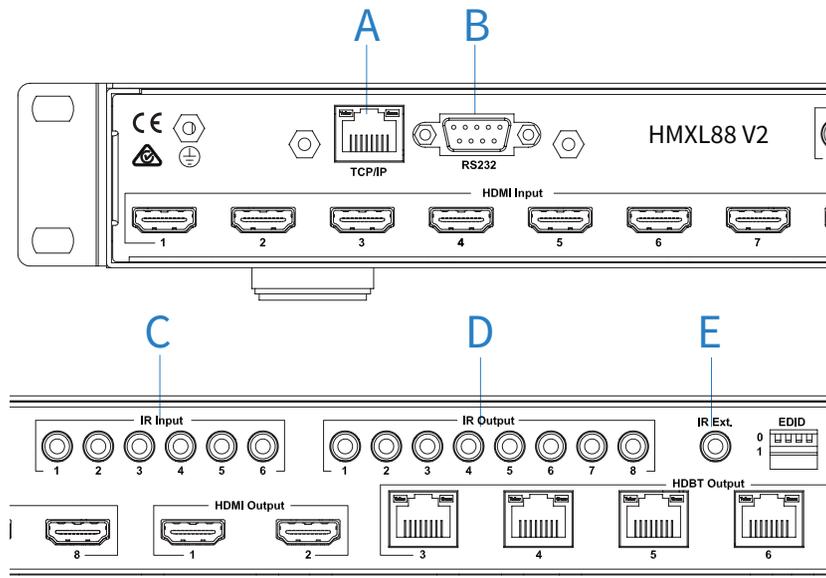
Connections:

A. TCP/IP – For control of the Matrix (RJ45 Connector).

B. RS-232 – For control of the Matrix (9 pin serial connection).

C. IR Input (3.5mm stereo jack) for IR pass-through to associated output HDBaseT Receiver*.

D. IR Output (3.5mm mono jack) for routed IR control of source equipment*.

E. Global IR Input 3.5mm stereo jack - For controlling the Matrix Switcher*.

*Note - Blustream products use 5V IR hardware. For further details please see page 9 'Infrared Distribution'.

There is no IR routing for outputs 1 & 2 on the HMXL88 V2 Matrix as these are HDMI outputs only and designed for connection to local displays/hardware.

Blustream HMXL88 V2 Matrix is supplied with all required 5V IR emitters, Receivers and IRCAB cables.

TCP/IP

The Blustream HMXL88 V2 Matrix can be controlled via TCP/IP.

For full list of protocols please see 'HMXL88 V2 Control Protocols' located at the rear of this manual.

The HMXL88 V2 Matrix features a built-in web browser user interface allowing control and configuration of the matrix. For further details please see page 18 'Web Browser User Interface'.

A 'Straight-through' RJ45 patch lead should be used.

RS-232 2-Way

The Blustream Matrix can be controlled via a 9-pin serial cable.

For full list of protocols please see 'HMXL88 V2 Control Protocols' located at the rear of this manual.

Details of RS232 pin assignment and communication are adjacent. Please note that depending on your control device serial port pin configuration you may require either a 'Straight' RS-232 cable or 'Null-modem' type.

BLUSTREAM RS-232		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

HMXL88 V2 HDBaseT Receiver Options

There are two HDBaseT receiver options that are recommended to be used with the HDBaseT outputs on the HMXL88 V2:-

HEX70B-RX

Basic HDBaseT Receiver with 2-way IR pass-through. Supports display distances up to 70m @ 1080p and 40m 4K (30Hz 4:4:4 & 60Hz 4:2:0).
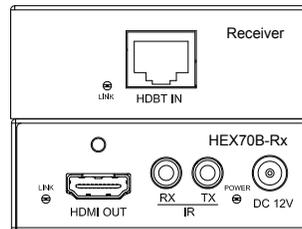
- HDBaseT input/HDMI output
- IR Output 3.5mm Mono jack
- IR Input 3.5mm Stereo jack

