

# HMXL44ARC-KIT

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.

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## Introduction

Our Essential 4x4 HDBaseT<sup>™</sup> Matrix offers unprecedented performance and value for the custom installation market. The HMXL44ARC is a HDMI2.0 4K60Hz 4:4:4 HDCP2.2 Matrix package utilising CSC technology to deliver HDMI, Bi-directional IR and PoC up to lengths of 70m (at 1080p) over a single CAT cable.

The Matrix also provides advanced features including simultaneous HDBaseT™/HDMI on output 1, video Smart Scaling on HDBaseT outputs and independent 14x4 audio matrix including Audio Return Channel (ARC). The HMXL44ARC includes in-built web browser interface module for control and configuration of the Matrix and RS-232 and IR pass through to enable seamless 3rd party control integration.

#### FEATURES:

- Advanced HDBaseT<sup>™</sup> technology offering distribution of video and audio over a single CAT cable
- Advanced Colour Space Conversion (CSC) supports HDMI 2.0 18Gbps specification including HDR\*
- Features 4 x HDMI inputs which can be independently routed to 4 x HDBaseT<sup>™</sup> outputs
- Output 1 features simultaneous HDMI and HDBaseT<sup>™</sup> output
- Video down-conversion on HDBaseT<sup>™</sup> outputs allowing a display only capable of supporting lower video resolutions (4K 60Hz 4:2:0, or 1080p) to receive 4K 60Hz 4:4:4 video content, while still showing maximum original 4K UHD resolution on remaining video outputs
- Supports 4K 60Hz 4:4:4 UHD video up to 40m, and 1080p video up to 70m
- 14x4 Audio Matrix independently controllable from video. Audio source inputs include:
  - 4 x audio breakout from HDMI source inputs
  - 4 x audio breakout from zone outputs
  - 4 x ARC from zone outputs\*
  - 1 x Optical and 1 x analogue audio input
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio transmission
- Web interface module for control and configuration of Matrix
- Supports bi-directional IR and RS-232 on all HDBaseT<sup>™</sup> outputs
- Control via front panel, IR, iOS / Android App, RS-232 and TCP/IP
- Supports PoC (Power over Cable) to power supplied RX70CS HDBaseT<sup>™</sup> receivers
- Supplied with Blustream IR receivers and emitters
- Advanced EDID management and HDCP 2.2 compliant

\* ARC feature supports HDMI ARC or Optical ARC

\* CSC & ARC feature compatible with RX70CS only

### Front Panel Description



- 2 LCD Display Shows the status of input /output selection, EDID etc...
- 3 Menu Button Press to access Matrix menu system allowing you to configure EDID settings, PoC settings, network config and firmware information
- Power Button Press and hold for 3 seconds to power on / off the Matrix
- Selection Buttons Multi-use buttons Primary Use:

First press = HDMI output selection -Press to select output/s from 1 to 4. Output(s) selected will be displayed on the Matrix display. Multiple outputs can be chosen. Then wait 3 seconds or press 'SELECT' to move to input selection.

Second Press = HDMI input selection -Press to select the input from 1 - 4. The Input selected will be displayed on the Matrix display. Press the Select button

to confirm switch

- 6 Select Button Press to confirm changes within the Matrix menu
- ESC Press to exit MENU mode

#### Secondary Use:

When the MENU button has been pressed buttons 1, 2, 3 & 4 are used as cursors to navigate the MENU system 1 = Left

- 2 = Up
- 3 = Right
- 4 = Down

### **Rear Panel Description**



- 1 IR Outputs 3.5mm mono connector to connect to Blustream 5V IR emitter. Used for local source control
- 2 IR Inputs 3.5mm stereo connector to connect to Blustream 5V IR receiver or Control Processor. Used to extend IR from Matrix to HDBaseT<sup>™</sup> Outputs 1-4
- 3 Bi-directional RS-232 ports. Connect to third party control device to extend RS-232 commands to RX70CS HDBaseT™ receivers RS-232 port
- 4 IR Control Input 3.5mm stereo connector to connect to Blustream IR receiver for IR control of the Matrix
- **5** TCP/IP RJ45 connector for TCP/IP and Web GUI control of the Matrix

- BRS-232 Phoenix connector for RS-232 control of the Matrix
- EDID DIP switch Used for global EDID settings
- 8 HDMI Inputs Connect to source devices
- 9 HDMI Output Connect to display device (simultaneous with HDBT output 1)
- IDBaseT™ Outputs RJ45 HDBaseT™ port to connect to the HDBaseT<sup>™</sup> input port of the supplied Blustream RX70CS HDBaseT<sup>™</sup> receiver
- Optical (Toslink) Audio Input Connect to source device for audio distribution within the HMXL44ARC independent audio matrix

- Analogue Audio Input 3.5mm L/R stereo jack. Connect to source device for audio distribution within the HMXL44ARC independent audio Matrix
- Optical and Analogue Audio Outputs independent audio matrix with 4 x dual outputs (Toslink + 3.5mm L/R line level stereo jack). For connection to 3rd party audio devices. NOTE: Analogue audio outputs support 2ch PCM only
- IEC Power Socket Use supplied IEC power cable
- B Power Switch

## 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. By pre-determining the video resolution and audio format of the source and display device you can reduce the time needed for EDID hand shaking thus making switching quicker and more reliable.

Configuration of Matrix EDID settings can be acheived in one of four ways:

- 1 Using Matrix web browser interface (see section on Web GUI Control)
- 2 Using Matrix Front Panel (see below)
- 3 Using API commands via RS-232 or Telnet (see below)
- 4 Using Matrix EDID dipswitches (see below)

#### To configure the EDID via Matrix Front Panel:

- a. Press the MENU button
- b. Scroll down to 'EDID Management'. Press the SELECT button to enter into EDID configuration mode
- c. Scroll through EDID management options and select 'Built-In EDID' or 'Copy Output xx'
- d. Select the input you wish to fix the EDID on (1-4) or select 'All'. Use UP/DOWN buttons to toggle the selection and press the SELECT button to move to EDID selection
- e. Select video resolution and audio format required (4K, 1080p, 3D, 2ch, 5.1 etc). Use UP/DOWN buttons to toggle the selection and press the SELECT button to apply. The SELECT button LED will flash orange when complete

#### Copy Output EDID:

- f. Select the HDBaseT<sup>™</sup> output you wish to copy the EDID from. Use UP/DOWN buttons to toggle the selection and press the SELECT button to move to the input selection that you wish to copy the EDID to
- g. Select the HDMI input (1-4) or select 'All' to copy to all HDMI inputs. Press the SELECT button to apply

#### To configure the EDID via RS-232/Telnet API:

Configuration of the EDID settings for each input can be achieved using the following API commands to specify the required EDID. Please see the section on RS-232 and Telnet API at the end of this manual for connectivity information:

EDID xx DF zz Set Input xx EDID To Default EDID zz

- xx = Input On Product (00 Refers To ALL Inputs, 02 = Input 2 Etc)
  - zz = 00 : HDMI 1080p@60Hz, Audio 2CH PCM (Default)
    - 01 : HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY
    - 02 : HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD
    - 03 : HDMI 1080i@60Hz, Audio 2CH PCM
  - 04 : HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY
  - 05 : HDMI 1080i@60Hz, Audio 7.1CH DTS/DOLBY/HD
  - 06 : HDMI 1080p@60Hz/3D, Audio 2CH PCM
  - 07 : HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY 08 : HDMI 1080p@60Hz/3D, Audio 7.1CH DTS/DOLBY/HD
  - 09 : HDMI 1080p@60H2/3D, Audio 7.1CH DTS/DC
  - 10 : HDMI 4K@30Hz 4:4:4, vAudio 5.1CH DTS/DOLBY
  - 11 : HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
  - 12 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 2CH PCM
  - 13 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY
  - 14 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
  - 15 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM
  - 16 : HDMI 4K@60Hz 4:4:4, Audio 5.1CH DTS/DOLBY
  - 17 : HDMI 4K@60Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
  - 18 : DVI 1280x1024@60Hz, Audio None 19 : DVI 1920x1080@60Hz, Audio None
  - 20 : DVI 1920x1200@60Hz, Audio None
  - 21 : HDMI 1920x1200@60Hz, Audio 2CH PCM/6CH PCM
  - 22 : User EDID 1
  - 23 : User EDID 2

#### To configure the EDID via DIP Switch:

To configure the global EDID for all inputs via the DIP switch, use the settings below. Note this will override and disallow any EDID settings configured via the web GUI.



3	2	1	0	
Combi	nation c	of DIP po	sitions	сыр туре
0	0	0	0	1080p 60Hz 2.0ch
0	0	0	1	1080p 60Hz 5.1ch
0	0	1	0	1080p 60Hz 7.1ch
0	0	1	1	1080i 60Hz 2.0ch
0	1	0	0	1080i 60Hz 5.1ch
0	1	0	1	1080i 60Hz 7.1ch
0	1	1	0	4K 60Hz 4:2:0 2.0ch
0	1	1	1	4K 60Hz 4:2:0 5.1ch
1	0	0	0	4K 60Hz 4:2:0 7.1ch
1	0	0	1	4K 60Hz 4:4:4 2.0ch
1	0	1	0	4K 60Hz 4:4:4 5.1ch
1	0	1	1	4K 60Hz 4:4:4 7.1ch
1	1	0	0	DVI 1280x1024@60Hz
1	1	0	1	DVI 1920x1080@60Hz
1	1	1	0	DVI 1920x1200@60Hz
1	1	1	1	Software EDID



### Front Panel Menu System



The front panel of the Matrix features a menu system to provide quick configuration of key features of the matrix. Press the menu button (=) to bring up the menu system of the matrix on the front panel display. While the menu system is active, the arrow keys (<, >, ^, v) to navigate through, and use select ( $\sqrt{$ ) or cancel (x) buttons to change settings.

