

# ▶ AMF42AU

## 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 AMF42AU is an advanced 4K 4x2 multi-format presentation switcher featuring 3 x HDMI and 1 x USB-C input to 2 x HDMI / 1 x HDBaseT™ output. The AMF42AU provides enhanced features including seamless switching, independent video scaling on outputs, MIC input with phantom power, audio mixing and PoC to power a Blustream compatible HDBaseT™ receiver. The AMF42AU also features a Web GUI for control and configuration, source and display control via: RS-232, CEC, manual or automated source selection, IR pass-through and control via front panel, IR, RS-232 and TCP/IP. The AMF42AU is an ideal product for your boardroom, classroom or lecture theatre.

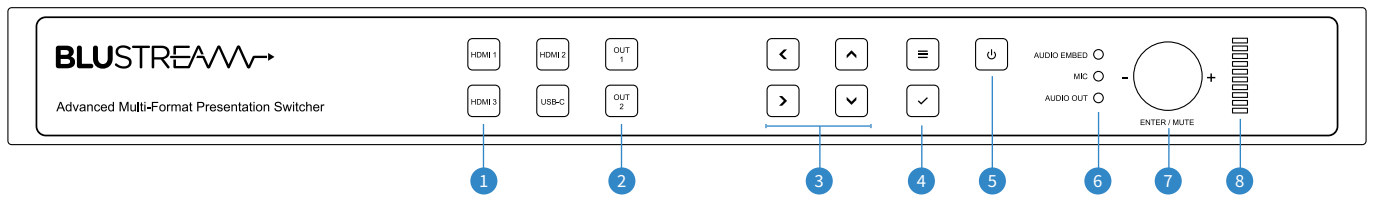
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## FEATURES:

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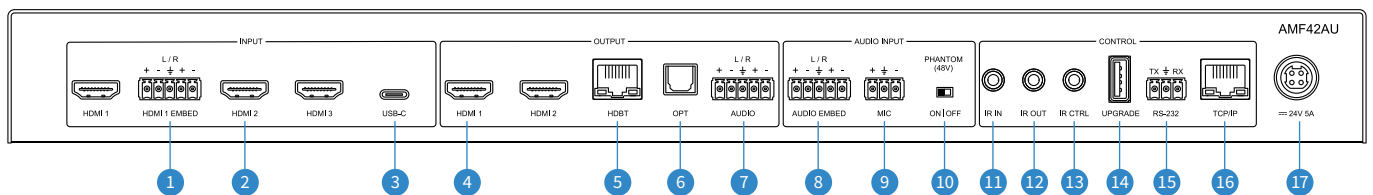
- Features 3 x HDMI and 1x USB-C inputs which can be independently routed to 2 x HDMI / HDBaseT™ outputs
- Seamless source switching with manual or auto source selection
- Independent video scaling on dual outputs
- Supports HDMI 2.0 18Gbps specification
- Supports resolutions up to 4K UHD 60Hz 4:4:4
- Dual HDMI / HDBaseT™ on output 2. HDBaseT™ output supports distribution of video sources up to 70m 1080p (4K 60Hz 4:4:4 up to 40m) to the Blustream RX70CS receiver
- Supports USB Type C up to 4K UHD 60Hz 4:4:4, DP1.2 with 40W charging capability
- Audio breakout to analogue L/R audio and Toslink (S/PDIF) digital outputs concurrently
- Audio mixing capabilities with independent level adjustment
- Analogue audio inputs support both balanced and unbalanced audio
- MIC input supports line level or 48V phantom power
- Configurable source and display control via RS-232, IR and CEC
- Web interface module for control and configuration of matrix
- Control via TCP/IP, RS-232, IR and front panel
- Open control API (IP / RS-232) for integration with 3rd party control platforms
- HDCP 2.2 compliant with advanced EDID management

## Front Panel Description



- 1 Input Selection Buttons - Press to select the input signal between HDMI 1 to 3 and USB-C
- 2 Output Selection Buttons - Press to select the output port between outputs 1 and 2
- 3 Menu Up / Down / Left / Right Buttons - Press to navigate through the on-screen menu system
- 4 Menu and Select Buttons - Press the menu button to bring up the on-screen menu, and the select button to select items within the on-screen menu system
- 5 Power Button - Press and hold to power the switcher on or off
- 6 Audio Embed / Mic / Audio Out LED Indicator - Indicates the currently selected audio source for volume adjustment
- 7 Enter / Mute Rotary Dial Button - Press to adjust the currently selected audio source, rotate to adjust the volume level up or down
- 8 LED Level Indicator - Indicates the volume level of the currently selected audio source

## Rear Panel Description



- 1 HDMI Audio Embed Input - Supports balanced or unbalanced analogue audio to be embedded over HDMI input 1
- 2 HDMI Inputs 1-3 - Connect to HDMI source equipment
- 3 USB-C Input - Connect to USB-C source equipment - please ensure that a USB-C cable is used that is capable of carrying video
- 4 HDMI Outputs 1-2 - Connect to HDMI display equipment
- 5 HDBase™ Output - Output for remote display. Connect to compatible Blustream HDBase™ receiver
- 6 Optical Audio Output - Toslink connector to connect to external audio distribution equipment or amplifier
- 7 Analogue Audio Output - Supports balanced or unbalanced analogue audio output to connect to external audio distribution equipment or amplifier
- 8 Audio Embed Input - Supports balanced or unbalanced audio to be embedded over the input signal
- 9 Mic Audio Input - Supports balanced and unbalanced microphones
- 10 Phantom Power On / Off Switch - Enables or disables 48V phantom power for the microphone input
- 11 IR Input - 3.5mm stereo jack. Sends 5V IR to a compatible Blustream HDBase™ receiver
- 12 IR Output - 3.5mm mono jack. Receives 5V IR from a compatible Blustream HDBase™ receiver
- 13 IR Control Input - 3.5mm stereo jack. 5V input to connect an IR receiver or control processor to control AMF42AU
- 14 USB Upgrade Port - Used for firmware update
- 15 RS-232 Port - 3-pin Phoenix connector for control of the Matrix from PC or 3rd party control processor
- 16 TCP/IP Port - RJ45 connector to connect to LAN for TCP/IP control of matrix and to access web GUI
- 17 Power Port - Use included 24V/5A DC adaptor

## EDID Management

EDID (Extended Display Identification Data) is a data structure that is used by a source device to find out what audio and video resolutions are supported by the display. By specifying the video resolution and audio format of the source device you can improve the EDID hand shaking thus making HDMI more reliable. Configuration of the EDID settings for each input can be achieved via the Web GUI or by using the following RS-232 commands:

### EDIDxxDFzz

Where xx = Input: 00 refers to ALL inputs; 01-04 = specific input

zz = EDID as shown below

zz = 00: HDMI 1080p@60Hz, Audio 2ch PCM (Default)

zz = 01: HDMI 4K@30Hz 4:4:4, Audio 2ch PCM

zz = 02: HDMI 4K@60Hz 4:2:0, Audio 2ch PCM

zz = 03: HDMI 4K@60Hz 4:4:4, Audio 2ch PCM

zz = 04: DVI 1280x1024@60Hz, Audio None

zz = 05: DVI 1920x1080@60Hz, Audio None

zz = 06: DVI 1920x1200@60Hz, Audio None

zz = 07: HDMI 1920x1200@60Hz, Audio 2ch PCM

zz = 08: User EDID 1

zz = 09: User EDID 2

zz = 10: EDID Passthrough1 (Copy from HDBT)

zz = 11: EDID Passthrough2 (Copy from HDMI OUT1)

zz = 12: EDID Passthrough3 (Copy from HDMI OUT2)

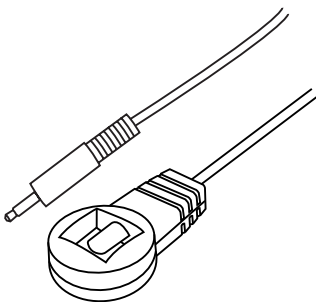
## Infrared (IR) Control

The Blustream range of matrix products include Matrix control via IR.

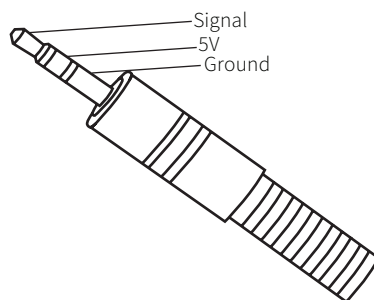
**IMPORTANT: Blustream Infrared products are all 5V and NOT compatible with alternative manufacturers Infrared solutions. When using third party 12V IR control solutions please use the Blustream IRCAB cable for IR conversion.**

### IR Receiver - IRR

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



### IR Receiver - Stereo 3.5mm

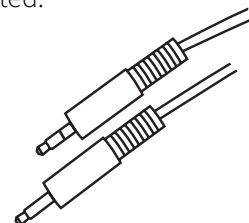


### IR Control Cable - IRCAB

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 AMF42AU 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.

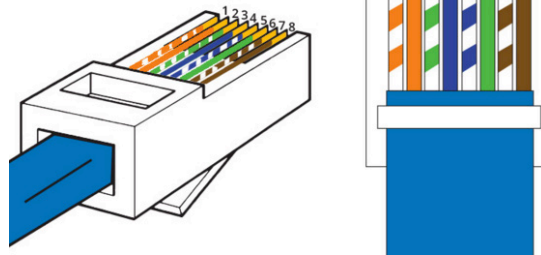
**Please note:** CEC is subject to the support of standardised codes for the sources and displays connected to the Matrix.

## Terminating CAT Cable for use with HDBaseT™

It is important that the interconnecting CAT cable between 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. 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.

### RJ45 Wiring - T568B



## Understanding the HDBaseT™ 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 - C66 / C88:

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

The link lights will only serve as an indication to the connectivity between matrix and HDBaseT™ 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™ equipment.

