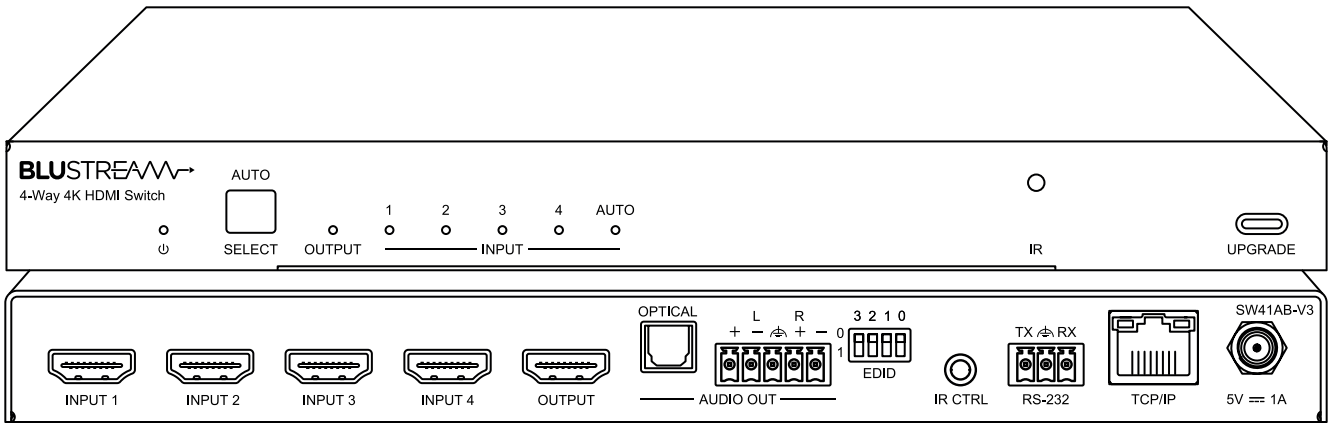


SW41AB-V3

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.

Safety and performance notice

Do not substitute or use any other power supply other than approved Blustream power supplies.

Do not disassemble the device for any reason. Doing so will void the manufacturer's warranty.

Contents

Introduction

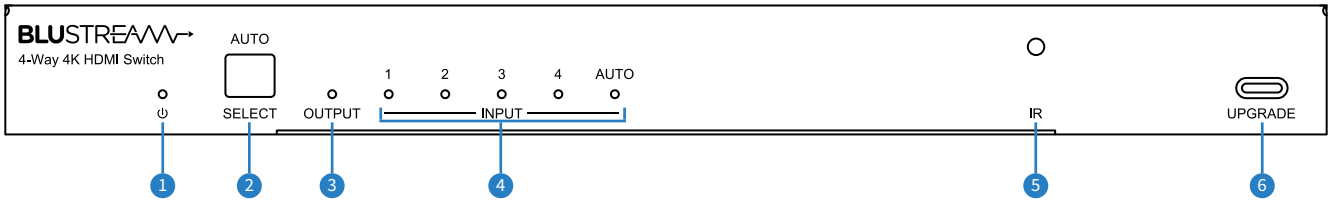
The SW41AB-V3 is a professional 4-input HDMI switch designed to simplify source management in meeting rooms, classrooms and commercial AV or residential environments. Supporting HDMI 2.0 and HDCP 2.2, it delivers flawless 4K 60Hz 4:4:4 video performance while providing flexible source selection through front panel controls, IR, RS-232 or network-based IP control for seamless integration into modern control systems.

Built with professional installations in mind, the SW41AB-V3 features both optical (S/PDIF) and balanced / unbalanced analogue audio breakout via phoenix connectors, making it easy to integrate with external amplifiers, DSPs and audio systems. Optional auto and priority switching further enhances usability by automatically selecting active sources, reducing user interaction and ensuring a smooth presentation experience.

FEATURES:

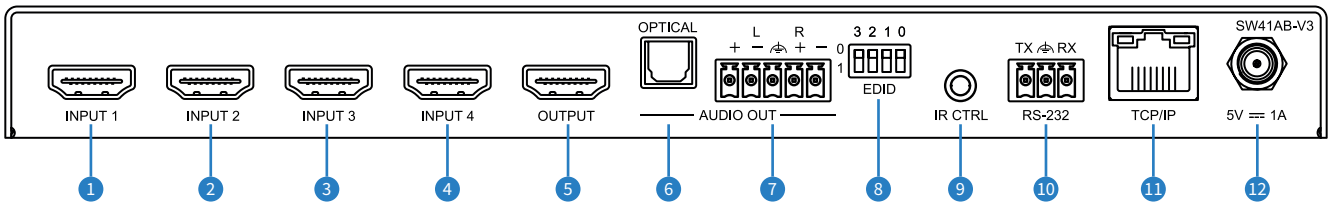
- Features 4 x HDMI inputs which can be switched to single HDMI output
- Supports full HDMI 2.0 specification 4K UHD video (4K 60Hz 4:4:4) with HDR
- HDCP 2.2 compliant
- Supports 3D signal display
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Auto, manual or priority switching capabilities. Auto switching from TMDS or 5V HPD
- Supports bitstream passthrough of multichannel surround sound including object-based audio formats in line with HDMI specifications
- HDMI audio breakout to phoenix balanced / unbalanced analogue audio and optical (S/PDIF) digital outputs concurrently
- Control via IP, RS-232, web GUI, front panel, and IR
- Advanced EDID management
- Auto-standby mode

Front Panel Description



1. Power Status LED
2. SELECT button — source selection
3. Output LED — lit when HDMI output is connected
4. Input LED — corresponds to currently selected source
5. IR Recevier Window
6. USB Upgrade port — upgrade firmware

Rear Panel Description



1. HDMI Input 1
2. HDMI Input 2
3. HDMI Input 3
4. HDMI Input 4
5. HDMI Output
6. Optical Audio Out — S/PDIF / Toslink connector
7. Analogue Audio Out — balanced 5-pin phoenix connector
8. EDID Dip Switch — set global EDID
9. 3.5mm IR Control Port — 5V
10. Serial 3-pin Phoenix Connector — RS-232
11. RJ45 Port — TCP/IP Control
12. Power Supply Input

Resetting the SW41AB-V3

To reset the SW41AB-V3 back to factory defaults, press and hold the SELECT button on the front panel for 30 seconds. The INPUT and AUTO LEDs will blink for 3 seconds.

The reset process takes approximately 30 seconds.

Operation and Connections

Operation of the SW41AB-V3 can achieved directly from the front panel. After connecting the HDMI inputs and the HDMI output, press the SELECT button to switch between the available HDMI input sources.

Auto switching is a feature that changes the active HDMI input based on TMDS activity or a 5V Hot Plug Detect signal. Auto switching can be enabled or disabled by pressing and holding SELECT for 5 seconds.

- The AUTO LED will blink for 3 seconds to indicate that the mode has changed.
- The AUTO LED remains illuminated while auto switching is enabled.

The front panel can be locked or unlocked by pressing and holding SELECT for 10 seconds.

- All INPUT LEDs will blink sequentially for 3 seconds to confirm the mode change.

CEC passthrough can be enabled or disabled by pressing and holding SELECT for 20 seconds.

- INPUT LED 1 and the AUTO LED will blink together for 3 seconds to confirm the change.

HDMI output audio can be extracted through the following ports:

- Optical TOSLINK (S/PDIF)
- Balanced 5-pin Phoenix terminal

Advanced control is supported via the 3-pin Phoenix serial port.

IR Control

Infrared (IR) control is available via the IR Control 3.5mm jack. This allows control from third-party control systems or direct control using an IR remote.

Please note: All Blustream-supplied IR cabling is rated for 5V operation.