The menu system allows configuration of the following items:

- 1 EDID Settings Select an
- 2 POC Settings
- 3 Network Config
- 4 F/W Version

## HDBaseT<sup>™</sup> Receiver Compatibility

This matrix is compatible with all Blusream HDBaseT<sup>™</sup> receivers however support of specific features will vary. The Blustream RX70CS HDBaseT<sup>™</sup> receivers are supplied with this Matrix as these fully supports the following key features:

- CSC Colour Space Conversion, the method utilised to support 18Gbps signals being transmitted over HDBaseT™
- ARC Audio Return Channel, to output the displays Audio Return Channel from the optical outputs of the Matrix
- PoC Power Over Cable, to power the HDBaseT<sup>™</sup> receiver from the Matrix over CAT cable without any additional power supplies required

## Power Over Cable

**Please note:** PoC (Power over Cable) is enabled on this product by default - if using another Blustream HDBaseT<sup>™</sup> receiver, please disable PoC prior to connection to eliminate the risk of damaging incompatible HDBaseT<sup>™</sup> receiver products. Please check your HDBaseT<sup>™</sup> receiver supports 24V PoC before enabling PoC on this product. There are 3 ways to enable/disable PoC on this matrix:

- 1 Using Matrix web browser interface (see section on web-GUI operation)
- 2 Using Matrix Front Panel Meny System (see secion above)
- 3 Using API commands via Telnet / RS-232 (see Telnet API section at the end of this manual)

## Terminating CAT Cable for use with HDBaseT™

It is important that the interconnecting CAT cable between Blustream HDBaseT<sup>™</sup> 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. HDMI distribution products will only work if used with CAT5e standard cable or above. Blustream recommends using a CAT6 cable (or better) for installations, especially when running longer distances, in areas of high EMI, or for 4K signal distribution. It is advised that using any method of patch panel, wall plate, or join within the CAT cable is avoided as these can add degradation to the signal. Blustream also recommend using RJ45 connectors that are recommended for use with the choice of CAT cable.



## Understanding the HDBaseT<sup>™</sup> Status LED's

The matrix includes status LED indicators on the HDBaseT™ RJ45 ports to show all connections are active, and to help diagnose potential connectivity issues.

### Understanding the Status Lights - HMXL44ARC:

- The yellow HDBaseT<sup>™</sup> status link light will be OFF when there is no HDBaseT<sup>™</sup> link established with a Blustream HDBaseT<sup>™</sup> receiver
- The yellow HDBaseT<sup>™</sup> status link light will be ON when there is a HDBaseT<sup>™</sup> link established with a Blusream HDBaseT<sup>™</sup> receiver
- The green HDBaseT<sup>™</sup> link light will be OFF when there is no video signal being transmitted between the matrix and Blustream HDBaseT<sup>™</sup> receiver
- The green HDBaseT<sup>™</sup> link light will be ON when a there is a HDCP enabled video signal being transmitted between the matrix and Blustream HDBaseT<sup>™</sup> receiver
- The green HDBaseT<sup>™</sup> link light will BLINK when there is a video signal with no HDCP being transmitted between the matrix and HDBaseT<sup>™</sup> receiver

The link lights will only serve as an indication to the connectivity between matrix and HDBaseT<sup>™</sup> receiver unit. The LED's will not indicate a termination, bandwidth, interference or cable length issues on a CAT cable run. Blustream always recommend qualifying / verifying / certifying a CAT cable run for suitability prior to the installation of HDBaseT<sup>™</sup> equipment.

## Infrared (IR) Control

The Blustream range of matrix products include Matrix control via 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 the Blustream IRCAB cable for IR conversion.

### IR Receiver - IRR

Blustream 5V IR receiver to receive an IR signal for control of the matrix.





IR Receiver - Stereo 3.5mm

**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 3 party products.

**Please Note:** cable is directional as indicated.



## CEC Control

The Marix features CEC control of source devices and displays via the products web GUI and RS-232. It is possible to send CEC commands such as power on / off, input selection as well as volume volume up or down. Please see the Web GUI CEC Control page or RS-232 command list in this document for more information and a full list of CEC commands.

Please note: CEC is subject to the support of standardised codes for the sources and displays connected to the Matrix.

## Audio Return Channel

This Matrix allows audio from your supported displays Audio Return Channel (ARC) to be sent back to the matrix via the RX70CS HDBaseT™ receiver either via HDMI ARC or Optical Audio Return. This can be configured on the Audio page within the web-GUI of the Matrix. See page 9 for further details.

## Web-GUI Control

This following pages take you through the operation of this Matrix's Web-GUI. You must connect the TCP/IP RJ45 socket to your local network in order to access the products Web-GUI.

By default the matrix is set to DHCP, however if a DHCP server (eg: network router) is not installed the matrix IP address will revert to below details:

Default IP Address is: 192.168.0.200Default Username is: blustreamDefault Password is: 1234

The Web-GUI supports multiple users along with multiple user permissions as follows:

**Guest Account** - This account does not require a user to login. The Guest account can only change sources for each zone. Guest access can be changed by the Admin, limiting inputs or outputs as necessary.

**User Accounts** - 7x User accounts can be utilised, each with individual login details. User accounts can be assigned permissions to specific areas and functions. A User must log in to make use of these functions.

Admin Account - This account allows full access to all functions of the Matrix as well as assigning users with permissions.

#### Login Page

The Login Page allows a user or admin to login and access additional functionality. This page also shows you the current firmware version of both the matrix and web GUI.

Login	
	<b>BLU</b> STR <del>E</del> ∕∿∕∕∕~→
	Username
	Please Enter
	Password
	Please Enter
	Login
	HMXI.B&AAC GUL-Y1.01b Firmware V1.00j

#### **Guest Control Page**

The Guest Control Page allows a guest to change inputs for each zone without needing to be logged into the matrix. Simply select the square that corresponds with the input and zone you wish to change.

There is also a power button on the lower right corner to turn the Matrix on or off.

Control	Audio		Login							
		Output 1	Output 2	Output 3	Output 4	Outputs Output 5	Output 6	Output 7	Output 8	
	Input 1									
	Input 2 Input 3									
	Input 4									
	Input 5									
	Input 7									
	Input 8									
	Video Mut									
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#### **Audio Control Page**

The Audio Control Page allows you to change the source audio of the matrix per output, as well as adjust the line level volume output or enable/disable the muting of the analogue or digital outputs. The Audio Select drop down menu also allows selection of Audio Return Channel either via HDMI or RX from the RX70CS HDBaseT<sup>™</sup> receivers.

Control	Audio	Login				
		Audio Output 1 -		Audio Out	put 2	
	Audio Select Aud	dio from Input 2		Audio Select Audio Return from HDMI	RX4	
	Analogue Audio 1 10	00%	• • •	Analogue Audio 2 100%		
	S/PDIF Audio 1	×		S/PDIF Audio 2		
		Audio Output 3 –		Audio Out	put 4	
	Audio Select Aud	dio from Input 6		Audio Select Audio Return from S/PDI	FRX8	
	Analogue Audio 3 10	00%	• • •	Analogue Audio 4 100%	• • • •	
	S/PDIF Audio 3	<b>4</b> ×		S/PDIF Audio 4		
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#### **User Control Page**

A logged in User or Admin Control Page allows a user to change inputs and presets for each zone. To change inputs, simply select the square that corresponds with the input and zone output you wish to change. On the right side you can recall a preset, or save the current input/output configuration into a specified preset.

There is also a power button on the lower right corner to turn the Matrix on or off.



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#### **Configuration IR Select Page**

The Configuration IR Select Page allows you to change the IR routing of the matrix. Simply select the square that corresponds with the input and zone output you wish to set up a bi-directional IR relationship with, to have IR route only between that input to output.

By enabling the 'IR Follow Video Switching' setting, IR will no longer have a fixed route. IR from zones will be transmitted to the input corresponding with whichever video input is slected. IR inputs will be transmitted to whatever outputs zones are currently viewing ths input source.



#### **Configuration Video Input Page**

The Configuration Video Input Page allows users to change settings specific to the inputs of the matrix. You can adjust the name of each input, the EDID of each input as well as enable or disable CEC to the input.



#### **Configuration Video Output Page**

The Configuration Video Output Page allows you to change settings specific to the outputs of the matrix as follows:

- The name of each output
- Enable or disable CEC to the output
- Enable or disable HDMI Auto Downscale this will enable/disable automatic conversion from 4K 60Hz 4:4:4 to 4K 60Hz 4:2:0 for displays that do not support 18Gbps HDMI signals. Downscaling will depend on resolutions supported by the display device
- Enable or disable PoC (Power over Cable) to power connected HDBT receiver. It is recommended to use the supplied Blustream RX70CS HDBT Receivers to support all features of this Matrix
- Enable or disable IR being transmitted out to a zone or from that zone output
- Set EDID Priority (output 1) where you can specific if the HDBT output or HDMI output should have priority for EDID management



#### **Configuration Audio Naming Page**

The Configuration Audio Naming page allows you to rename all audio inputs and outputs to human readible names, such as the name of your source device, or the name of the zone output (eg: Kitchen, Bedroom, etc...)

