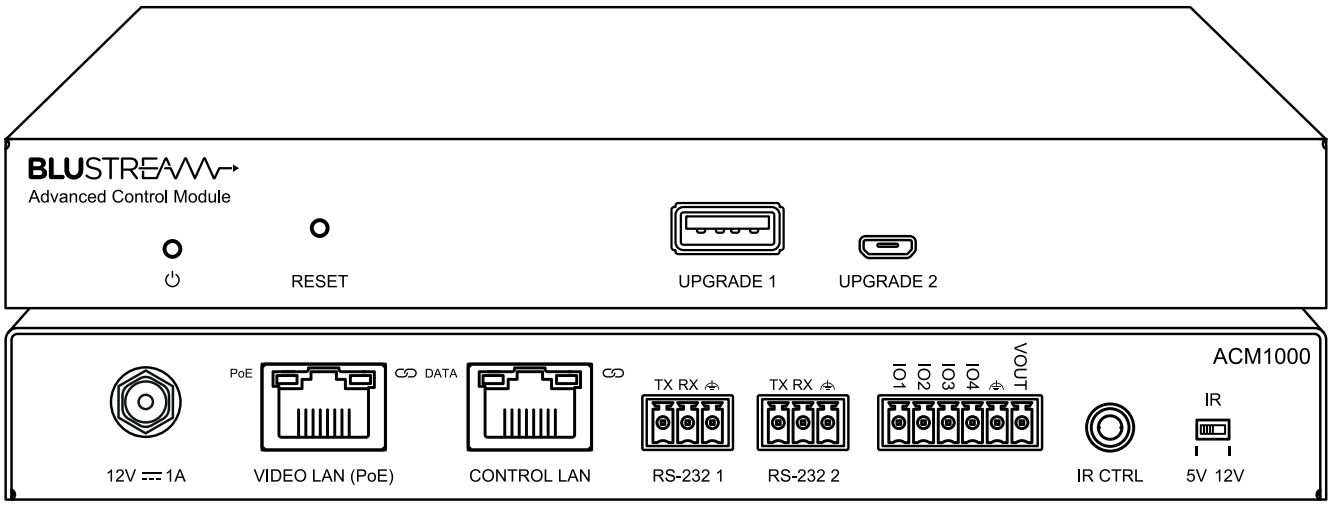

ACM1000

User Manual

For Use With:

IP200UHD-RX

IP200UHD-TX

IP250UHD-RX

IP250UHD-TX

IP300UHD-RX

IP300UHD-TX

IP350UHD-RX

IP350UHD-TX

IP300UHD-WP-TX

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 PoE network products or approved Blustream power supplies.

Do not disassemble the ACM1000 device for any reason. Doing so will void the manufacturer's warranty.

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Introduction

Blustream's AV over IP platforms enable seamless distribution of video and audio across a managed network infrastructure. At the core of these systems is the ACM1000 Advanced Control Processor, which provides powerful access to configuration, management, and integration with third-party control systems via IP, serial, and IR - all accessible through the built-in intuitive web user interface.

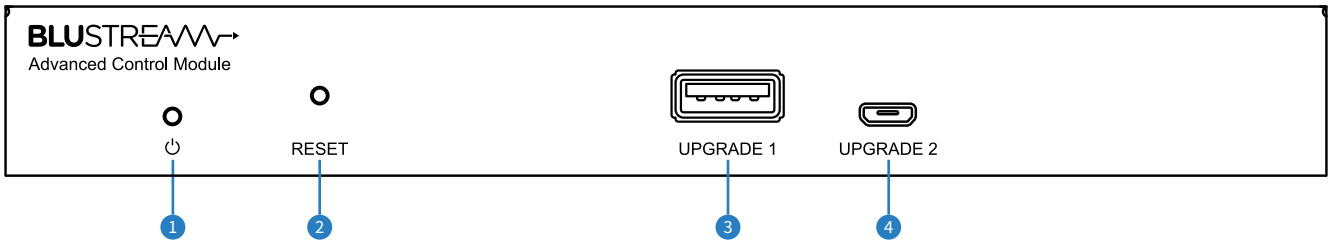
The ACM1000 features a user-friendly web interface for complete setup and control of your AV over IP system. It offers advanced functionality such as 'Drag and Drop' source selection with receiver (display) grouping, video wall array management with live video previews, and customisable I/O presets. Users can independently route video, audio, serial, IR, USB/KVM, and CEC signals across the network.

Powered by a quad-core processor, the ACM1000 supports a GUI-based remote interface for source and display control. It handles multiple control commands simultaneously, supports multi-threaded routing (IP to IR, serial, or CEC), and enables the creation of custom macros and presets. These can be scheduled and executed automatically with its built-in 24/7 scheduling capabilities.

FEATURES:

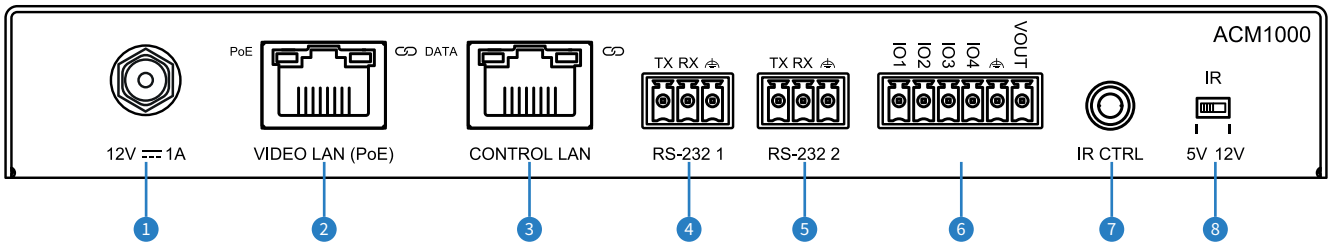
- Web interface module for configuration and control of Blustream AV over IP systems
- Intuitive 'Drag and Drop' source selection with video preview feature for active monitoring of system status
- Advanced signal management for independent routing of video, audio, IR, RS-232, USB/KVM, and CEC (AVoIP platform dependent)
- Auto system configuration using in-built 'Setup Wizard'
- Dual RJ45 LAN connections to bridge business / home network to AV over IP video distribution network, resulting in:
    - Better system performance as network traffic is separated (different networks, or VLAN's)
    - No advanced network setup required
    - Independent IP address per LAN connection
    - Allows for simplified TCP / IP control of AV over IP system
- Dual RS-232 ports for control of the AV over IP system, or pass-through of control commands to remote third party devices
- 5V/12V IR integration for control of AV over IP system
- Configurable GPIO ports for integration with 3rd party products
- Direct control command processing allowing IP to IR, serial or CEC to any end point in the system
- GUI based source and display remote for direct control using IR, serial and CEC
- 24/7 scheduling functionality
- Macro functionality for recall of multiple commands from a schedule, GPIO, or API command
- Grouping of receivers for instant recall of input switching to multiple displays
- Preset functionality for recalling set I/O's from a single GUI button press or API command
- PoE (Power over Ethernet) to power Blustream product from PoE switch
- Local 12V power supply (optional) should AV over IP network not support PoE
- 3rd Party drivers available for major control brands

Front Panel Description



1. Power Status LED
2. Reset Button — press and hold for 10 seconds to factory reset the ACM1000
3. Upgrade USB-A port — load firmware from a USB device
4. Upgrade Micro USB port — reserved for future use

Rear Panel Description



1. Power Supply Input
2. Video LAN (PoE) port — RJ45 connector
3. Control LAN port — RJ45 connector
4. 3-pin Phoenix RS-232 Serial port 1 — serial control of ACM1000 & serial passthrough
5. 3-pin Phoenix RS-232 Serial port 2 — mirrors Serial port 1 (reserved for future use)
6. GPIO ports
7. IR Control 3.5mm port
8. IR Select - 5V or 12V

Compatibility

The ACM1000 is currently compatible with the following Blustream products:

- IP200UHD-RX & IP200UHD-TX
- IP250UHD-RX & IP250UHD-TX
- IP300UHD-RX & IP300UHD-TX
- IP350UHD-RX & IP350UHD-TX
- IP300UHD-WP-TX

Please note: The ACM1000 will detect any IP2XXUHD series and IP3XXUHD series devices in a AVoIP system and allow control of connected devices. However, Blustream does not support interoperability between these series.