# 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: **192.168.0.200**      Default Username is: **blustream**      Default 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.

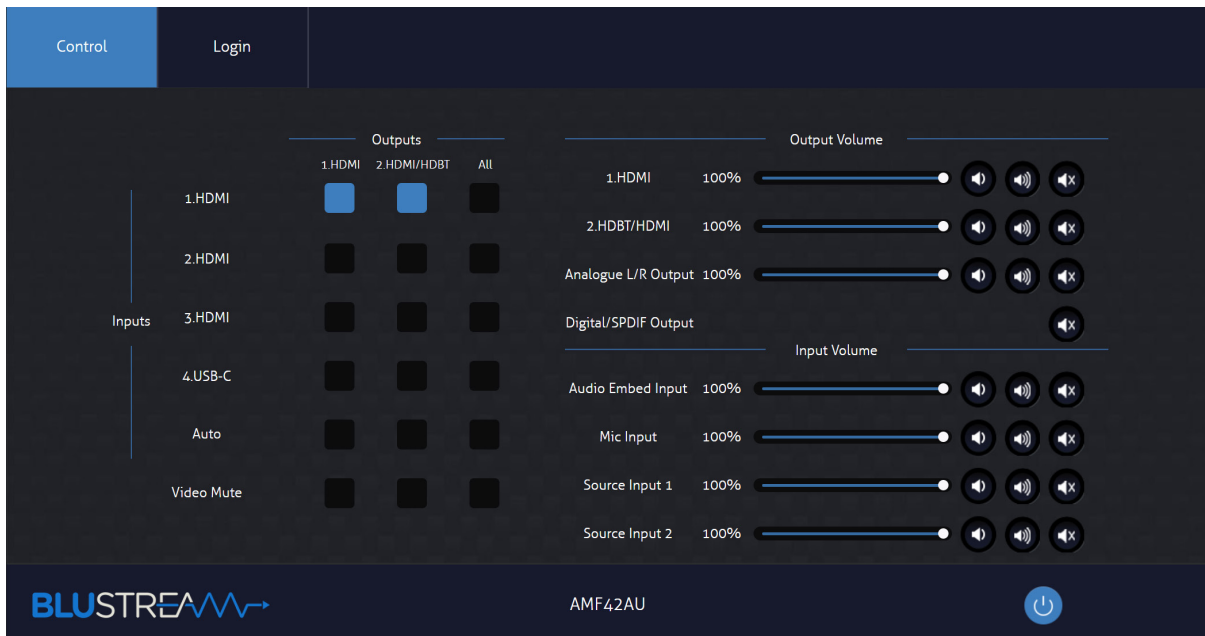
**User Accounts** - 7x User accounts can be utilised, each with individual login details. User accounts can be assigned permissions to specific areas and functions. A User must log in to make use of these functions.

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

## Guest Control Page

The Guest Control Page allows a guest user to change inputs for each zone as well as adjust volume levels 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.



### 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.

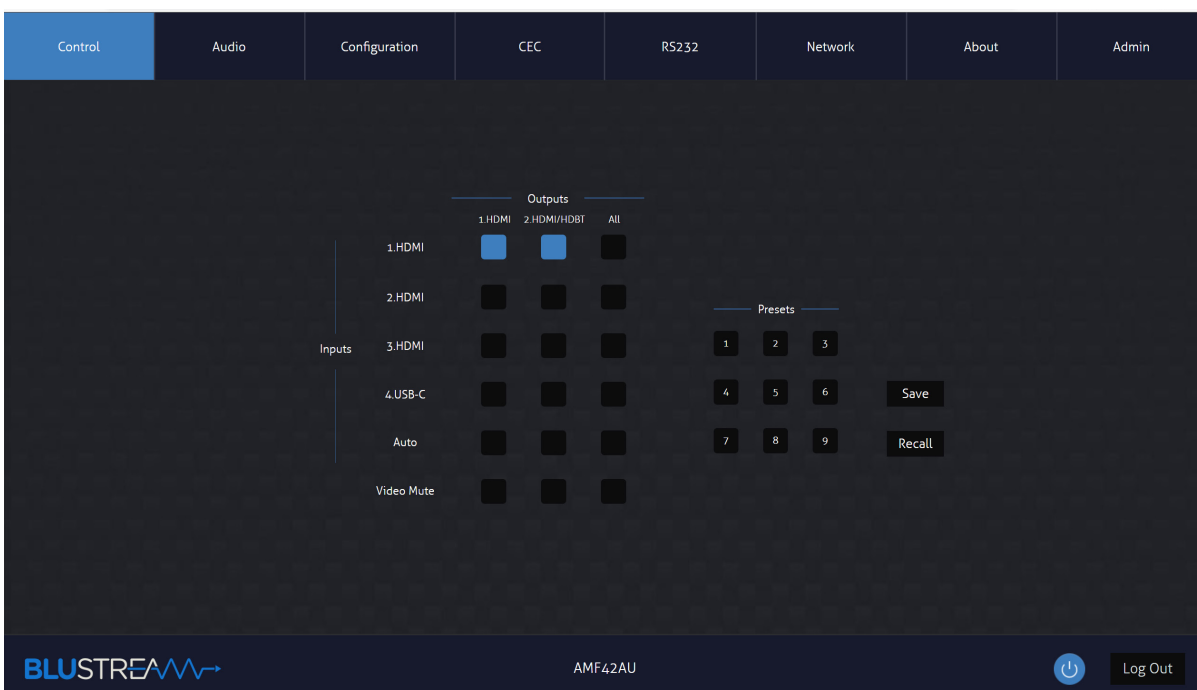


### User Control Page

A logged in User or Admin Control Page allows a user to change inputs for each zone. Simply select the square that corresponds with the input and zone you wish to change.

A User or Admin also has the ability to Save or Recall preconfigured Presets. A Saved Preset will store the specified input to output configuration, and allow you to Recall the configuration when required.

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

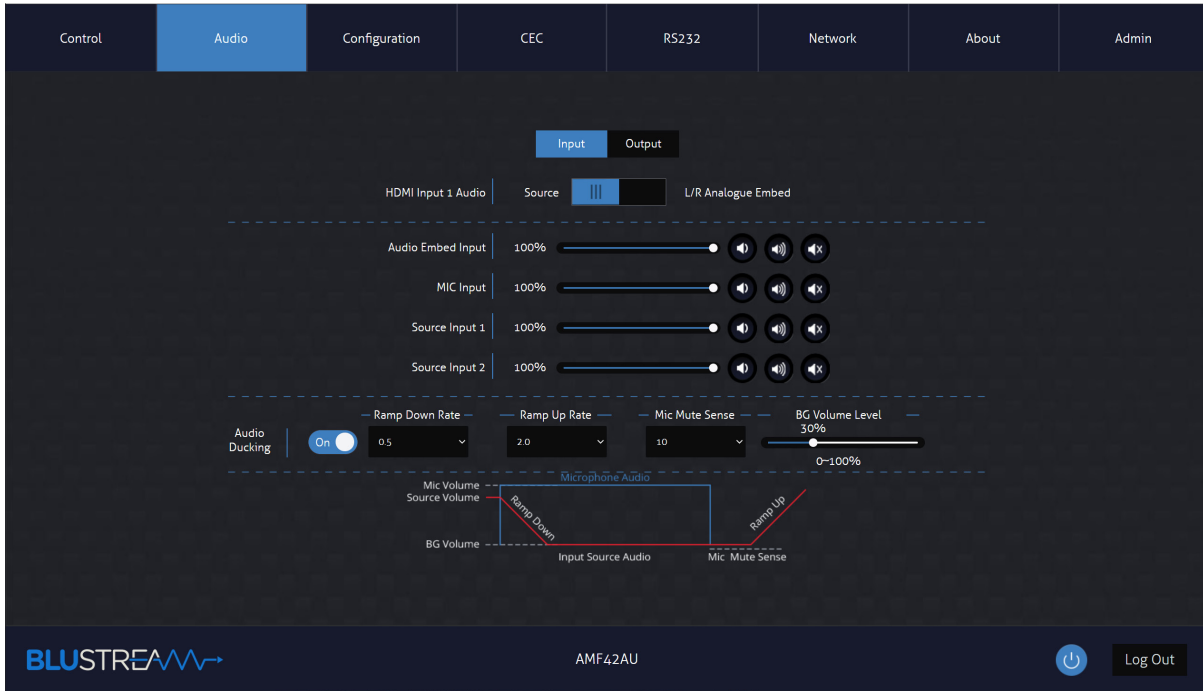




### Audio Input Page

The Audio Input Page allows you to configure settings to do with the audio inputs of the matrix. You can select the configuration for either Input or Output at the top of the page. Within the Input Page you can:

- Select if HDMI Input embeds the associated analogue L/R audio or uses the source audio (from HDMI/USB-C source device)
- Specify volume levels for inputs into the matrix, as well as muting them
- Adjust the audio ducking settings for the MIC input

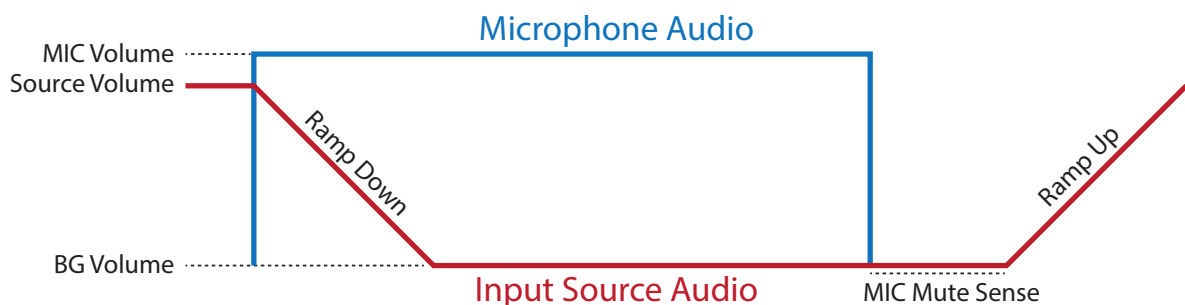


### MIC Audio Ducking

The AMF42AU features a microphone input that can support 48V phantom power (selectable via the switch on the rear panel) and balanced and unbalanced microphones. It also features auto audio ducking where by the input source’s audio decreases in volume and the microphone audio is mixed over the top. This feature is enabled by default and can be customised via the AMF42AU’s web GUI or RS-232. You can adjust the following:

- Ramp Down Rate or Ramp Up Rate - this is how quickly the background audio will lower or raise when MIC signal is detected or lost
- MIC Mute Sense - how long after MIC audio stops for the background audio to ramp back up to normal volume
- BG Volume Level - this is the level the source audio reduces to when MIC audio begins

The illustration below outlines how the microphone audio mixes over the input source’s audio.