Control	Audio	Configuration		R5232	Network	Upgrade Firmware	Admin
		Inputs Audio from Input 1 Name Audio from Input 2 Name Audio from Input 2 Audio from Input 3 Name Audio from Input 3 Audio from Input 3 Audio from Input 4	IR Select Video Input	Video Output Audio Naming Analogue Audio 1 Name Analogue Audio 2 Name Analogue Audio 2 Analogue Audio 2 Analogue Audio 3 Name Analogue Audio 3 Name Analogue Audio 4 Name	Outputs		
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#### **CEC** Page - Input

The CEC Page allows you to send pre-defined CEC commands to Inputs or Outputs of the matrix. You can choose between Input, Output and User-defined sections at the top of the page. On the CEC Input Page, you must specify an input to send the CEC command to. Press the icon of the command you wish to send at it will be transmitted to the source device connected to the specified input via HDMI.

Note CEC is subject to the support of the sources and displays connected to the matrix.



#### **CEC Page - Output**

On the CEC Output Page, you must specify a specific output to send the CEC command out of. Press the icon of the command you wish to send and it will be transmitted to the display device connected to the specified output. Note CEC is subject to the support of the sources and displays connected to the matrix.

Control	Audio	Configuration	CEC	RS232	Network	Upgrade Firmware	Admin
			Input Out	tput User-defined			
		Outou			unction		
		Output 1	Output 2				
		Priority HDBT		U On	Off Display Input		
		Output 3	Output 4	<b>▲</b> X	Matrix Connection		
		Output 5	Output 6	Mute V	/olume- Volume+		
		Output 7	Output 8	elected, macro time will increase.			
				99ADC			
BLUSIRE/V	$\vee \vee \rightarrow$		HMXL	88AKL			Log Out

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#### **CEC Page - User-defined**

The CEC User-defined Page allows you to send custom CEC commands to any Output in the matrix.

You can select an output and then enter the custom CEC command to send the desired function to the output display. Note CEC is subject to the support of the sources and displays connected to the matrix.

Control	Audio	Configuration	CEC	R5232	Network	Upgrade Firmware	Admin
			Input Ou	tput User-defined			
		Inputs		Outputs-			
		Input 1 Input 2	Trigger 1:	Output 1	Output 2 Trigger 1:		
		Input 3 Input 4	Send	Priority HDBT.	Send		
		Input 5 Input 6	Trigger 2:	Output 3	Trigger 2: Output 4		
		Input 7 Input 8	Send	Output 5	Output 6 Send		
				Output 7	Output 8		
BLUSTREA/	$\bigvee \rightarrow$		HMXL	L88ARC			U Log Out

#### RS-232 Page - Local

The RS-232 Page allows you to send commands either out of the local RS-232 port on the matrix itself, or via HDBT and out of a compatible HDBT Receiver connected to a display. If the Local radio box is selected, RS-232 commands will be sent out of the DB9 serial port at the rear of the matrix to a connected device. Baud rate and terminator command as well as HEX or ASCII can be selected.

Sending an RS-232 command out via the Matrix can be useful in assisting with debugging and fault finding an RS-232 device connected to the matrix.

Control	Audio	Configuration	CEC		Network	Upgrade Firmware	Admin
			o Local	НОВТ			
			HEX	ASCII			
			Baud Rate: 57600				
			ommand Ending: NULL	~			
			Command:				
			Send	Cancel			
BLUSTREA/	$\bigvee$		HMXL	88ARC			Log Out

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#### RS-232 Page - HDBT

The RS-232 HDBT Page allows you to remotely control devices connected via DB9 serial to the remote HDBT Receiver. It is then possible to automate the display on, input select and display off process via RS-232 for each HDBT output, when the Matrix is turned on or off.

If RS-232 On is enabled, the User Commands 1, 2, 3, 4, and 5 are all sent out of the HDBT Receiver, when the Matrix is turned on.

If RS-232 Off is enabled, the User Off Command will be sent out of the corresponding HDBT Receiver, when the Matrix is turned off.

You can also specify the Baud Rate and Command Ending (eg: new line, carriage return) to the match the RS-232 device connected to the HDBT Receiver.

Control	Audio		Confi	guration	CEC	R5232	Network	Upgrade Firmware	Admin
						HDBT			
		<b>O</b> Ou	tput 1	Output 2	Output 3 Output 4	Port Output 5 Output	ut 6 Output 7 O	Output 8	
		Off			RS232 Off: Off		HEX ASCII		
	Baud Rate:	57600	~			Display Input Select:		Save	
	Command Ending:	NULL	~			User Command 1:		Save	
	Input Delay:			Save		User Command 2:		Save	
	Display On:			Save		User Command 3:		Save	
						User Off Command:		Save	
BLUSTRE/	$\longrightarrow$				НМХІ	L88ARC			(J) Log Out

#### **Network Page**

The Network Page allows you to specify the TCP/IP network port settings. You can choose from Static IP or DHCP, as well as specify a fixed IP Address, Subnet Mask and Gateway. It is also possible to change or disable the Telnet port.

Control	Audio	Configuration	CEC	R\$232	Network	Upgrade Firmware	Admin
		MAC Address: CC 9C DA 90 00	24	Toloot			
		DHCP	Static IP				
		IP Address: 192.168.0.200		Telnet Access:	On		
		Subnet Mask: 255.255.255.0		Telnet Port: 2	13		
		Gateway:		Port 8000:	On On		
		2	ave				
BLUSTREA/			HMXL	88ARC			(U) Log Out

Contact: support@blustream.com.au | support@blustream-us.com | support@blustream.co.uk \_\_\_\_



#### **Upgrade** Page

The Upgrade Page will show you the current firmware version of the matrix, including the Web GUI version and the MCU firmware version. It also allows you to upgrade the firmware of both the Matrix MCU as well as the Receiver units connected to the matrix. Simply select whether you are updating the Matrix MCU or a Receiver connected to the unit, browse for the firmware update file, and press Submit. If you have selected to update a Receiver, you will see a pop up window asking you to select a specific Receiver or all Receivers to update.

	Configuration	CEC		Network	Admin
		—————————————————————————————————————	BBARC		
		GUE V Firmward	1.0.16 r V1.0.0j		
		———— Upgrade	Firmware ————		
		Matrix	O RX		
			Browse		
		Sub	mit		
BLUSTREAM		HMXL	BBARC		U Log Out

#### Admin Page

The Admin Page allows the admin to configure up to 8 users including a guest user. Each user can adjust their password via this page as well.

The Admin, or Users who have been given Admin permissions, are able to allocate permissions to Users. These permissions include allowing or disallowing access to each page in the Web GUI, as well as allowing or disallowing access to each input or output in the Matrix.

The Admin Page also allows you to lock or unlock the Front Panel Buttons or Front Panel IR of the matrix as well as Factory Reset the Matrix.

Control	Audio	Configuration	CEC	R5232	Network	Upgrade Firmware	Admin
		Name	Current Password	New Password	Confirm New Password		
		blustream					
		Guest User 1	User 2 User 3	User 4 User 5	User 6 User 7		
		On Off	Off Off	Off Off	Off Off		
			Volume P	ermissions			
		Analogue Audio 1	Analogue Audio 2	Analogue Audio 3	Analogue Audio 4		
		S/PDIE Audio 1	S/PDIE Audio 2	S/PDIE Audio 3	S/PDIF Audio A		
		S/PDIF Audio 5	S/PDIF Audio 6	S/PDIF Audio 7	S/PDIF Audio 8		
			Luna ( Outro	4 Paramianiana			
		INPUT 🔲 1 🔛 2	3 4	OUTPUT 🔲 1	2 3 4		
-0-0-0-0-0-0		5 6	7 8	5	6 7 8		9-9-9-9-9-9-9-9-
	- Main Felders						
					Reset all settings of t     unit including netwo	he rk	
					and general settings.		
			Cor	afrem			
BLUSTREA/			HMXL	88ARC			U Log Out

#### Please note:

To enable a User and create password for a user account, complete all 4 text fields under the User section: Name, Current Password, New Password and Confirm New Password.

For all users, the default password is the same as their name (all lower case).

For example: User1 password is user1, User2 password is user2, etc... To change user2 password to 12345, complete the following steps:

- 1. Ensure that the User Authorisation button is set to On for User 2
- 2. Select the User 2 radio button
- 3. Enter Name as User2 (or the user's name)
- 4. Enter Current Password as user2
- 5. Enter New password and Confirm New Password as 12345
- 6. Select the 'Save' button at the bottom

### **Remote Control Description**



### OUTPUT AND INPUT SELECTION

- A Select the zone Output you wish to change the source on (Numbers 1-4 correspond to the zone outputs 1-4, or All corresponds with all outputs).
   Pressing the PTP button will mirror all inputs and outputs (Example Input 1 to output 1, input 2 to output 2 etc).
- **B** Select the source Input you wish to change the selected zone to (numbers 1-4 correspond to the source inputs 1-4 or All corresponds with all inputs)
- **C** You can adjust the volume or mute each of the outputs by pressing the desired output button first, and then pressing the Vol +, Vol or Mute button.

## IR Commands

NEC Customer Code = 1898 Advanced matrix features are not available via IR commands

COMMAND		
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 001
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 001
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 001
OUTPUT 3	1F	OAC 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 001
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 001
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 001
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 001
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 001
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 001

## IR Commands

COMMAND		
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 001
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 001
INPUT DOWN	07	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 001
INPUT UP	40	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 001
VOL-	DB	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 001
VOL+	DC	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 001
MUTE	DD	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 001

### BLUSTREA

### Specifications

- Video Input Connectors: 4 x HDMI Type A, 19-pin, female
- Video Output Connectors: 1 x HDMI Type A, 19-pin, female, 4 x HDBaseT<sup>™</sup> RJ45 connectors
- Audio Input Connectors: 1 x Analogue audio L/R (3.5mm stereo Jack), 1 x Optical (S/PDIF)
- Audio Output Connectors: 4 x Analogue audio L/R (3.5mm stereo Jack), 4 x Optical (S/PDIF)
- RS-232 Serial Port: 5 x 3-pin phoenix connector
- IR Input Ports: 5 x 3.5mm stereo jack
- IR Output Ports: 5 x 3.5mm mono jack
- Rack Mountable: 1U rack height, rack ears included
- Casing Dimensions (W x H x D): 436mm x 44mm x 300mm (without feet)
- Operating Temperature: 32°F to 104°F (-5°C to +55°C)
- Storage Temperature: -4°F to 140°F (-25°C to +70°C)
- Power Supply: Internal 100-240V AC

NOTE: Specifications are subject to change without notice. Weights and dimensions are approximate.