IR-CAB - IR Cable 3.5mm Mono to 3.5mm (optional)

Blustream IR 3.5mm Mono (TS) to 3.5mm Stereo (TRS) Cable for linking third party control solutions to Blustream products

12V to 5V step down conversion

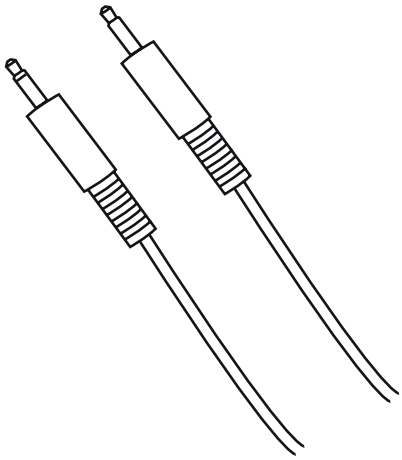
Please note: Cable is directional as indicated

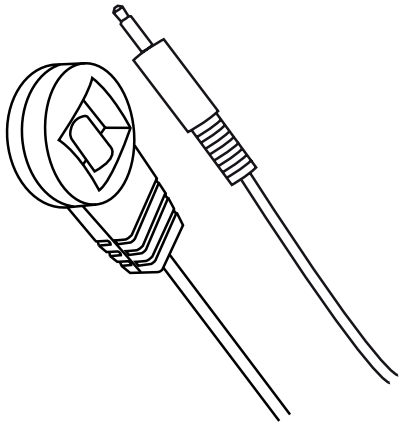
IRR - IR Receiver Stereo 3.5mm Jack (included)

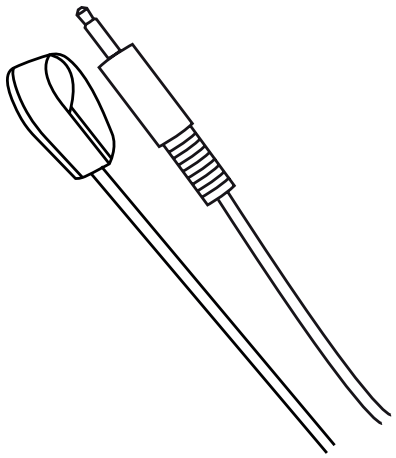
Blustream 5V IR Receiver 3.5mm stereo (TRS) jack to receive an IR signal and distribute through Blustream products

IRE - IR Emitter Mono 3.5mm Jack (optional)

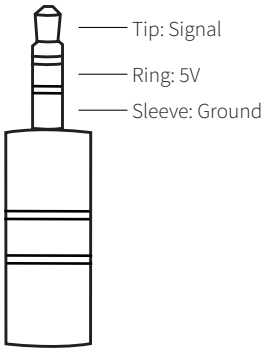
Blustream 5V IR Emitter 3.5mm mono (TR) jack to emit an IR signal for discreet IR control



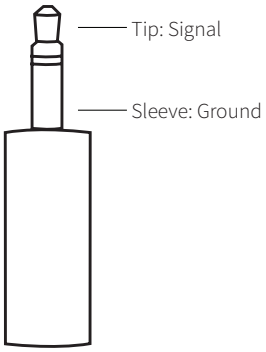




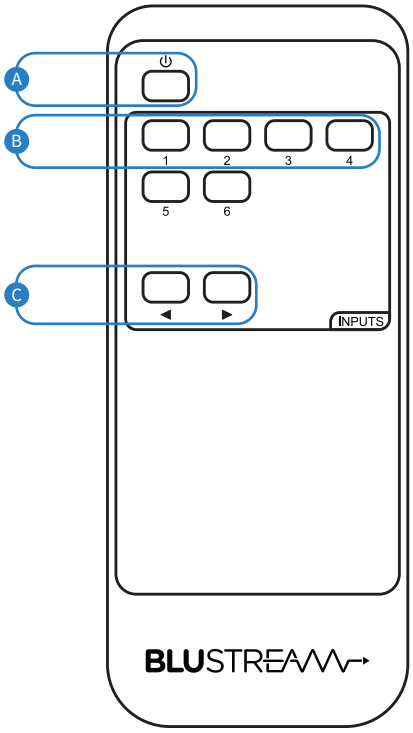
IR Stereo (TRS) 3.5mm Pinout:



IR Mono (TS) 3.5mm Pinout:



Remote Control



Power On / Power Off:

A Press the power button

Input Selection:

B Select the input to display on the output
(Numbers 1 - 4 correspond to inputs 1 - 4)

Switch Inputs:

C Press < or > to cycle through the inputs

IR Commands

COMMAND	NEC IR CODE	HEX IR CODE
Last Input (Input 4,3,2,1,4...)	0x50	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679
Next Input (Input 1,2,3,4,1...)	0x55	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679
Input 1	0x09	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679
Input 2	0x1D	000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679
Input 3	0x1F	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0679
Input 4	0X0D	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679
Power on/off	0x14	0000 006C 0000 0022 015B 00AD 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0679

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 thus making switching quicker and more reliable.

Configuration of SW41AB-V3 EDID settings can be achieved by:

1 Using control commands via RS-232

2 Using the EDID dipswitches

3 Using the Web GUI

RS-232:

Configuration of the EDID settings for each input can be achieved using the following control commands to specify the required EDID:

EDID xx DF zz Set Input:xx EDID To Default EDID:zz
- xx=00: Select All Input Port
- xx=[01...04]: Select One Input Port
- yy=[01...02]: Select One Output Port
- zz=00: HDMI 1080p@60Hz, Audio 2CH PCM
- zz=01: HDMI 1080p@60Hz, Audio 5.1CH 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
- 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)

EDID DIP Switches:

To configure the global EDID for all inputs via the DIP switch, use the settings below.

Please note: EDID DIP switch settings will override and disallow any EDID settings configured via RS-232.

3	2	1	0	EDID Type
DIP Positions				
0	0	0	0	1080p@60Hz, 2ch PCM (default)
0	0	0	1	1080p@60Hz, 5.1ch PCM/DTS/DOLBY
0	0	1	0	1080p@60Hz, 7.1ch PCM/DTS/DOLBY/HD
0	0	1	1	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, 2ch PCM
0	1	0	0	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, 5.1ch PCM/DTS/DOLBY
0	1	0	1	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, 7.1ch PCM/DTS/DOLBY
0	1	1	0	4K@60Hz 4:4:4, 8-bit, 2ch PCM
0	1	1	1	4K@60Hz 4:4:4, 8-bit, 5.1ch PCM/DTS/DOLBY
1	0	0	0	4K@60Hz 4:4:4, 8-bit, 7.1ch PCM/DTS/DOLBY
1	0	0	1	4K@60Hz 4:4:4, 10-bit HDR, 2ch PCM
1	0	1	0	4K@60Hz 4:4:4, 10-bit HDR, 5.1ch PCM/DTS/DOLBY
1	0	1	1	4K@60Hz 4:4:4, 10-bit HDR, 7.1ch PCM/DTS/DOLBY
1	1	0	0	DVI 1920x1080@60Hz, Audio None
1	1	0	1	DVI 1920x1200@60Hz, Audio None
1	1	1	0	EDID pass-through (Copy from Output 1)
1	1	1	1	EDID Software

Web GUI - Log In and Initialisation

The Web GUI allows for full configuration, ongoing maintenance and control of the SW41AB-V3 through a web portal. Connect a TCP/IP RJ45 socket to the local network, or directly from a computer, to the SW41AB-V3 in order to access the Web GUI.

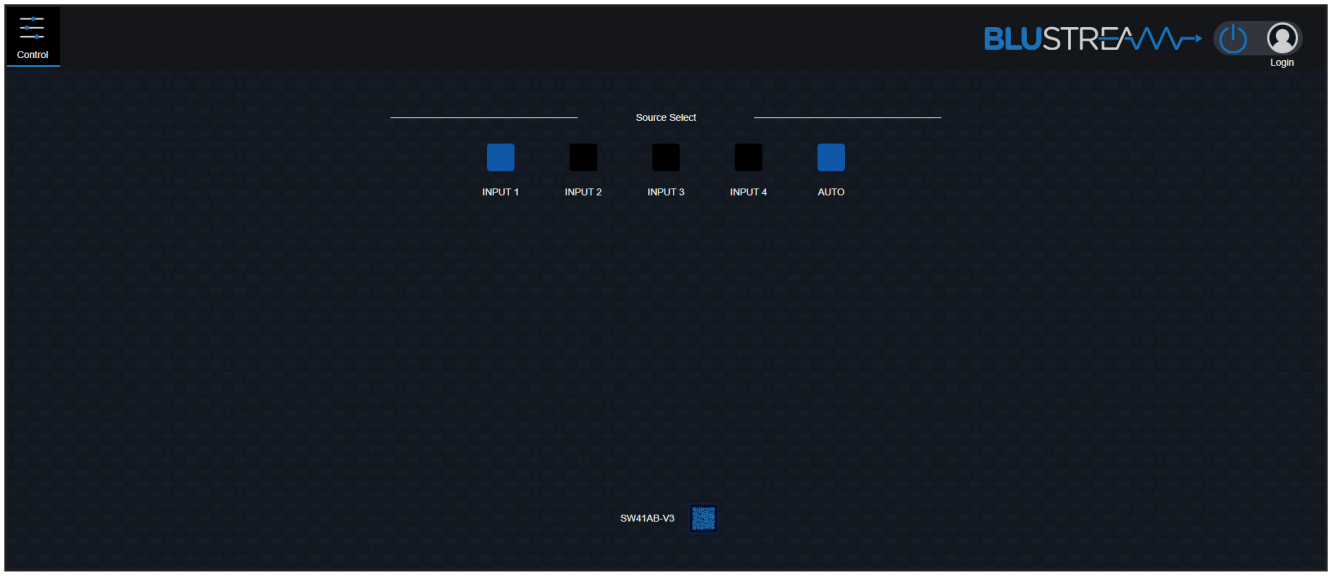
By default, the SW41AB-V3 is set to obtain an IP address via DHCP; however, if a DHCP server (eg: network router) is not installed, the IP address will revert to below details:

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

If the IP address of the SW41AB-V3 is not known, it can be found by:

- Using a 3rd party IP scanning tool
- Using an RS-232 connection and sending a 'STATUS' command; this will return all settings of the SW41AB-V3
- Using the default mDNS hostname address
  - The SW41AB-V3 can be accessed via its mDNS hostname when the IP address is not known.
  - The default mDNS name is **sw41ab-v3.local**, which allows devices on the same local network to resolve the product's IP address without requiring a dedicated DNS server.