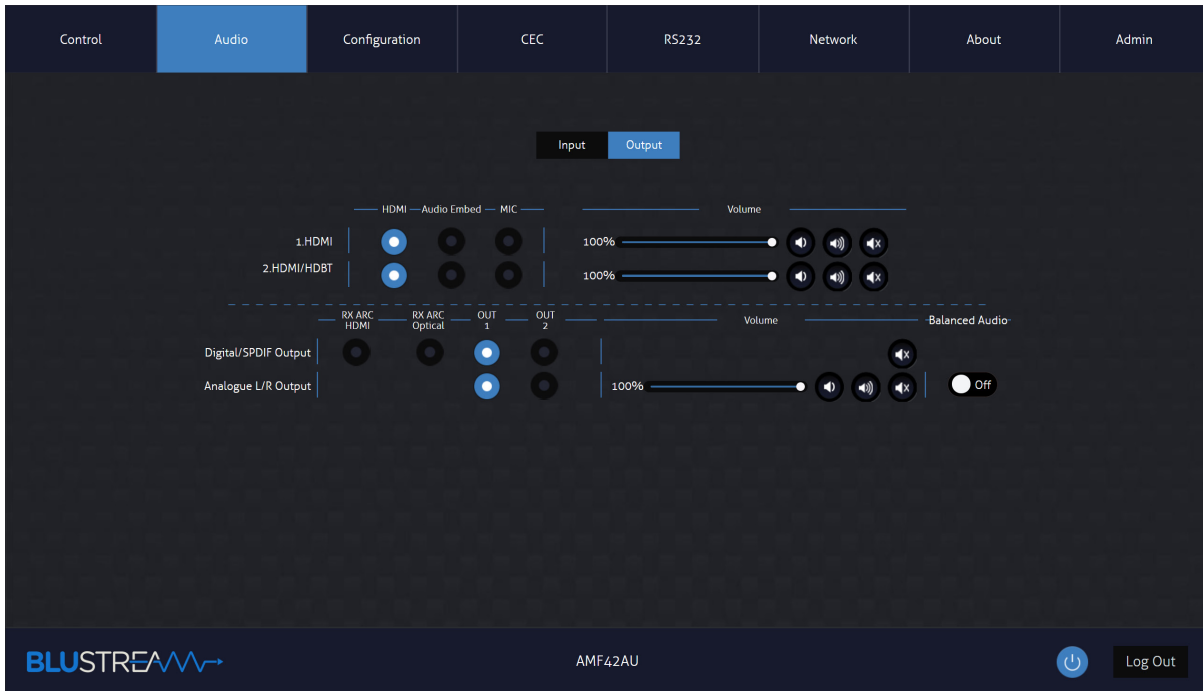


### Audio Output Page

The Audio Output Page allows us to change settings specific to the audio outputs of the matrix. You can adjust volume levels and mute audio for each independent output, as well as enable/disable the balanced analogue audio output.

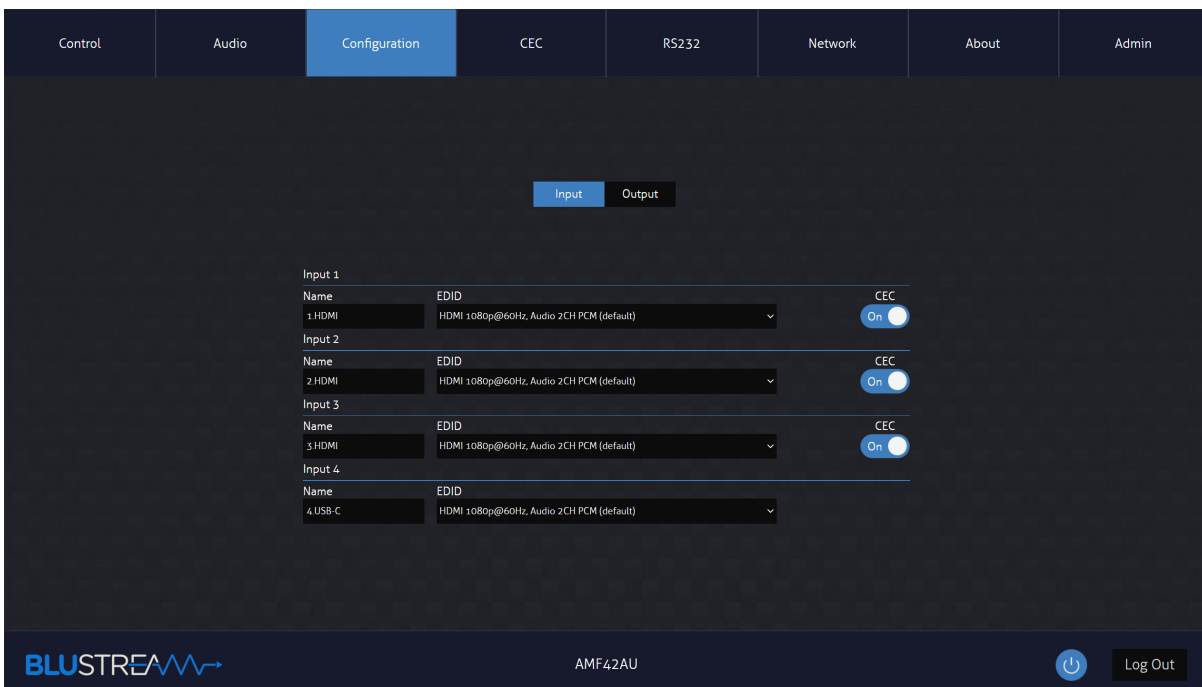
For the output audio source selection, HDMI refers to following the HDMI/USB-C input source selection while Audio Embed would override the audio with the analogue audio embed input. To allow for MIC mixing over a specific output, you can select the MIC radio box along with either HDMI or Audio Embed radio boxes.

Audio Return Channel can be passed back from a display connected to HDBT output 2 when using the Blustream RX70CS receiver. You can specify ARC from the HDMI or optical audio connected to the RX70CS. This audio can be output via the optical output of the AMF42AU.



### Configuration Input Page

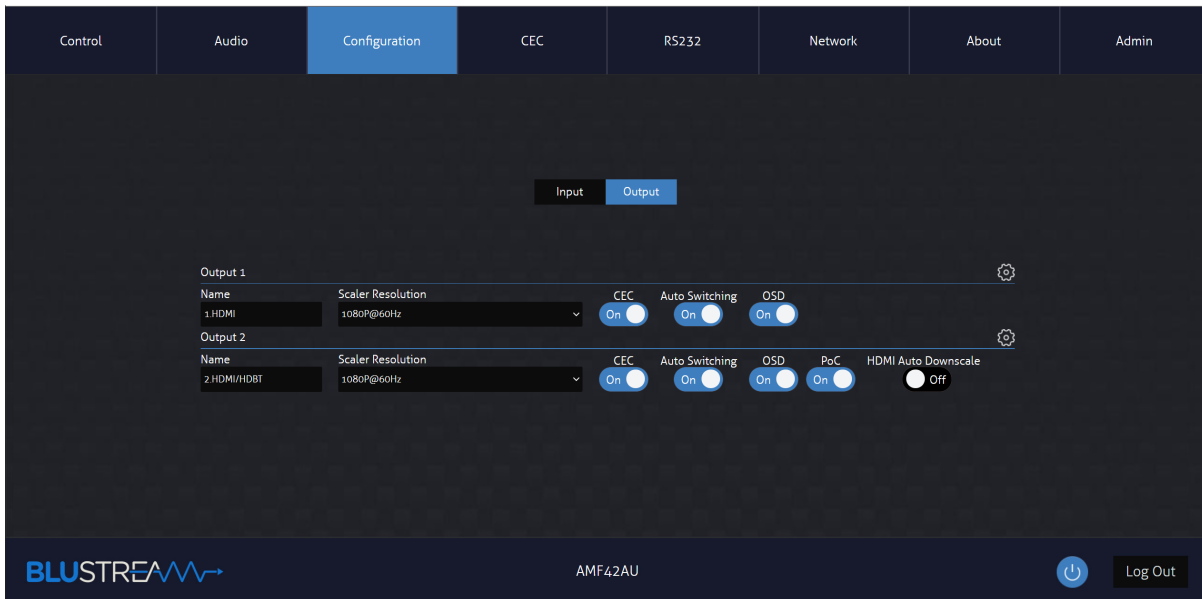
The Configuration Input Page allows us to change settings specific to the inputs of the matrix. You can adjust the name of each input, the EDID of each input as well as enable or disable CEC to the input. For more information on EDID's, please see the EDID Management section on page 5.



