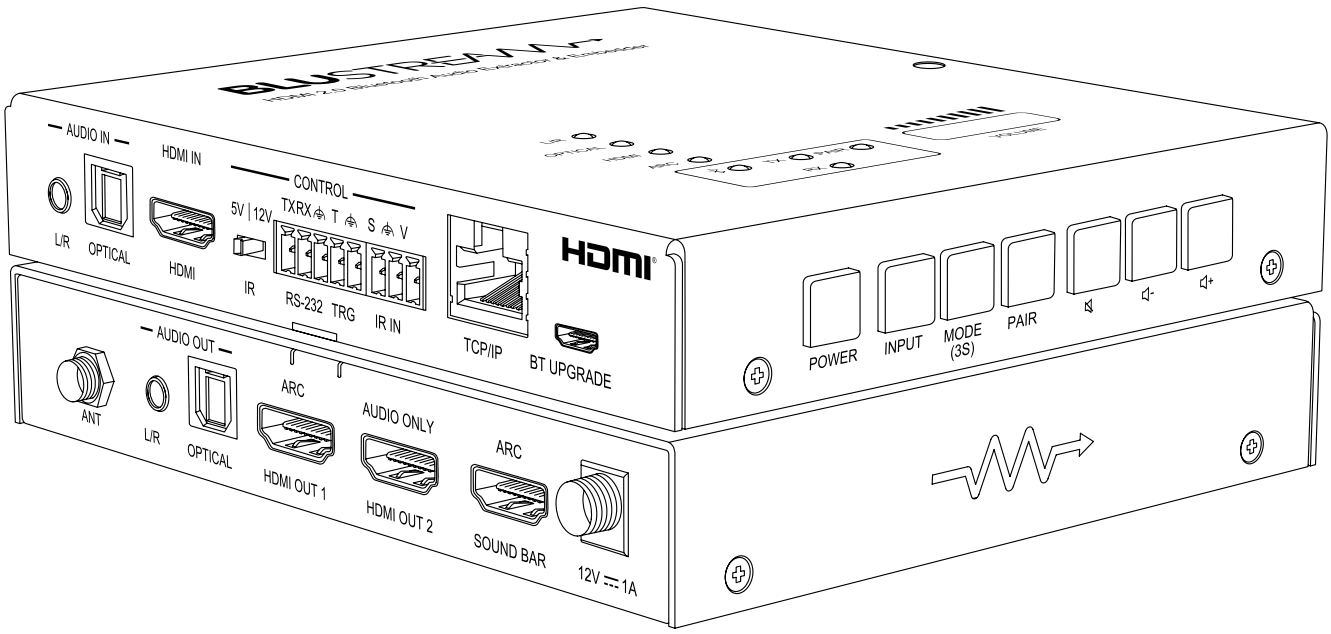


BLUARC

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.

Eco Friendly Packaging

This product has been packaged with fully recyclable materials, including compostable bags. Please help us to help the environment.

Contents

Introduction

The Blustream BLUARC is a multi-format audio switching device designed to embed or de-embed, and route audio between different audio source and sink devices where HDMI video is being distributed.

This multi-input audio switch supports HDMI embedded audio, external L/R analogue audio, optical digital audio, Bluetooth audio and HDMI ARC audio inputs, distributed to different audio devices via Bluetooth, HDMI output, HDMI audio only, HDMI ARC (i.e soundbar), optical digital audio, and L/R analogue audio outputs.

The multiple audio routing options make the BLUARC suitable for both residential and commercial applications where Bluetooth connectivity is required.

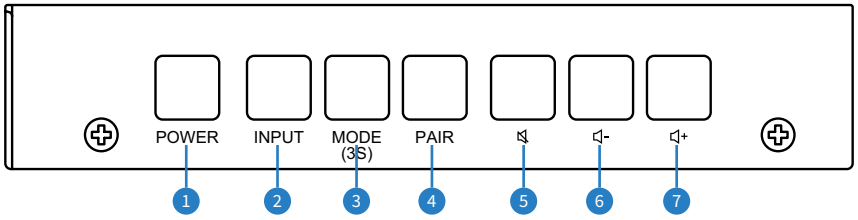
FEATURES:

- Supports HDMI2.0b 18Gbps 4K UHD 60Hz 4:4:4 pass-through including HDR
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Supports bitstream passthrough of multichannel surround sound including object-based audio formats in line with HDMI specifications
- HDMI audio breakout to Bluetooth audio (2ch PCM), HDMI output, HDMI audio only output, HDMI soundbar output, analogue L/R audio (2ch PCM) and optical digital outputs concurrently
- HDMI ARC (Audio Return Channel) to Bluetooth audio (2ch PCM), HDMI audio only output, HDMI soundbar output, analogue L/R audio (2ch PCM) and optical digital outputs concurrently
- Analogue L/R and optical digital audio embedding
- Analogue L/R and optical digital audio de-embedding
- Bluetooth 5.0 output and L/R output support volume adjustment
- Bluetooth 5.0 specification supporting SBC/MP3/AAC/APT-X /APTX-LL/APTX-HD, 44.1K-48KHz 16/24Bit 2ch only
- Control via front panel, IR, RS-232, TCP/IP, Web-GUI, GPIO, & CEC
- Supplied with Blustream 5V IR receiver
- 3rd party drivers available for all major control brands
- HDCP2.3 compliant with advanced EDID management

Please note: when 2x Bluetooth devices are connected that Bluetooth codec type will be SBC format.

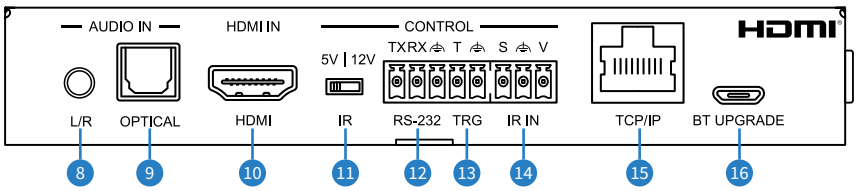
Please note: audio performance and latency is subject to Bluetooth connected devices/audio codec compatibility and audio from source device. When a Bluetooth Low Latency codec is being used (APTX-LL), the number of connections is limited to one Bluetooth receiving device.