When initially accessing the Web-GUI of the SW41AB-V3, the Guest Control page is shown as below. Permissions for the Guest can be set so as to restrict control for users who are not logged in.



Guest Control Page:

The Guest user is able to access the Control page of the Web GUI without logging in. Depending on the permissions set, control for input selection can be accessed from here.

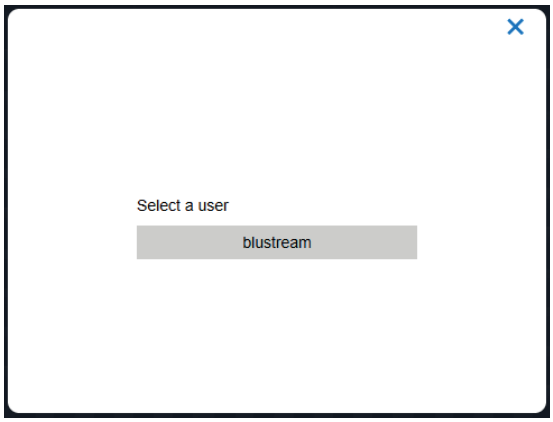
Permissions can be set or revoked from the Users page when logged in, depending on the requirements of the installation.

It is recommended to set permissions for the Guest user to avoid unwanted access or changes.

Login Page:

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

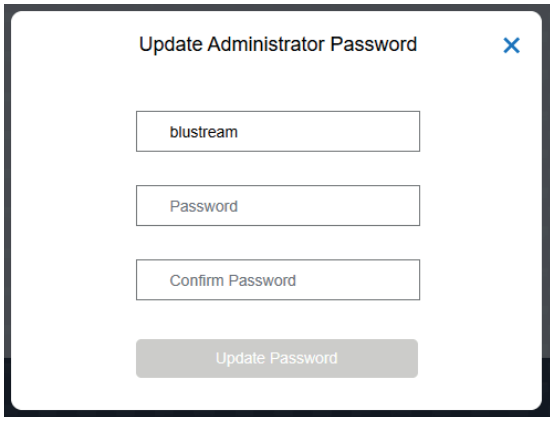
Administrator (Blustream)	The Administrator account allows full access to all functions and configuration of the device and is always enabled
Guest	When enabled, various Web GUI pages can be accessed without logging in depending on the permissions set
User Accounts	User accounts can be utilised, each with individual login details and can be assigned permissions to specific areas and functions



Please note: the first time the Administrator logs into the Web GUI of the SW41AB-V3 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 device, losing all prior network and configuration settings.

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

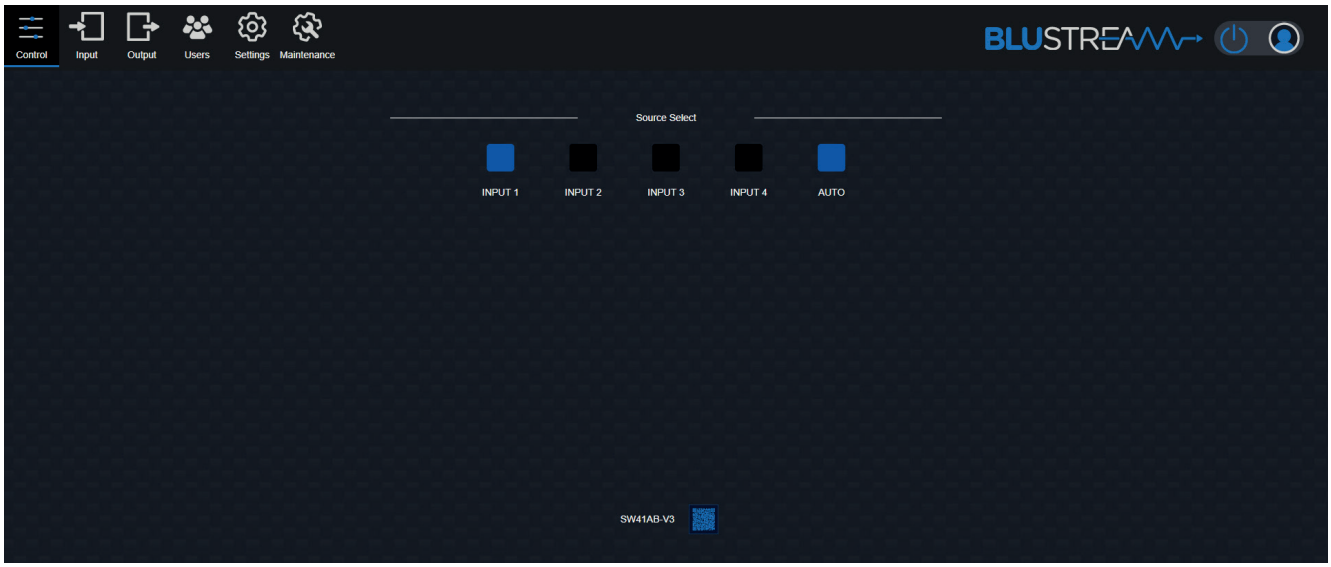
Passwords can be changed as required within the Web GUI of the device once logged in.



Web GUI - Control

Once logged in as the Administrator, the user will be directed to the Control page and additional pages become available from within the Web GUI. These can be navigated to by using the navigation bar at the top of the Web GUI and pressing the corresponding icon.

The Control page allows for input selection and advanced CEC Control.

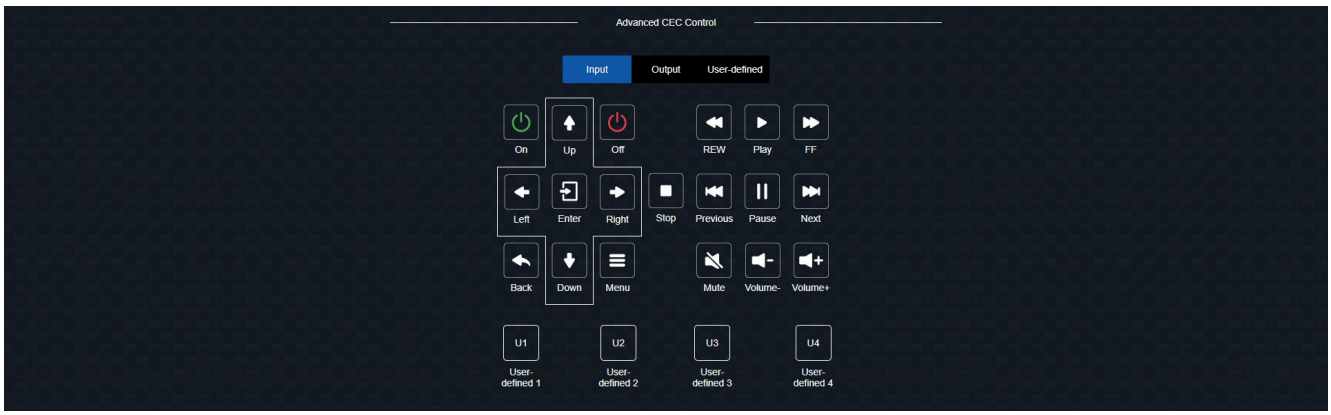


Source Select:

- The input source can be selected from one of the HDMI inputs by pressing the corresponding button
- Select **Auto** to enable auto switching
  - Auto switching is a feature that changes the active HDMI input based on TMDS activity or a 5V Hot Plug Detect signal

Advanced CEC Control:

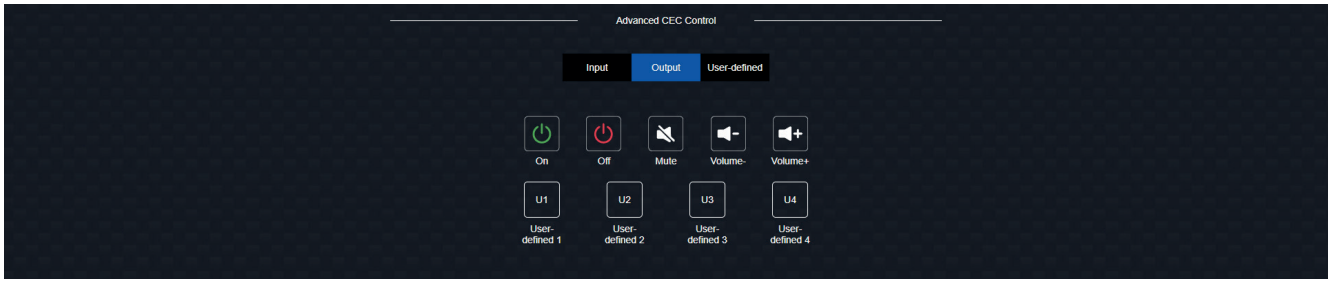
When Advanced CEC Control in enabled under the Settings page in the Web GUI, the Advanced CEC Control pane will be accessible on the Control page.



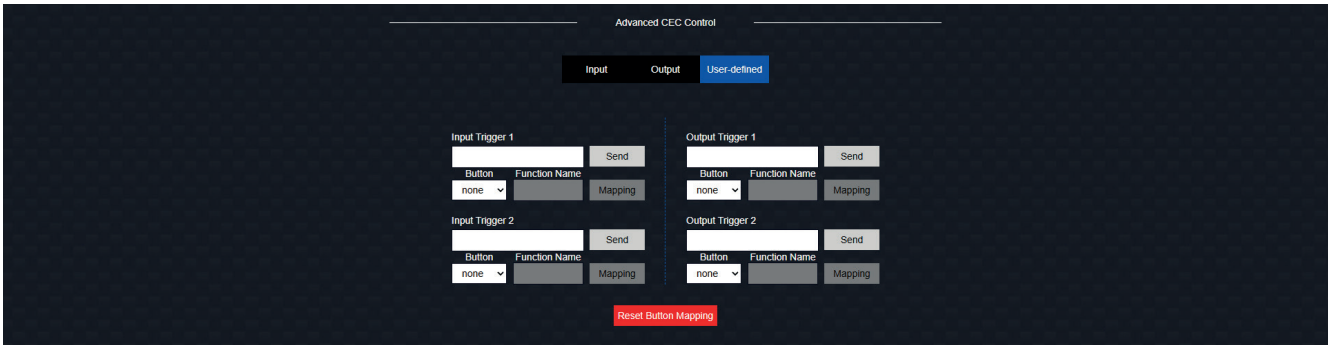
Advanced CEC Control (continued)

The CEC Advanced Control page allows users to send standard and user defined CEC commands to both the input and output connected devices.

Standard CEC commands can be sent by selecting the desired input or output, and pressing the corresponding buttons on the remote control.



The SW41AB-V3 can also store and send up to four user defined CEC commands from the input and output tabs.



Trigger

- Enter the CEC command you want to send

Button

- Select the button number that the command will be assigned to

Function Name

- Enter a descriptive name for the command. This name is displayed across the Web GUI

Send

- Sends the command immediately for testing purposes. Use this button to verify that the command behaves as expected before mapping it

Mapping

- Saves the command and name, and assigns them to the selected user-defined button

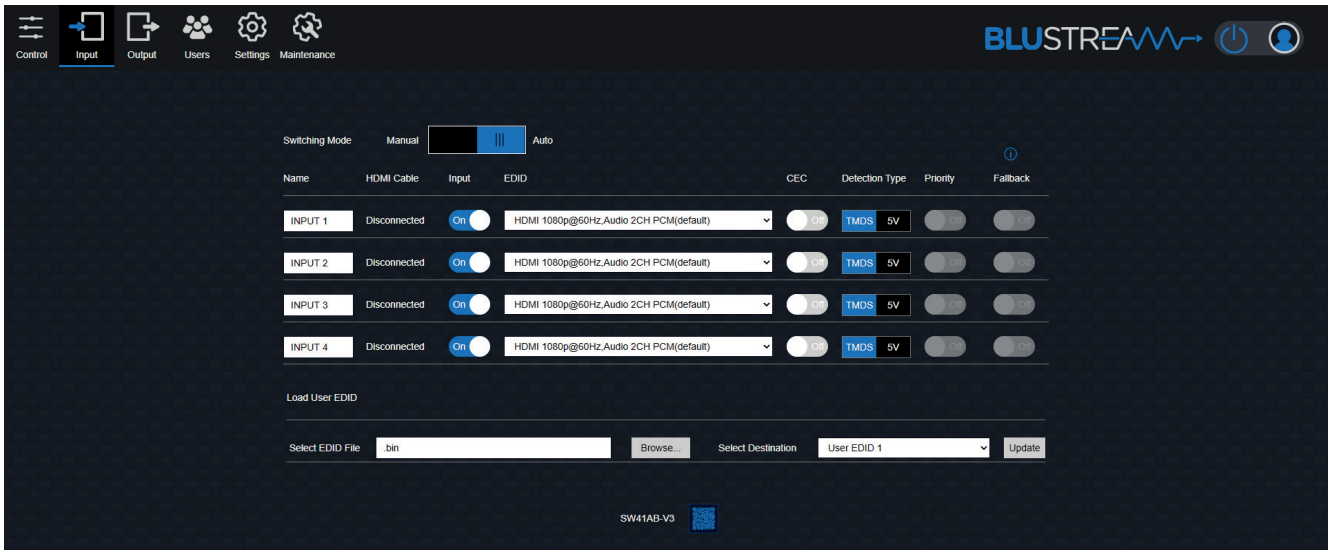
Reset Button Mapping

- Reset all user defined button settings

Web GUI - Input

The Input page allows for configuration of each input the SW41AB-V3, and loading of custom EDID files.

The Switching Mode can be changed between Manual (auto switching disabled) and Auto (auto switching enabled).



Name

- Displays the name of the input. The name can be updated by entering a new name into the name field and pressing Enter

HDMI Cable

- Displays the connection status of the HDMI input port

Input

- Enable / Disable the input

EDID

- An EDID can be defined for each input, allowing the SW41AB-V3 to communicate preferred video resolutions and audio formats to the connected source devices
- The drop down menu contains all of the EDIDs supported, the ability to copy the EDID from another output with a connected display, and also the ability to load up to two user defined EDIDs

CEC

- Enable / Disable CEC passthrough

Detection Type

- TMDS / 5V

Priority (auto switching mode only)

- When enabled, the SW41AB-V3 automatically switches to the designated priority input as soon as a TMDS / 5V signal is detected on that input
- Input switching is then disabled

Fallback (auto switching mode only)

- When enabled, the SW41AB-V3 automatically switches to the selected fallback input if the active input signal is lost. If no fallback input is defined, the unit will cycle through all inputs until a valid signal is found

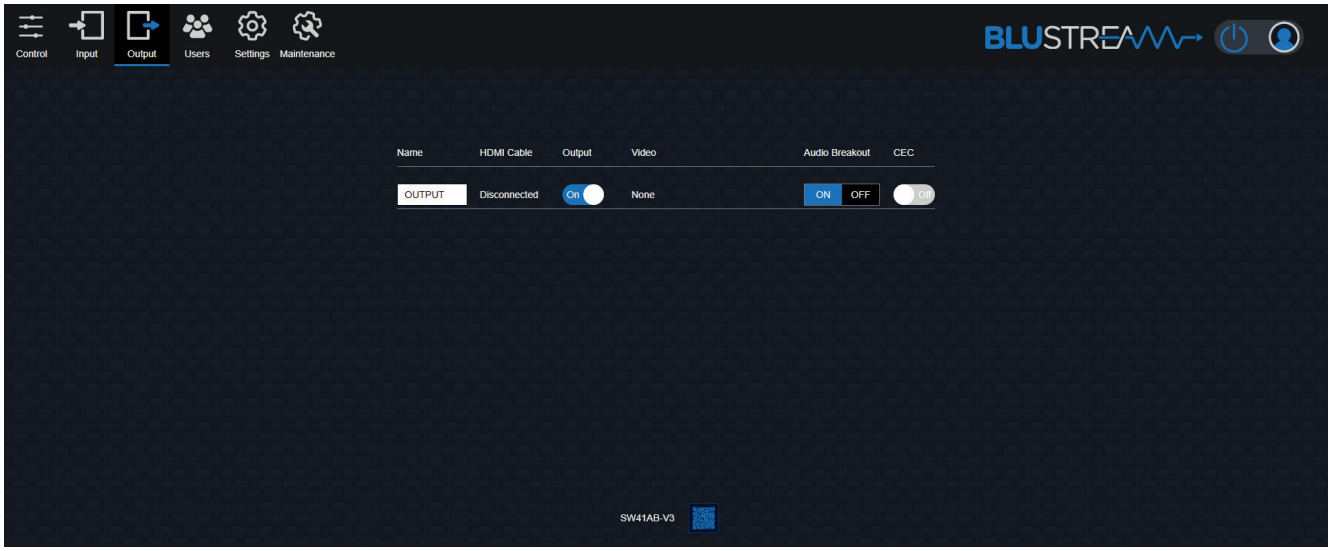
Web GUI - Input (continued)