### Package Contents

- 1 x HMXL44ARC
- 4 x RX70CS HDBaseT™ Receivers
- 1 x Rack Mounting Kit
- 1 x Remote Control
- 4 x IR Emitters
- 5 x IR Receivers
- 1 x Serial Cable DB9 to 3-pin phoenix Connector
- 1 x IR Control Cable 3.5mm to 3.5mm
- 1 x Quick Reference Guide
- IEC Power Cable(s)

### Maintenance

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

## RS-232 Configuration and Telnet Commands

The Blustream matrix can be controlled via serial and TCP/IP.

The RS-232 port is used for configuration and control of the product, as well as pass through of RS-232 commands to a compatible Blustream HDBaseT<sup>™</sup> receiver.

The default RS-232 communication settings are:

Baud rate: 57600 Data bit: 8 Stop bit: 1 Parity bit: none

The following pages list all available serial commands.

#### **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

## RS-232 Configuration and Telnet Commands

COMMAND	ACTION	COMMAND	ACTION	
?/HELP	Print help information	OUT xx ARC aa	Set RX70ARC On Output xx To ARC Mode aa	
STATUS	Print system status and port status		xx = 00 : All Outputs xx = [01-04] : Output 1 - 4	
INSTA	Print All Inputs Status		aa = 01 : ARC From SPDIF aa = 02 : ARC From HDMI	
OUTSTA	Print All Outputs Status		Set Output xx Scaling ON/OFF xx = 00 : All Outputs xx = [01-04] : Output 1 - 4	
CTRLSTA	Print All Controls Status	OFF		
PRESETSTATUS	Print All Preset Configurations			
PON	Power On, system run on normal state	IRFV ON/OFF	Local Matrix IR Out Follow Video Switching ON/OFF	
POFF	Power Off, system run on power save state		Set Input xx EDID To Default EDID zz xx = Input On Product (00 Refers To ALL Inputs, 02 = Input 2 Etc) zz = 00 : HDMI 1080p@60Hz, Audio 2CH PCM (Default) 01 : HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY 02 : HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD 03 : HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY 04 : HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY 05 : HDMI 1080p@60Hz/3D, Audio 2CH PCM 06 : HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY/HD 06 : HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY/HD 09 : HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY/HD 09 : HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY/HD 09 : HDMI 4K@30Hz 4:4:4, Audio 2CH PCM 10 : HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY/HD 12 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 2CH PCM 13 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY 14 : HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD 15 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, Audio 2CH PCM 17 : HDMI 4K@60Hz 4:4:4, Audio 5.1CH DTS/DOLBY 17 : HDMI 4K@60Hz 4:4:4; Audio 5.1CH DTS/DOLBY 17	
RESET	Reset System To Default Setting			
KEY ON/OFF	Set System Front Panel KEY Control On Or Off			
IR ON/OFF	Set System Front Panel IR Control On Or Off			
LCD ON/OFF	Set LCD Always On Or Set LCD Off After No Operation 30 Seconds			
IROUTxx ON	Enable IR Remote-control Mode On HDBT Output xx			
IROUTxx OFF	Disable IR Remote-control Mode On HDBT Output xx			
RESET	Reset System To Default Setting (Type "Yes" To Confirm, Or Send Other Command To Discard)			
OUTxx EH	Priority Output for EDID Copy and CEC = HDMI			
OUTxx ET	Priority Output for EDID Copy and CEC = HDBT xx = [00-01] : Output 1	EDID xx DF zz		
POCOUTxx ON	Set PoC On On Output xx			
POCOUTxx OFF	Set PoC Off On Output xx			
SPDIFxx MUTE	Set SPDIF Mute On Output xx			
SPDIFxx UNMUTE	Set SPDIF Unmute On Output xx			
OUTxx ON	Set Output xx On			
OUTxx OFF	Set Output xx Off		18 : DVI 1280x1024@60Hz, Audio None	
OUTxx FR yy	Set Output From Input:yy xx = 00 : All Outputs xx = [01-04] : Output 1 - 4 yy = [01-04] : Input 1 - 4		19 : DVI 1920x1080@60Hz, Audio None 20 : DVI 1920x1200@60Hz, Audio None 21 : HDMI 1920x1200@60Hz, Audio 2CH PCM/6CH PCM 22 : User EDID 1	
AUDIOXX FR vv	Set Audio Output xx From Input yy xx = 00 : All Outputs xx = [01-04] : Output 1 - 4 yy = [01-04] : Audio From Input 1-4	EDID xx CP yy	23 : User EDID 2 Copy EDID From Output yy To Input xx xx = [00-04] : 00 : All Inputs ,Input 1 - 4 yy = [01-04] : Output 1 - 4	
Nobioxxiikyy	yy = [05-08] : Audio From Output 1-4		Save External EDID yy Into Slot zz yy = [01-04]: EDID Copy Output 1 - 4 yy = 00: EDID Via RS232 Send To Matrix zz = 00: All User EDID zz = 01 or 22: User EDID 1 zz = 02 or 23: User EDID 2	
	yy = 109-12]. Addio From Arc 1-4 yy = 13 : SPDIF Input yy = 14 : Analogue Audio Input	EDID SAVE yy TO zz		
MXIR xx FR yy	Local Matrix IR Out xx From Remote Rx yy IR In xx = [01-04] : Local IR Out 1 - 4			
	yy = [00] : All Remote Rx IR In Turn Mute On (Off On Output vir	PRESET pp SAVE	Save Current Output Connections To Preset pp Config	
MUTE mm TX xx	mm = On mm = Off	PRESET pp CLR	Delete Preset pp Config pp = [00-09] : 00 : All Presets, Preset 1 - 9	
	xx = 00: All Outputs xx = 01 - 04: Analogue Output 1 To 4	PRESET pp APPLY	Apply Preset pp Config To Output Connection pp = [01-09] : Presets 1 - 9	
	xx = 05 - 08: Optical Output 1 To 4	OUTxx CEC ENABLE	Enable CEC Control On Output xx	
	Set volume Level xx On Output yy xx = [0100]: Set Volume Level	OUTxx CEC DISABLE	Disable CEC Control On Output xx	
VOL xx TX yy	xx = +: Volume Level Increases xx = -: Volume Level Decreases	OUTxx CEC OK	Confirm Operation (Enter) On Output xx	
	yy = 00: Select All Output Ports yy = [0104]: Select Single Output Port 01 To 04	OUTxx CEC UP	UP On Output xx	