### Configuration Output Page

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

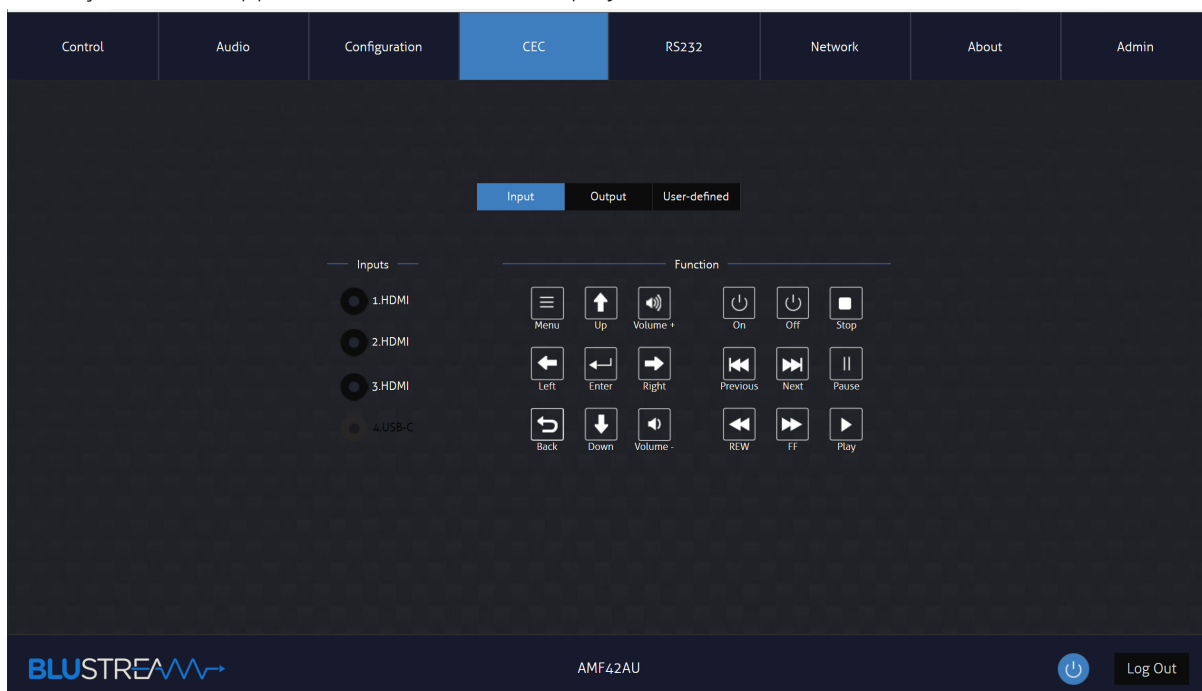
- The name of each output
- The resolution of the scaler output (set this to match the displays supported resolution)
- Enable or disable CEC to the output
- Enable or disable Auto Switching - this will trigger a source change when a device is connected or disconnected
- Enable or disable OSD - this will show the On Screen Display if you press the menu button on the front of the matrix
- Enable or disable PoC (Power over Cable) to power connected HDBT receiver
- 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.



### 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.

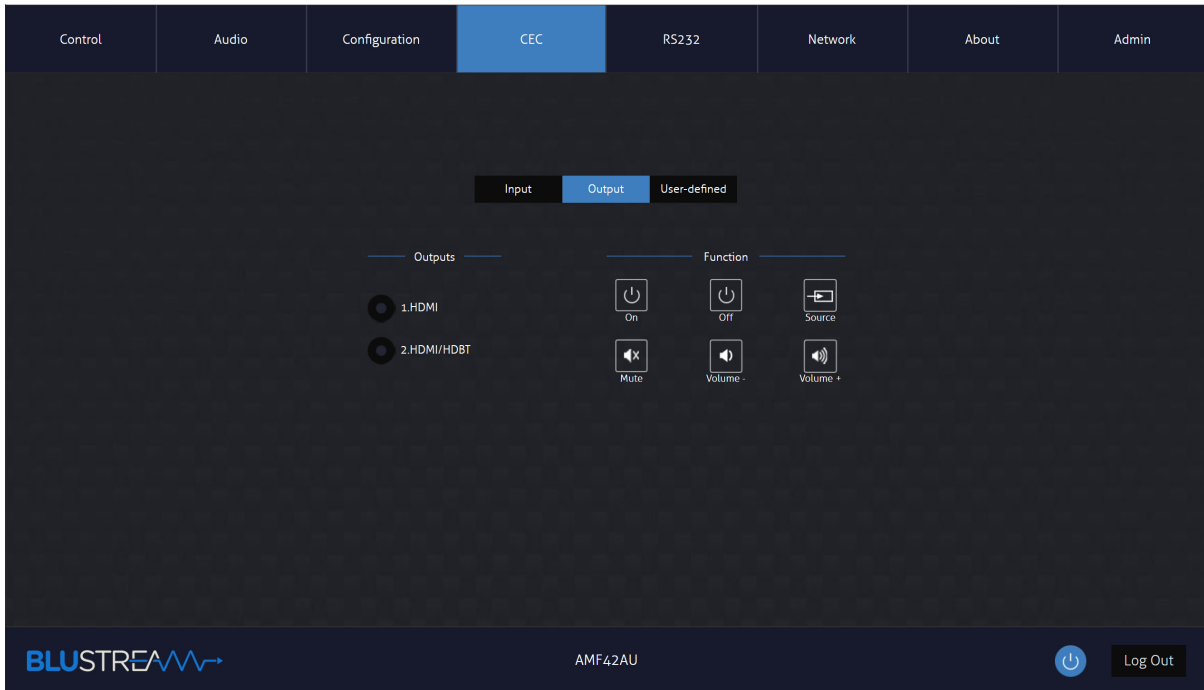
Note CEC is subject to the support of the sources and displays connected to the matrix.



### 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 at 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.

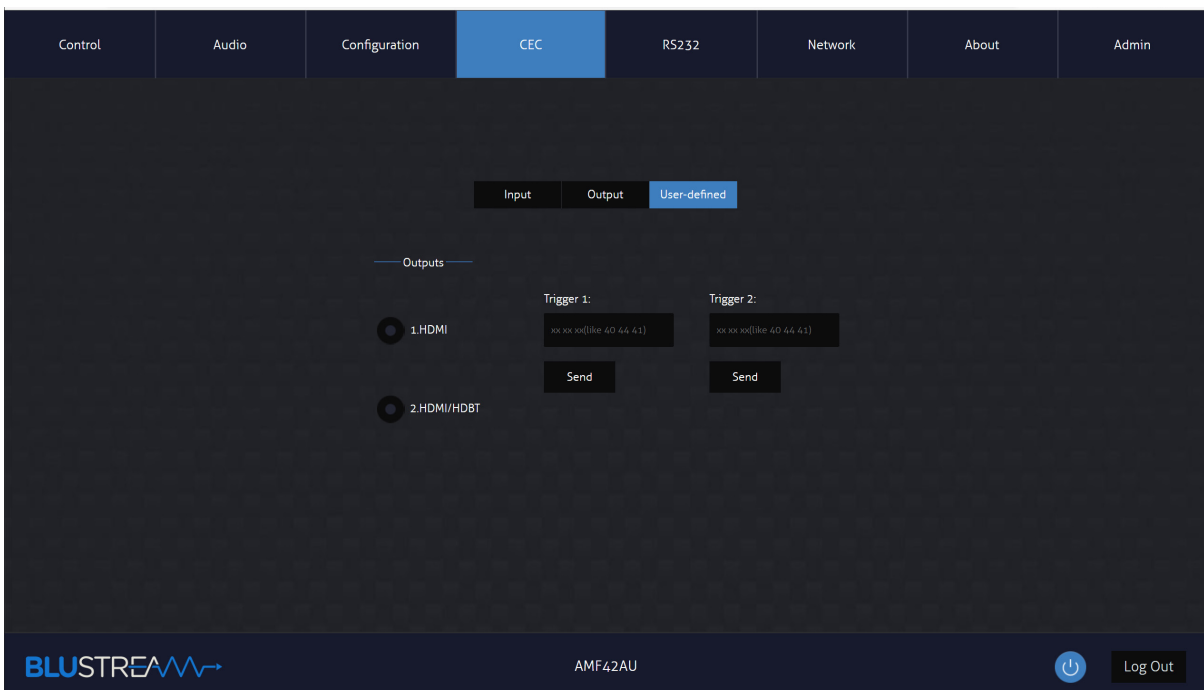


### CEC Page - User-defined

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.