Load User EDID

- It is possible to upload custom EDID .bin files to the SW41AB-V3 if a specific EDID is not listed within the included formats. A custom EDID file can be generated from a third party EDID generation tool and uploaded using the **Browse** and **Update** buttons. There are two custom EDID slots available that can selected via the **Select Destination** dropdown
- Once a file has been uploaded, it's can be directed at any of the four inputs via their EDID dropdown menus and selecting **User EDID 1** or **User EDID 2** respectively.

Web GUI - Output

The Output page allows for configuration of the outputs of the SW41AB-V3.



Name

- Displays the name of the input. The name can be updated by entering a new name into the name field and pressing Enter

HDMI Cable

- Displays the connection status of the HDMI input port

Output

- Enable / Disable the output

Video

- Detects and display information about the output connection such as the resolution, refresh rate, colour depth and HDR

Audio Breakout

- Enable / Disable audio breakout on the Toslink (S/PDIF) optical and 5-pin phoenix analogue audio outputs

CEC

- Enable / Disable CEC passthrough

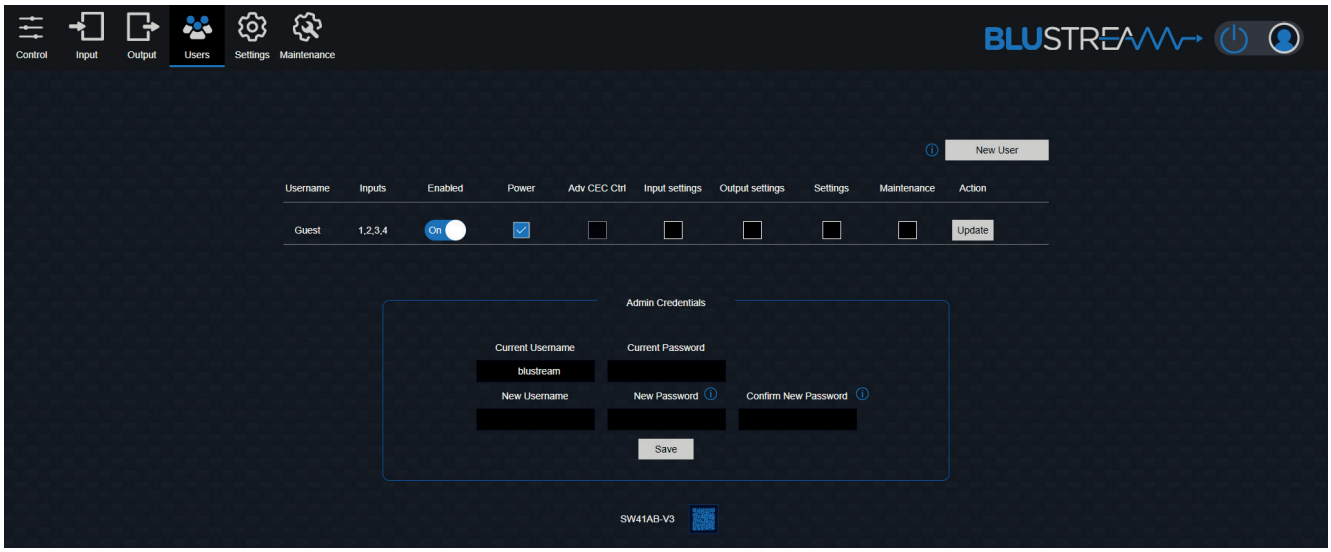
Web GUI - Users

The SW41AB-V3 offers flexible user management, allowing multiple users to be configured with unique log ins and customisable access privileges. Access to inputs, outputs, presets, and various Web GUI pages can be configured per user.

Please note: A dedicated user should be set up and used after installation of the device in order to prevent non-administrator users from changing settings and potentially damaging connected equipment. The guest user should also be disabled or have permissions set to prevent unwanted access, as they do not require credentials for control of the device.

By default, there is an Administrator and Guest user.

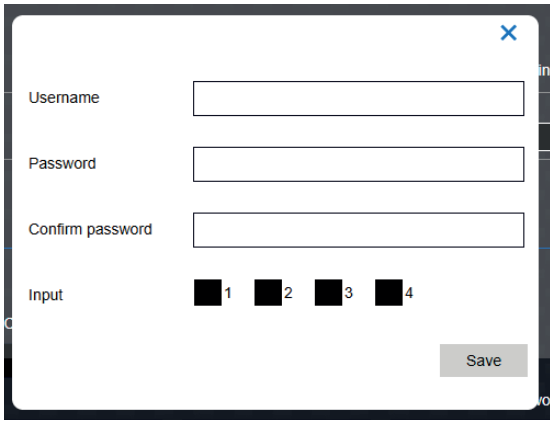
The login details for the Administrator can be modified from **Admin Credentials**.



To add a new user, select **New User**.

Enter a username, password, and select which inputs, outputs and presets the user will be allowed to control.

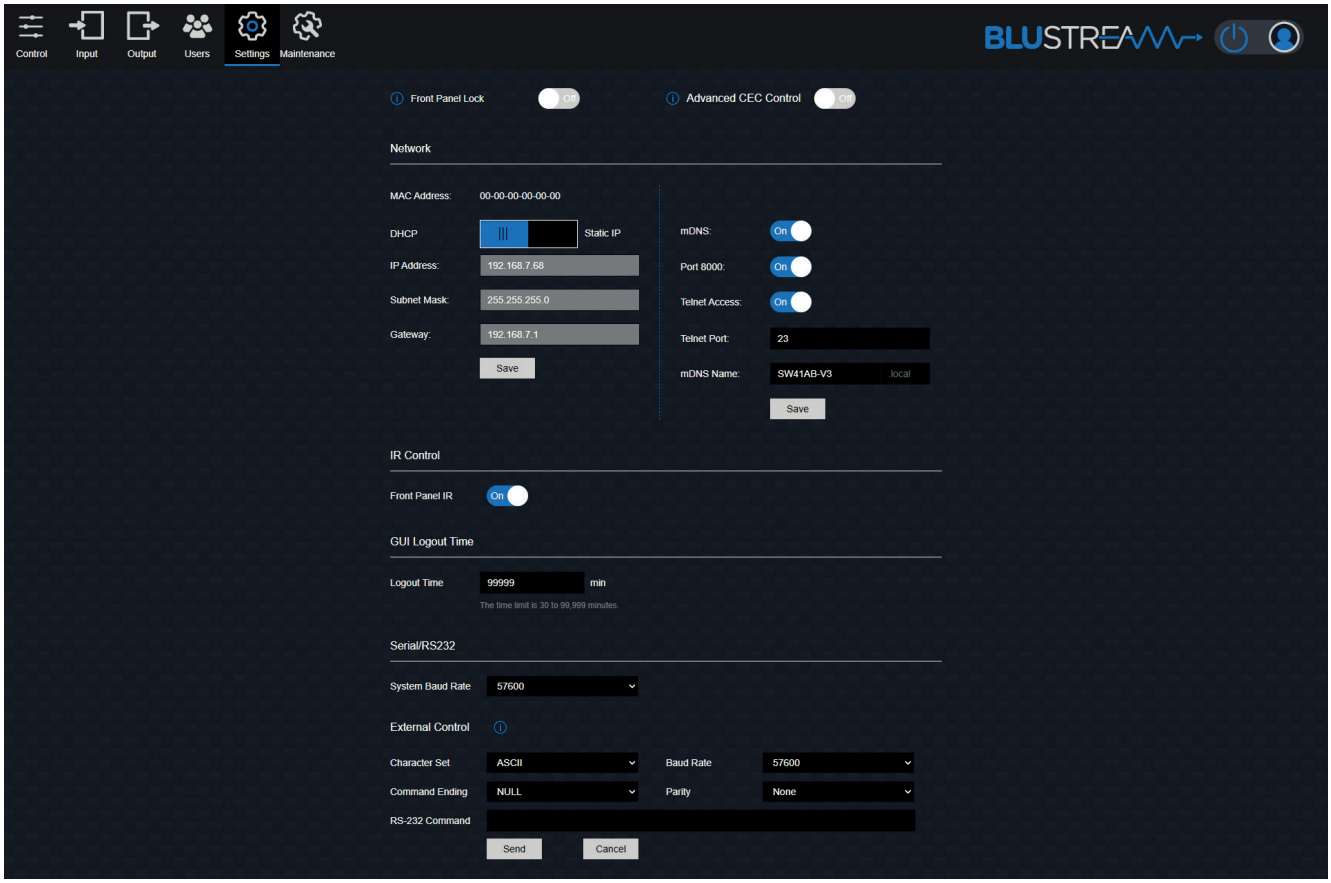
Press **Save** to create the new user.