Front Panel Description



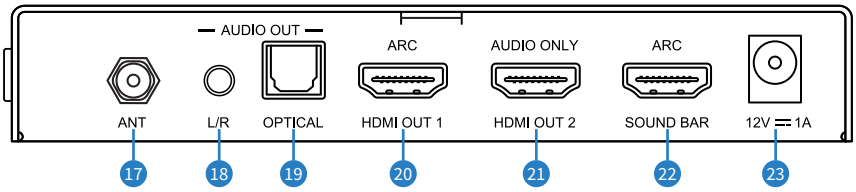
1. Power Button
2. Input Button
3. Mode Button
4. Pair Button
5. Output Volume Mute Button
6. Output Volume Down Button
7. Output Volume Up Button

Left Panel Description



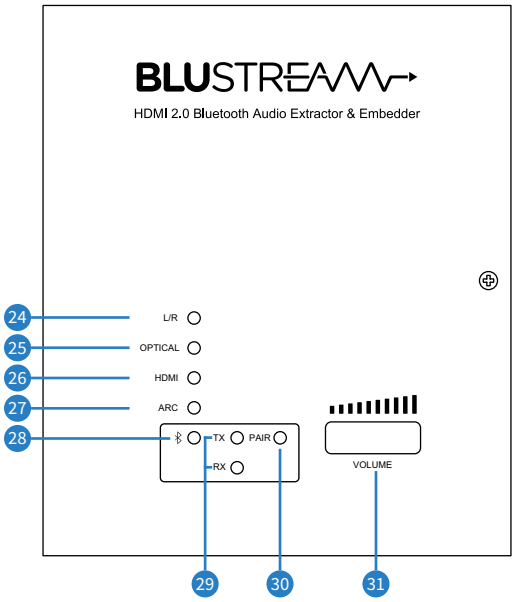
8. Analogue Audio Input — 3.5mm stereo jack
9. Optical Audio Input —Toslink (S/PDIF) connector
10. HDMI Input
11. IR Voltage Selection Switch — 5V or 12V
12. RS-232 Port — 3-pin Phoenix connector
13. Trigger Port — 2-pin Phoenix connector
14. IR In Port — 3-pin Phoenix connector
15. TCP/IP Network Connection — RJ45 connector
16. BT Upgrade Port — Micro USB for Bluetooth firmware updates

Right Panel Description



17. Antenna Connection — SMA connector to connect supplied antenna
18. Analogue Audio Outlet — 3.5mm stereo jack
19. Optical Audio Output — Toslink (S/PDIF) connector
20. HDMI Ouput 1 (ARC)
21. HDMI Output 2 (Audio Only)
22. HDMI Soundbar Output (ARC + CEC)
23. DC Power Port — 12V / 1A

Top Panel Description



24 Analogue L/R Audio LED
25 Optical Audio LED
26 HDMI LED
27 ARC LED
28 Bluetooth LED
29 Bluetooth Mode LED
30 Bluetooth Pair LED
31 Volume Indicator

Operation and Connections

Basic operation of the BLUARC can be achieved via the front, left and right panel: attach the SMA antenna, connect the audio input and audio output devices, the, and power to the rear of the unit:

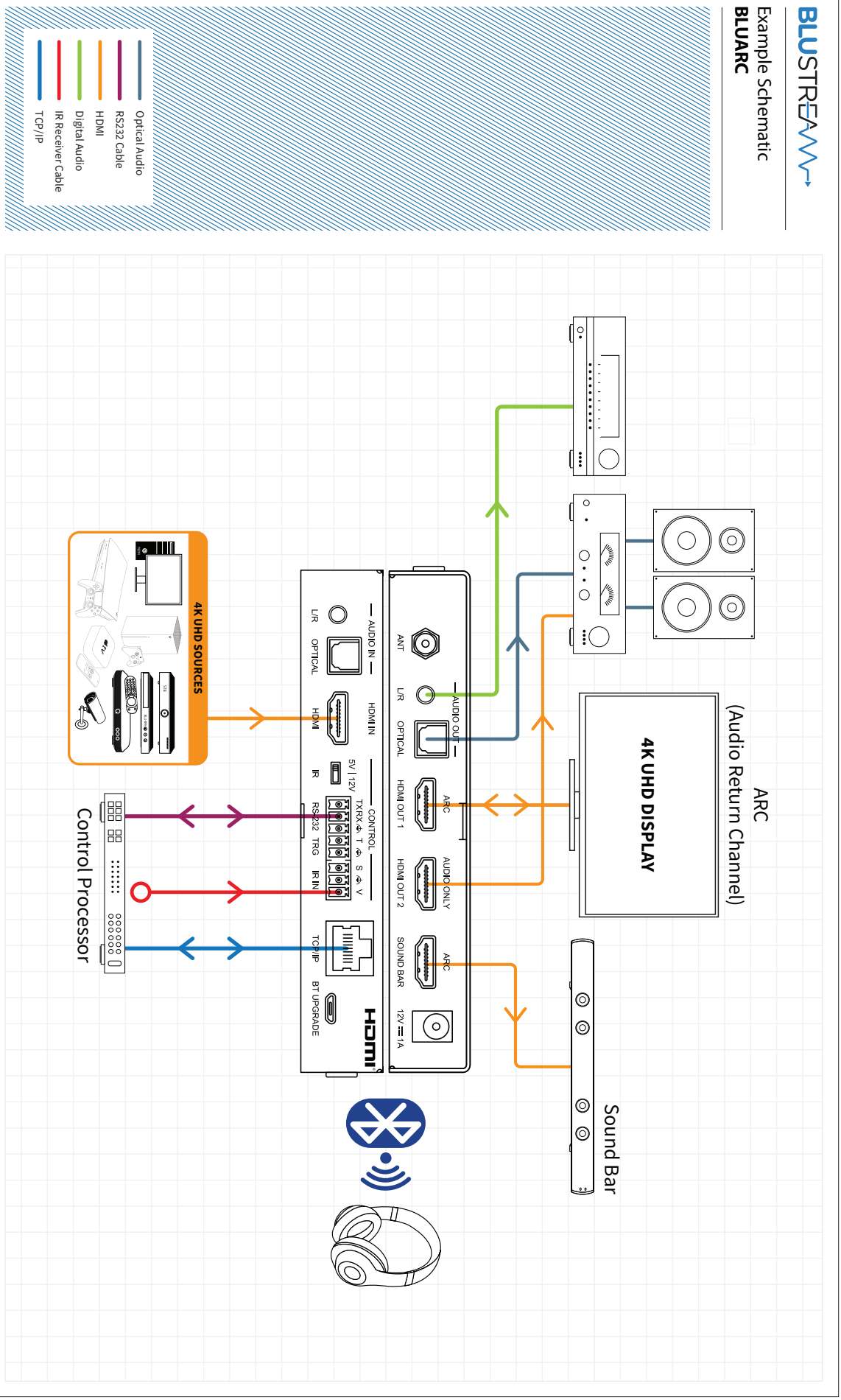
- Press the input button to cycle through the BLUARC inputs; the selected audio input will be indicated on the top panel of the unit via the corresponding LED
- When Bluetooth is selected, the TX / RX light will indicate which mode the unit is in
- Press the pair button to enter pairing mode, hold the pair button to switch between Bluetooth RX and TX mode
- Press the volume up/down/mute buttons to control the output volume for the Bluetooth analogue output

The input audio will play through all outputs. HDMI Output 1 will passthrough video and embed the audio of the selected input.

For full configuration of the BLUARC, the in-built Web-GUI must be utilised.

BLUSTREAM

Example Schematic
BLUARC



EDID Management

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.