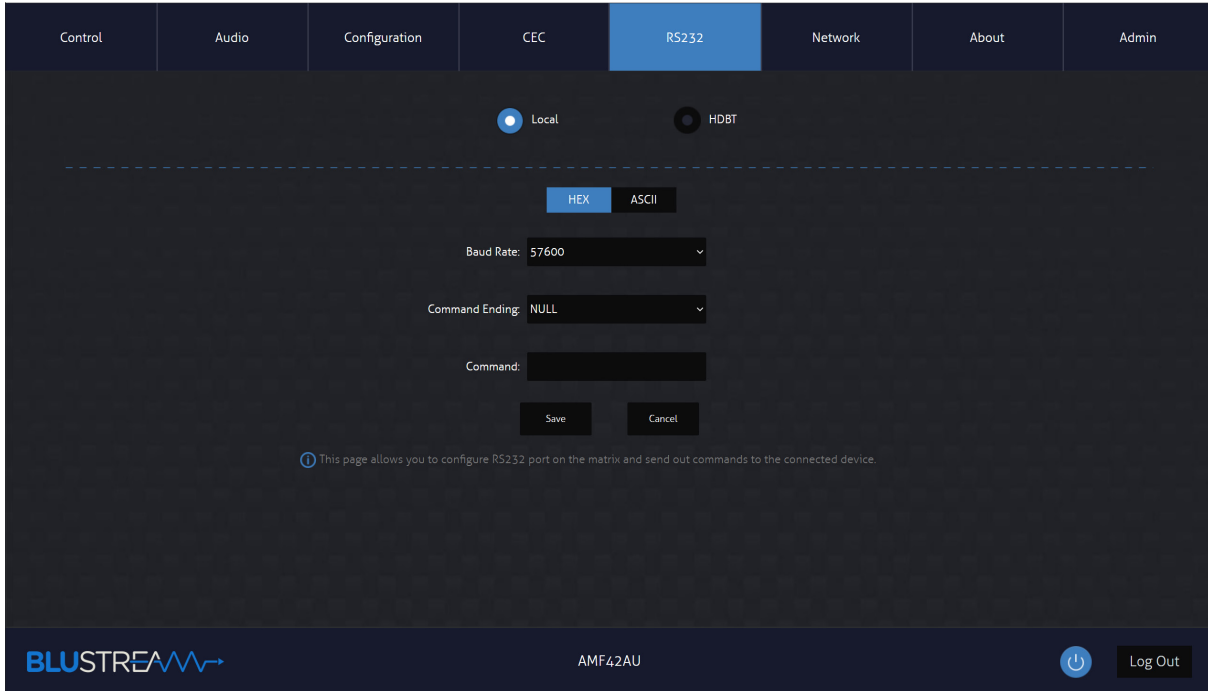
Note CEC is subject to the support of the sources and displays connected to the matrix.



### 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 AMF42AU can be useful in assisting with debugging and fault finding an RS-232 device connected to the matrix.



### RS-232 Page - HDBT

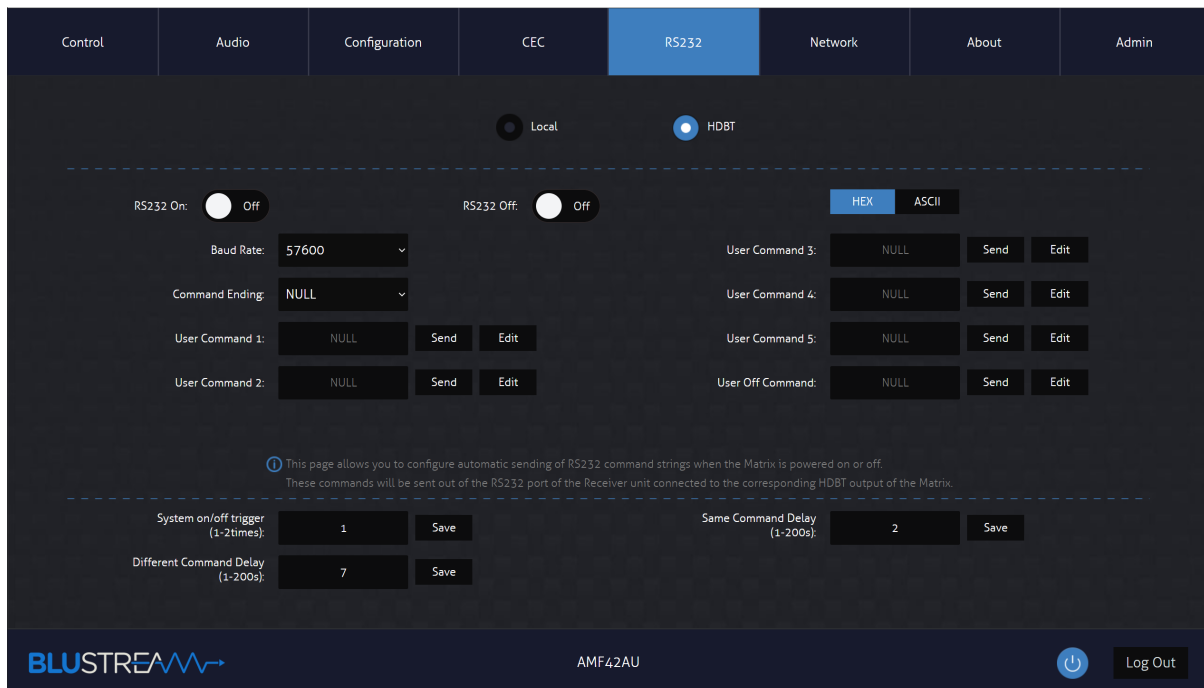
The RS-232 HDBT Page allows you to remotely control devices connected via DB9 serial to the remote HDBT Receiver. It is then possible to automate the display on, input select and display off process via RS-232 for each HDBT output, when the Matrix is turned on or off.

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.

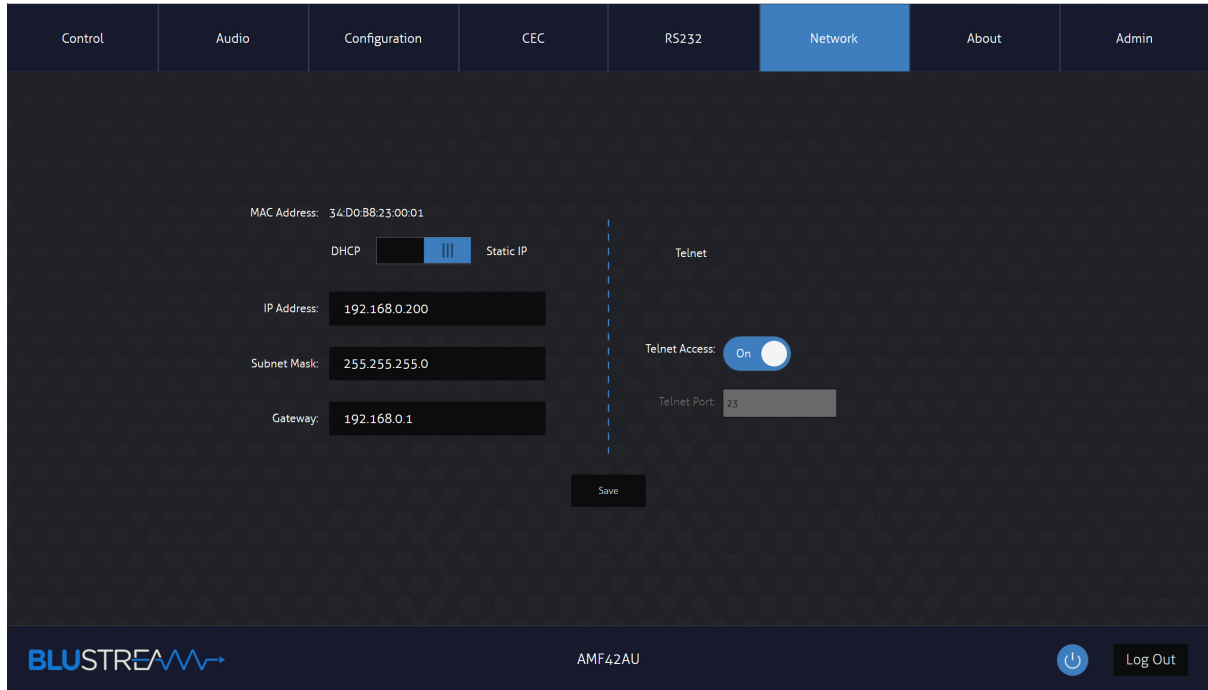
You can also specify the Baud Rate and Command Ending (eg: new line, carriage return) to the match the RS-232 device connected to the HDBT Receiver.

There are also additional options for repeating the command 2 times, and adjusting the time delay between sending the same repeated command, or different command.



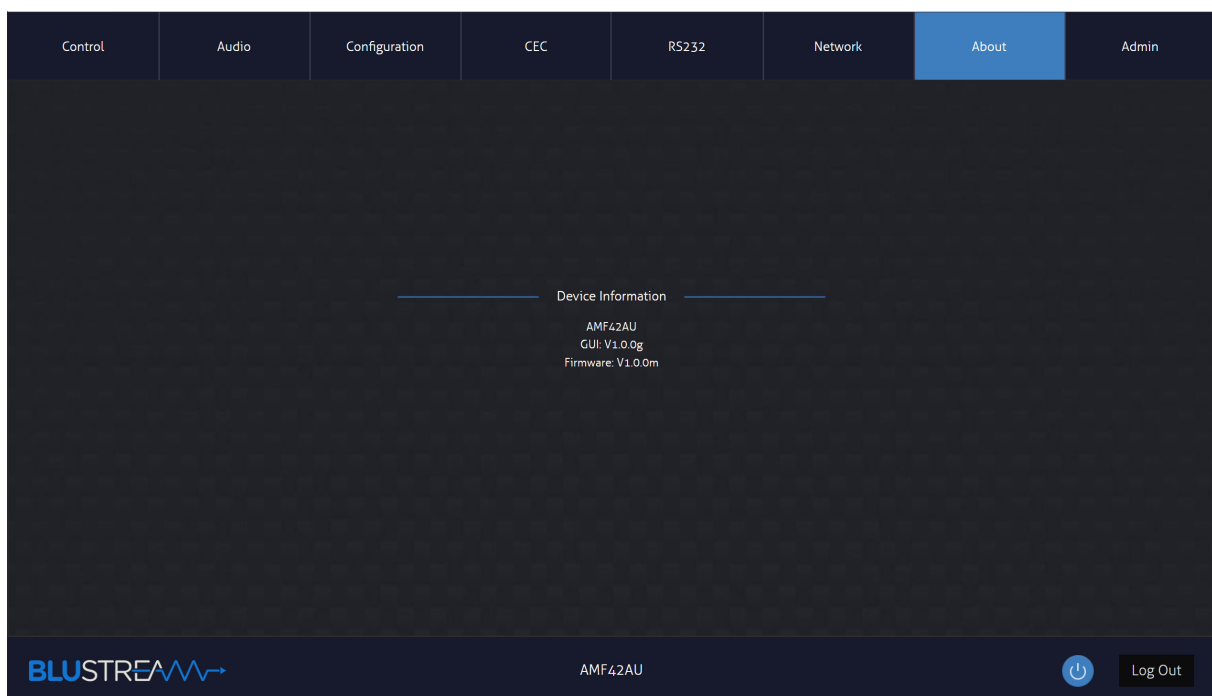
### Network Page

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.