Additional permissions for access to Web GUI pages can be assigned by ticking the corresponding boxes.

Web GUI - Settings

The Settings page allows for advanced configuration of the SW41AB-V3.



Front Panel Lock

- Enable / Disable the front panel buttons

Advanced CEC Control

- Enable / Disable Advanced CEC Control on the Control page (see page “Advanced CEC Control:” on page 12)

Network:

DHCP / Static

- Set the SW41AB-V3 to obtain an IP address through DHCP or to set a static IP address

MAC Address

- Displays the MAC Address

IP Address

- Set the static IP address of TCP/IP port

Subnet

- Set the subnet mask of the TCP/IP port

Gateway

- Set the gateway address of the TCP/IP port

Press **Save** to apply any changes.

Network (continued)

mDNS

- Enable / Disabled mDNS broadcasting

Port 8000

- Enable / Disable TCP/IP Access

Telnet Access

- Enable / Disable Telnet Access

Telnet Port

- Set the Telnet port
- Default is 23

mDNS Name

- 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 SW41AB-V3 is able to be accessed via the hostname if the IP address is not known.
- By default this is set to **sw41ab-v3.local**

Press **Save** to apply any changes.

IR Control:

Front Panel IR

- Enable / Disable the IR receiver window on the front panel

GUI Logout Time:

Logout Time

- Set the amount of time in minutes until the Web GUI will log out a user

Serial / RS-232:

System Baud Rate

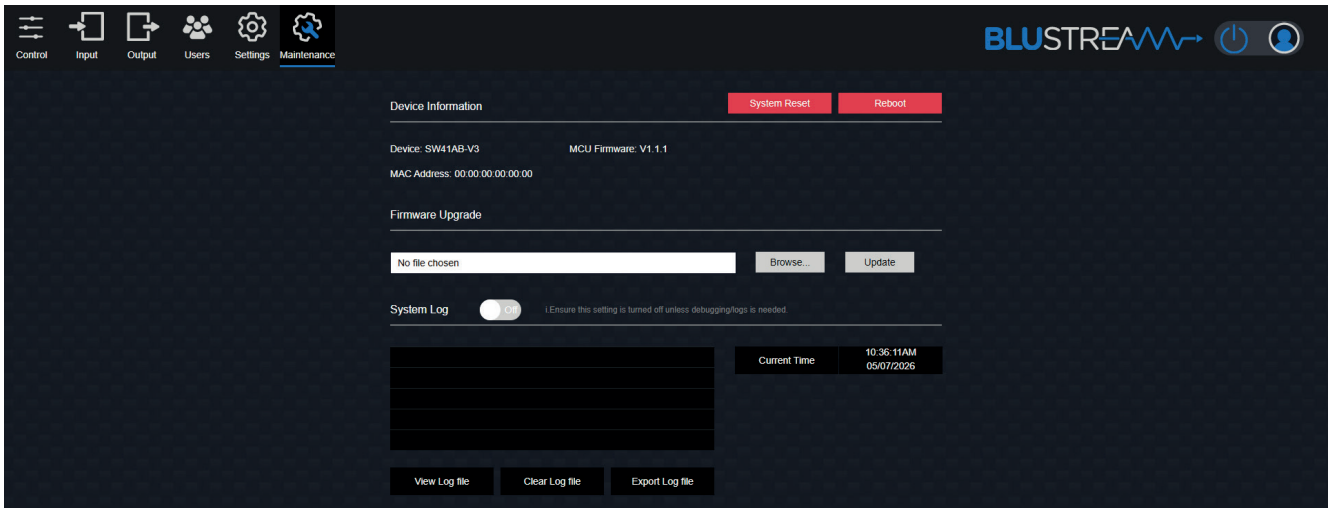
- 2400 / 4800/ 9600 / 19200 / 38400 / 57600 / 115200

External Control
The SW41AB-V3 can send RS-232 commands out from it's serial port to an external device. This can be used for testing or external control

- Character Set
  - ASCII / HEX
- Baud Rate
  - 2400 / 4800/ 9600 / 19200 / 38400 / 57600 / 115200
- Command Ending
  - NULL / CR / LF / CR+LF
- Parity
  - None / Even / Odd
- RS-232 Command
  - Enter the string to send into the input field
  - Press **Send** to transmit the command, or press **Cancel** to clear the command

Web GUI - Maintenance

The Maintenance page allows the firmware of the SW41AB-V3 to be upgraded. Various debugging tools are also available from this page.

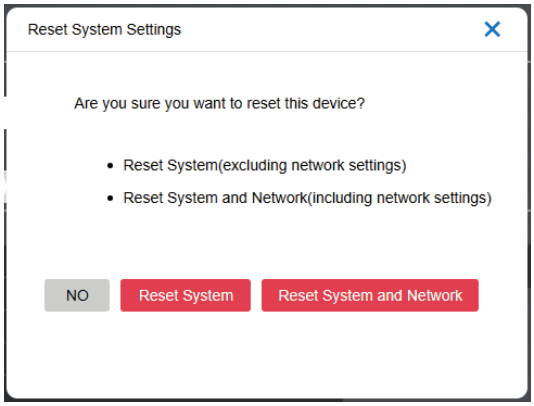


System Reset

- Factory reset the SW41AB-V3
- To reset but retain network configuration, select **Reset System**
- To fully reset, select **Reset System and Network**

Reboot

- Reboots the SW41AB-V3



Device Information:

Display various system information including firmware version.

Firmware Upgrade:

The latest firmware for the SW41AB-V3 can be found on the Blustream website.

Download the firmware file and press **Browse** to locate and select the file.

Once selected, press **Update** to begin the upgrade process.

System Log:

The System Log is intended strictly for debugging and advanced troubleshooting. It is recommended to keep this disabled during normal operation.