## RS-232 Configuration and Telnet Commands

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OUTCOCCUTOUTI ON OUTQUIXDUTA GENERATRECHT ON OUTQUIXDUTA GENERATRECHT ON OUTQUIXOUTO COCKUTORECHT ON OUTQUIXDUTA GENERATRECHT ON OUTQUIXOUTO COCKUTOSoldward MUTESUSS ON OUTQUIXOUTO COCKUTOSoldward MUTESUSS ON OUTQUIXOUTO COCKUTOREGENERAT SOL OUTGUIXOUTO COCKUTOSoldward MUTESUSS ON OUTQUIXOUTO COCKUTOSoldward MUTESUSS ON OUTQUIXMEDISO DO OUTQUIXSoldward MUTESUSS ON OUTQUIXVITA GENERATORSoldward MUTESUSS ON OUTQUIXMEDISO DO OUTQUIXSoldward MUTESUSS ON OUTQUIXVITA GENERATORSoldward MUTESUSS ON OUTQUIXMEDISO DO OUTQUIXSoldward MUTESUSS ON OUTQUIXVITA GENERATORSoldward MUTESUSS ON OUTQUIX<	OUTxx CEC DOWN	DOWN On Output xx		Send Custom CEC Command u8DevID: 00 Select All CEC Input Port	
OLTA GEG REATREFURN DA OutputzsGEGUSRIABEGUSRIA<	OUTxx CEC LEFT	LEFT On Output xx	CECUSER- CMD <u8 devid<br="">u8Addr u8Opcode pu8Operand[MAX]&gt;</u8>		
OUTAX CEC FET LINNRET LINN On Output ixDifference (CA)Difference (CA)Diffe	OUTxx CEC RIGHT	RIGHT On Output xx		u8DevID: [01-04] Input 1 - 4 u8DevID: F0 Select All CEC Output Port u8DevID: [F1-F8] Output 1 - 4	
OUTEX CEC ENTENT OR OUTPUT XXBysBoperand MAXY BARN 0-14OUTEX CEC VOUUPVOUUNE COVEN OR OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXOUTEX CEC FUNDIogle Aucio MUTE Status ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXOUTEX CEC FUNDIogle Aucio MUTE Status ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXOUTEX CEC FUNDSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXOUTEX CEC FUNDSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTOP ON OUTPUT XXPSERVERING -764 444 IF VALOUT CEC VOLTO XXMUTEX CEC FUNDSSTO	OUTxx CEC RETURN	RETURN On Output xx			
OUTIX CEC VOLUPVOLUPE LOWN ON OUTXPERFORMANCE AND	OUTxx CEC EXIT	EXIT On Output xx		pu8Operand[MAX] : MAX 0 - 14 Eg:CECUSERCMD <f0 40="" 41="" 44=""> (ALL OUT CEC VOLUP) Eg:CECUSERCMD <f0 40="" 42="" 44=""> (ALL OUT CEC VOLDOWN)</f0></f0>	
OUTX CLE VOLDOWNVOLUNE DOWN ON Output XXEnd CLE VOLED WITEEnd CLE VOLDOWNOUTX CLE VOLE WITEPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXOUTX CLE VOLD PSTOP ON Dutput XXPLAY ON OUtput XXPLAY ON OUtput XXOUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXOUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXOUTX CLE CLE PLAYSPLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPOUR OF ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXOUTX CLE PLAYSPOUR OF ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPOUR OF ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPOUR OF ON OUtput XXPLAY ON OUtput XXPLAY ON OUtput XXNUTX CLE PLAYSPOUR PLAY ON OUtput XXPLAY ON OUtput XXPLAY ON OUTPUT XXNUTX CLE PLAYSPOUR PLAYSPLAY ON OUTPUT XXPLAY ON OUTPUT XXNUTX CLE PLAYSPOUR PLAYSPLAYS PLAYSPLAYS PLAYS P	OUTxx CEC VOLUP	VOLUME UP On Output xx			
OUTA CEC MUTEToggle Actio MUTE Status On Output XXSet RE322 BAUD 2Set RE322 BAUD 2Set RE322 BAUD 2OUTA CEC FLWSIOP On Output XXToggle Actio Nutry MI (inclinit Stocords)Set Set Od Output XI (inclinit Stocords)OUTA CEC FLWRADSC DO Output XXToggle Actio Nutry MI (inclinit Stocords)Set Set Od Output VI (inclinit Stocords)OUTA CEC FLWRescalation On Output XXThe Operation Index 5 To Wate For TV CommunicationSet Set Od Output Pert 4The Operation Index 5 To Wate For TV CommunicationSet Set Od Output Pert 4Set Set Od Output Pert 4The Operation Index 5 To Wate For TV CommunicationSet Set Od Upput 1-4Set Set Od Upput 1-4The Operation Index 5 To Wate For TV CommunicationSet Set Od Upput 1-4Set Set Od Upput 1-4The Operation Index 5 To Wate For TV CommunicationSet Set Od Upput 1-4Set Set Od Upput 1-4The Operation Index 5 To Wate For TV CommunicationSet Set Od Upput 1-4Set Set Od Upput 1-4The Operation Index 5 To Set Od Upput XSet Set Od Upput XSet Set Od Upput XOUTA CEC FORPOWLRON On Output XSet Set Od Upput XSet Set Od Upput XOUTA CEC FORPOWLRON On Output XSet Set Od Upput XSet Set Set Od Upput XNax CEC DASEFoo Set	OUTxx CEC VOLDOWN	VOLUME DOWN On Output xx			
OUTX CEC PLAYPLAY ON Output XPLAY ON Output XOUTX CEC PLAYSPD On Output XOUTX CEC PLAYPLAYEO A OUTPUT XOUTX CEC PLAYEOPLAYEO A OUTPUT XNAX CEE DABLEEnable CEC Control O Input XNAXE CEE DABLEEnable CEC Control O Input XNAXE CEE DASLEDEADLE CEC CONTROL ON INput XNAXE CEE DASLEDEA	OUTxx CEC MUTE	Toggle Audio MUTE Status On Output xx	RS232BAUD z	Set RS232 Baud Rate To xx z = 1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default) 7 115200	
OUTEX CEC STOPSTOP On Output xxStop On Output xxStop On Output xxOUTEX CEC PAUSEPAUSE On Output xxFile Control On Output xxFile Control On Output xxIn Output Cammel ys Salection On Output xx, The Operation Media Is Walf For IV Communication To Succeed xx= 00.41 Output Port xx= 01.40 Output 1.4FS232 DUTX ONFS232 Remote-control Mode On HDBT Output xxOUTEX CEC INPUTyxx= 01.40 Output 1.4FS322 DUTX ONFS232 Remote-control Mode On HDBT Output xxOUTEX CEC PONEY= 01.40, FTX's HDMI Input 1.4FS322 DUTX ONFS322 Remote-control Mode On HDBT Output xxOUTEX CEC PONEY= 01.40, FTX's HDMI Input 1.4FS322 DUTX ONFS322 Remote-control Mode On HDBT Output xxOUTEX CEC PONEPOWER ON On Output xxFS322 DUTX ONFS322 Remote-control Mode On HDBT Output xxOUTEX CEC PONEPOWER ON On Output xxFS322 DUTX OFFSave S Type Of Command a Stored On HDBT xx= 00.41 Output Port xx= 00.41 Output XXNEX CEC DEADLEEnable CEC Control On Input xxFS322 DUTX OFFFS322 Bus Command 1 Stored In Store MDBS Power Stop On Input xXNEX CEC DEADLEEnable CEC Control On Input xxFS322 DUTX OFFFS322 Bus Command 2 Power Stop On Input xXNEX CEC DEADLEEnable CEC Control On Input xXFS322 DUTX OFFFS322 Bus Command 2 Power Stop ON Input xXNEX CEC LAWELEEnable CEC Control On Input xXFS322 Command 2 Power Stop ON Input xXNEX CEC LAWELEBus Cec Control On Input xXFS322 Command 2 Power Stop ON Input xXNEX CEC LAWELEBus Control Input xXFS322 Comma	OUTxx CEC PLAY	PLAY On Output xx			
OUTX CEC PAUSEPAUSE On Output XXSet Set Output YXSet	OUTxx CEC STOP	STOP On Output xx			
DUTAX CEC RECORDRECORD on Output XX Intro Operation Needs To Walt For TV communication To Surpeed ware 0.6.10 Output X4, The Operation Needs To Walt For TV communication to Surpeed ware 0.6.10 Output X4RS323 DINOUThactisee 0.6.41 Output 1-4 ware 0.6.41 Output X4OUTAX CEC INPUTYY YF 010-04, TY SHOWIN Input 1-4 YF 010-04, TY SHOWIN Input 1-4RS323 OUTX OFFDiable RS323 Remote control Mode On HDBT Output XOUTAX CEC POFFPOWER OFF ON Output XX xare 0.0-40 Output XX xare 0.40 Output XX xare 0.41 Output XX NX CEC PORDOWN On Input XX RS232ONOUTPAR TARE XARE XARE XARE XARE XARE XARE XARE X	OUTxx CEC PAUSE	PAUSE On Output xx	RS232DLYOUTxx:tt	Set Send Output xx Interval Time In tt Seconds Between RS232 On And User Commands xx= 00: All Output Port xx= [01-04]: Output 1 - 4	
Input Channel y Selection On Output xx, The Operation NeedS To Walt For TV Communication To Succeed wa DD, All Output PartRask selection NeedS To Walt For TV Communication (Seconds)Rask selection NeedS To Walt For TV Communication (Seconds)Rask selection NeedS To Walt For TV Communication (Seconds)Rask 	OUTxx CEC RECORD	RECORD On Output xx			
Image: space of the control of input xImage: space of the control of th		Input Channel vy Selection On Output xx,			
OUTXX CEC INPUTYYIS SucceedRS2320UTXX ONRS2320 Remote-control Mode On HDBT Output xxOUTXX CEC INPUTYYxx= [01.04]: Output 1.4RS232 DUTXX ONRS232 Remote-control Mode On HDBT Output xxOUTXX CEC POFFPOWER OFF On Output xxRS232 DUTXX ONSave y Type Of Command a Stored in Slot x Whose Baid Ratels 2 On Output xxOUTXX CEC POFFPOWER ON On Output xxRS232 DUTXX ONSavey Type Of Command a Stored in Slot x Whose Savey Type Of Command a Stored in Slot x Whose y = RS232 DUTXX ONOUTXX CEC POFFPOWER ON On Output xxRS232 DUTXX ONSavey Type Of Command a Stored in Slot x Whose y = RS232 DUTXX ONOUTXX CEC PORPOWER ON On Output xxRS232 DUTXX ONSavey Type Of Command a Stored in Slot x Whose y = RS232 DUTXX ONNXX CEC PORPOWER ON On Output xxRS232 DUTXX ONRS232 DUTXX ONNXX CEC PORDusable CEC Control On Input xxRS232 DUTXX ONRS232 DUTXX ONNXX CEC CPDusable CEC Control On Input xxRS232 DUTXX ONRS232 DUTXX ONNXX CEC CPDUS ON On Input xxRS232 DUTXX ONRS232 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX ONRS232 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX ONRS232 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX ONRS322 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX ONRS322 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX ONRS322 DUTXX ONNXX CEC CP RUNRGHT ON Input xxRS322 DUTXX DNRS322 DUTXX DN <td></td> <td>The Operation Needs To Wait For TV Communication</td> <td></td> <td>tt= [0-180]: Delay tt Seconds</td>		The Operation Needs To Wait For TV Communication		tt= [0-180]: Delay tt Seconds	
OUTX CEC INPUTY VPU0140/: IVS HOM Input 1-4 VPU002 Current HOM Input VPU0140/: IVS HOM Input 2 VPU0140/: IVS HOM Input 2 VPU0140RS2320UTx OFFDisable RS232 Remote-control Mode On HDBTOUTX CEC POPFPOWER ON On Output XX XX=00.All Output Port XX=01.401 Output Port XX=01.401 Output Port XX=01.401 Output Port XX=01.401 Output Port XX=01.401 Output XRS2320UTX VPU0140 VPU01400000000000000000000000000000000000		To Succeed	RS232OUTxx ON	Enable RS232 Remote-control Mode On HDBT	
Backwardswareyy= [01 od]: TV's HDMI Input 1: 4 yy= [01; Current HDMI Input yy= [01; Current HDMI Input xare (0: 40]; Curput 1: 4Save y Type Of Command a Stored In Slot x Whose Mad Rate Is 2: 0n Output xare xare (0: 40]; Curput 1: 4OUTax CEC PONPOWER ON On Output xare xare (0: 40]; Curput 1: 4Save y Type Of Command a Stored In Slot x Whose Mad Rate Is 2: 0n Output xare xare (0: 40]; Curput 1: 4INXx CEC CNEnable CEC control On Input xare xare (0: 40]; Curput 1: 4Save y Type Of Command a Stored In Slot x Whose Mad Rate Is 2: 0n Output xare xare (0: 40]; Curput 1: 4INXx CEC CNEnable CEC control On Input xaFS232ONUTixare a 1 2400, 2 4800, 3 8600, 4 19200, 5 38400, 6 57600 Default, 7 115200 b = R5232 Command 2INXx CEC CR FEI FORREFURN On Input xaFS232OFFOUTxare a 1 2400, 2 4800, 3 9800, 4 19200, 5 38400, 6 57600 Default, 7 115200 b = R5232 Command 2INXx CEC FORDVOLUME UPON Input xaFS232OFFOUTxare a 1 2400, 2 4800, 3 9800, 4 19200, 5 38400, 6 57600 Default, 7 115200 b = R5232 Command 2INXx CEC FORDFOR On Input xaFS232OFFOUTxare a 1 2400, 2 4800, 3 9800, 4 19200, 5 38400, 6 57600 Default, 7 115200 b = R5232 Command 2INXx CEC FUAD <td>OUTxx CEC INPUTvv</td> <td>xx= 00: All Output Port xx= [01-04]: Output 1 - 4</td> <td></td> <td colspan="2"></td>	OUTxx CEC INPUTvv	xx= 00: All Output Port xx= [01-04]: Output 1 - 4			