RX70AMP

The RX70AMP is a combination of HDBaseT receiver and Class D digital audio amplifier (30W per channel). The unit has local HDMI and Analogue audio inputs as well as supporting HDMI ARC (Audio Return Channel) with compatible displays (ARC to RX70AMP only). Should you wish to use alternate power amplification the unit has variable analogue outputs. Control of the unit is possible via front panel or by bi-directional RS-232 or IR control. Supports display distances up to 70m @ 1080p and 40m 4K (30Hz 4:4:4 & 60Hz 4:2:0).
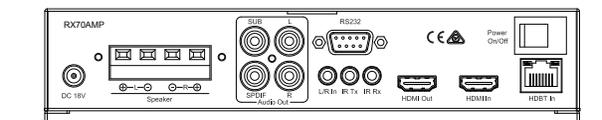
- HDBaseT input/HDMI output
- HDMI Local input for connection of local source
- 2.1 Stereo audio output @ 30W per channel (capable of drive 4, 6 & 8 Ohm speakers) & analogue Subwoofer output (RCA)
- Variable analogue line level outputs (RCA)
- Digital Coaxial S/PDIF output
- Local analogue L/R audio input 3.5mm Stereo Jack
- 2-way RS-232 (9-pin serial)
- IR Output 3.5mm Mono Jack
- IR Input 3.5mm Stereo Jack
- Built-in IR receiver on front panel of unit
- Note - RX70AMP must be powered locally

* Note - Other HDBaseT receivers will work with the HDBaseT outputs of the Blustream HMXL88 V2 but some features of these receivers may not be supported by the Matrix.

Matrix Front Panel Control

Front Panel Display - Input/Output selection

The following display shows current source input selection per zone output.

1. To change input selection first press 'OUTPUT' button (1-8)

2. Press desired 'INPUT' button (1-8)

3. An 'X' indicates that the zone output has been turned off.

   Zones can be turned on/off using RS-232/TCP/IP commands.

   Zone outputs can be forced back on by powering OFF/ON the matrix. All outputs will be turned on when powered up.

   Zone outputs can be forced back on by pressing and holding 'OUTPUT 1' button on the front panel for 10 seconds. The matrix will reset and all outputs will be turned back on.

```
        ①          ③
┌────────────────────────────┐
│  OUT    1  2  x  4  5  x  7  8  │
│  IN     1  2  3  4  5  6  7  8  │
└────────────────────────────┘
        ②
```
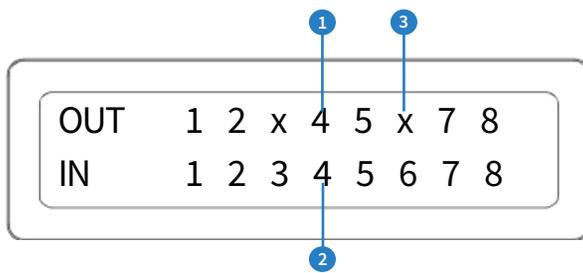
EDID Management - Global or individual input settings

The following characters show adjusting the EDID for 'All' inputs (Global). Current EDID value is set to 1080P & 2ch audio.

```
┌────────────────────────────┐
│  EDID:      IN ALL          │
│  HDMI:      1080P 2CH       │
└────────────────────────────┘
```
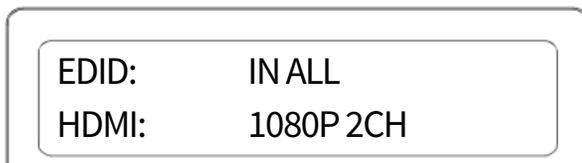
To change the input signal type using the Matrix front panel buttons press the following:-
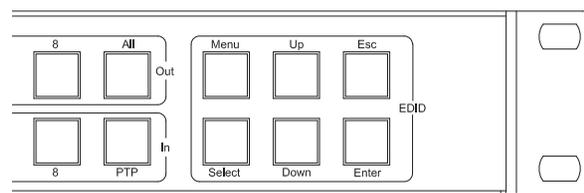
Using Matrix Front Panel Buttons

a. Press *MENU* button

b. Panel will display 'EDID settings'. Press *SELECT* button

c. Select the input you wish to fix the EDID on (1-8) or select 'All'. Use *UP/DOWN* buttons to toggle selection and *SELECT* button to confirm

d. Select video resolution required (4K, 1080p, 3D etc). Use *UP/DOWN* buttons to toggle selection and *SELECT* button to confirm

e. Select audio resolution required (2ch, 5.1 or 7.1). Use *UP/DOWN* buttons to toggle selection and *SELECT* button to confirm

f. Press the *ESC* button to exit

Terminating the interconnecting HDBaseT CAT cable

It is important that the interconnecting CAT cable between the Blustream HDBaseT products is terminated using the correct RJ45 pin configuration. The link CAT cable **MUST** be a 'straight' (pin-to-pin) CAT cable and it is advised that this is wired to the T568B wiring standard as this format is less prone to EMI (Electro-Magnetic Interference).