Enable/Disable

- Switches the background recording of system events on or off

View Log File

- Opens a window to scroll through current log entries

Clear Log File

- Deletes all current log entries

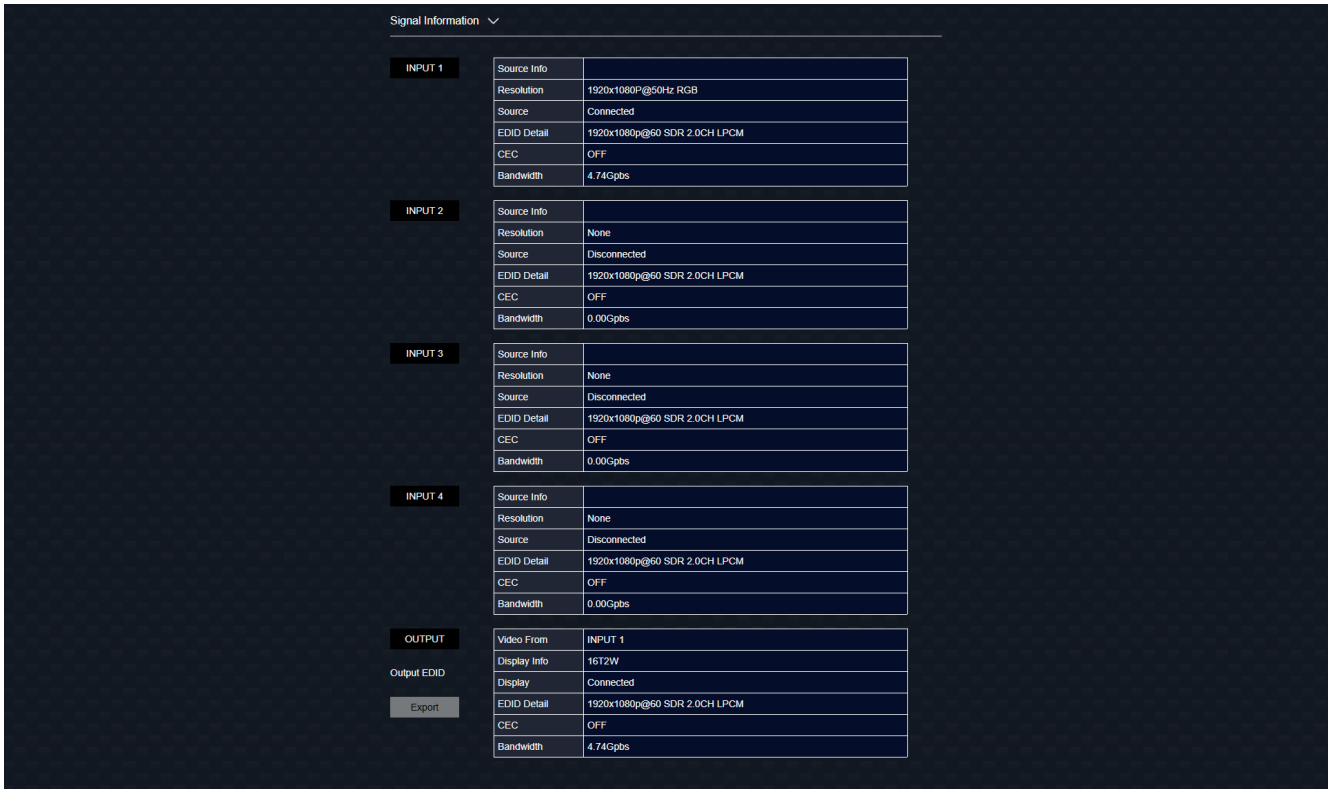
Export Log File

- Exports the current log entries as a .txt file

Signal Information:

The Signal Information section provides a real time overview of the HDMI signals passing through the SW41AB-V3.

In addition to signal metadata, the HDMI Output features an Export EDID button, allowing the EDID from a connected display to be captured.



Specifications

- **Video Input Connectors:** 4 x HDMI Type A, female
- **Video Output Connectors:** 1 x HDMI Type A, female
- **Audio Output Connectors:** 1 x Optical (S/PDIF) & 1x 5-pin Phoenix analogue audio
- **TCP/IP Input Ports:** 1 x RJ45 (female)
- **IR Input Ports:** 1 x 3.5mm stereo jack (5V)
- **Casing dimensions (W x H x D):** 234mm x 23mm x 94mm
- **Dimensions including connections (W x H x D):** 196mm x 32mm x 99mm
- **Shipping weight:** 0.9kg
- **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:** 5V/1A DC, screw barrell

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

Package Contents

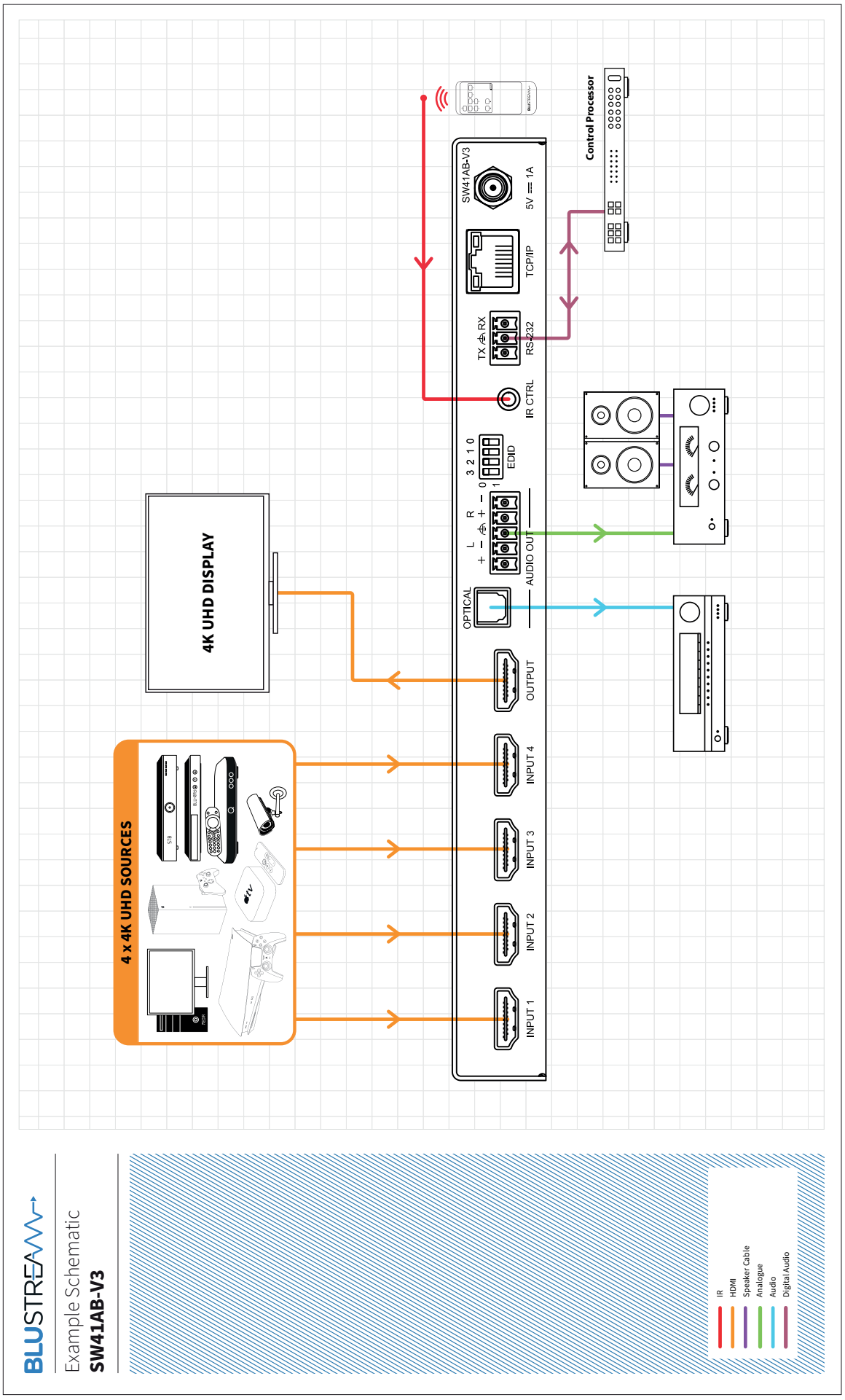
- 1 x SW41AB-V3
- 1 x REMSW41V3 (no battery)
- 1 x 5V/1A DC power supply
- 1 x IRR - IR receiver (5V)
- 1 x Quick Reference Card

Maintenance

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

Connection Schematic

BLUSTREAM
Example Schematic
SW41AB-V3



Communication Protocols and Commands

The SW41AB-V3 can be controlled with control commands via serial (RS-232) and TCP/IP (Telnet)

The default RS-232 communication settings are:

- **Baud rate:** 57600
- **Data bits:** 8
- **Stop bits:** 1
- **Parity bit:** none
- **Control Character:** CR+LF (Carriage Return 0x0D /r + Line Feed 0x0A /n)

The following pages list all available control 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
OUTxxFRyy	Routing an output to an input
	Example: OUT01FR01 (This would set output 1 to input 1)
EDIDxxDFzz	Setting the EDID of an input
	Example: EDID01DF02 (This would set the EDID for input 1 to 1080p@60Hz)

Common Mistakes:

- Control Character
  - Serial terminal applications and control software vary in how they handle command termination. Some applications automatically append a Carriage Return CR and/or Line Feed LF character when transmitting a command. Other applications transmit the command string exactly as entered, requiring control characters to be added manually.
  - Blustream products require a Carriage Return (CR, 0D, /r) + Line Feed (LF, 0A, /n) at the end of each serial command. Commands that are not terminated with a CR character will not be recognized.
  - Before troubleshooting serial communication issues, confirm how the application handles command termination and ensure a CR and LF character is appended to every transmitted command.
- Spaces
  - Blustream commands do not require space between commands unless specified. There may be some applications 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

Communication Protocols and Commands (continued)