yy= [0]: Current HDMI input yy= [0]: Now input Select Menu if TV SupportSave Type 0f Command a Stored in Slot x Whose Bad Rate is 7 on Output xx 		yy= [01-04]: TV's HDMI Input 1 - 4	RS232OUTxx OFF	Disable RS232 Remote-control Mode On HDB1 Output xx	
Basel of the sector of the s		yy= [00]: Current HDMI Input		Save v Type Of Command a Stored In Slot x Whose	
Interpret NoncessPower of the output xx Power on output xx xx = 00. All Output Port 		yy= []:(No Parameter) Will Show Input Select Menu If		Baud Rate Is z On Output xx	
OUTX CEC FONFORENO TO OUTDUTXX XX=00-41 Output 1-4KXX=00-41 Output 1-4OUTXX CEC PONXX=00-41 Output 1-4XX=00-41 Output 1-4NXX CEC PONXX=00-41 Output 1-4XX=00-41 Output 1-4NXX CEC CNABLEEnable CEC control On Input XXXX=00-41 Output 1-4NXX CEC DISABLEDisable CEC control On Input XXXX=00-41 Output 1-4NXX CEC UPUP On Input XXV= MS232 User Command 2NXX CEC UPUP On Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC UPUP On Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTLEFT On Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC RETURNRETURN On Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTEFT ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTEFT ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTEFT ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTEFT ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CLEFTEFT ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC VILPVOLUME UP ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CONDRETURN ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC CONDRETURN ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC VOLPVOLUME UP ON Input XXXX=000, 3 solo, 4 1920, 5 38400, 6 57600NXX CEC VOLPVOLUME UP ON Input XXXX=000, ADD, ADD, XXNXX CEC CPUXP				xx= 00: All Output Port	
OUTIX CEC PONX=010-04; Output Port x=01-04; Output 1 - 4Second Second	OUTAX CECT OFF			xx= [01-04]: Output 1 - 4	
Interactionxxx [01-04]: Output 1-4RS2320NOUTxx y=3 RS232 User Command 1 y=4 RS232 User Command 2 y=4 RS232 User Command 2 y=4 RS232 User Command 3 z=a ASCII, h HEX a=12400, 24800, 39600, 419200, 538400, 657600 b=RS232 Command 3 z=a ASCII, h HEX a=12400, 24800, 39600, 419200, 538400, 657600 b=RS232 Command 3 z=a ASCII, h HEX a=12400, 24800, 39600, 419200, 538400, 657600 b=RS232 Command 3 z=a ASCII, h HEX a=12400, 24800, 39600, 419200, 538400, 657600 b=RS232 Command 3 z=a ASCII, h HEX a=12400, 24800, 39600, 419200, 538400, 657600 b=RS232 Command a Of Type Whose Baud Rate is 2 on Output xxNxx CEC REFTURNREFTURN On Input xxRS232OFFOUTxx 2:abSave RS232 Off Command a Of Type Whose Baud Rate is 2 on Output xxNxx CEC REFTURNRETURN On Input xxRS232OFFOUTxx 2:abSave RS232 Off Command a Of Type Whose Baud Rate is 2 on Output xxNxx CEC VOLDPVOLUME UP ON Input xxRS232OFFOUTxx 2:abSave RS232 Off Command a Of Type Whose Baud Rate is 2 on Output xxNxx CEC VOLDPVOLUME UP ON Input xxRS232OFFOUTxx 2:abSave RS232 Command A Off Type Whose Baud Rate is 2 on Output xxNxx CEC VOLDPVOLUME DOWN On Input xxRS232OFFOUTxx 2:abSave RS232 Command SWhen Detecting A Signal On Output xxNxx CEC REVINDRECORD On Input xxRS232OFFOUTxx 2:abSave RS232 Command SWhen Not Detecting A ASIgnal On Output xxNxx CEC REVINDRECORD On Input xxRS232OFFOUTxxSave OXID (POPOT) ASIgnal On Output xxNxx CEC REVINDRECORD On Input xxRS232OFFOUTxxSave OXID (POPOT) ASIgnal On Output xxNxx CEC FWDRACKWARD On Input xxRT THON/OFFSatue	OUTxx CEC PON	xx= 00: All Output Port	RS232ONOUTxx y:z:a:b	y = 1 R3232 Display On y = 2 RS232 Display Input Select y = 3 RS232 User Command 1 y = 4 RS232 User Command 2 y = 5 RS232 User Command 3 z = a ASCII, h HEX a = 1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200	
Nxx CEC ENABLEEnable CEC Control On Input xxy=4 R5232 User Command 2 y=5 R5232 User Command 3 z= a ASCII, h HEX a=1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200 b= R5232 Command 4Nxx CEC DWNDOWN On Input xxDOWN On Input xxFactor Command 2 y=5 R5232 User Command 3 z= a ASCII, h HEX a=1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200 b= R5232 CommandNxx CEC DWNDOWN On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC RIGHTRIGHT On Input xxRETURN On Input xxNxx CEC RITINRETURN On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC EXITEXIT On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC VOLDPVOLUME UP On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC FURNRETURN On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC PLAYPLAY On Input xxFactor Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC FURNRECORD On Input xxRS232 OFFOUTxxNxx CEC FURNREVIND On Input xxFactor Command 2 (Default), 7 115200 b= R5232 Command 2 (Default), 7 115200 b= R5232 CommandNxx CEC FURYPAY On Input xxRECORD COM (Default), 7 115200 b= R5232 CommandNxx CEC FURYREVIND On Input xxRECORD (Default), 7 115200 b= R5232 CommandNxx CEC FURYREVIND On Input xxRECORD (Default), 7 115200 b= R5232 CommandNxx CEC FURYREVIND On Input xxRECORD (Default), 7 115200 bNxx CEC FURY		xx=[01-04]: Output 1 - 4			
INXX CEC DISABLEDisable CEC Control On Input xxSear AS232 User Command 3 z = a ASC1, h HEX a = 12400, 24800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 L15200 b = RS232 CommandINXX CEC DWNDOWN On Input xxDOWN On Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC RETURNRETURN On Input xxRETURN On Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC RETURNRETURN On Input xxRETURN On Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC VOLUPVOLUME UP On Input xxRETURN On Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC VOLUPVOLUME UP On Input xxRETURN On Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC VOLUPVOLUME UP On Input xxRETURN ON Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC VOLUPVOLUME DOWN ON Input xxRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC VOLUPVOLUME DOWN ON Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC PLAYPLAY ON Input xxFRST Command a Of ytype Whose Baud Rate is 2 On Output xxINXX CEC PLAYPLAY ON Input xxFRST Command Baud Rate is 2 On Output xxINXX CEC PRUNDRECORD ON Input xxFRST Command Baud Rate is 2 On Output xxINXX CEC PRUNDRECORD ON Input xxFRST Command Baud Rate is 2 On Output xxINXX CEC PRUNDRECORD ON Input xxFRST FORWARD ON Input xxINXX CEC PRUNDRECORD ON Input	INxx CEC ENABLE	Enable CEC Control On Input xx			
INXX CEC OKConfirm Operation (Enter) On Input xxInstruction (Enter) On Input xxINXX CEC UPUP On Input xxDOWN On Input xxInput xxINXX CEC DOWNDOWN On Input xxEFT On Input xxInput xxINXX CEC LEFTLEFT On Input xxSave RS320 Gf Command a Of Type Whose Baud Rate is z on Output xxINXX CEC RGHTRIGHT On Input xxRETURN On Input xxINXX CEC RETURNRETURN On Input xxRETURN On Input xxINXX CEC VOLUPVOLUME UP On Input xxPS232OFFOUTxx z:a'INXX CEC VOLUPVOLUME DOWN ON Input xxPS232OFFOUTxx z:a'INXX CEC PLAYPLAY ON Input xxPS232OFFOUTX z:a'INXX CEC PLAYPLAY ON Input xxPS232OFFOUTX z:a'INXX CEC PLAYPLAY ON Input xxPS232OFFOUTX z:a'INXX CEC REVINDRECORD ON Input xxPS232OFFOUTX z:a'INXX CEC REVINDRECORD ON Input xxPS232OFFOUTX z:a'INXX CEC REVINDRECORD ON Input xxPS232OFFOUTX z:a'INXX CEC REVINDREVIND ON Input xxPS232OFFOUTX z:a'INXX CEC REVINDREVIND ON Input xxPS332OFFOUTX z:a'INXX CEC REVINDREVIND ON Input xxPS332OFFOUTX z:a'INXX CEC REVINDREVIND ON Input xxPS332OFFOUTX z:a'INXX CEC REVINDPOWER ON Input xxPS332OFFOUTX z:a'INXX CEC REVINDPOWER ON Input	INxx CEC DISABLE	Disable CEC Control On Input xx			
INXX CEC UPUP On Input xxUP On Input xxOWN On Input xxSave RS32 CommandSave RS32 CommandSave RS32 CommandOWN On Input xxSave RS32 CommandSave	INxx CEC OK	Confirm Operation (Enter) On Input xx			
INXx CEC DOWNDOWN On Input xxDOWN On Input xxDefended and and and and and and and and and an	INxx CEC UP	UP On Input xx			
INXX CEC LEFTLEFT On Input xxSave RS232 Off Command a Of y Type Whose Baud Rate is 2 On Output xx a a SACII, h HEX a 12400, 24800, 39600, 419200, 538400, 657600 (Default), 7115200 b = RS232 CommandINXX CEC VOLUPVOLUME UP On Input xxRET On Input xxRS2320FFOUTxx zial a 12400, 24800, 39600, 419200, 538400, 657600 (Default), 7115200 b = RS232 CommandINXX CEC VOLUPVOLUME DOWN On Input xxRS2320FFOUTxx zial a 12400, 24800, 39600, 419200, 538400, 657600 (Default), 7115200 b = RS232 CommandINXX CEC VOLUPVOLUME DOWN On Input xxRS2320FFOUTXx zial a Isole Auto RS232 Commands When Detecting A Signal On Output xxINXX CEC PLAYPLAY On Input xxRS2320FFOUTXx Zial ABLESignal On Output xxINXX CEC PLAYPAUSE On Input xxRS2320FFOUTXx Zial ABLESignal On Output xxINXX CEC RECORDRECORD ON Input xxRS2320FFOUTXXSignal On Output xxINXX CEC RECORDRECORD ON Input xxRECORD ON Input xxNET DHCP ON/OFFSet Auto IP(DHCP) On Or OffINXX CEC FWDFORWARD ON Input xxNET TN ON/OFFSet Inter Port Auto IP(DHCP) ON Or OffINXX CEC POFFPOWER ON ON Input xxNET TN SONO ON/OFFSet Inter Port Auto IP(DHCP)INXX CEC POFFPOWER ON ON Input xxNET TO NXXXXXXXXXXXXSet IP AddressINXX CEC POFFPOWER ON ON Input xxNET TO XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	INxx CEC DOWN	DOWN On Input xx		b = RS232 Command	
INX CEC RIGHTRIGHT On Input xxRef TURN On Input xxRef TURN On Input xxRef TURN On Input xxINX CEC RETURNRETURN On Input xxRS2320FFOUTxx z:ab $a = 12400, 24800, 39600, 419200, 538400, 657600 (Default), 7115200 (Default), 7$	INxx CEC LEFT	LEFT On Input xx	RS2320FFOUTxx z:a:b	Save RS232 Off Command a Of y Type Whose Baud Rate Is z On Output xx z = a ASCII, h HEX a = 1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200	