When installing CAT cables it is advised that you use the best possible CAT cable quality possible. HDMI distribution products will only work if used with CAT5e standard cable or above. Blustream recommends using a CAT6 cable for your installations, especially when running over longer distances, in areas of high EMI, or with 4K signal distribution.

RJ45 Pin-Out T568B

1 2 3 4 5 6 7 8
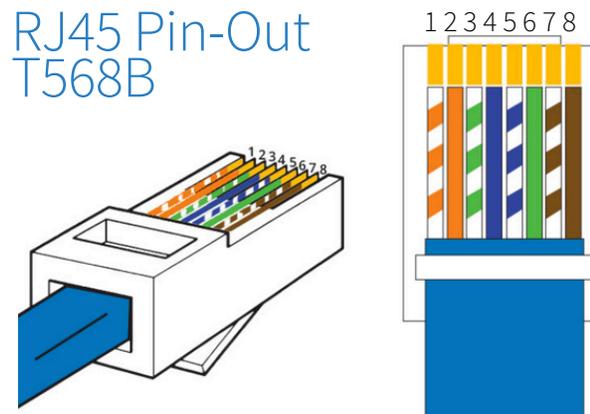
Understanding the RX/HMXL88 V2 HDBaseT status lights

The Blustream HMXL88 V2 Matrix and HDBaseT extender solutions include status LED indicators on both the Matrix and Receiver products to show all connections are active and to help diagnose possible problems.

Understanding the status lights:-

Blustream HMXL88 V2 Matrix:

- The Yellow HDBaseT status link light will be off when the zone output has been turned off or there is a problem with the specific Matrix output.
- The Yellow HDBaseT status link light will blink when the zone output is on and working
- The Green HDBaseT link light will blink if there is an unstable connection between the Blustream Matrix and HDBaseT Receiver
- The Green HDBaseT link light will be lit when a there is an active HDBaseT Receiver connected to the Matrix
- The Green HDBaseT link light will be off when a there is no connection with a HDBaseT receiver

Blustream HDBaseT Receiver:
- The HDMI link light will be off when there is no connection with a display
- The HDMI link light will be on when there is an active connection with a display (NOTE - Not all HDBaseT RX feature a HDMI status LED)
- The HDBaseT link light will be off when there is no CAT cable/active HDBaseT connection on the RJ45 HDBaseT input
- The HDBaseT link light will blink if there is an unstable connection between the Blustream Matrx and HDBaseT receiver
- The HDBaseT link light will be lit when a CAT cable is connected to the HDBaseT RJ45 output on the Matrix and an active connection is achieved with the Blustream HDBaseT Receiver.

Blustream Support department are on hand to assist with signal distribution issues should they arise - please email us at one of the email addresses adjacent.

Infrared (IR) Distribution

The Blustream range of matrix products include multiple options for control and routing of IR.

IMPORTANT: Blustream Infrared products are all 5V and NOT compatible with alternative manufacturers Infrared solutions. When using third party 12V IR control solutions please use supplied Blustream IRCAB cable for IR conversion.

Each Blustream Matrix and HDBaseT receiver is supplied with all necessary IR hardware required and includes:

IR Emitter - IR1 & IR2 (IR2 sold separately)

Blustream 5V IR Emitter designed for discrete IR control of hardware
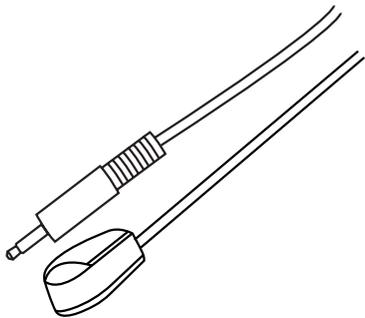
Infrared 3.5mm Pin-Out