### About Page

The About Page will show you the current firmware version of the AMF42AU, including the Web GUI version and the MCU firmware version.

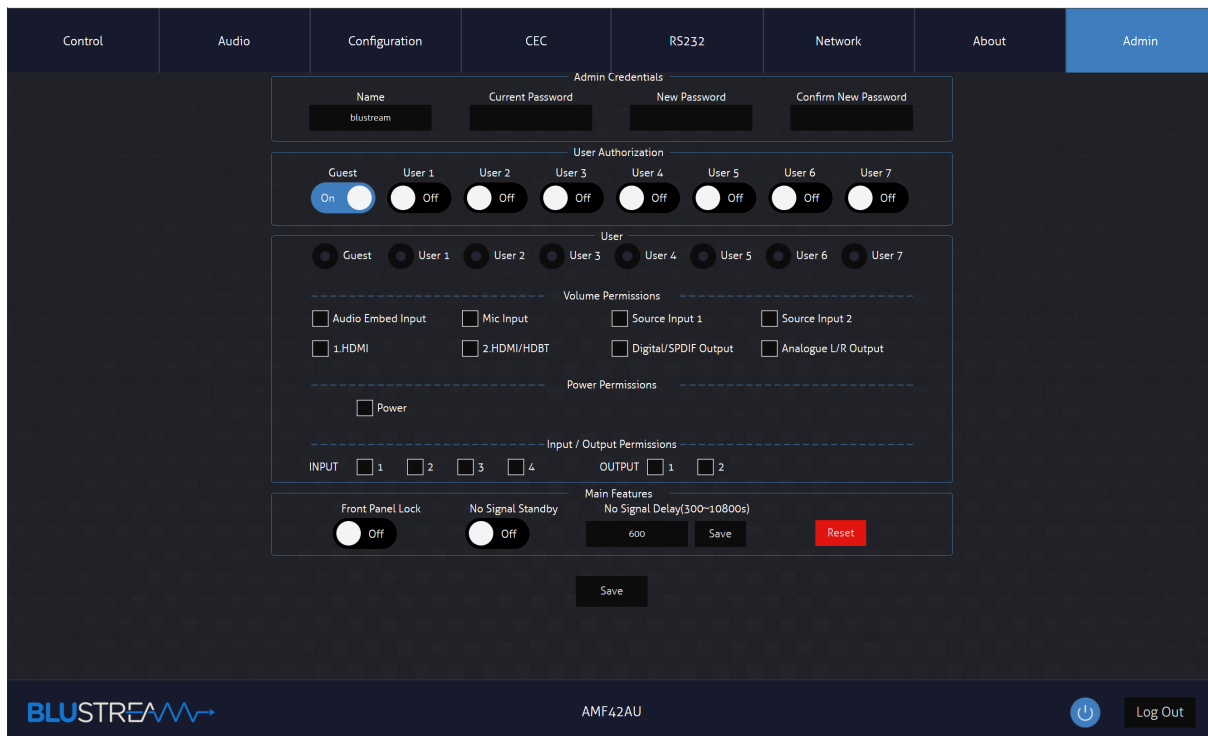


### Admin Page

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.

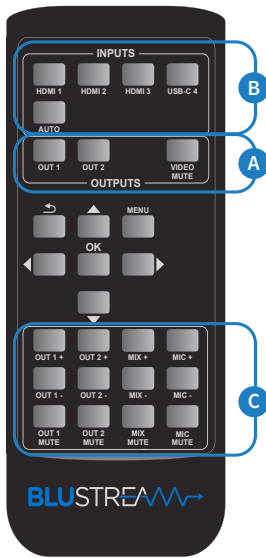
The Admin, or Users who have been given Admin permissions, are able to allocate permissions to Users. These permissions include allowing or disallow access to each page in the Web GUI, as well as allowing or disallowing access to each input or output in the Matrix.

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





# Remote Control Description



## OUTPUT AND INPUT SELECTION

- A Select the zone Output you wish to change the source on (numbers 1-2 correspond to the zone outputs 1-2).
- B Select the source Input you wish to change the selected zone to (numbers 1-4 correspond to the source inputs 1-4)
- C You can adjust the volume or mute each of the outputs by pressing the corresponding button. You can also adjust the volume for the analogue audio input as well as the mic input independently.

Note: Selecting the Auto input button will enable auto switching on the selected output. The matrix will use signal sensing to determine if a source has been connected or disconnected to trigger a source change to that input.

## IR Commands

NEC Customer Code = 1898

Advanced matrix features are not available via IR commands

COMMAND	NEC	HEX
INPUT 1	50	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 2	55	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 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 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT 4	4A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
INPUT AUTO	AA	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0679
OUTPUT 1	09	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
OUTPUT 2	1D	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 003F 0016 003F 0016 0016 0016 0016 0016 0016 003F 0016 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0016 0016 003F 0016 0689
VIDEO MUTE	D1	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0679
CANCEL	C0	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0679
MENU	C9	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0679



# Specifications

## AMF42AU

- **Video Input Connectors:** 3 x HDMI Type A, 19-pin, female, 1 x USB-C Type C
- **Video Output Connectors:** 2 x HDMI Type A, 19-pin, female, 1 x HDBaseT™ RJ45 connector
- **Audio Input Connectors:** 2 x 5-pin Phoenix connector (2ch balanced / unbalanced analogue audio)
- **MIC Input Connectors:** 1 x 3-pin Phoenix connector
- **Audio Output Connectors:** 1 x 5-pin Phoenix connector (2ch balanced / unbalanced analogue audio), 1 x Toslink (S/PDIF)
- **RS-232 Serial Port:** 1 x 3-pin Phoenix connector
- **TCP/IP Control:** 1 x RJ45, female
- **IR Input Ports:** 2 x 3.5mm stereo jack
- **IR Output Ports:** 1 x 3.5mm mono jack
- **Product Upgrade:** 1 x USB Type A female
- **Rack Mountable:** 1U rack height, rack ears included
- **Dimensions (L x W x H):** 436.4mm x 270mm x 56.5mm (with feet and connections)
- **Dimensions (L x W x H):** 436.4mm x 263.5mm x 44mm (without feet and connections)
- **Shipping Weight:** 4.05Kg
- **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:** 24V/5A DC

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

# Package Contents

## AMF42AU

- 1 x AMF42AU
- 1 x Remote Control
- 1 x 24V/5A DC Power Supply
- 1 x Rack Mounting Kit
- 2 x IR Receiver
- 1 x IR Emitter
- 1 x RS-232 Control Cable
- 1 x Quick Reference Guide