INXX CEC RETURNRETURN On Input xxRETURN On Input xxRES232OFFOUTxx z:ab a = 1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200 b = RS232 CommandINXX CEC VOLUPVOLUME UP On Input xxRECORD ON Input xxRS232OFFOUTXx z:ab b = RS232 Commanda = 1 2400, 2 4800, 3 9600, 4 19200, 5 38400, 6 57600 (Default), 7 115200 b = RS232 CommandINXX CEC VOLUPVOLUME DOWN ON Input xxRS232OFFOUTXx z:ab b = RS232 Commands When Detecting A Signal On Output xxINXX CEC PLAYPLAY ON Input xxRS232OFFOUTXx Z:ab b = RS232 Commands When Detecting A Signal On Output xxINXX CEC FONDSTOP ON Input xxRS232OFFOUTXxINXX CEC RECORDRECORD ON Input xxRS232OFFOUTXxINXX CEC FWDREVIND ON Input xxRS232OFFOUTXxINXX CEC FWDFORWARD ON Input xxRS232OFFOUTXxINXX CEC FWDFORWARD ON Input xxNET DHCP ON/OFFINXX CEC FWDFORWARD ON Input xxNET TN ON/OFFINXX CEC POFFPOWER OFF ON Input xxNET TN SONO ON/OFFINXX CEC PORPOWER ON ON Input xxSet Caleway AddressINXX CEC PONPOWER ON ON Input xxSet Gateway AddressINXX CEC PONxx = 00: All Output Port xx = 00: All Output 1 - 4INXX CEC PONPOWER ON ON Input xxSet Subnet Mask AddressINXX CEC PONPOWER ON ON Input xxSet Subnet Mask AddressINXX CEC PONPOWER ON ON Input xxSet Subnet Mask AddressINXX CEC PONPOWER ON ON Input xxSet Subnet Mask AddressINXX CEC PONPOWER ON ON Input xxSet Subnet Ma	INxx CEC RIGHT	RIGHT On Input xx			
INXx CEC EXIT       EXIT On Input xx       (Default), 7 115200         INXx CEC VOLUP       VOLUME UP On Input xx       b=R5232 Command         INxx CEC VOLDOWN       VOLUME DOWN On Input xx       RS2320NOUTxx DIS- Signal On Output xx         INxx CEC PLAY       PLAY On Input xx       RS2320NOUTxx DIS- Signal On Output xx         INxx CEC PLAY       PLAY On Input xx       RS2320FFOUTxx         INxx CEC PAUSE       PAUSE On Input xx       RS2320FFOUTxx         INxx CEC RECORD       RECORD On Input xx       RS2320FFOUTxx         INxx CEC FF       FAST FORWARD On Input xx       RS2320FFOUTxx         INxx CEC FWD       FORWARD On Input xx       NET DHCP ON/OFF         INxx CEC FWD       FORWARD On Input xx       NET TN ON/OFF         INxx CEC POFF       POWER OFF On Input xx       Set Telnet Port 0n Or Off         INxx CEC POFF       POWER ON ON Input xx       NET TN 8000 ON/OFF       Set Telnet Port 8000 On Or Off         INxx CEC PON       POWER ON ON Input xx       NET IP xxx.xxx.xxx       Set Gateway Address         INxx CEC PON       POWER ON ON Input xx       Set Subnet Mask Address         INxx CEC PON       POWER ON ON Input xx       Set Subnet Mask Address         INxx CEC PON       POWER ON ON Input xx       Set Subnet Mask Address         INXx CEC PON <td< td=""><td>INxx CEC RETURN</td><td>RETURN On Input xx</td></td<>	INxx CEC RETURN	RETURN On Input xx			
INXX CEC VOLUP       VOLUME UP On Input xx       FS232 Command         INXX CEC VOLDOWN       VOLUME DOWN On Input xx       RS232 Commands When Detecting A Signal On Output xx         INXX CEC PLAY       PLAY On Input xx       Bisable Auto RS232 Commands When Detecting A Signal On Output xx         INXX CEC STOP       STOP On Input xx       Disable Auto RS232 Commands When Not Detecting A Signal On Output xx         INXX CEC FAUSE       PAUSE On Input xx       Disable Auto RS232 Commands When Not Detecting A Signal On Output xx         INXX CEC RECORD       RECORD On Input xx       Disable Auto RS232 Commands When Not Detecting A Signal On Output xx         INXX CEC REWIND       REWIND On Input xx       Disable Auto RS232 Commands When Not Detecting A Signal On Output xx         INXX CEC REWIND       REWIND On Input xx       Disable Auto RS232 Commands When Not Detecting A 	INxx CEC EXIT	EXIT On Input xx			
INXX CEC VOLDOWNVOLUME DOWN On Input xxRS232ONOUTxx DIS- ABLEDisable Auto RS232 Commands When Detecting A Signal On Output xxINXX CEC PLAYPLAY On Input xxABLESignal On Output xxINXX CEC STOPSTOP On Input xxDisable Auto RS232 Commands When Not Detecting A Signal On Output xxINXX CEC PAUSEPAUSE On Input xxDisable Auto RS232 Commands When Not Detecting A Signal On Output xxINXX CEC RECORDRECORD On Input xxDisable Auto RS232 Commands When Not Detecting A Signal On Output xxINXX CEC REWINDREWIND On Input xxDisable Auto RS232 Commands When Not Detecting A Signal On Output xxINXX CEC FWDFORWARD On Input xxNET DHCP ON/OFFSet Auto IP(DHCP) On Or OffINXX CEC BWDBACKWARD On Input xxNET TIN ON/OFFSet Telnet Port On Or OffINXX CEC POFFPOWER OFF On Input xxNET IP xxx.xxx.xxxSet IP AddressINXX CEC PONPOWER ON On Input xx xx= 00: All Output Port xx=[01-04]; Output 1 - 4NET GW xxx.xxx.xxxSet Gateway AddressINXX CEC PONPOWER ON ON Input xx xx= 00: All Output Port xx=[01-04]; Output 1 - 4NET GW xxx.xxx.xxxSet Gateway AddressNET RBSet Network Reboot And Apply New Config!!!NET RBSet Network Reboot And Apply New Config!!!	INxx CEC VOLUP	VOLUME UP On Input xx		b = RS232 Command	
INXx CEC PLAYPLAY On Input xxPLAY On Input xxSignal On Output xxINXx CEC STOPSTOP On Input xxDisable Auto RS232 Commands When Not Detecting A Signal On Output xx xx= 00: All Output Port xx= [01-04]: Output 1 - 4INxx CEC RECORDRECORD On Input xxRECORD On Input xx INxx CEC REWINDREWIND On Input xxINxx CEC FFFAST FORWARD On Input xxNET DHCP ON/OFFSet Auto IP(DHCP) On Or OffINxx CEC FWDFORWARD On Input xxNET TN ON/OFFSet Telnet Port On Or OffINxx CEC BWDBACKWARD On Input xxNET TN 8000 ON/OFFSet Telnet Port 8000 On Or OffINxx CEC POFFPOWER OFF On Input xxNET GW xxx.xxx.xxxSet IP AddressINxx CEC PONxx= 00: All Output Port xx= 00: All Output Port xx= 00: All Output 1 - 4NET GW xxx.xxx.xxxSet Subnet Mask AddressINxx CEC PONPOWER ON On Input xx xx= 00: All Output Port xx= [01-04]: Output 1 - 4NET GW xxx.xxx.xxxSet Subnet Mask AddressINxx CEC PONNET RBSet Network Reboot And Apply New Config!!NET FW	INxx CEC VOLDOWN	VOLUME DOWN On Input xx	RS232ONOUTxx DIS-	Disable Auto RS232 Commands When Detecting A	
INxx CEC STOPSTOP On Input xxDisable Auto RS222 commands when Not DetectingINxx CEC PAUSEPAUSE On Input xxA Signal On Output xxINxx CEC RECORDRECORD On Input xxDISABLEINxx CEC REWINDREWIND On Input xxDISABLEINxx CEC FWFAST FORWARD On Input xxNET DHCP ON/OFFINxx CEC RWDFORWARD On Input xxNET TN ON/OFFINxx CEC BWDBACKWARD On Input xxNET TN ON/OFFINxx CEC POFFPOWER OFF On Input xxSet Telnet Port 8000 On Or OffINxx CEC PONPOWER ON ON Input xxNET IP xxx.xxx.xxxINxx CEC PONSet Gateway AddressINxx CEC PONX= (01-04): Output 1-4INxx CEC PONSet Subnet Mask AddressINxx CEC PONSet Subnet Mask Reboot And Apply New Config!!!<	INxx CEC PLAY	PLAY On Input xx	ADEL		
INxx CEC PAUSEPAUSE On Input xxPAUSE On Input xxPAUSE On Input xxPAUSE On Input xxINxx CEC RECORDRECORD On Input xxDISABLExx=00: All Output Port xx=[01-04]: Output 1 - 4INxx CEC REWINDREWIND On Input xxNET DHCP ON/OFFSet Auto IP(DHCP) On Or OffINxx CEC FWDFORWARD On Input xxNET TN ON/OFFSet Telnet Port 0n Or OffINxx CEC BWDBACKWARD On Input xxNET IP xxx.xxx.xxxSet IP AddressINxx CEC POFFPOWER OFF On Input xxNET IP xxx.xxx.xxxSet Gateway AddressINxx CEC PONxx=00: All Output Port xx=[01-04]: Output 1 - 4NET SM xxx.xxx.xxxSet Subnet Mask AddressNET SM xxx.xxx.xxxSet Network Reboot And Apply New Config!!!NET RBSet Network Reboot And Apply New Config!!!	INxx CEC STOP	STOP On Input xx	RS232OFFOUTxx DISABLE	Disable Auto RS232 Commands When Not Detecting A Signal On Output xx xx= 00: All Output Port	
INxx CEC RECORDRECORD On Input xxRecord on Input xxINxx CEC REWINDREWIND On Input xxNET DHCP ON/OFFSet Auto IP(DHCP) On Or OffINxx CEC FWDFORWARD On Input xxNET TN ON/OFFSet Telnet Port On Or OffINxx CEC BWDBACKWARD On Input xxNET TN 8000 ON/OFFSet Telnet Port 8000 On Or OffINxx CEC POFFPOWER OFF On Input xxNET IP xx.xxx.xxxSet IP AddressINxx CEC PONxx= 00: All Output Port xx= (01-04): Output 1 - 4NET SM xxx.xxx.xxxSet Subnet Mask AddressNET RBSet Network Reboot And Apply New Config!!!	INxx CEC PAUSE	PAUSE On Input xx			
INXX CEC REWIND     REWIND On Input xx       INXX CEC FF     FAST FORWARD On Input xx       INXX CEC FWD     FORWARD On Input xx       INXX CEC FWD     FORWARD On Input xx       INXX CEC BWD     BACKWARD On Input xx       INXX CEC POFF     POWER OFF On Input xx       POWER ON On Input xx     Set Telnet Port 8000 On Or Off       INXX CEC PON     POWER ON On Input xx       xx = 00: All Output Port xx = [01-04]: Output 1 - 4     NET B       VET TRB     Set Network Reboot And Apply New Config!!!	INXX CEC RECORD	RECORD On Input xx		xx= [01-04]: Output 1 - 4	
INXX CEC FV     FAST FORWARD On Input xx     NET TN ON/OFF     Set Telnet Port On Or Off       INXX CEC FWD     FORWARD On Input xx     NET TN ON/OFF     Set Telnet Port 00 Or Off       INXX CEC BWD     BACKWARD On Input xx     NET TN ON/OFF     Set Telnet Port 00 Or Off       INXX CEC POFF     POWER OFF On Input xx     NET TN ON/OFF     Set IP Address       INXX CEC PON     POWER ON On Input xx     NET GW XXXXXXXXXX     Set Gateway Address       NET SM XXXXXXXXXX     Set Subnet Mask Address     NET RB     Set Network Reboot And Apply New Config!!!	INXX CEC REWIND		NET DHCP ON/OFF	Set Auto IP(DHCP) On Or Off	
INXX CEC FWD       FORWARD ON INput XX         INXX CEC BWD       BACKWARD ON Input XX         INXX CEC POFF       POWER OFF ON Input XX         Y       POWER ON ON Input XX         YXX CEC PON       YXX=00: All Output Port         YXX= [01-04]: Output 1 - 4       NET SM XXXXXXXXXX         YXX       Set Network Reboot And Apply New Config!!!			NET TN ON/OFF	Set Telnet Port On Or Off	
NXX CEC BWD     BACKWARD OF INput XX     NET IP XXX.XXX.XXX       INXX CEC POFF     POWER OFF On Input XX     NET IP XXX.XXX.XXXX       POWER ON On Input XX     XX= 00: All Output Port     NET GW XXX.XXX.XXXX       XX= [01-04]: Output 1 - 4     NET RB     Set Network Reboot And Apply New Config!!!			NET TN8000 ON/OFF	Set Telnet Port 8000 On Or Off	
INXX CEC POP       POWER OFF OF Initipatities       NET GW xxx.xxx.xxx       Set Gateway Address         INXX CEC PON       xx= 00: All Output Port xx= [01-04]: Output 1 - 4       NET GW xxx.xxx.xxxx       Set Gateway Address         NET SM xxx.xxx.xxx       Set Subnet Mask Address       NET RB       Set Network Reboot And Apply New Config!!!			NET IP xxx.xxx.xxx.xxx	Set IP Address	
INxx CEC PON     xx= 00: All Output Port xx= [01-04]: Output 1 - 4     NET SM xxx.xxx.xxx     Set Subnet Mask Address       NET RB     Set Network Reboot And Apply New Config!!!	INXX CEC PUFF		NET GW xxx.xxx.xxx.xxx	Set Gateway Address	
xx= [01-04]: Output 1 - 4     NET RB     Set Network Reboot And Apply New Config!!!	INxx CEC PON	xx= 00: All Output Port		Set Subnet Mask Address	
		xx=[01-04]: Output 1 - 4	NET RB	Set Network Reboot And Apply New Config!!	
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## Web-GUI Firmware Update