IR Emitter - Mono 3.5mm

Signal

Ground
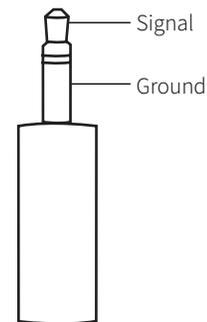
IR Receiver - IRR

Blustream 5V IR receiver to receive IR signal and distribute through Blustream products
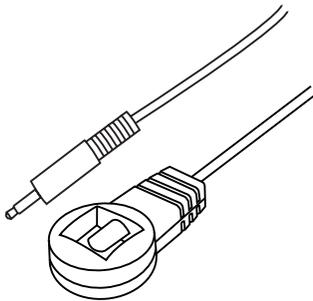
IR Receiver - Stereo 3.5mm

Signal
5V
Ground
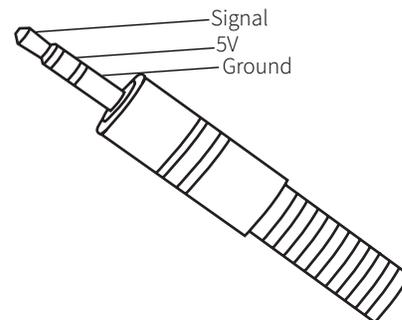
IR Control Cable - IRCAB

Blustream IR Control cable 3.5mm Mono to 3.5mm Stereo for linking third party control solutions to Blustream products.

Compatible with 12V IR third party products.

Note: Cable is directional as indicated
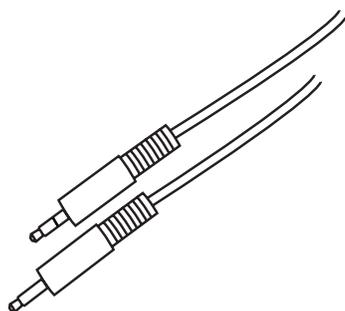
InfraRed (IR) Control

The Blustream HMXL88 V2 Matrix is supplied with one REM88 IR Remote Control for source selection and general setup.

As well as controlling matrix solutions using the original Blustream remote the Blustream product can be controlled using the original InfraRed codes shown at the rear of this manual.

Remote Control Description
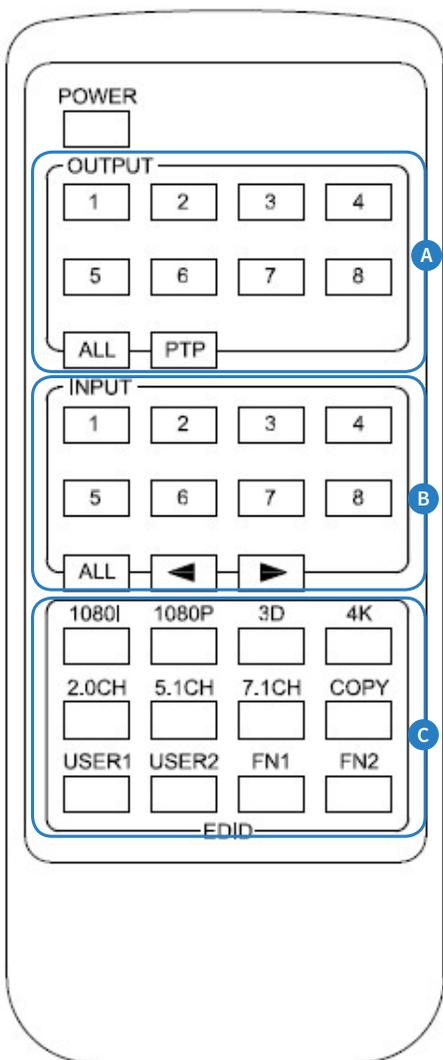
OUTPUT AND INPUT SELECTION

A   Select the zone OUTPUT you wish to change the source on (Numbers 1-8 correspond to the zone outputs 1-8).

B   Select the source INPUT you wish to change on the selected zone to (Numbers 1-8 corresponds to the source inputs 1-8)

C   Press PTP button If you wish to instantly mirror all inputs and outputs (Example - Input 1 to output 1, input 2 to output 2 etc).