COMMAND	ACTION
?/HELP	Print Help Information
REBOOT	Reboot System
STATUS	Print System Status And Port Status
CTRLSTA	Print All controls Status
INSTA	Print All Input Status
OUTSTA	Print All Output Status
OUT xx DIAG	Get Output xx Diagnostics Status xx = [00-01] : 00 : All Outputs, Output 1
IN xx DIAG	Get Input xx Diagnostics Status xx = [00-04] : 00 : All Inputs, Input 1 - 4
FWVER	Print All Firmware Version
PON/OFF	Set System Power On Or Off
KEY ON/OFF	Set System Key Control On Or Off
IR ON/OFF	Set System Front Panel IR Control On Or Off
RESET	Reset System To Default Setting
RESETALL	Reset ALL System and Network To Default Setting Type 'Yes' To Confirm, 'No' To Discard Within 30 Seconds
DIAGPRINT ON/OFF	Enable Or Disable Diagnostics Log Print
SYSTEMLOG ON/OFF	Enable Or Disable System Log Print
FASTSWITCH ON/OFF	Enable Or Disable Fast Switch Mode
AUTO STANDBY ON/OFF	Enable Or Disable Auto Standby
AUTO STANDBY DLY xx	Set Auto Standby Delay Time to xx seconds xx = 30-1800
ENSIGET/DISSIGDET	Enable Or Disable Output Auto Switch
PRIORITY ON/OFF	Enable Or Disable Auto Priority mode
FALLBACK ON/OFF	Enable Or Disable Auto Fallback mode
IN xx PRIORITY	Set Input xx As Priority Input
IN xx FALLBACK	Set Input xx As Fallback Input
IN xx SIGTRG yy	Set Input xx Auto Switch triggle mode to yy xx = [00-04] : 00 : All Inputs, Input 1 - 4 yy = 1 : HDMI (5V Hot Plug) 2 : HDMI (TMDS Video)
IN yy ON	Set Input yy On
IN yy OFF	Set Input yy Off yy = 00 : All Inputs yy = [01-04] : Input 1 - 4
OUT xx ON	Set Output xx On
OUT xx OFF	Set Output xx Off xx = 00 : All Outputs xx = [01] : Output 1
OUT xx FR yy	Set Output xx From Input yy xx = 00 : All Outputs xx = [01] : Output 1 yy = [01-04] : Input 1 - 4

COMMAND	ACTION
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 4K@30Hz 4:4:4, Audio 2CH PCM 10 : HDMI 4K@30Hz 4:4:4, Audio 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, 8-bit, Audio 2CH PCM 16 : HDMI 4K@60Hz 4:4:4, 8-bit, Audio 5.1CH DTS/DOLBY 17 : HDMI 4K@60Hz 4:4:4, 8-bit, Audio 7.1CH DTS/DOLBY/HD 18 : HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 2CH PCM 19 : HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 5.1CH DTS/DOLBY 20 : HDMI 4K@60Hz 4:4:4, HDR 10-bit, Audio 7.1CH DTS/DOLBY/HD 21 : HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 2CH PCM 22 : HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 5.1CH DTS/DOLBY 23 : HDMI 4K@60Hz 4:4:4, HDR 12-bit, Audio 7.1CH DTS/DOLBY/HD 24 : HDMI 4K@60Hz 4:4:4, HDR 10-bit(Inc DV), Audio 2CH PCM 25 : HDMI 4K@60Hz 4:4:4, HDR 10-bit(Inc DV), Audio 5.1CH DTS/DOLBY 26 : HDMI 4K@60Hz 4:4:4, HDR 10-bit(Inc DV), Audio 7.1CH DTS/DOLBY/HD 27 : HDMI 4K@60Hz 4:4:4, HDR 12-bit(Inc DV), Audio 2CH PCM 28 : HDMI 4K@60Hz 4:4:4, HDR 12-bit(Inc DV), Audio 5.1CH DTS/DOLBY 29 : HDMI 4K@60Hz 4:4:4, HDR 12-bit(Inc DV), Audio 7.1CH DTS/DOLBY/HD 30 : DVI 1280x1024@60Hz, Audio None 31 : DVI 1920x1080@60Hz, Audio None 32 : DVI 1920x1200@60Hz, Audio None 33 : HDMI 1920x1200@60Hz, Audio 2CH PCM/6CH PCM 34 : User EDID 1 35 : User EDID 2 36 : EDID pass-through (copy from Sink 1)
EDID xx CP yy	Copy EDID From Output yy To Input xx xx = [00-04] : 00 : All Inputs ,Input 1 - 4 yy = [01] : Output 1
EDID SAVE yy TO zz	Save External EDID yy Into Slot zz yy = [01]: EDID Copy Output 1 yy = 00: EDID Via RS232 Send To Device zz = 00: All User EDID zz = 01 or 34: User EDID 1 zz = 02 or 35: User EDID 2

Communication Protocols and Commands (continued)

COMMAND	ACTION
AUD DEC ON/OFF	Set Audio Decode On, Off
OUTxx CEC ENABLE	Enable CEC Control On Output xx
OUTxx CEC DISABLE	Disable CEC Control On Output xx
OUTxx CEC OK	Confirm Operation (Enter) On Output xx
OUTxx CEC UP	UP On Output xx
OUTxx CEC DOWN	DOWN On Output xx
OUTxx CEC LEFT	LEFT On Output xx
OUTxx CEC RIGHT	RIGHT On Output xx
OUTxx CEC RETURN	RETURN On Output xx
OUTxx CEC EXIT	EXIT On Output xx
OUTxx CEC VOLUP	VOLUME UP On Output xx
OUTxx CEC VOLDOWN	VOLUME DOWN On Output xx
OUTxx CEC MUTE	Toggle Audio MUTE Status On Output xx
OUTxx CEC PLAY	PLAY On Output xx
OUTxx CEC STOP	STOP On Output xx
OUTxx CEC PAUSE	PAUSE On Output xx
OUTxx CEC RECORD	RECORD On Output xx
OUTxx CEC INPUTyy	Input Channel yy Selection On Output xx, The Operation Needs To Wait For TV Communication To Succeed xx= 00: All Output Port xx= [01]: Output 1 yy= [01-04]: TV's HDMI Input 1 - 4 yy= [00]: Current HDMI Input yy= []:(No Parameter) Will Show Input Select Menu If TV Support
OUTxx CEC POFF	POWER OFF On Output xx
OUTxx CEC PON	POWER ON On Output xx xx= 00: All Output Port xx= [01]: Output 1
INxx CEC ENABLE	Enable CEC Control On Input xx
INxx CEC DISABLE	Disable CEC Control On Input xx
INxx CEC OK	Confirm Operation (Enter) On Input xx
INxx CEC UP	UP On Input xx
INxx CEC DOWN	DOWN On Input xx
INxx CEC LEFT	LEFT On Input xx
INxx CEC RIGHT	RIGHT On Input xx
INxx CEC RETURN	RETURN On Input xx
INxx CEC EXIT	EXIT On Input xx
INxx CEC VOLUP	VOLUME UP On Input xx
INxx CEC VOLDOWN	VOLUME DOWN On Input xx
INxx CEC VOLMUTE	VOLUME MUTE On Input xx
INxx CEC PLAY	PLAY On Input xx
INxx CEC STOP	STOP On Input xx
INxx CEC PAUSE	PAUSE On Input xx
INxx CEC RECORD	RECORD 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 BWD	BACKWARD On Input xx

COMMAND	ACTION
INxx CEC POFF	POWER OFF On Input xx
INxx CEC PON	POWER ON On Input xx xx= 00: All Input Port xx= [01-04]: Input 1 - 4
CECUSERCMD	<u8DevID u8Addr u8Opcode pu8Operand[MAX]> u8DevID: 00 Select All CEC Input Port u8DevID: [01-04] Input 1 - 4 u8DevID: F0 Select All CEC Output Port u8DevID: [F1-F4] Output 1 - 4 pu8Operand[MAX] : MAX 0 - 14 Eg:CECUSERCMD <F0 40 44 41 > (ALL OUT CEC VOLUP) Eg:CECUSERCMD <F0 40 44 42 > (ALL OUT CEC VOLDOWN)
RSB x	Set RS232 Baud Rate To x bps x = 0 115200, 1 57600 (Default), 2 38400, 3 19200, 4 9300, 5 4800, 6 2400
RS232ONOUT y:z:a	Send y Type Of Command a Stored In Local RS232 Whose Baud Rate Is z y = a ASCII, h HEX z = 0 115200, 1 57600 (Default), 2 38400, 3 19200, 4 9300, 5 4800, 6 2400 a = RS232 Command
NET DHCP ON/OFF	Set Auto IP(DHCP) On Or Off
NET TN 8000 ON/OFF	Set Telnet Port 8000 On Or Off
NET TN ON/OFF	Set Telnet Port On Or Off
NET MDNS ON/OFF	Set mDNS On Or Off
NET MDNS xxxx.local	Set mDNS Name to xxxx.local
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

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.

www.blustream.com.au
www.blustream-us.com
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