The web-GUI of the Matrix is used to configure and control the product through a web portal. The Matrix can be accessed on any internet connected device including: tablets, smart phones and laptops that are on the same network.

As the web-GUI is used to update the main matrix firmware it is important to make sure that the web-GUI firmware is the latest version. Please check your firmware version against the version available to download from the Blustream website.

To update the web-GUI firmware:

1) Login to the web-GUI update menu:

Default IP Address is: 192.168.0.200:100

Default Username is: blustream

s: blustream Default Password is: 1234

Please note: the IP address may differ if default network settings have been updated. If this is the case, please replace the following with the products current IP address:

XXX.XXX.XXX.XXX:100

2) When you have accessed the web-GUI menu interface, expand the 'Administration' file in the menu tree by clicking the small '+' icon next to the file.

3) Select 'Upload Firmware':



4) Click 'Choose File' and select the web-GUI/MediaTek firmware file downloaded from the Blustream website. This will be a .bin file:



5) Press 'Apply' to begin the firmware update process.

The update process will take up to 1 minute to complete. Do not refresh or navigate away from this page until the update process has completed.



### BLUSTRE∕√√/→

### Schematic



## Certifications

### **FCC Notice**

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 off 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.

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

### CANADA, INDUSTRY CANADA (IC) NOTICES

This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

### CANADA, AVIS D'INDUSTRY CANADA (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

### CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.







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