EDID Configuration

Fixed EDID to INPUT / ALL INPUTS:

To select video resolution - Press *1080I/1080p/3D/4K*

To select Audio resolution - Press *2.0ch/5.1ch/7.1ch*

To assign settings to individual input/all inputs – Press *INPUT /ALL* button in 'ZONE INPUT' area of remote control

Copy EDID of any specific OUTPUT to any assigned INPUT or ALL INPUTS:

Press *COPY* button

Press *OUTPUT* zone button you wish to copy EDID from

Press *INPUT* zone button /ALL button to copy EDID to

User defined EDID to any INPUT or ALL INPUTS:

Press *USER1/USER2* button

Press selected *INPUT* or *ALL* button to assign EDID

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 discover what the best audio and video resolutions need to be outputted.

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 you can reduce the time need for EDID hand shaking thus making switching quicker and more reliable.

Configuration of Matrix EDID settings can be achieved in one of five ways:-

1   Using Matrix PC Software (See 'Blustream Matrix Software Guide' for further details available at www.blustream.co.uk)

2   Using Matrix web browser interface (See 'Blustream Web Browser Interface Guide' for further details available at www.blustream.co.uk)

3   Using Matrix Front Panel Buttons (For further details see page 7)

4   Using Supplied Blustream REM88 Matrix IR Remote Control (For further details see page 10)

5   Using dip-switches on the rear panel of the HMXL88 V2 Matrix. Please see below table for global EDID settings.

*Note - Once dip-switch settings have been made the HMXL88 V2 should be power cycled for settings to be applied.
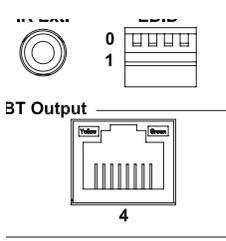
Global EDID settings
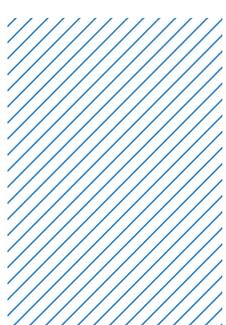
DIP ON ▼/OFF▲ SWITCHING POSITIONS				
3	2	1	0	**EDID TYPE**
OFF	OFF	ON	OFF	1080p/2.0ch
OFF	ON	OFF	OFF	1080p/5.1ch
OFF	ON	ON	OFF	1080p/7.1ch
ON	OFF	OFF	OFF	1080i/2.0ch
ON	OFF	ON	OFF	1080p 3D/2.0ch
ON	ON	OFF	OFF	4K 30Hz/2.0ch
OFF	OFF	OFF	OFF	Copy Display EDID