# 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™ 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:

<b>STATUS</b>	Status will give feedback on matrix such as zones on, type of connection etc...
<b>PON</b>	Power on
<b>POFF</b>	Power off
<b>OUTxxON</b>	(xx is the zone number you wish to turn on)
Example:-	OUT01ON (This would turn output one back on)
<b>OUTxxFRyy</b>	(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		
STATUS	Print System Status And Port Status		
INSTA	Print All Input Status		
OUTSTA	Print All Output Status		
CTRLSTA	Print All Control Status		
AUDSTA	Print All Audio Status		
PON/OFF	Set System Power On Or Off		
KEY ON/OFF	Set System Key Control On Or Off		
NOSIGDLY xxxxx	Set System Off Time To xxxxx Seconds (300-10800s,Default 600s) When No HDMI Signal Has Been Detected, System Will Turn Off After Specified Time	EDID yy DF zz	Set Input yy EDID To Default EDID zz yy=[00]: All Input Ports, [01...04]: Input Port zz=00: HDMI 1080p@60Hz, Audio 2CH PCM (Default) zz=01: HDMI 4K@30Hz 4:4:4, Audio 2ch PCM zz=02: HDMI 4K@60Hz 4:2:0, Audio 2ch PCM zz=03: HDMI 4K@60Hz 4:4:4, Audio 2ch PCM zz=04: DVI 1280x1024@60Hz, Audio None zz=05: DVI 1920x1080@60Hz, Audio None zz=06: DVI 1920x1200@60Hz, Audio None zz=07: HDMI 1920x1200@60Hz, Audio 2ch PCM zz=08: User EDID 1 zz=09: User EDID 2 zz=10: EDID Passthrough1 (Copy from HDBT) zz=11: EDID Passthrough2 (Copy from HDMI OUT1) zz=12: EDID Passthrough3 (Copy from HDMI OUT2)
NOSIGSTANDBY ON/OFF	Set No Signal Standby On Or Off	EDID yy CP xx	Copy EDID From Output xx To Input yy yy=[00]: All Input Ports, [01...04]: Input Port xx=01: HDMI Output 1, 02: HDMI Output 2, 03: HDBT Output 2
RESET	Reset System To Default Setting Type "Yes" To Confirm, "No" To Discard	EXTEDIDSAVE zz	Save External EDID From USB Into Slot zz xx = 08 : User EDID 1 xx = 09 : User EDID 2
POCOUT ON/OFF	Set HDBT Output POC On Or Off	AUD xx FR yy	Set The Analogue/Digital Audio xx To Follow Audio Output yy xx=01: Analogue xx=02: Digital yy=01: Output 1 (HDMI) yy=02: Output 2 (Dual HDBT/HDMI) yy=03: HDBT RX ARC Optical* yy=04: HDBT RX ARC HDMI* *Analogue Audio Can't Be Switched To ARC
OUT xx MUTE ON/OFF	Set Output xx Video Mute On Or Off	AUDxx BALANCED ON/OFF	Set Audio Output xx Balanced On Or Off xx=01: Analogue
OUT xx SWITCH yy	Set Output xx Auto Switching To yy xx=[00]: All Output Ports, [01...02]: Output Port yy=AUTO: Auto Switching On - Auto Mode yy=MAN: Auto Switching Off - Manual Mode	AUDSCAANA	Set HDMI Input 1 Audio From Analogue L/R Input
OUT xx BRIGHTNESS vv	Set Output xx Brightness To vv	AUDSCAORG	Set HDMI Input 1 Audio From Original Source (HDMI 1)
OUT xx CONTRAST vv	Set Output xx Contrast To vv vv=[00...99]: Brightness/Contrast Value	MUTE ON/OFF OUT xx	Set Output xx Mute On or Off xx=00: All Outputs xx=01: Audio of HDMI Output 1 xx=02: Audio of HDMI Output 2 xx=03: Audio Of SPDIF Output xx=04: Audio Of L/R Output xx=05: AUDEMBED Audio Input xx=06: Mic Audio Input
OUT xx PICTUREMODE mm	Set Output xx Picture Mode mm mm=01: Soft Mode, 02: Standard Mode, 03: Vivid Mode, 04: User Mode	VOL vv OUT xx	Set Volume Level vv On Output xx vv=00-100: Set Volume Level vv=+: Volume Level Increase vv=-: Volume Level Decrease xx=00: Select All Output Ports xx=01...04: Select Output Port 01 to 04 xx=01: Audio of HDMI Output 1 xx=02: Audio of HDMI Output 2 xx=04: Audio Of L/R Output"
OUT xx RED vv	Set Output xx RED To vv	AUDEMBED VOL vv	Set Volume Level vv For AUDEMBED Input
OUT xx GREEN vv	Set Output xx GREEN To vv	MIC VOL vv	Set Volume Level vv For MIC Input
OUT xx BLUE vv	Set Output xx BLUE To vv vv=[00...255]: RED/GREEN/BLUE Value	OUT xx HDMIVOL vv	Set Volume Level vv For HDMI Source xx=00: All HDMI OUT Source xx=01: HDMI OUT 01 Source xx=02: HDMI OUT 02 Source vv=00-100: Set Volume Level vv=+: Volume Level Increase vv=-: Volume Level Decrease vv=UNMUTE: Unmute HDMI Source Volume vv=MUTE: Mute HDMI Source Volume
OUT xx COLOURTEMP mm	Set Output xx Colour Temperature mm mm=01: Warm Mode, 02: Standard Mode, 03: Cool Mode, 04: User Mode		
OUT xx RES rr	Set Output xx Scaler Resolution To rr rr=00: 1024x768@60Hz    rr=07: 720P@60Hz rr=01: 1280x800@60Hz   rr=08: 1080P@50Hz rr=02: 1360x768@60Hz   rr=09: 1080P@60Hz rr=03: 1440x900@60Hz   rr=10: 4K2K@30Hz rr=04: 1680x1050@60Hz   rr=11: 4K2K@50Hz rr=05: 1920x1200@60Hz   rr=12: 4K2K@60Hz rr=06: 720P@50Hz		
OUT xx FR yy	Set Output xx From Input yy xx=[00]: All Output Ports, [01...02]: Output Port yy=[01...04]: Input Port 1 To 4		
PRESET pp SAVE	Save Current Output Config To Preset pp		
PRESET pp APPLY	Apply Preset pp		
PRESET pp CLR	Clear Preset pp pp=[01...09]: Preset		

# RS-232 Configuration and Telnet Commands

COMMAND	ACTION
OUT xx MIX mm	Set Output xx Audio MIX Type To mm xx=00: All Outputs xx=01...02: Output 1 To 2 mm=01: HDMI Audio Only mm=02: Mic Audio Only mm=03: AUDEMBED Audio Only mm=04: HDMI Audio + Mic Audio mm=05: AUDEMBED Audio + Mic Audio
MIC AUTOBG ON/OFF	Set Auto Background Audio Volume Decrease When Mic Detected To On Or Off
MIC BGVOL pp	Set Auto Background Audio Volume Decrease To pp Percent pp=[00...100]: Percent Of Volume
MIC BGDEL dd	After No Mic Audio For dd Seconds, Start The Ramp Up Of The Background Volume dd=[01...20]: Delay Seconds
MIC RUP rr	Set Ramp Up Background Audio Volume For rr Seconds
MIC RDOWN rr	Set Ramp Down Background Audio Volume For rr Seconds rr=[00]: Instant Ramp, No Delay rr=[01...20]: 0.5s Increment
OUTxxCECENABLE/DISABLE	Set CEC Control Of Output xx To Enabled Or Disabled
OUT xx CEC INPUT yy	Send CEC Input Channel Selection To Output xx
OUT xx CEC OK	Send CEC OK To Output xx
OUT xx CEC UP	Send CEC Up To Output xx
OUT xx CEC DOWN	Send CEC Down To Output xx
OUT xx CEC LEFT	Send CEC Left To Output xx
OUT xx CEC RIGHT	Send CEC Right To Output xx
OUT xx CEC RETURN	Send CEC Return To Output xx
OUT xx CEC EXIT	Send CEC Exit To Output xx
OUT xx CEC VOLUP	Send CEC Volume Up To Output xx
OUT xx CEC VOLDOWN	Send CEC Volume Down To Output xx
OUT xx CEC MUTE	Send CEC Mute Toggle To Output xx
OUT xx CEC PLAY	Send CEC Play To Output xx
OUT xx CEC STOP	Send CEC Stop To Output xx
OUT xx CEC PAUSE	Send CEC Pause To Output xx
OUT xx CEC RECORD	Send CEC Record To Output xx
OUT xx CEC REWIND	Send CEC Rewind To Output xx
OUT xx CEC FF	Send CEC Fast Forward To Output xx
OUT xx CEC FWD	Send CEC Forward To Output xx
OUT xx CEC BWD	Send CEC Backward To Output xx
OUT xx CEC POFF	Send CEC Power Off To Output xx
OUT xx CEC PON	Send CEC Power On To Output xx xx=00: Select All Output Ports xx=[01...03]: Select One Output Port yy: Select The TV Input Port
OUT xx CEC USER aa bb cc dd	Set Output xx CEC User Command For Power On aa=01: User Command 1, 02: User Command 2 bb cc dd=: Custom CEC Command
IN yy CEC ENABLE/DISABLE	Set CEC Control Of Output yy To Enabled Or Disabled
IN yy CEC OK	Send CEC OK To Input yy
IN yy CEC UP	Send CEC Up To Input yy
IN yy CEC DOWN	Send CEC Down To Input yy

COMMAND	ACTION
IN yy CEC LEFT	Send CEC Left To Input yy
IN yy CEC RIGHT	Send CEC Right To Input yy
IN yy CEC RETURN	Send CEC Return To Input yy
IN yy CEC EXIT	Send CEC Exit To Input yy
IN yy CEC VOLUP	Send CEC Volume Up To Input yy
IN yy CEC VOLDOWN	Send CEC Volume Down To Input yy
IN yy CEC PLAY	Send CEC Play To Input yy
IN yy CEC STOP	Send CEC Stop To Input yy
IN yy CEC PAUSE	Send CEC Pause To Input yy
IN yy CEC RECORD	Send CEC Record To Input yy
IN yy CEC REWIND	Send CEC Rewind To Input yy
IN yy CEC FF	Send CEC Fast Forward To Input yy
IN yy CEC FWD	Send CEC Forward To Input yy
IN yy CEC BWD	Send CEC Backward To Input yy
IN yy CEC POFF	Send CEC Power Off To Input yy
IN yy CEC PON	Send CEC Power On To Input yy yy=00: Select All Input Ports yy=[01...03]: Select One Input Port
RS232BAUD z	Set RS232 Baud Rate To xx z=0: 115200, 1: 57600(default), 2: 38400, 3: 19200, 4: 9600
RS232ON DISABLE	Set Auto RS232 Commands When Detect A Signal To Disabled
RS232ON x:y:za	Send y Type Of Command a Stored In Slot x To The Third-party Device Whose Baud Rate Is z x=1: Store RS232 Command In Slot 1 - Display On x=2: Store RS232 Command In Slot 2 - Input Select x=3: Store RS232 Command In Slot 3 - User Command 1 x=4: Store RS232 Command In Slot 4 - User Command 2 y=a: ASCII, h: HEX z=1: 2400, 2: 4800, 3: 9600, 4: 19200, 5: 38400, 6: 57600 (default), 7: 115200 a=: RS232 command
RS232OFF DISABLE	Set Auto RS232 Commands When Not Detect A Signal To Disabled
RS232OFF y:za	Set RS232 Off Command a Of y Type Whose Baud Rate Is z y=a: ASCII, h: HEX z=1: 2400, 2: 4800, 3: 9600, 4: 19200, 5: 38400, 6: 57600 (default), 7: 115200 a=: RS232 command
RS232 RPTCMD x	Set RS232 Repeat Command To x Time(s) x=[1...2]: Command Repeats
RS232 SAMECMD DLY ttt	Set RS232 Different Same Delay Time To ttt Seconds (1-200s, Default 2s)
RS232 DIFFCMD DLY ttt	Set RS232 Different Command Delay Time To ttt Seconds (1-200s, Default 7s) ttt=[001...200]: Time In Seconds
NET DHCP ON/OFF	Set Auto IP(DHCP) On Or Off
NET IP xxx.xxx.xxx.xxx	Set IP Address
NET GW xxx.xxx.xxx.xxx	Set Gateway Address
NET SM xxx.xxx.xxx.xxx	Set Subnet Mask Address
NET RB	Set Network Reboot And Apply New Config!!!
NET TN xxxx	Set Telnet Port