Configuration of BLUARC's EDID settings can be achieved using the web-GUI or through API commands. The EDID options available are:

#	EDID SETTING
01	HDMI 1080p@60Hz, Audio 2CH PCM (default)
02	HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY
03	HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD
04	HDMI 1080i@60Hz, Audio 2CH PCM
05	HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY
06	HDMI 1080i@60Hz, Audio 7.1CH DTS/DOLBY/HD
07	HDMI 1080p@60Hz/3D, Audio 2CH PCM
08	HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY
09	HDMI 1080p@60Hz/3D, Audio 7.1CH DTS/DOLBY/HD
10	HDMI 4K@30Hz 4:4:4, Audio 2CH PCM
11	HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY
12	HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
13	HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 2CH PCM
14	HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY
15	HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
16	HDMI 4K@60Hz 4:4:4, 8-bit, Audio 2CH PCM
17	HDMI 4K@60Hz 4:4:4, 8-bit, Audio 5.1CH DTS/DOLBY
18	HDMI 4K@60Hz 4:4:4, 8-bit, Audio 7.1CH DTS/DOLBY/HD
19	HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 2CH PCM
20	HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 5.1CH DTS/DOLBY
21	HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 7.1CH DTS/DOLBY/HD
22	HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 2CH PCM
23	HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 5.1CH DTS/DOLBY
24	HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 7.1CH DTS/DOLBY/HD
25	HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 2CH PCM
26	HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 5.1CH DTS/DOLBY
27	HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 7.1CH DTS/DOLBY/HD
28	HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 2CH PCM
29	HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 5.1CH DTS/DOLBY
30	HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 7.1CH DTS/DOLBY/HD
31	DVI 1280x1024@60Hz, Audio None
32	DVI 1920x1080@60Hz, Audio None
33	DVI 1920x1200@60Hz, Audio None
34	HDMI 1920x1200@60Hz, Audio 2CH PCM/6CH PCM
35	User EDID 1
36	User EDID 2
37	EDID Pass-Through (Copy From Sink 1)

Web-GUI - Log In and Initialisation

The following pages will take you through the operation of the units web-GUI. You must connect a TCP/IP RJ45 socket to your local network, or directly from your computer to the BLUARC, in order to access the product's web-GUI.

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

Default IP Address is: 192.168.0.200 Default Admin Username is: blustream Default Admin Password is: @Bls1234

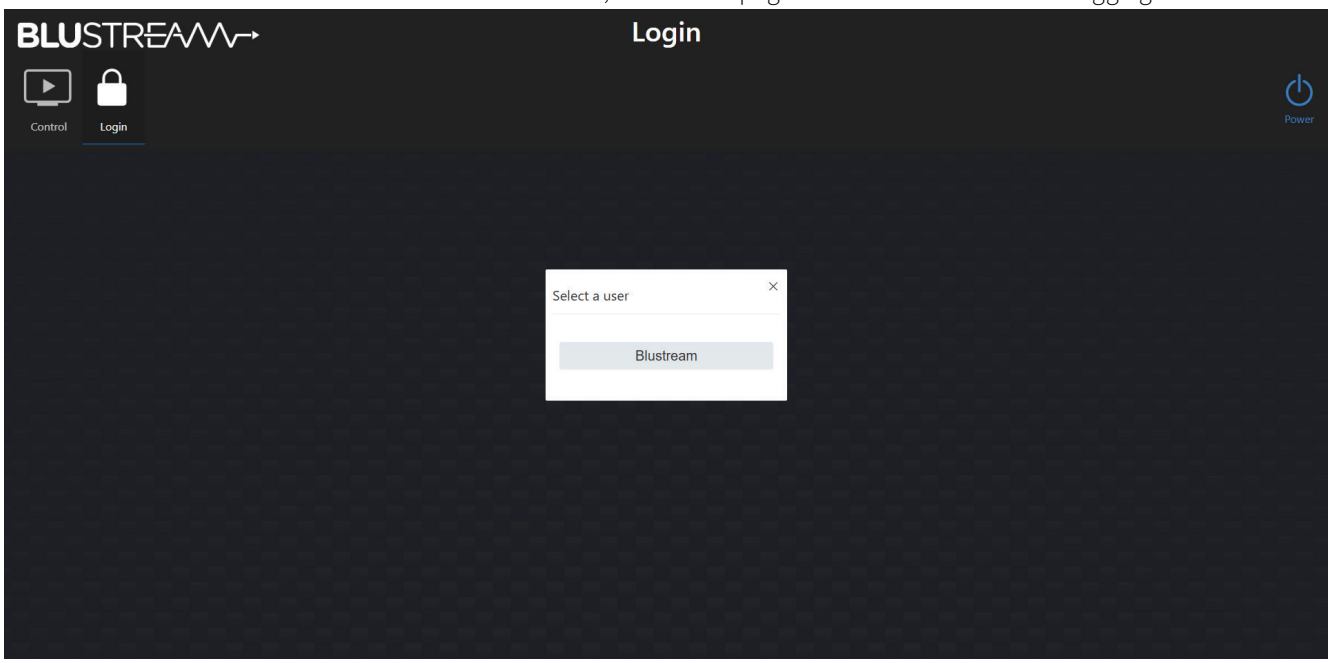
The BLUARC is able to be accessed via it's hostname if the IP address is not known:

Default mDNS is: bluarc.local

Login Page:

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

- Admin (Blustream) The Admin account allows full access to all functions and configuration of the unit
- User Accounts Unique user accounts can be utilised, each with individual login details
- Guest When enabled, the control page can be accessed without logging in

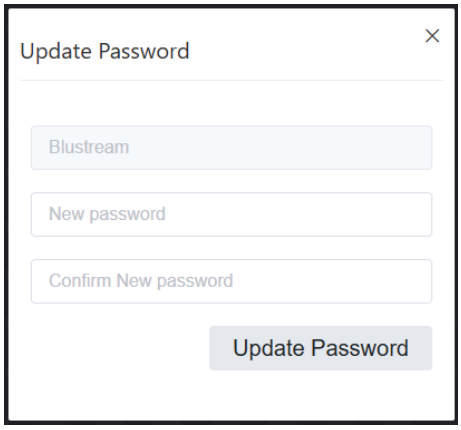


Please note: the first time the Administrator logs into the web-GUI of the BLUARC, the default password must be changed to a unique password. Please retain this password for future use. Forgetting the password will mean having to factory reset the unit, losing all prior network and configuration settings.

New password regulations requires passwords being set for products to be a minimum of 8 characters and contain a minimum of: 1 x uppercase letter, 1 x lowercase latter, 1 x symbol and 1 x number.

Passwords can be changed as required within the web-GUI of the unit once logged in.