Dip-switch position '0' = Off

Dip-switch position '1' = On

Note - When setting EDID values using the dip-switches there are limited EDID types available. It is advised that EDID values are adjusted using the HMXL88 V2 front panel, or remote control. For full details please see page 7 'Matrix Front Panel Control'.
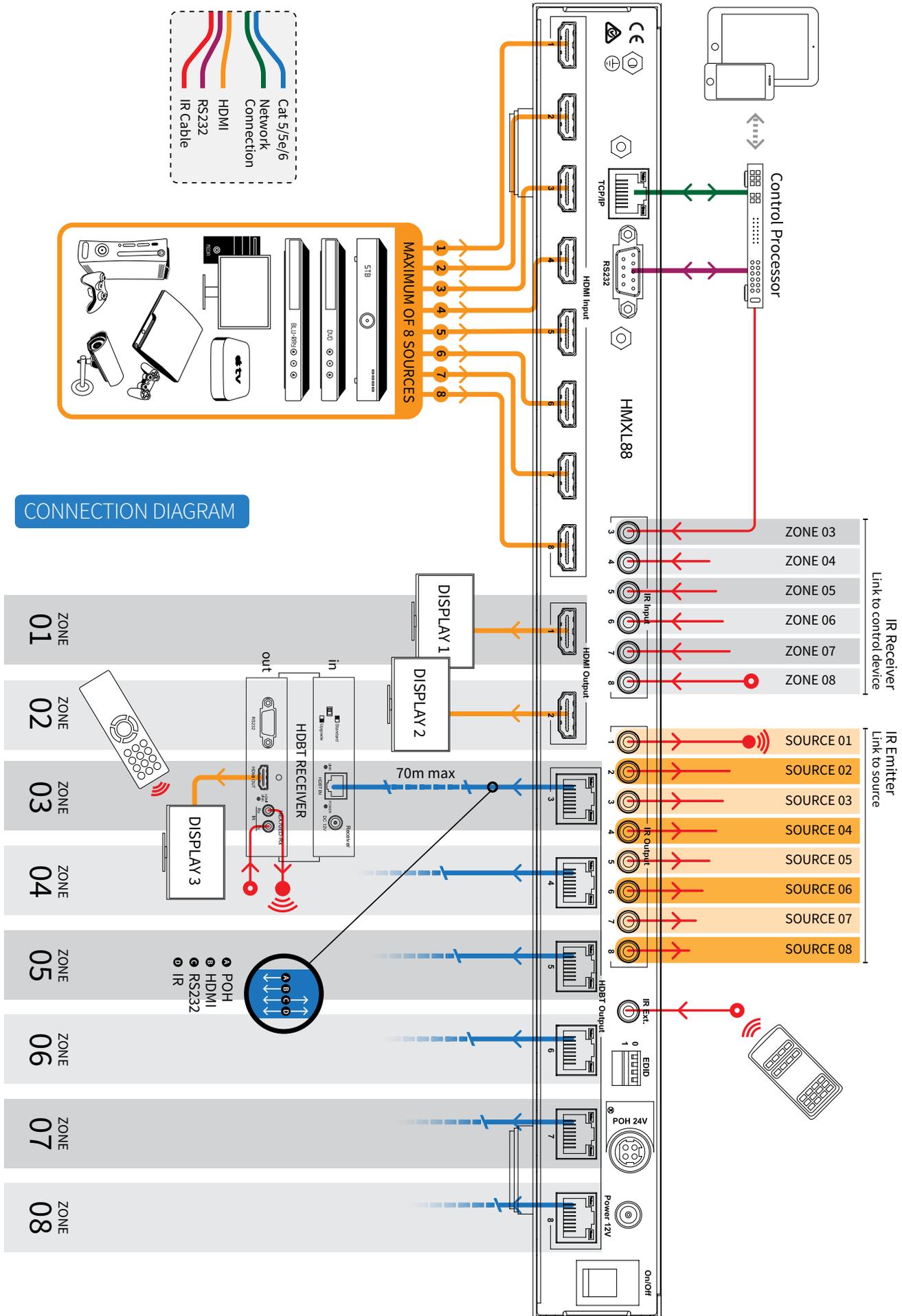
CONNECTION DIAGRAM

Specifications:

Video Input Connectors: 8x HDMI Type A, 19-pin, female, locking

Video Output Connectors: 2x HDMI Type A, 6x HDBaseT™ RJ45 connector

RS-232 serial port: 1x DB 9 connector

TCP/IP Control: RJ45, female

IR Input ports: 7x 3.5mm stereo jack

IR Output ports: 8x 3.5mm mono jack

Dimensions (W x H x D): 438mm x 300mm x 43mm

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: 1x 12V DC/5A, 1x 24V DC/6A

NOTE: *Specifications are subject to change without notice.*

Package Contents:

- 1 x HMXL88 V2

- 1 x Rack mounting kit

- 1 x 24V/6A power supply

- 1 x 12V/5A power supply

- 1 x Remote control

- 1 x IRR Blustream 5V IR receiver

- 6 x IRCAB Blustream IR control cables - 3.5mm-3.5mm cable

- 8 x IR1 Blustream 5V IR emitters

- 1 x User manual

Maintenance

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

RS232 and Telnet Commands

The Blustream HMXL88 V2 can be controlled via serial and TCP/IP. The following pages list all available serial commands for the HMXL88 V2 Matrix. Details of RS232 pin assignment can be found on page 05.

Commonly used Serial commands:

There are several commands that are commonly used for control and testing:-

STATUS	Status will give feedback on Matrix such as zones on, type of connection etc
PON	Power on
POFF	Power off
OUTxxON	(xx is the zone number you wish to turn on)
Example:-	OUT01ON (This would turn output one back on)
OUTxxFRyy	(xx is the zone out, yy is the input)
Example:-	OUT01FR04 (This would switch output 1 to source input 4)

Common Mistakes

• Carriage return – Some programs do not require the carriage return where as other will not work unless sent directly after the string. In the case of some Terminal software the token <CR> is used to execute a carriage return. Depending on the program you are using this token maybe different. Some other examples that other control systems deploy include \r or 0D (in hex)

• Spaces – Blustream commands do not require space between commands unless specified. There may be some programs that require spacing in order to work.