Resetting the ACM1000

To reset the ACM1000 back to factory defaults, use a small instrument to press down the recessed button on the front panel labelled RESET. Hold for at least 10 seconds before releasing.

The reset process takes approximately 30 seconds.

Operation and Connections

Basic operation of the ACM1000 is available through the RS-232 ports, GPIO ports, and the IR control port on the rear panel. The device can be powered via Power over Ethernet (PoE) through the Video LAN port or with an external power supply.

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

Control Ports and Protocols

The ACM1000 supports multiple methods for system control and configuration:

TCP/IP:

Network control is available via Telnet or SSH protocols. This allows for remote access and command execution.

Refer to the API Commands section of this manual for a complete list of commands:

- Telnet Control Port 23
- SSH Control Port: 22
- Default IP for Control LAN: 192.168.0.225
- Default IP for Video LAN: 169.254.2.225
- Default username: blustream
- Default password: @Bls1234

RS-232 / Serial:

Serial control is available via the 3-pin Phoenix connector on the ACM1000. This method provides reliable direct communication for integration with third-party control systems.

Refer to the API Commands section of this manual for a complete list of commands:

- Baud Rate 57600
- Data Bit: 8-bit
- Parity: None
- Stop Bit: 1-bit
- Flow Control: None

Serial Guest Mode:

Serial Guest Mode is an extension of TCP/IP and RS-232 control that allows serial commands to be sent through the Blustream AVoIP system. When enabled, commands sent to the ACM1000 can be forwarded to the serial ports of any Transmitter or Receiver. This allows third-party control systems to communicate with RS-232 devices connected to a AVoIP device.

In Serial Guest Mode, commands sent to the ACM1000, using either the 3-pin Phoenix port or an IP protocol such as Telnet, are routed through the AVoIP system and output via the TX pin on the Phoenix port of a Transmitter or Receiver. Similarly, any data received on the RX pin on the Phoenix port of a Transmitter or Receiver will be returned to the ACM1000 and displayed in its serial or TCP/IP feedback.

This functionality enables scalable control of multiple RS-232 devices from a single connection to the ACM1000.

To enable Serial Guest Mode, the Transmitter or Receiver must have Serial Guest Mode enabled. This can be done via the Web GUI under the Transmitter or Receiver Action tabs, or by sending the command:

- INxxxSGON Turn Serial Guest Mode on for Transmitter ID xxx
- OUTxxxSGON Turn Serial Guest Mode on for Receiver ID xxx

Serial Guest Mode can be turned off by sending the command:

- INxxxSGOFF Turn Serial Guest Mode off for Transmitter ID xxx
- OUTxxxSGOFF Turn Serial Guest Mode off for Receiver ID xxx

For example: to enable Serial Guest Mode on Transmitter 10 (ID 010), send IN010SGON.

Once enabled, a Serial Guest Mode connection between the ACM1000 and a Transmitter or Receiver can be opened by sending the command:

- INxxxGUEST Connect to Transmitter ID xxx in Serial Guest Mode
- OUTxxxGUEST Connect to Receiver ID xxx in Serial Guest Mode

For example: to open a connection to Transmitter 10 (ID 010), send IN010GUEST.

Any characters sent to the ACM1000 will now be transmitted to that device, and responses will be displayed in the serial or API feedback.

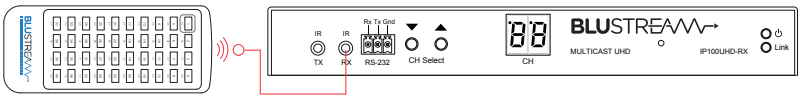
To close the connection, send the following command:

- CLOSEACMGUEST

The ACM1000 will close the Serial Guest Mode connection, and commands can be sent directly to the ACM1000 again as normal.

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. This control method enables source selection only. Advanced features, such as Video Wall configuration and fixed signal routing, require control via RS-232 or TCP/IP.



Blustream provides a comprehensive set of 80 input and 80 output IR commands. These commands allow source selection across up to 80 Transmitters and 80 Receivers.

The first 16 input and 16 output IR codes are included at the back of this manual. For systems larger than 16x16, the full 80x80 IR code set can be downloaded from the Blustream website.

The ACM1000 is compatible with both 5V and 12V IR systems. Before connecting, ensure the voltage selector switch (located adjacent to the IR port) is set to match the IR line voltage of the control system.

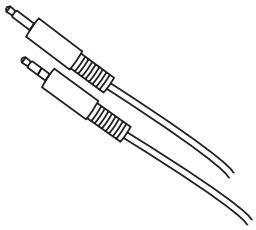
Please note: All Blustream-supplied IR cabling is rated for 5V operation.

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

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

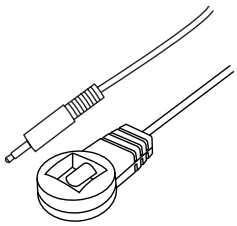
12V to 5V step down conversion

Please note: Cable is directional as indicated

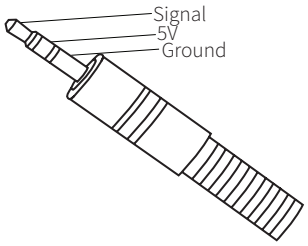


IRR - IR Receiver Stereo 3.5mm Jack (optional)

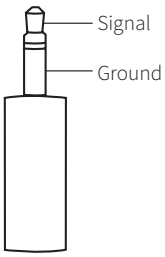
Blustream 5V IR Receiver 3.5mm stereo (TRS) jack to receive an IR signal and distribute through Blustream products



IR-CAB Wiring - Stereo (TRS) 3.5mm Jack:



IR-CAB Wiring - Mono (TS) 3.5mm Jack:



GPIO:

The ACM1000 device includes 4 x General-Purpose Input/Output (GPIO) pins.

IO1 and IO2 are input pins designed to detect either LOW (0V) or HIGH (5V or 12V) voltage levels from external devices.

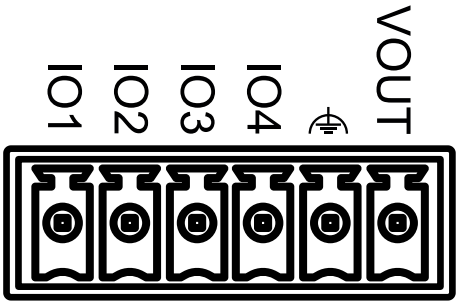
IO3 and IO4 are output pins capable of delivering LOW (0V) or HIGH (5V or 12V) voltage signals to external devices.

A VOUT pin is able to deliver 5V or 12V to power 3rd party devices.

Each GPIO pin must be configured using API commands to set voltage, current, or to read input status. These controls allow flexible integration with external devices and systems.

Please see page 66 for a list of commands.

GPIO Pinout:



Web GUI - Log In and Initialisation

The Web GUI of the ACM allows for full configuration of a new system, as well as ongoing maintenance and control of an existing system through a web portal. Once configured, the ACM1000 can be accessed on any internet connected device that is on the same 'Control' network.

Connect a TCP/IP RJ45 socket to the local network, or directly from a computer, to the ACM1000 in order to access the product's Web GUI. By default, the device's IP address is set to static; if a DHCP server is present, it can be set to obtain an address (see page 59):

Default Control LAN IP Address is: **192.168.0.225** Default Video LAN IP Address is: **169.254.2.225**