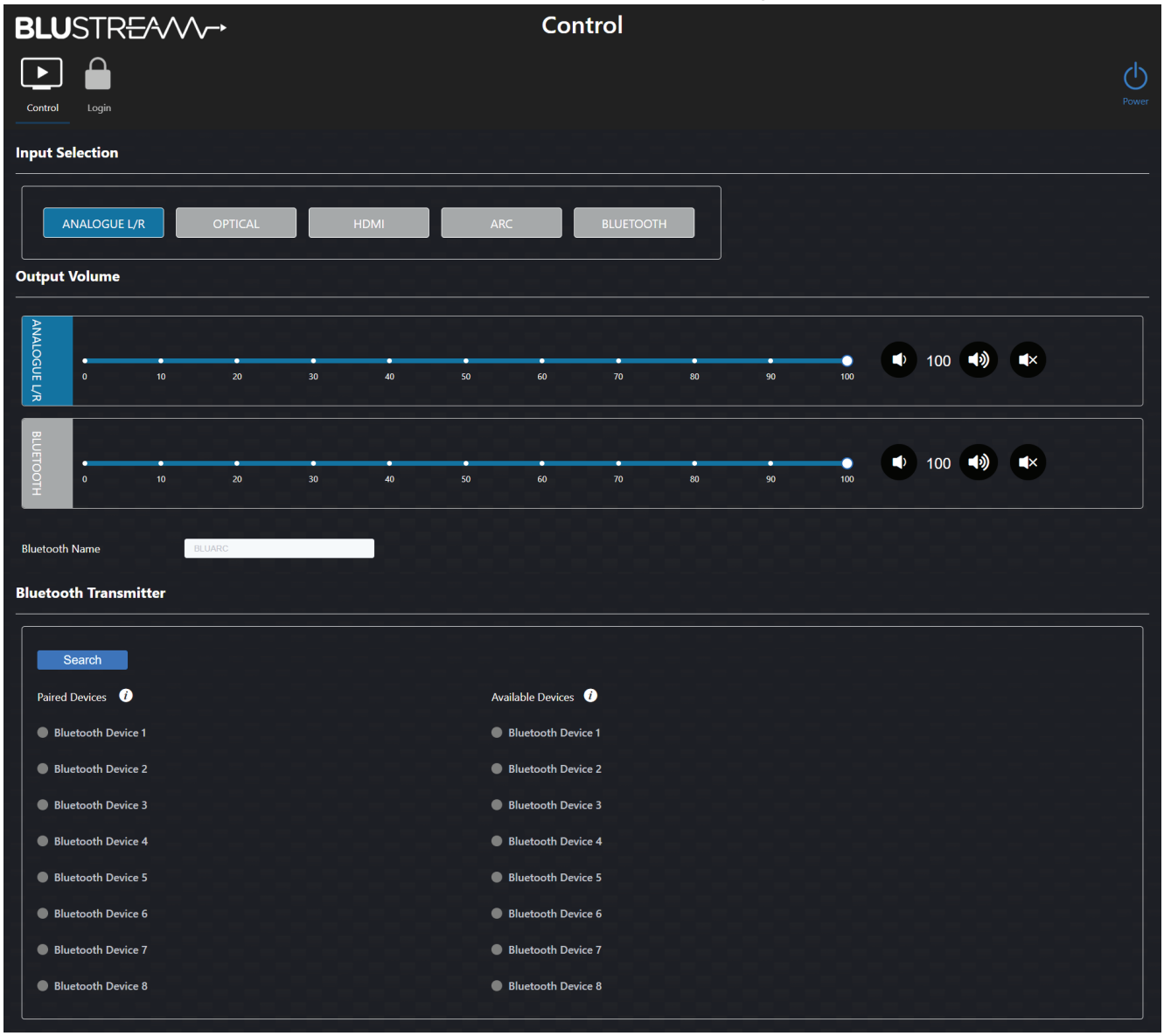
Login Page (continued)



Guest Control Page:

When the Guest user is enabled, the control page is able to be accessed from the web-GUI without logging in. Settings for input selection, output volume and Bluetooth pairing can be accessed from here.

It is recommended to disable the Guest user to avoid unwanted access and/or changes to the BLUARC system.



Web-GUI - Control

After logging into the BLUARC, the user will be directed to the Control page. Configuration of the input, output, Bluetooth and EDID settings can be managed here.

Input Selection:

The desired audio input can be selected by pressing the corresponding button.

Output Volume:

The volume for the analogue or Bluetooth output devices can be adjusted by using the corresponding slider for the desired channel. Fine-tuning of the volume can be achieved by using the decrement button ❶ or the increment button ❸, or by manually inputting the value ❷. The output can be muted by pressing the mute button ❹.

The front panel volume buttons will control the highlighted output. This can be changed in the System page of the web-GUI.

Bluetooth Settings:

The BLUARC can act as a Bluetooth receiver or transmitter:

- A maximum number of 2 Bluetooth devices can be connected at the same time in TX mode. However, the BLUARC can store up to 8 devices ready to be paired
- Only a single Bluetooth device can be connected in RX mode. The user must disconnect the current Bluetooth device in order to connect a new device

Please note: the BLUARC cannot receive and transmit audio at the same time.

Bluetooth Mode

- Auto
  - When in Auto mode, the BLUARC will automatically determine which mode to operate in (i.e., when Bluetooth is selected as the input source, the BLUARC will switch to RX mode)
- TX
  - The BLUARC will only operate in TX mode, regardless of the input selected
- RX
  - The BLUARC will only operate in RX mode

Please note: the Bluetooth module needs to be restarted after switching between TX and RX modes, which will take approximately 3-4 seconds.

Bluetooth Name

- Sets the Bluetooth broadcast name for the BLUARC
- Limit of 30 characters, and some special characters may not be supported

Bluetooth Receiver:

Bluetooth Pairing

- OFF
  - Bluetooth broadcasting is disabled and no Bluetooth connection is possible
- ON
  - The Bluetooth signal is constantly broadcasting and Bluetooth devices can connect at any time. Please note: Once a Bluetooth source is connected, the BLUARC will stop broadcasting. The Bluetooth broadcasting will automatically resume once the Bluetooth source is disconnected
- Manual
  - Bluetooth will only broadcast once the front panel Pair button has been pressed or when triggered by pressing the Pair button on the web-GUI or via API
- Timeout (available in manual pairing mode)
  - Set the Bluetooth broadcast timeout for manual pairing. Interval can be set between 1-999 seconds. The remaining time will be displayed in the countdown timer. Once the timer reaches zero, the BLUARC will exit pairing mode

Bluetooth Receiver (continued)

Force Pairing Mode

Turning on Force Pairing mode will change the behavior of the pair button:

- When Force Pairing Mode is enabled, pressing the pair button will disconnect the current device and put the unit in pairing mode
- When Force Pairing Mode is disabled, the existing Bluetooth source must be disconnected before another source can be connected to the BLUARC

Manual Disconnect

- Sets how long to press and hold the pair button to force disconnect all Bluetooth devices. When set to Off, this feature is disabled

Bluetooth Source

- The current Bluetooth source device name will be displayed here

Bluetooth Transmitter

First Priority

Select which codec type will be prioritized when transmitting to a Bluetooth device.

BLUARC supports Bluetooth 5.0 which includes aptX, aptX Low Latency (AptX-LL) and aptX High Definition (aptX-HD). AptX Low Latency mode is often used when listening to TV audio to improve lip-sync delay. AptX High Definition mode is often used when listening to high quality audio content.

Auto Connection

When enabled, the BLUARC will automatically pair to 1-2 Bluetooth devices in pairing mode with the strongest signal.