   - How the string should look is as follows OUT01ON

   - How the string may look if spaces are required: OUT{Space}01{Space}ON

• Baud rate or other serial protocol settings not correct - Please see Page 5 for Matrix settings

RS232 Command	Description
?	Print Help Information
HELP	Print Help Information
STATUS	Print System Status And Port Status
PON	Power On, System Run On Normal State
POFF	Power Off, System Run On Power Save State
IRON/OFF	Set System IR Control On Or Off
KEYON/OFF	Set System KEY Control On Or Off
DBG ON/OFF	Set Debug Mode On Or Off
BEEPON/OFF	Set Onboard Beep On Or Off
RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)
OUT xxON/OFF	Set OUTPUT:xx On Or Off
OUT xx FRyy	Set OUTPUT:xx From INPUT:yy
EDID xx CPyy	Copy EDID from output (yy) to input (xx) Both yy & xx can be set individually (01-08) or as ALL (00)

RS232 and Telnet Commands (Continued)

RS232 Command	Description
EDID xx DFzz	Set Input:xx EDID To Default EDID:zz xx=00: Select All INPUT Port xx=[01...04]: Select One INPUT Port yy=[01...02]: Select One OUTPUT Port zz=00: HDMI 1080p@60Hz, Audio 2CH PCM zz=01: HDMI 1080p@60Hz, Audio 5.1CH PCM/DTS/DOLBY zz=02: HDMI 1080p@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD zz=03: HDMI 1080i@60Hz, Audio 2CH PCM zz=04: HDMI 1080i@60Hz, Audio 5.1CH PCM/DTS/DOLBY zz=05: HDMI 1080i@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD zz=06: HDMI 1080p@60Hz/3D, Audio 2CH PCM zz=07: HDMI 1080p@60Hz/3D, Audio 5.1CH PCM/DTS/DOLBY zz=08: HDMI 1080p@60Hz/3D, Audio 7.1CH PCM/DTS/DOLBY/HD zz=09: HDMI 4K2K, Audio 2CH PCM zz=10: HDMI 4K2K, Audio 5.1CH PCM/DTS/DOLBY zz=11: HDMI 4K2K, Audio 7.1CH PCM/DTS/DOLBY/HD zz=12: DVI 1280x1024@60Hz, Audio None zz=13: DVI 1920x1080@60Hz, Audio None zz=14: DVI 1920x1200@60Hz, Audio None
RESETDEF	Restore factory settings

8x8 Matrix IR Database

8x8 MATRIX PRODUCTS	NEC IR: CUSTOMER CODE 1898	HEX IR
POWER	14	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 1	09	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 2	1D	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 3	1F	0AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 4	0D	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 5	19	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 6	1B	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 7	11	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT 8	15	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT ALL	17	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
OUTPUT PTP	12	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
INPUT 1	50	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689

8x8 Matrix IR Database (Continued)

INPUT 2	55	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 3	48	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 4	4A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 5	5E	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 6	06	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
INPUT 7	05	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
INPUT 8	03	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
INPUT ALL	47	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0689
INPUT BACK	07	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
INPUT UP	40	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0689
1080i	18	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
1080p	44	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0689

8x8 Matrix IR Database (Continued)

3D	0F	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0689
4K	51	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
2.0ch	0A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0689
5.1ch	1E	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
7.1ch	0E	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
COPY	1A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0689
USER 1	53	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
USER 2	52	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
USER 3	01	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 003F 0016 0689
USER 4	45	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 003F 0016 003F 0016 0016 0016 003F 0016 0689

Blustream Web Browser Interface

The Blustream HMXL88 V2 matrix unit can be both controlled and configured using the in-built web-server.

The HMXL88 V2 Matrix must be connected to an active network router/switch and it is advised that the Matrix is given a static IP address. You can configure the network settings of the Matrix using either the Web Browser Interface (Blustream Matrix products are shipped with the network set to DHCP) or using the Blustream PC Configuration Software (downloadable from the Blustream Drivers & Protocols link on the product web page).

For detailed instructions on using the Blustream Web Browser Interface please download the specific software manual at the following link:

http://www.blustream.co.uk/HMXL88V2

Blustream PC Configuration Software

The Blustream HMXL88 V2 matrix units can be configured using the Blustream matrix PC configuration software.

Please download the specific software and PC software manual at the following link:

http://www.blustream.co.uk/HMXL88V2

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