Default Admin username is: **blustream** Default Admin password is: **@Bls1234**

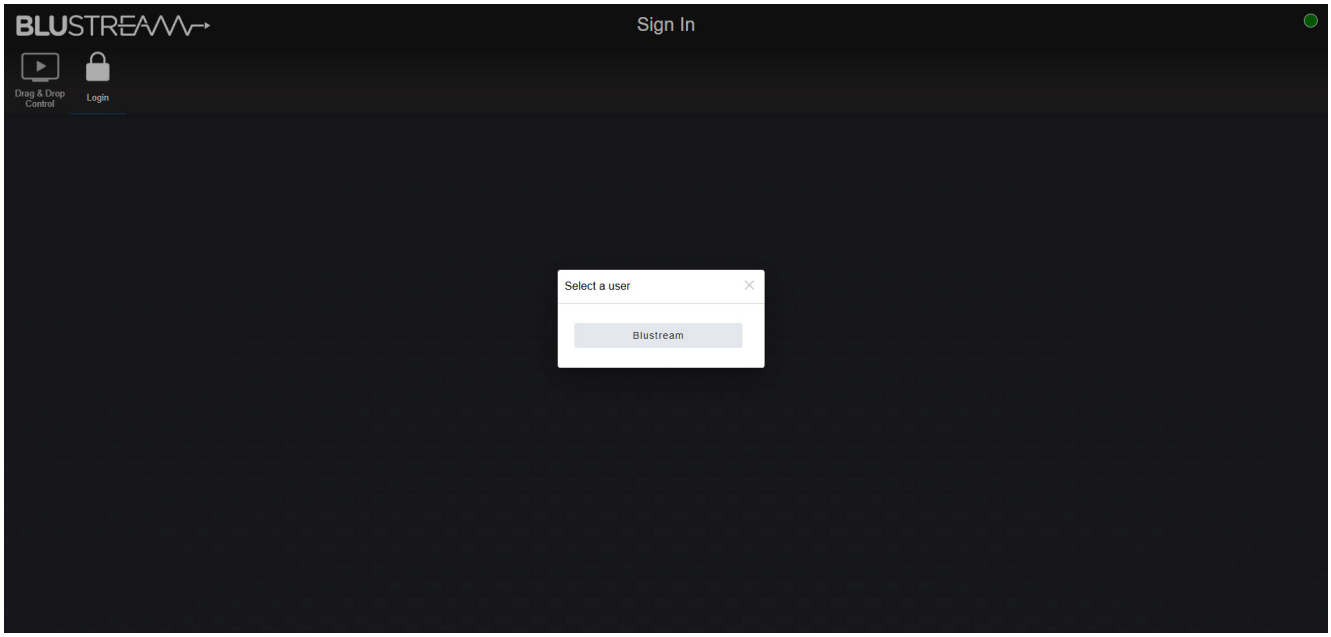
The ACM1000 can be accessed via its mDNS hostname when the IP address is not known.

The default mDNS name is **acm1000.local**, which allows devices on the same local network to resolve the product's IP address without requiring a dedicated DNS server.

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 device
User Accounts	User accounts can be utilised, each with individual login detail and can be assigned permissions to specific areas and functions
Guest	When enabled, the control page can be accessed without logging in

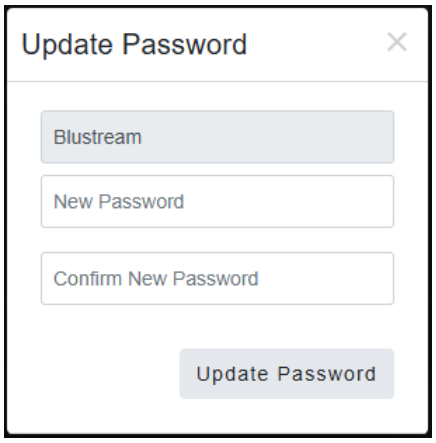


Please note: the first time the Administrator logs into the Web GUI of the ACM1000, the default password must be changed to a unique password. Please retain this password for future use. Forgetting the password will mean having to factory reset the device, losing all prior network and configuration settings.

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.

Login Page (continued)



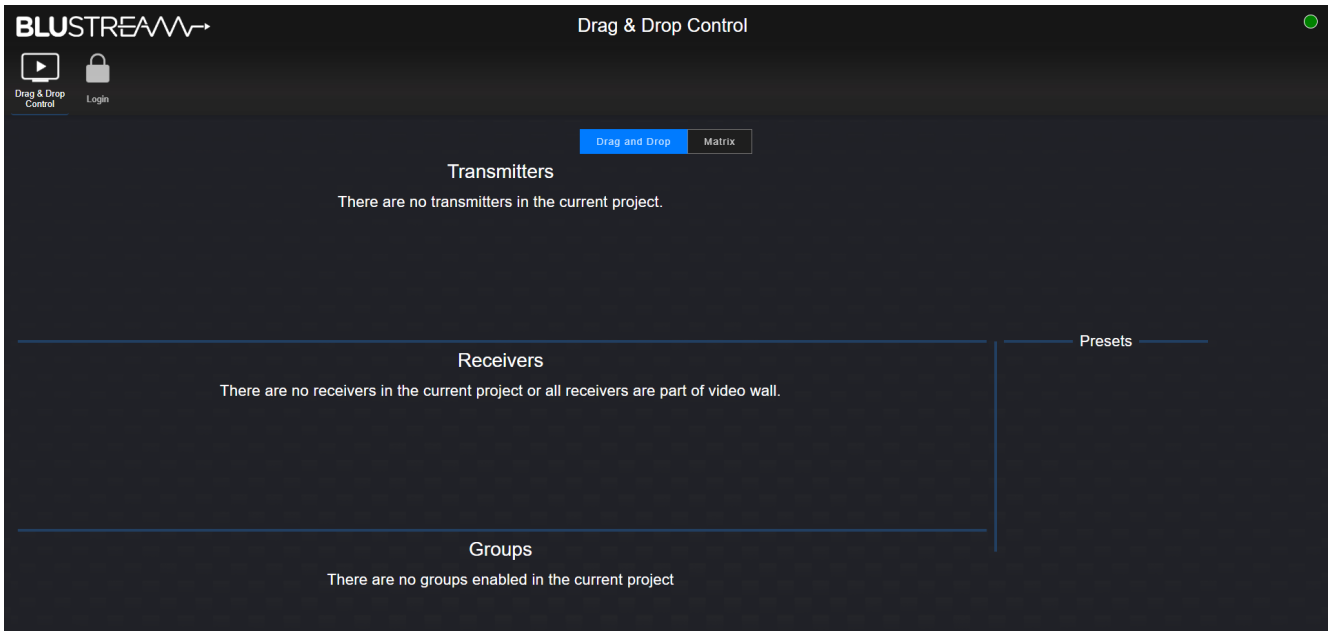
Guest Control Page:

When the Guest user is enabled, the **Drag and Drop Control** page can be accessed without logging in.

Only the Transmitters, Receivers, Groups, and Presets assigned to the Guest user will be visible and available for routing.

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

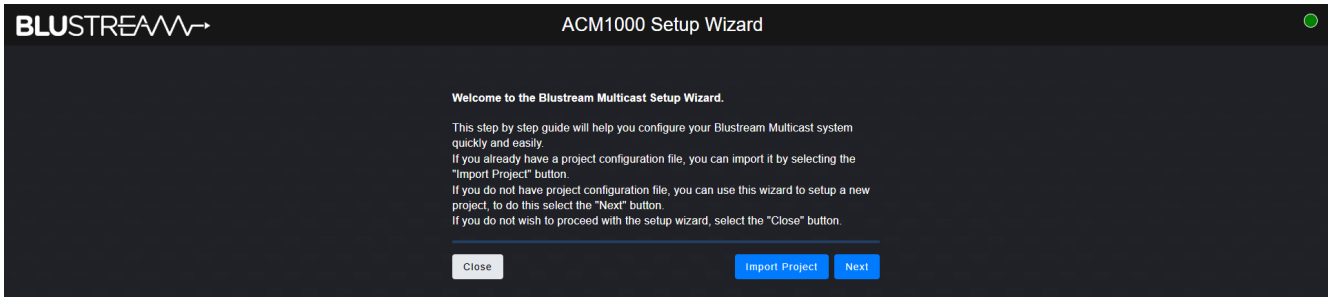
It is recommended to set permissions for the Guest user to avoid unwanted access or changes to the AVoIP system.



Web GUI - New Project Setup Wizard

After logging into the ACM1000, the New Project Setup Wizard will automatically launch. This wizard is designed to streamline the initial system configuration by allowing Transmitters and Receivers to be connected to the network switch simultaneously, without causing IP conflicts. Each device is automatically assigned a unique name and IP address in sequence, preparing the system for basic operation.

Please note: While intended for setup of brand new or factory default AVoIP devices, the ACM1000 will detect all Transmitters and Receivers on the same IP range and subnet mask as the Video LAN (169.254.xxx.xxx).



To exit the wizard without configuring the system, select **Close** to cancel the setup process and allow access to the rest of the Web GUI; devices can still be added manually via the project page.

Various settings can then be configured, such as network settings and DHCP server settings, before adding devices to the ACM1000.

Please note: For instructions on setting up AVoIP devices using the ACM1000's built-in DHCP server, see page 60.