When disabled, the BLUARC requires manual selection of the device to be connected to.

Paired Devices

Displays a list of the currently paired Bluetooth devices (max 8). The device name and audio codec type will be shown.

Please note: When connecting two Bluetooth audio devices, the Bluetooth audio codec will be forced to SBC mode. If the BLUARC returns to a single Bluetooth connection, it will re-handshake and establish the best audio codec possible. This may result in an audio loss of several seconds as the Bluetooth module reboots.

To unpair a Bluetooth device, please press the delete icon on the WebGUI or use API commands.

Available Devices

Available devices will show all local Bluetooth devices discovered after searching. To connect to an available Bluetooth device, select it from the list and it will automatically move to paired devices once paired.

EDID Setting:

The EDID for HDMI Output 1 can be modified from the dropdown menu.

A list of available EDIDs can be found under the EDID Management section of this manual.

Load EDID to User Memory:

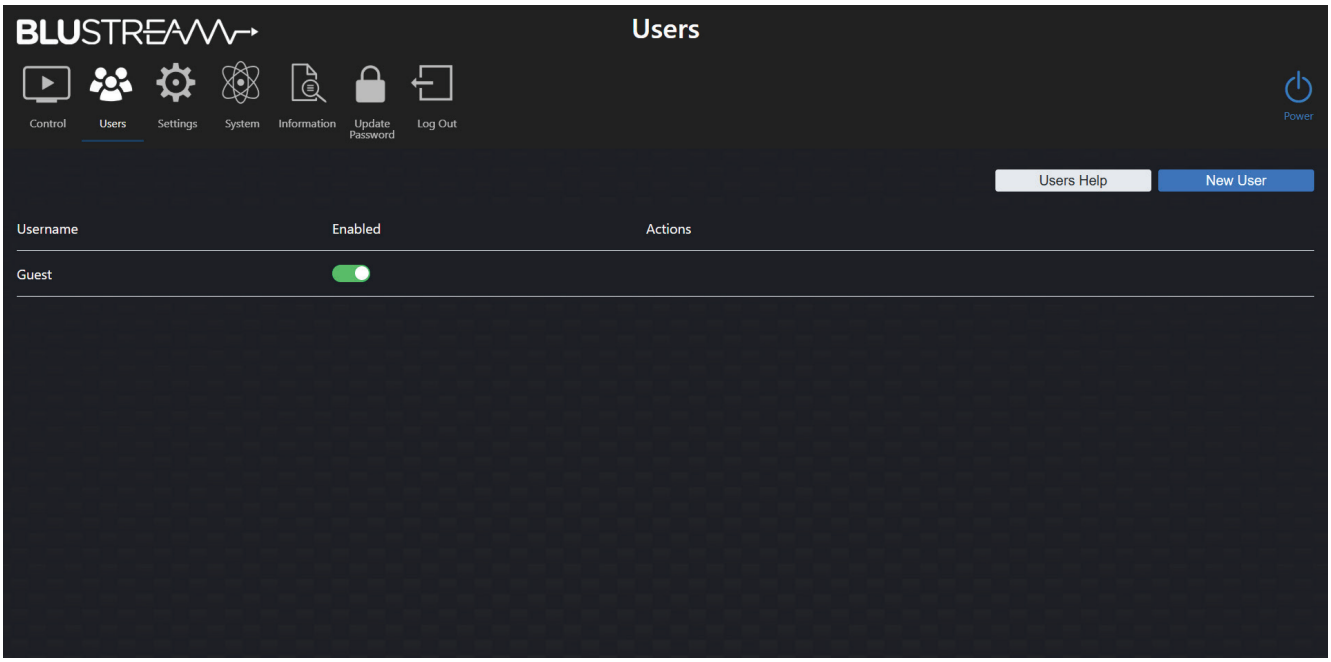
It is possible to upload custom EDID .bin files to the BLUARC if a specific EDID is not listed within the standard formats. A custom EDID file can be generated from a third party EDID generation tool, and uploaded using the Browse and Upload buttons. There are 2 x custom EDID slots available.

Once a file has been uploaded, it can be selected by using the corresponding USER EDID option.

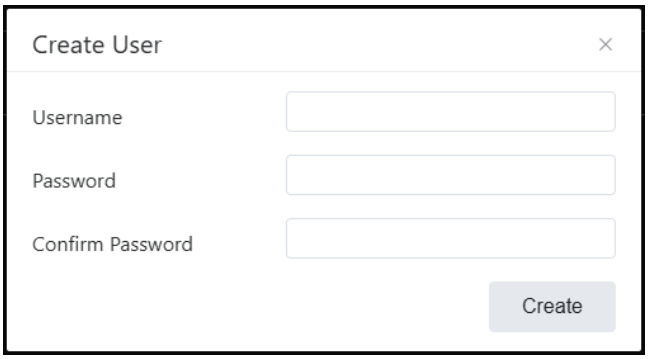
Web-GUI - Users

The BLUARC can be set up with multiple users with unique logins The added users will only have access to the control page of the web-GUI.

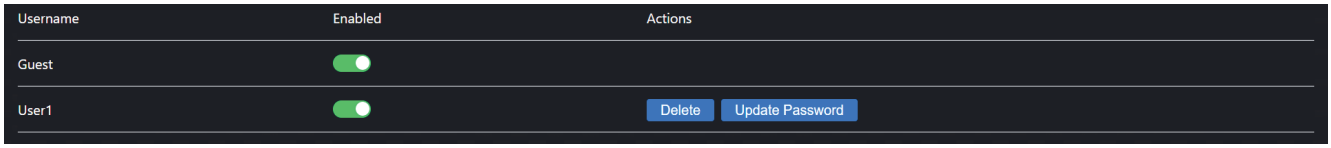
Please note: A separate user should be set up and used after installation of the unit in order to prevent non-administrator users from changing settings and potentially damaging connected equipment.



To create a new user, press the New User button. Set a username and password and press Create.

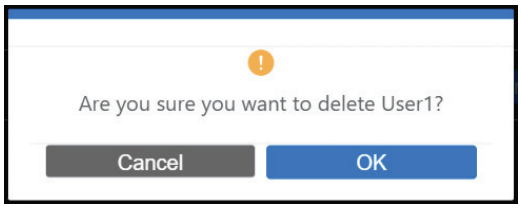


The new user will appear in the list.



To enable / disable a user, press the respective toggle.

To delete a user, press the respective Delete button.