## Web-GUI Firmware Update

The web-GUI of the AMF42AU is used to configure and control the product through a web portal. The AMF42AU 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](http://192.168.0.200:100)

Default Username is: [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:

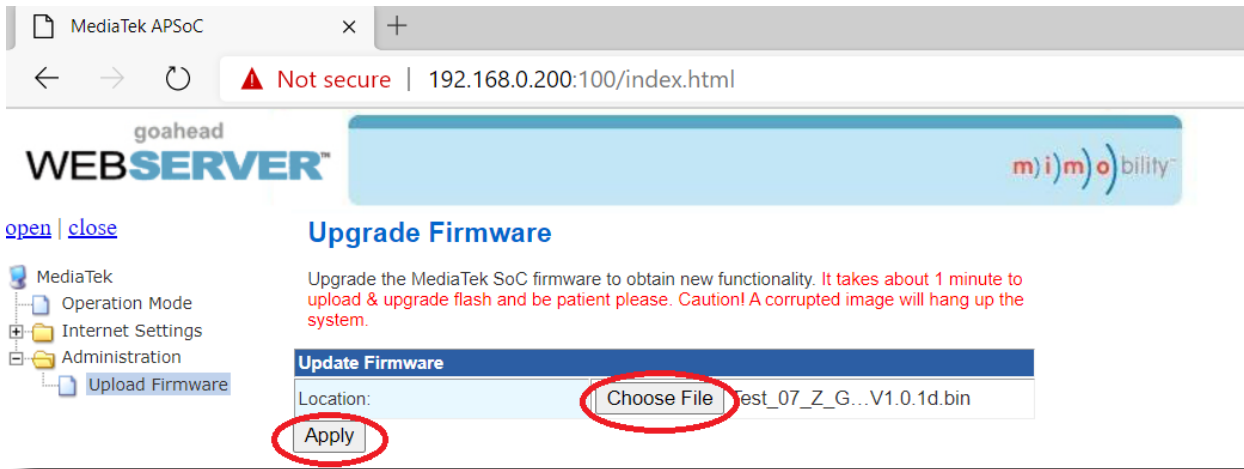
[XXX.XXX.XXX.XXX:100](#)

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':

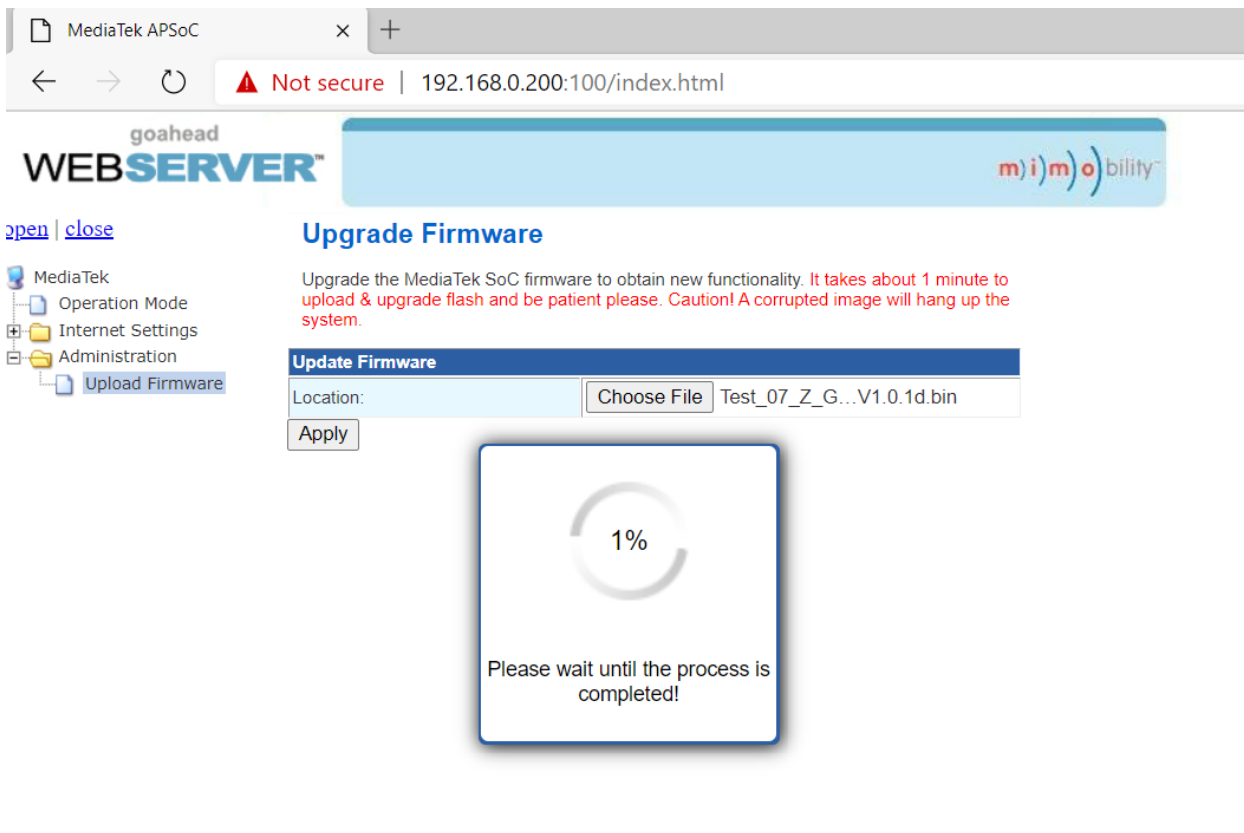


4) Click 'Choose File' and select the web-GUI/MediaTek firmware file downloaded from the Blustream website. This will be a .bin file:



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.





# 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.

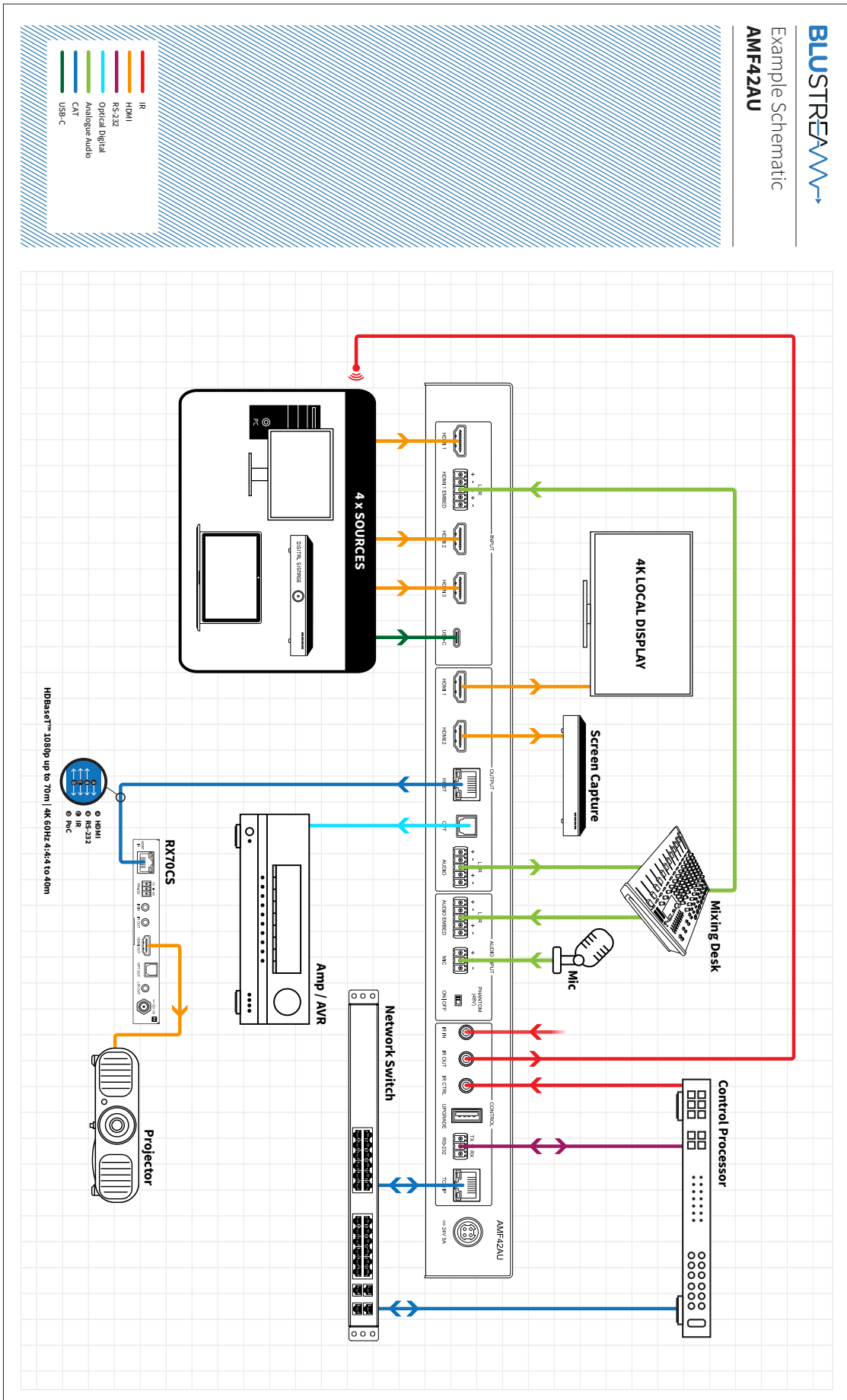
Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

## 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.



# Schematic







[www.blustream.com.au](http://www.blustream.com.au)  
[www.blustream-us.com](http://www.blustream-us.com)  
[www.blustream.co.uk](http://www.blustream.co.uk)