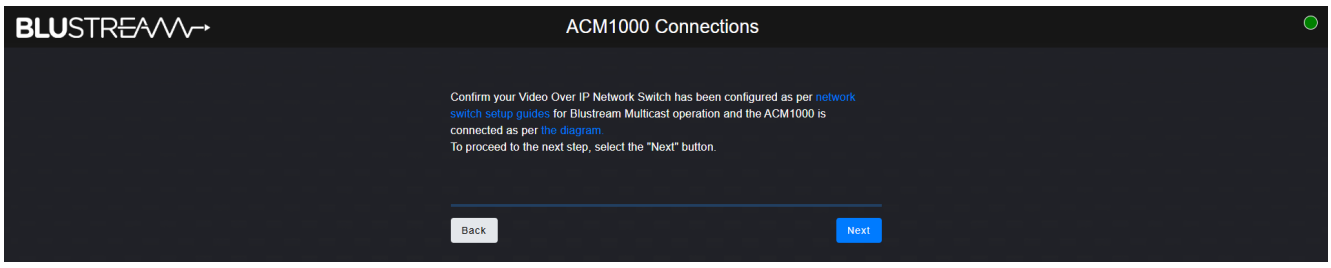
If replacing an ACM1000 on an existing site and a saved project file is available, it can be imported by selecting **Import Project** and selecting an exported .json file.

To proceed with the setup, select Next.

Network Switch and Hardware Configuration:

If the selected network switch is not yet configured for use with a Blustream AVoIP system, click on the Network Switch Setup Guides hyperlink on the Web GUI to access configuration guides for commonly used network switches.

To ensure the ACM1000 is correctly connected to the wider AVoIP system, click on the diagram hyperlink on the Web GUI to view a sample schematic and verify the physical connections before proceeding.



To proceed with the setup, select **Next**.

System Size and Polling Rate

During normal operation, the ACM1000 continuously polls connected AVoIP devices to retrieve status updates and screen captures of the media streams within the system.

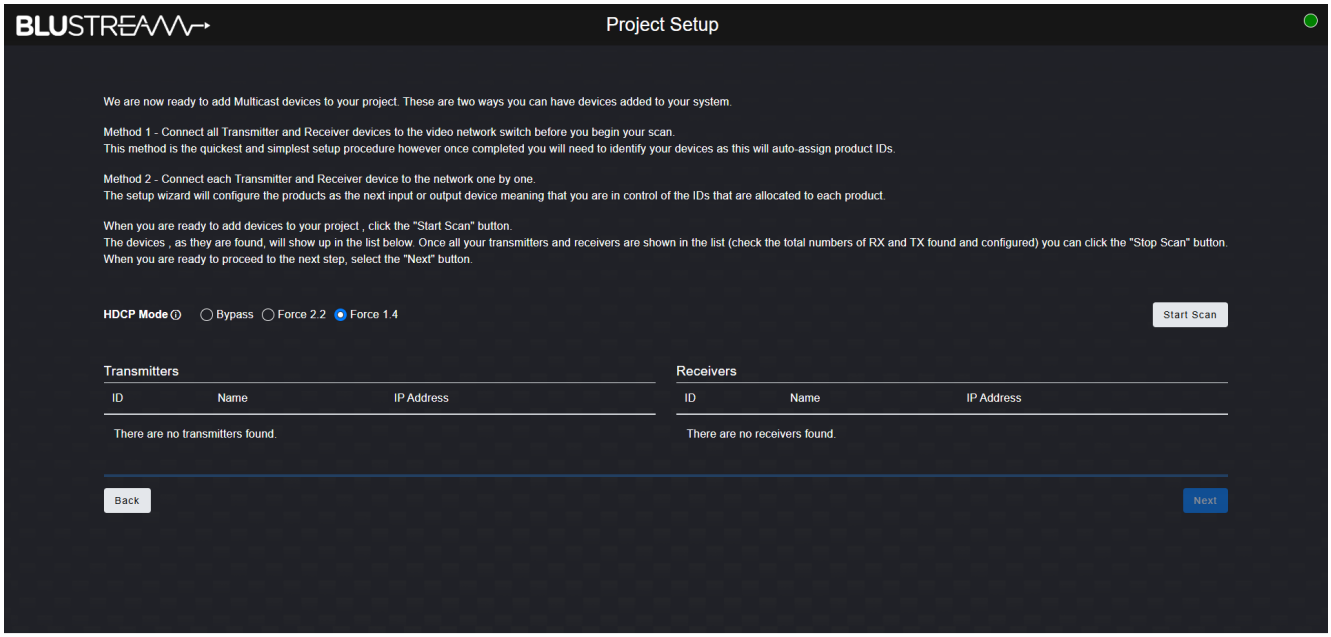
In larger systems (75+ Products), this polling activity may impact overall performance. To optimise system responsiveness, the polling rate between the ACM1000 and the AVoIP devices can be reduced.

Polling rate adjustments can be made after the initial setup via the Project page. Polling settings can also be configured on a per-device level (see page 29 & 34).

Select the relevant system size to proceed with the setup.

HDCP Mode:

Blustream AVoIP devices, by default, apply HDCP (High-bandwidth Digital Content Protection) to the outgoing HDMI stream, regardless of whether the source device includes HDCP on its output as this improves switching speed.



HDCP Mode (continued)

The HDCP Mode allows control of how HDCP is applied:

- Force 1.4 / 2.2 — HDCP is forced to follow a common compliance
- Bypass — HDCP is not added by the system. This is recommended when using commercial equipment (e.g., video conferencing systems) that does not output HDCP, and when connecting to non-HDCP-compliant devices (e.g., capture software)

Please note: Bypass mode does not remove HDCP from an incoming HDMI signal. If the source signal includes HDCP (e.g., HDCP 1.x), it will be passed through the system unchanged. If the source signal does not include HDCP, the AVoIP devices will not add it when in Bypass mode.

Adding Transmitters and Receivers to the System

There are two methods for adding Transmitters and Receivers to the system:

Method 1: Bulk Connection (Auto-Assign)

- Connect all Transmitter and Receiver devices to the network switch at once. The ACM1000 will automatically assign each device a unique IP address and ID. This method is fast and efficient but assigns devices randomly (not based on the network switch port), so manual identification will be required afterward.

Method 2: Sequential Connection (Manual Control)

- Connect each Transmitter and Receiver one at a time to the network. The Setup Wizard will detect and configure each device in the order it is connected. This method allows for controlled, sequential assignment of IP addresses and IDs, making it easier to label and track devices during installation.

IP addresses are assigned in the following way:

Transmitters:

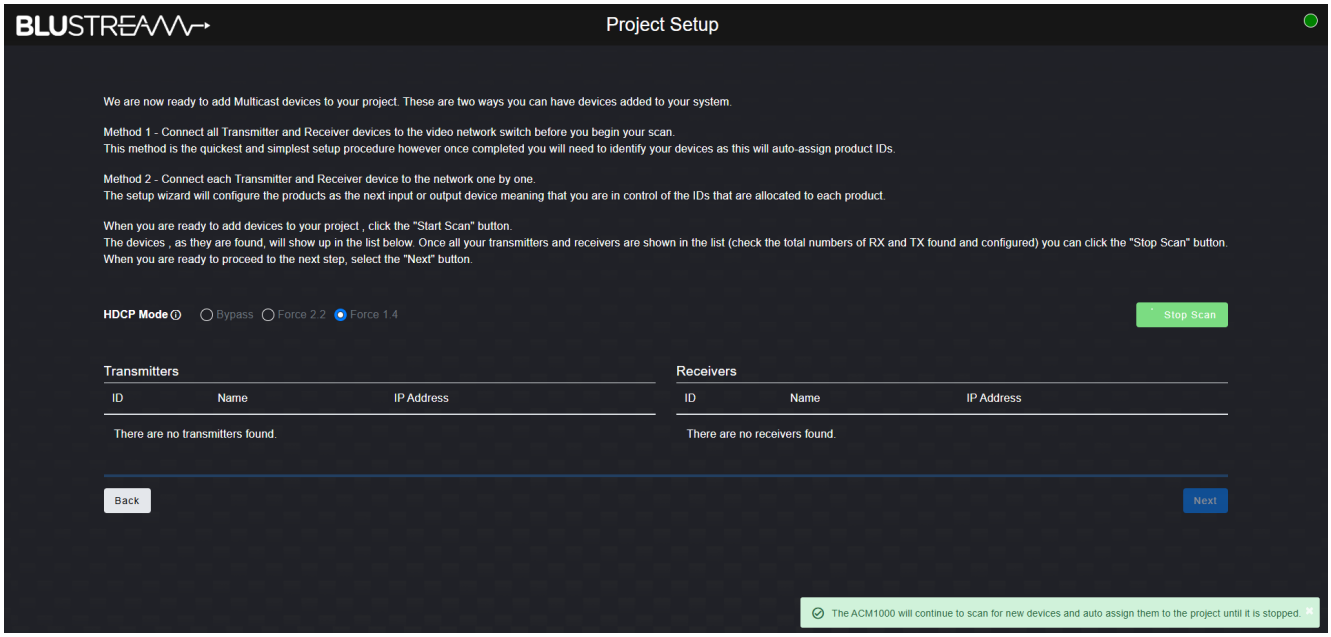
- Starts at 169.254.3.1, incrementing by one for each device
- After reaching 169.254.3.254, the system continues with 169.254.4.1, then 169.254.5.1, and so on