To change the password for a user, press the respective Update Password button

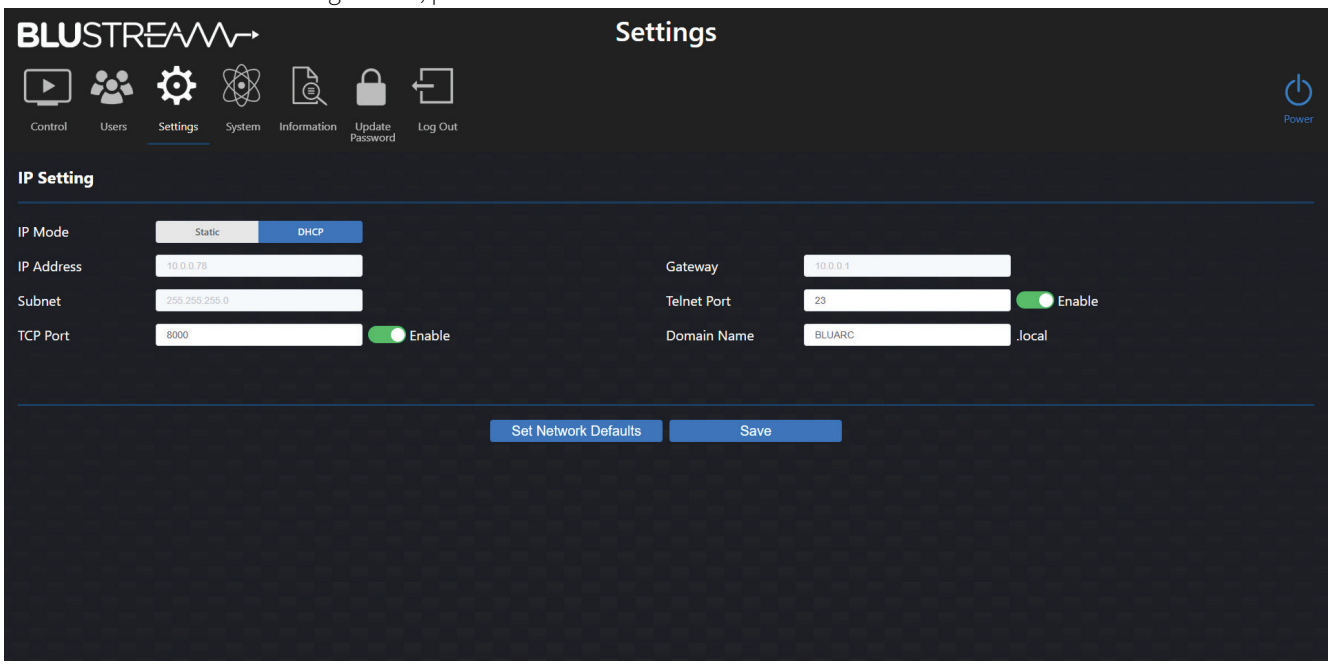
Please note: Admin (blustream) and Guest user cannot be deleted. The guest user be disabled to prevent unwanted access, as they do not require credentials for control of the unit.

Web-GUI - Settings

Network settings for the BLUARC can be configured from this page, such as: IP settings, Telnet and mDNS.

The default network settings can be restored by pressing the Set Network Defaults button.

To save the current network configuration, press the Save button.



IP Settings:

IP Mode

- Static / DHCP

IP Address

- Disabled when in DHCP mode

IP Subnet

- Disabled when in DHCP mode

TCP Port

- Enable / Disable (default: 8000)

Gateway

- Disabled when in DHCP mode

Telnet Port

- Enable / Disable (default: 23)

Domain name (mDNS)

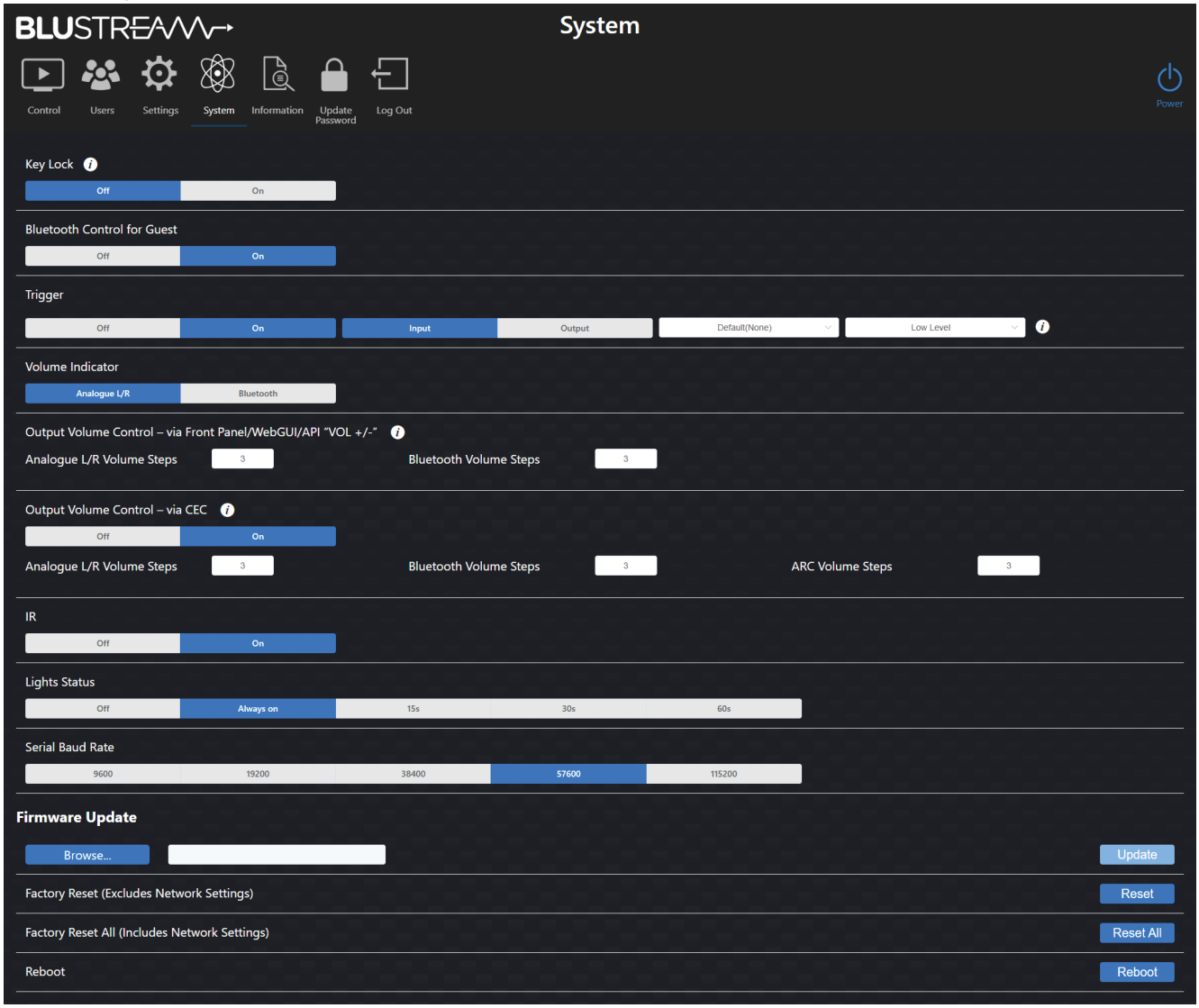
- mDNS is a protocol used in network environments to resolve hostnames to IP addresses within local networks without the need for a dedicated DNS server. The BLUARC is able to be accessed via the hostname if the IP address is not known. By default this is set to bluarc.local

To restore network default settings, press the Set Network Defaults button.

Press the Save button to apply any changes made.

Web-GUI - System

The System page allows for configuration of the BLUARC, enabling and disabling features, as well as firmware upgrading and factory resetting.



Key Lock

Enables/Disables the front panel buttons.

Bluetooth Control for Guest

Enables/Disables Bluetooth control for the Guest user.

Web-GUI - System (continued)

Trigger

Enables/Disables the trigger port. The trigger port can be configured as an Input or an Output when connected to a third-party control product. Event's can be specified when to send a signal, or to occur when a signal is received.

Input

Sets the trigger port as an input. The following events can be selected from the dropdown menu to be executed when an external trigger input signal is detected on the trigger port:

- Default (None) — No action
- BT TX On (TV Speaker Off) — This will connect Bluetooth transmitter with the Bluetooth paired devices and mute the audio coming out of the HDMI output 1
- BT TX Off (TV Speaker On) — This will disconnect Bluetooth transmitter with the Bluetooth paired devices and unmute the audio coming out of the HDMI output 1
- System Power On Or Off — This will switch the power status of the BLUARC between power on and power off. It allows third party trigger control of the BLUARC. When the BLUARC is powered off, there is no signal or 5V on the HDMI outputs

Output

Sets the trigger port as an output. The following events can be selected from the dropdown menu to send a signal from the trigger port when the selected event occurs:

- Default (None) — Disable trigger output
- Paired Devices Connection Change — Bluetooth transmitter paired devices connection status change will trigger output (high or low level)
- System Power Status Change — System power status change will trigger output (high or low level)

The input trigger can be configured as Low Level or High Level or Low Pulse or High Pulse:

- Low Level: 0V
- High Level: 5-12V
- Low Pulse: 0V, the duration of 0V must be at least 30ms
- High Pulse: 5-12V, the duration of 5~12V must be at least 30ms

The output trigger can be configured as Low Level or High Level:

- Low Level: 0V
- High Level: 12V

Volume Indicator

Sets which output will be controlled via the front panel buttons. This selection will appear highlighted in Control page of the web-GUI.

Output Volume Control – via Front Panel/WebGUI/API "VOL +/-"

The analogue output and Bluetooth output volume can be adjusted to increment and decrement by a fixed amount.

The default step value is 3 (volume changes will occur in steps of 3 every time an increment / decrement command is received).

Volume steps can be configured between 1 to 10, resulting in slower/faster changing volume.

Output Volume Control – via CEC

The CEC volume control can be adjusted to increment and decrement by a fixed amount.

The default step value is 3 (volume changes will occur in steps of 3 every time an increment / decrement command is received).

Volume steps can be configured between 1 to 10, resulting in slower/faster changing volume.

Web-GUI - System (continued)

IR

Enables/Disables IR control.

Lights Status

Set the duration the LEDs on the front panel of the unit will remain on for.

Serial Baud Rate

Select the Baud Rate for the RS-232 Serial port.

Firmware Update

Browse your device for a firmware file to upload to the unit.

Factory Reset (Excludes Network Settings)

Erases all settings, except for network settings, and reboots the unit.

Factory Reset All (Includes Network Settings)

Erases all settings and reboots the unit.

Reboot

Reboots the unit.

Web-GUI - Information

The Information page displays the model name, serial number, web-GUI firmware version, MCU firmware version and Bluetooth version of the BLUARC. It also displays network configuration, temperature and uptime data.

Specifications

- **Video Input Connectors:** 1 x HDMI Type A, 19-pin, female
- **Video Output Connectors:** 3 x HDMI Type A, 19-pin, female
- **Audio Input Connectors:** 1 x Optical (S/PDIF), 1 x analogue L/R (3.5mm stereo jack)
- **Audio Output Connectors:** 1 x Optical (S/PDIF), 1 x analogue L/R (3.5mm stereo jack)
- **Network Connectors:** 1 x Ethernet connection (RJ45)
- **Bluetooth Antennae:** 1 x SMA connector
- **RS-232 & I/O Connectors:** 1 x 5-Pin Phoenix connector
- **IR Input Connectors:** 1 x 3-Pin Phoenix connector
- **Firmware Upgrade:** 1 x Micro-USB UART port
- **Dimensions (W x D x H):** 125mm x 147mm x 25mm
- **Shipping Weight:** 0.6kg
- **Operating Temperature:** 32°F to 104°F (0°C to 40°C)
- **Storage Temperature:** - 4°F to 140°F (- 20°C to 60°C)
- **Power Supply:** 12V/1A DC, screw connector

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

Package Contents

- 1 x BLUARC
- 1 x IR receiver
- 1 x 3-pin Phoenix connector
- 1 x 5-pin Phoenix connector
- 1 x IR Remote Control
- 1 x Mounting kit
- 1 x Quick reference guide
- 1 x 12V/1A DC power supply

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 BLUARC can be controlled via serial and TCP/IP.

The default RS-232 communication settings are:

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

The following pages list all available serial / IP commands.

Commonly Used Serial Commands

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

STATUS	Status will give feedback on the switcher such as outputs on, type of connection, etc.
PON	Power on
POFF	Power off
OUTON/OFF	Toggling the main output ON or OFF as required Example: OUTON (This would turn the main output on)
OUT FRyy	(yy is the input) Example: OUT FR04 (This would switch the main output 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: OUTON
  - How the string may look if spaces are required: OUT{Space}ON
- Baud rate or other serial protocol settings not correct

RS-232 Configuration and Telnet Commands (continued)

COMMAND	ACTION
?/HELP	Print Help Information
STATUS	Print System Status And Port Status
UPTIME	Print System Uptime
TEMP	Print System Temperature
PON	Power On, System Run On Normal State
POFF	Power Off, System Run On Power Save State
RESET	Reset System Settings To Default (Should Type "Yes" To Confirm, "No" To Discard)
RESET ALL	Reset System And Network Settings To Default (Should Type "Yes" To Confirm, "No" To Discard)
REBOOT	Set System Reboot
KEY ON/OFF	Set System Key Control On Or Off
LCD ON/OFF/15/30/60	Set LCD Always On Or Auto Turn Off In Power On State Or Turn On 15s/30s/60s
IR ON/OFF	Set System IR Control On Or Off
CEC ON/OFF	Set CEC Volume Control On Or Off
RSB x	Set RS232 Baud Rate To x Bps x=[0:115200, 1:57600, 2:38400, 3:19200, 4:9600]
VOL xx DISPLAY	Set Output:xx Volume Bar Display xx=[1...2]:1: Default(Analogue L/R),2:BT
TRIG ON/OFF	Set Trigger On Or Off
TRIG IN/OUT	Set Trigger As Input Or Output
TRIG INLV xx	Set Trigger Input Level xx=0:(Low Level) xx=1:(5-12V High Level) xx=2:(Low Pulse) xx=3:(5-12V High Pulse)
TRIG INAC xx	Set Action After Trigger Input Toggled xx=0:Default(None) xx=1:BT TX On(TV Speaker Off) xx=2:BT TX Off(TV Speaker On) xx=3:System Power On Or Off
TRIG OUTLV xx	Set Trigger Output Level xx After Meeting Condition xx=0:(Low Level) xx=1:(12V High Level)
TRIG OUTCD xx	Set Trigger Output Condition xx=0:Default(None) xx=1:Paired Devices Connection Status Change xx=2:Systen Power Status Change
TRIG STATUS	Print Trigger Status
OUT FR yy	Set All Output From Input:yy yy=[1...5]:1:Default(Analogue L/R),2:OPTICAL,3:HDMI,4:ARC,5:BLUETOOTH
OUT xx ON/OFF	Set Output:xx On Or Off xx=00:Select All Output Port xx=[01...02]:Select One Output Port
OUT xx VOL yy	Set Output:xx Volume To yy xx=[0...2]:0:All,1:Analogue L/R,2:BT yy=[0...100]:Volume Value