Receivers:

- Starts at 169.254.6.1, incrementing by one for each device
- After reaching 169.254.6.254, the system continues with 169.254.7.1, then 169.254.8.1, and so on

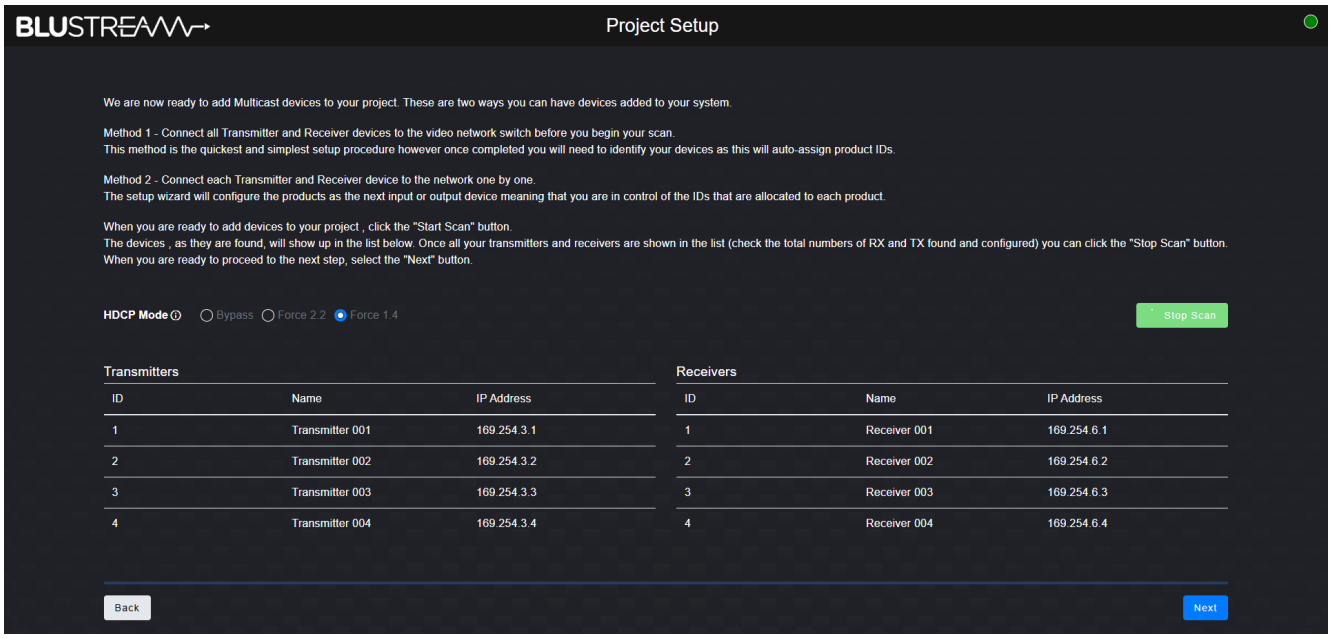
Adding Transmitters and Receivers to the System (continued)

When ready, press **Start Scan**:



The ACM1000 will search for Blustream AVoIP devices on the network.

As new devices are found by the ACM1000, they will populate to their respective columns, be configured with a new IP address, and will reboot automatically.



The ACM1000 will continue to scan for devices until the **Stop Scan** is pressed.

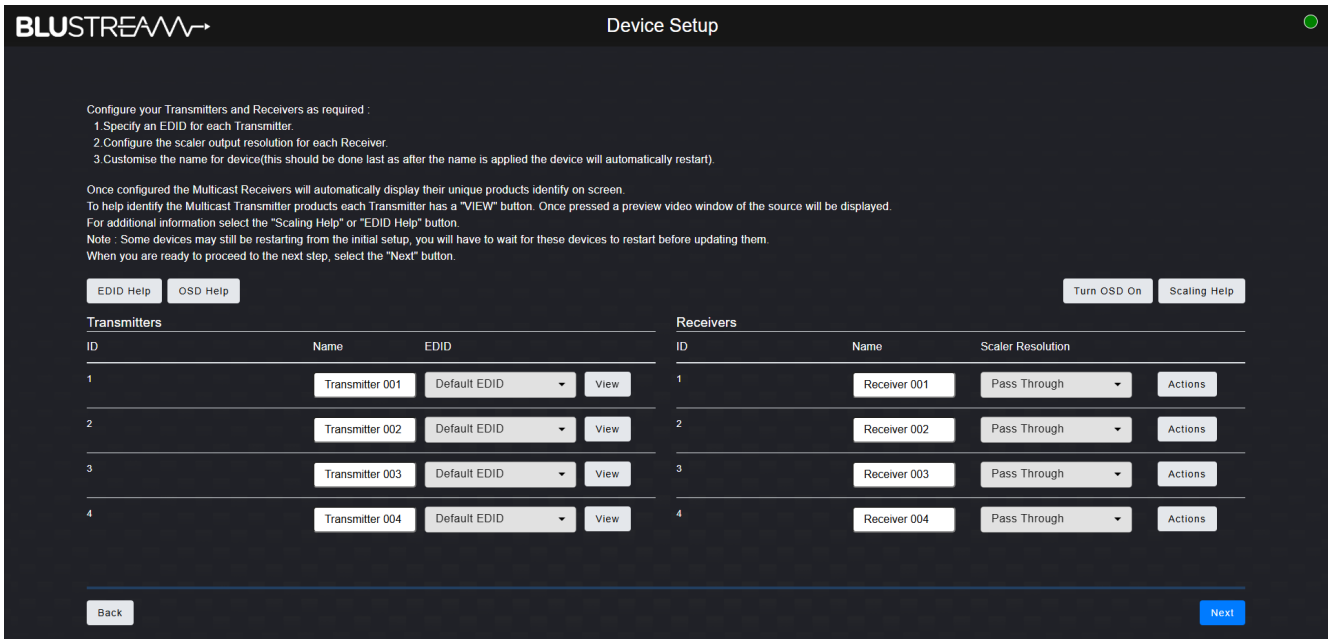
To proceed with the setup, select **Next** once all devices have been found and assigned.

If more devices need to be added, this screen can be returned to by pressing **Back**.

Device Setup:

The Transmitters and Receivers can now be identified, labelled and configured with EDID and Scaler settings.

Information on EDID, OSD, and Scaling settings can be found by selecting their respective **Help** buttons.

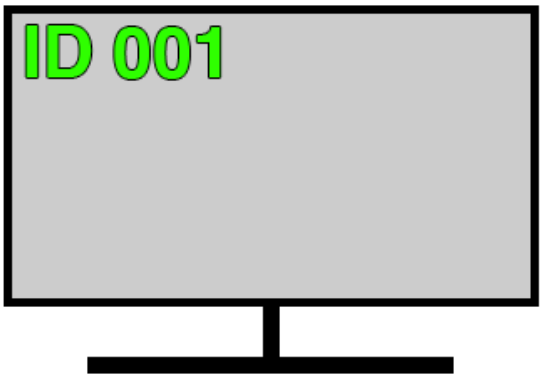


To help identify Transmitters for naming, a preview of the current HDMI input can be viewed by selecting the respective **View** button. If there is no input detected, a No Signal image will be displayed.

To help identify Receivers for naming, selecting **Turn OSD On** will overlay On Screen Display (OSD) on the HDMI output, displaying the Receiver's ID number in the top left of the screen. By default, during configuration, an OSD will appear on all screens connected to Receivers for easy identification.