COMMAND	ACTION
OUT xx VOL+yy	Increase Output:xx Volume xx=[0...2]:0:All,1:Analogue L/R,2:BT yy=[1...100]:Steps yy Can Be Empty(1 Step)
OUT xx VOL-yy	Decrease Output:xx Volume xx=[0...2]:0:All,1:Analogue L/R,2:BT yy=[1...100]:Steps yy Can Be Empty(1 Step)
OUT xx VOL STEPS yy	Set Vol Steps xx=[0...2]:0:All,1:Analogue L/R,2:BT yy=[1...10]:Vol Steps
OUT xx MUTE ON/OFF	Set Output:xx Mute On Or Off xx=[0...2]:0:All,1:Analogue L/R,2:BT
OUT xx CEC VOL STEPS yy	Set CEC Vol Steps xx=[0...3]:0:All,1:Analogue L/R,2:BT,3:ARC yy=[1...10]:Vol Steps
STEPS STATUS	Print Volume Control Steps Status
BT NAME xx	Set BT Name To xx(xx,Character String Max<=30)
BT MODE xx	Set BT Working Mode To xx xx=[0...2]:0:Auto,1:TX Only,2:RX Only
BT DIS xx	Set BT Disconnected After Long Pressing Pair Key xx Seconds xx=[0/3/5/10]:0=Off,Default(3s)
BT RXPM xx	Set BT RX Pairing Mode To xx xx=[1...3]:1:Default(On),2:Off,3:Manual
BT RXTIMEOUT xx	Set BT RX Pair Timeout Period To xx xx=[1...999]:Default(30s)
BT RXPAIR	BT RX Trigger Paired Button
BT FORCEPAIR xx	Set BT RX Force Pairing Mode To xx xx=[0...1]:1:Default(On),0:Off
BT SOURCE	BT RX Paired Source List
BT RXCD xx	Set BT RX Connected Device xx xx=1:Paired Device List ID
BT RXDIS xx	Set BT RX Disconnected Device xx xx=1:Paired Device List ID
BT RXDEL xx	Set BT RX Deleted Device xx xx=1:Paired Device List ID
BT TXCM xx	Set BT TX Connection Mode To xx xx=[1...2]:1:Default(Auto),2:Manual
BT DEVICE	BT TX Searched Device List
BT TXCPD xx	Set BT TX Connected Paired Device xx xx=[1...8]:Paired Device List ID
BT TXCAD xx	Set BT TX Connected Available Device xx xx=[1...8]:Available Device List ID
BT TXDIS xx	Set BT TX Disconnected Device xx xx=[1...2]:Paired Device List ID
BT TXDEL xx	Set BT TX Deleted Paired Device xx xx=[1...8]:Paired Device List ID
BT TXFP xx	Set BT TX First Priority To xx xx=[0...1]:0=APTX-LL, 1=APTX-HD
BT TXSEARCH	Set BT TX Search For Bluetooth Receiver
BT GUEST ON/OFF	Set BT Control for Guest:On/Off

RS-232 Configuration and Telnet Commands (continued)

COMMAND	ACTION
EDID xx CP	Set Input:xx EDID Copy From Output xx=00:Select All Input Port xx=1:Soundbar,2:HDMI
EDID xx DF zz	Set Input:xx EDID To Default EDID:zz xx=0: Select All Input Port xx=[1:Soundbar,2:HDMI]: Select One Input Port zz=00: HDMI 1080p@60Hz, Audio 2CH PCM (default) zz=01: HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY zz=02: HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD zz=03: HDMI 1080i@60Hz, Audio 2CH PCM zz=04: HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY zz=05: HDMI 1080i@60Hz, Audio 7.1CH DTS/DOLBY/HD zz=06: HDMI 1080p@60Hz/3D, Audio 2CH PCM zz=07: HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY zz=08: HDMI 1080p@60Hz/3D, Audio 7.1CH DTS/DOLBY/HD zz=09: HDMI 4K@30Hz 4:4:4, Audio 2CH PCM zz=10: HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY zz=11: HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD zz=12: HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 2CH PCM zz=13: HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY zz=14: HDMI 4K@60Hz 4:2:0/4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD zz=15: HDMI 4K@60Hz 4:4:4, 8-bit, Audio 2CH PCM

COMMAND	ACTION
EDID xx DF zz	zz=16: HDMI 4K@60Hz 4:4:4, 8-bit, Audio 5.1CH DTS/DOLBY zz=17: HDMI 4K@60Hz 4:4:4, 8-bit, Audio 7.1CH DTS/DOLBY/HD zz=18: HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 2CH PCM zz=19: HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 5.1CH DTS/DOLBY zz=20: HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 7.1CH DTS/DOLBY/HD zz=21: HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 2CH PCM zz=22: HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 5.1CH DTS/DOLBY zz=23: HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 7.1CH DTS/DOLBY/HD zz=24: HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 2CH PCM zz=25: HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 5.1CH DTS/DOLBY zz=26: HDMI 4K@60Hz 4:4:4, HDR 10-bit (Inc DV), Audio 7.1CH DTS/DOLBY/HD zz=27: HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 2CH PCM zz=28: HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 5.1CH DTS/DOLBY zz=29: HDMI 4K@60Hz 4:4:4, HDR 12-bit (Inc DV), Audio 7.1CH DTS/DOLBY/HD zz=30: DVI 1280x1024@60Hz, Audio None zz=31: DVI 1920x1080@60Hz, Audio None zz=32: DVI 1920x1200@60Hz, Audio None zz=33: HDMI 1920x1200@60Hz, Audio 2CH PCM/6CH PCM zz=34: User EDID 1 zz=35: User EDID 2 zz=36: EDID Pass-Through (Copy From Sink 1)
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 TCPPORT ON/OFF	Set TCP/IP Port On Or Off
NET TCPPORT xxxx	Set TCP/IP Port
NET TN ON/OFF	Set Telnet On Or Off
NET TN xxxx	Set Telnet Port
NET RB	Network Reboot And Apply New Config!!!
NET DNS xxxx	Set DNS Domain Name To xx(xx,Character String Max<=16)

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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