The OSD will turn off automatically after setup.

OSD Identifier:



Device Setup (continued)

Transmitters:

ID

- Displays the assigned ID of the Transmitter

Name

- Transmitters are automatically assigned default names. These can be amended for easier identification by typing in the corresponding box

EDID

- EDID (Extended Display Identification Data) is used to request specific video and audio formats from a source device. Pre-setting the video resolution and audio format reduces EDID handshake time, making switching faster and more reliable. For more information, see page 28
- The default EDID for Blustream equipment is: 1080p, 2ch audio
- Available EDIDs vary per product

Selecting **View** will open a sub menu to preview the current HDMI input, and to configure the following options:

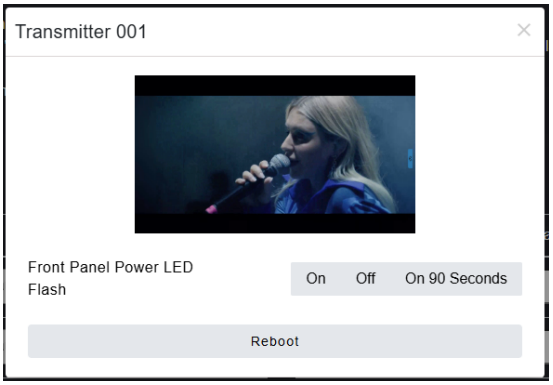
Front Panel Power LED Flash

- The Power LED on the front panel of the Transmitter can be set to blink steadily in order to identify the device

Reboot

- Reboots the Transmitter

Transmitter Preview:



Receivers:

ID

- Displays the assigned ID of the Receiver

Name

- Receivers are automatically assigned default names. These can be amended for easier identification by typing in the corresponding box

Scaler Resolution

- Each Receiver includes a built-in scaler that can adjust the video resolution to suit the connected display. Setting the scaler to Pass-Through preserves the source's native resolution and refresh rate, and also improves switching speed between Transmitters by avoiding display renegotiation. For more information, see page 33
- Available Scaler Resolutions vary per product

Selecting **Actions** will open a sub menu to configure the following options:

On Screen Product ID

- Toggles the OSD overlay on the HDMI output (on by default during the New Project Setup Wizard)

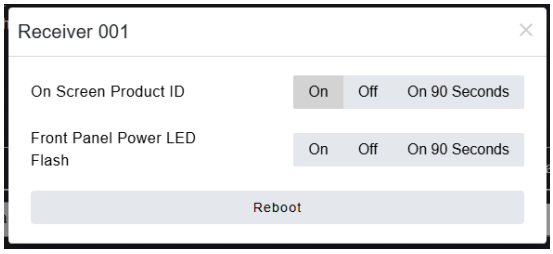
Front Panel Power LED Flash

- The Power LED on the front panel of the Receiver can be set to blink steadily in order to identify the device

Reboot

- Reboots the Receiver

Receiver Actions:



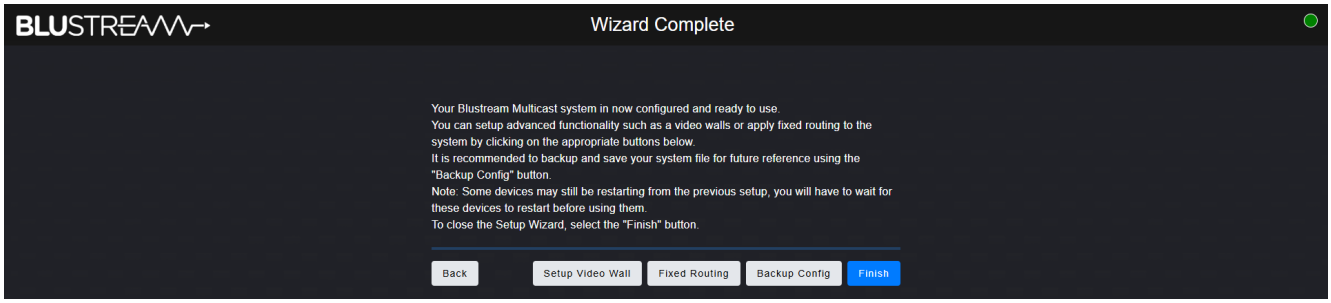
Once all devices have been configured, press **Next** to complete the Wizard.

Wizard Complete:

Select **Finish** to complete the Wizard and be directed to the Drag and Drop Control page.

Quick access links to the Video Wall Configuration and Fixed Signal Routing are provided.

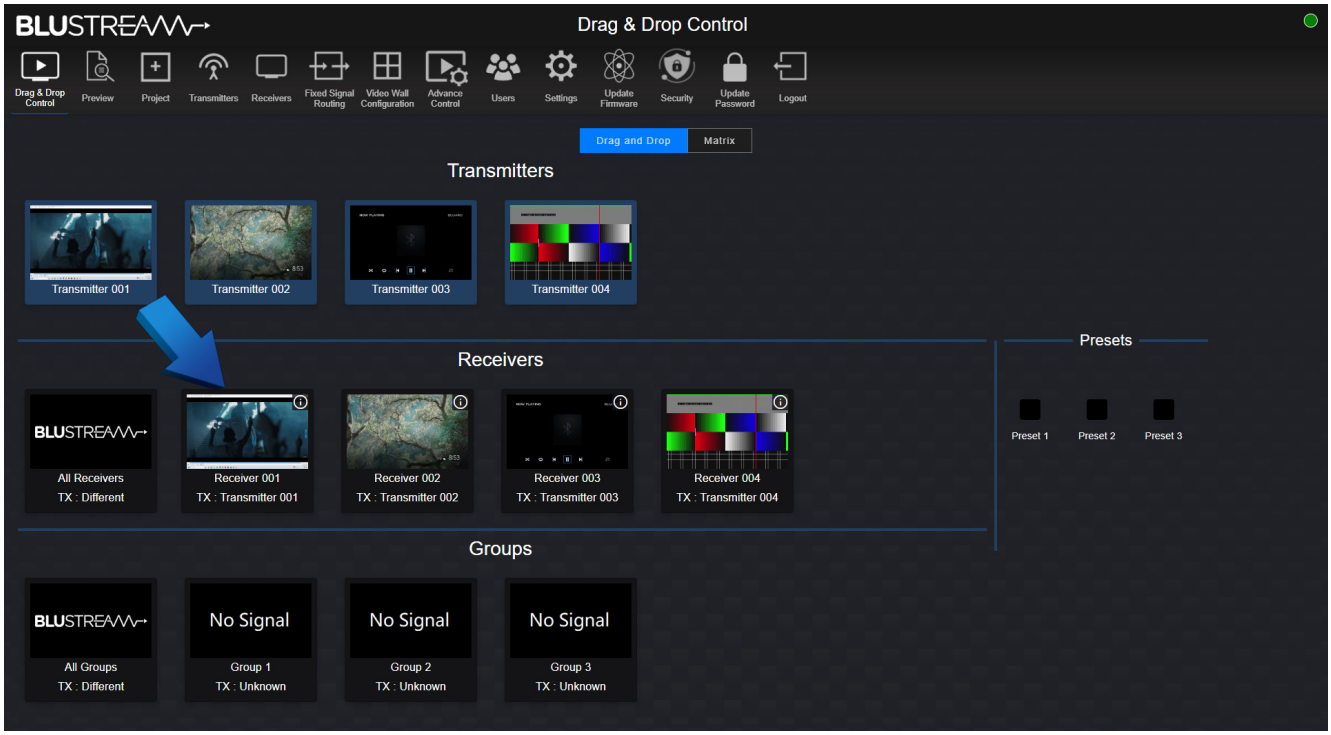
A backup file of the now configured ACM1000 can be downloaded and saved by selecting **Backup Config**.



Web GUI - Drag and Drop Control

The Drag and Drop Control page displays all online AVoIP devices, each with a live screen capture that refreshes every few seconds. Routing can be achieved by simply dragging a Transmitter to a Receiver, or via the Matrix tab.

Transmitters and Receivers will display the names assigned during initial setup. These names are reflected globally throughout the Web GUI, making it easier to identify and manage devices across the system. Devices can be renamed at any time via the Transmitters or Receivers page.



Drag and Drop:

To change a routing, select the desired Transmitter, and drag the preview onto the target Receiver preview. The Receiver preview window will update with the stream of the Transmitter selected. All signals will be routed except for any Fixed Signal Routing.

To change the routing for all Receivers, drag and drop a Transmitter onto the All Receivers preview.

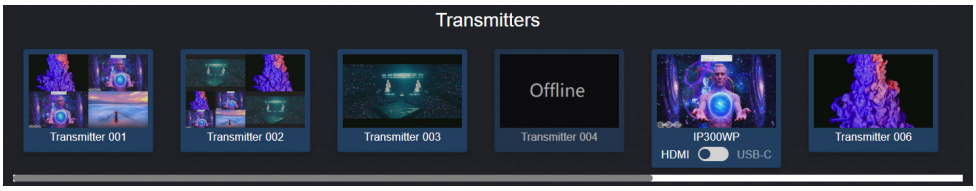
Please note: Receivers in Video Wall Mode are not displayed on the Drag and Drop page.

The Drag and Drop Control page also allows Transmitters to be routed to Groups, and for Presets to be applied, if configured.

To route a Transmitter to a Group, select the desired Transmitter, and drag the preview onto the target Group preview.

To apply a Preset, select the desired Preset button and the Preset will be applied.

Please note: On devices with smaller screens, if the number of Transmitters and Receivers exceeds the visible area, scroll or swipe horizontally to view all available devices.

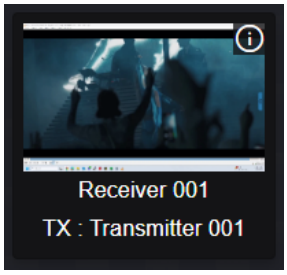


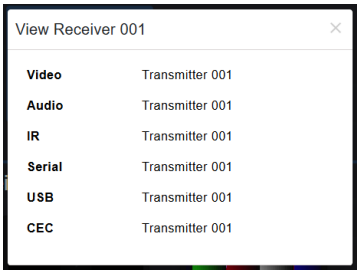
Drag and Drop (continued):

To see the current routes for any chosen Receiver, select the Information Icon on the right of the Receiver preview window.

This can be very useful when using Fixed Signal Routing to help track routes.

View Receiver Routing:





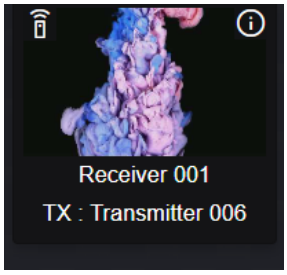
If the Remote has been configured in Advanced Control, a Remote Icon will be selectable.

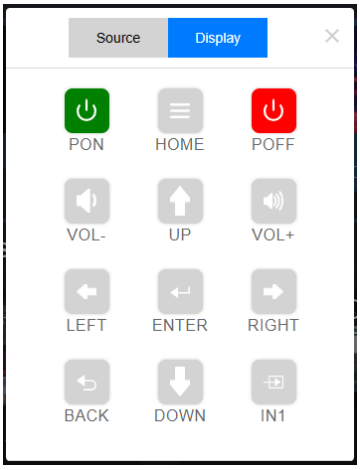
Commands can be issued via IR, CEC or RS-232 to the Source or Display device.

Please see the Advanced Control section for more information.

Please note: To make the Remote icon appear in the target Receiver preview window, at least one command must be configured in the Display Remote section.

Advanced Control Remote:

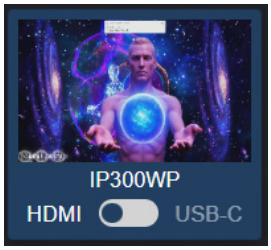




The IP300UHD-WP-TX has a toggle on its preview window to allow switching between inputs.

Press the toggle to switch the input of the Transmitter.

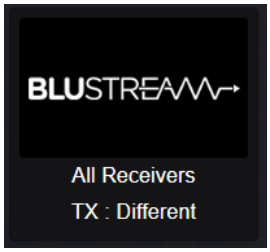
IP300UHD-WP-TX - Input Toggle:



Drag and Drop (continued):

When the All Receivers preview displays the Blustream logo, it indicates that multiple Receivers are viewing different sources. The label beneath will show 'TX : Different' to reflect this status.

All Receivers Preview - TX Different:



If the Transmitter preview displays 'No Signal', the HDMI source may not be powered on, connected correctly, or outputting a compatible signal. Check the HDMI cable and verify that the EDID settings match the source device's capabilities.

Transmitter Preview - No Signal:

If the Receiver preview shows 'No Signal', the device may not be powered or connected to the AVoIP system. Confirm that the Receiver is online and linked to a functioning Transmitter.

Receiver Preview - No Signal:

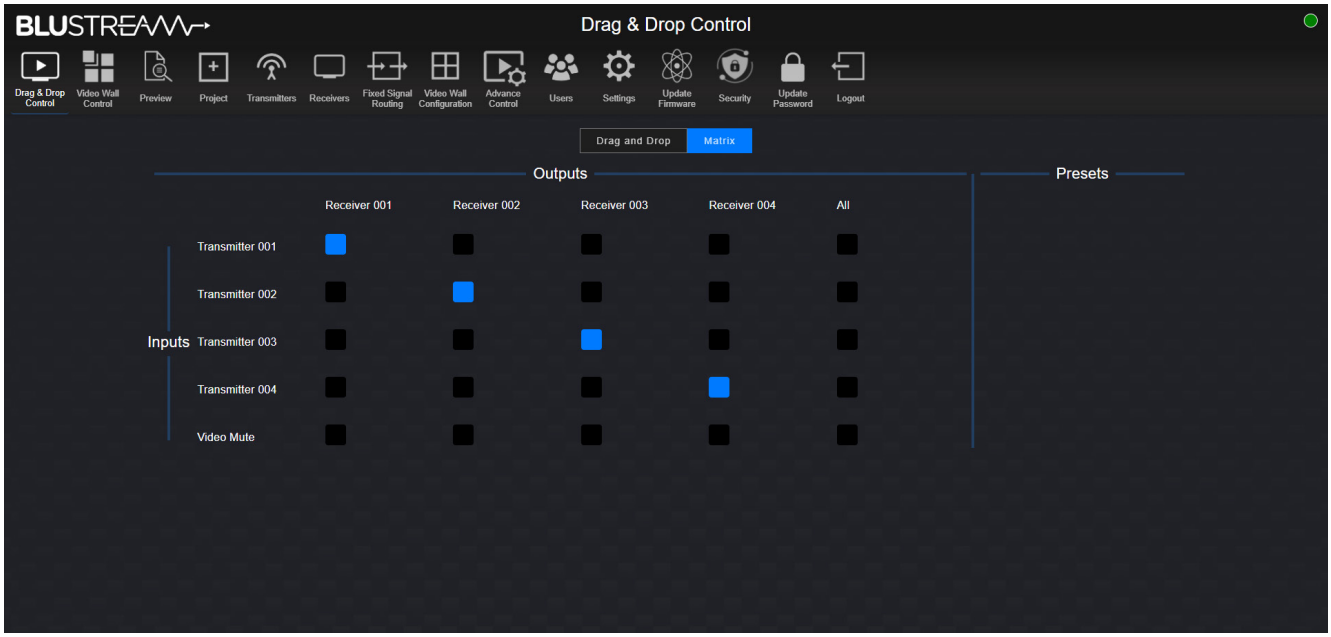
If either preview shows 'Preview Off', the Preview feature has been turned off. It can be re-enabled through API commands.

Preview Window - No Preview:

Matrix:

Matrix Mode provides an alternative view for creating routes. Transmitters are listed as rows and Receivers as columns, forming a grid of selectable routing points.

To make a route, simply select the square where the desired Transmitter and Receiver intersect. Selecting a square in the All column will route the Transmitter to all Receivers.



If any Presets have been configured, they will be selectable under the Presets section.

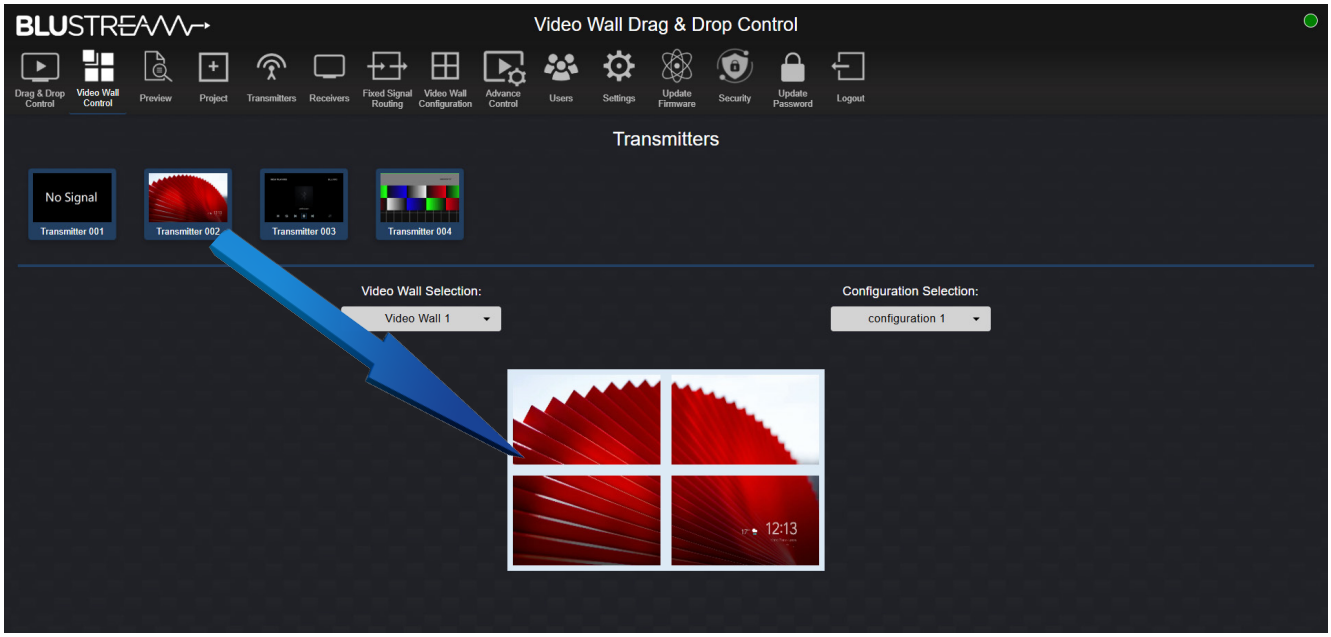
To apply a Preset, select the desired Preset button and the Preset will be applied.

WARNING: While possible, it is not recommend to route Receivers configured as a Video Wall in Matrix mode.

Web GUI - Video Wall Control

The Video Wall Control page is separate from the Drag and Drop Control page to simplify the management of Video Walls and configurations, particularly in large AVoIP systems. All configured Video Walls and Video Wall Configurations can be routed to and updated directly from this page.

If no Video Walls have been configured, the Video Wall Control page will not be available. Once a Video Wall is created, the page becomes accessible and can be navigated to.



Transmitter preview windows are displayed at the top of the page, with a graphical representation of the currently selected Video Wall shown below.

To select a different Video Wall, use the Video Wall Selection drop down menu.

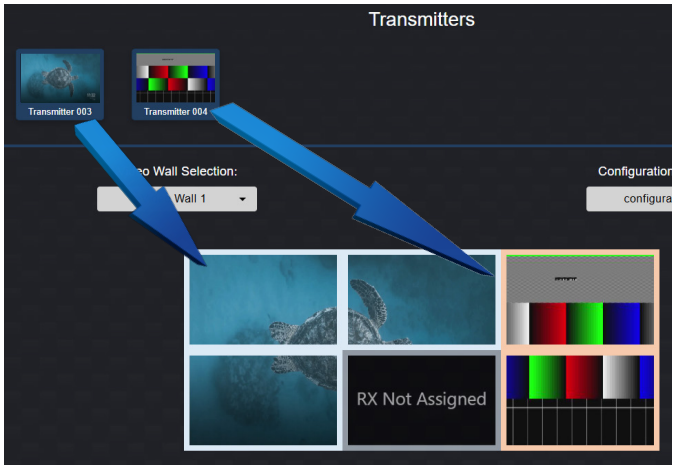
To select a different configuration for the current Video Wall, use the Configuration Selection drop down menu.

To route a Transmitter across the entire Video Wall, drag and drop the desired Transmitter preview onto the Video Wall preview. All assigned Receivers within the Video Wall will update to route the selected signal.

When a Group has been configured within the Video Wall, its assigned windows will be recoloured to indicate group membership. To route a Transmitter to a specific group, drag and drop the Transmitter preview onto the desired Group. All Receivers in that group will update accordingly.

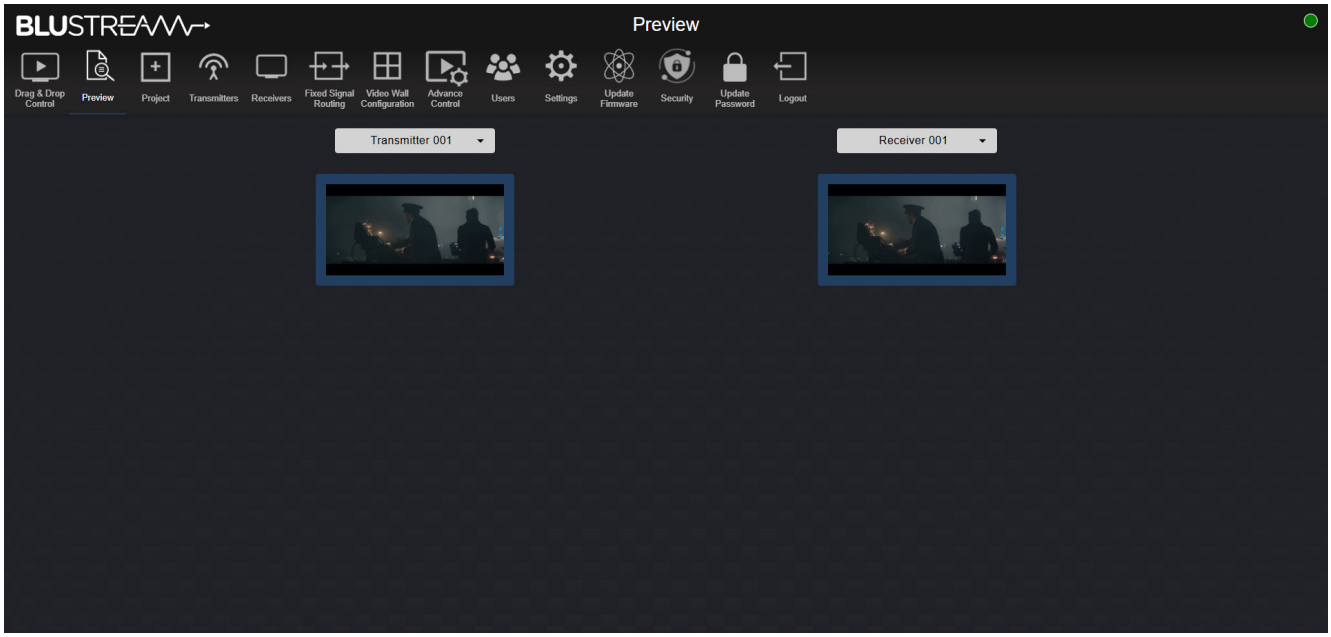
If a Receiver has been configured as a single screen within the Video Wall, its window will be recoloured to denote its individual status. To route a Transmitter to that screen, drag and drop the Transmitter preview onto the single screen preview. The Receiver will update to route the selected signal.

If a Video Wall window displays 'RX Not Assigned', no Receiver has been assigned to that section of the Video Wall. The Receiver can be assigned in the Video Wall Configuration page.



Web GUI - Preview

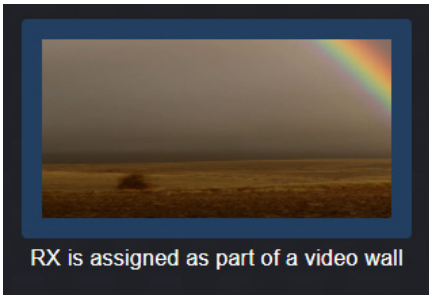
The Preview feature is a quick way to view the stream from the HDMI source device into any Transmitter, or the stream being received by any Receiver in the system concurrently. This is particularly helpful for debugging and checking source devices are powered on and are outputting a HDMI signal, or to check the I/O status of the system.



The Preview windows show a screen grab of the media which automatically updates every few seconds. Use the drop down box to select the individual Transmitter or Receiver to preview.

The Preview window will also notify when viewing a Receiver that is part of a Video Wall.

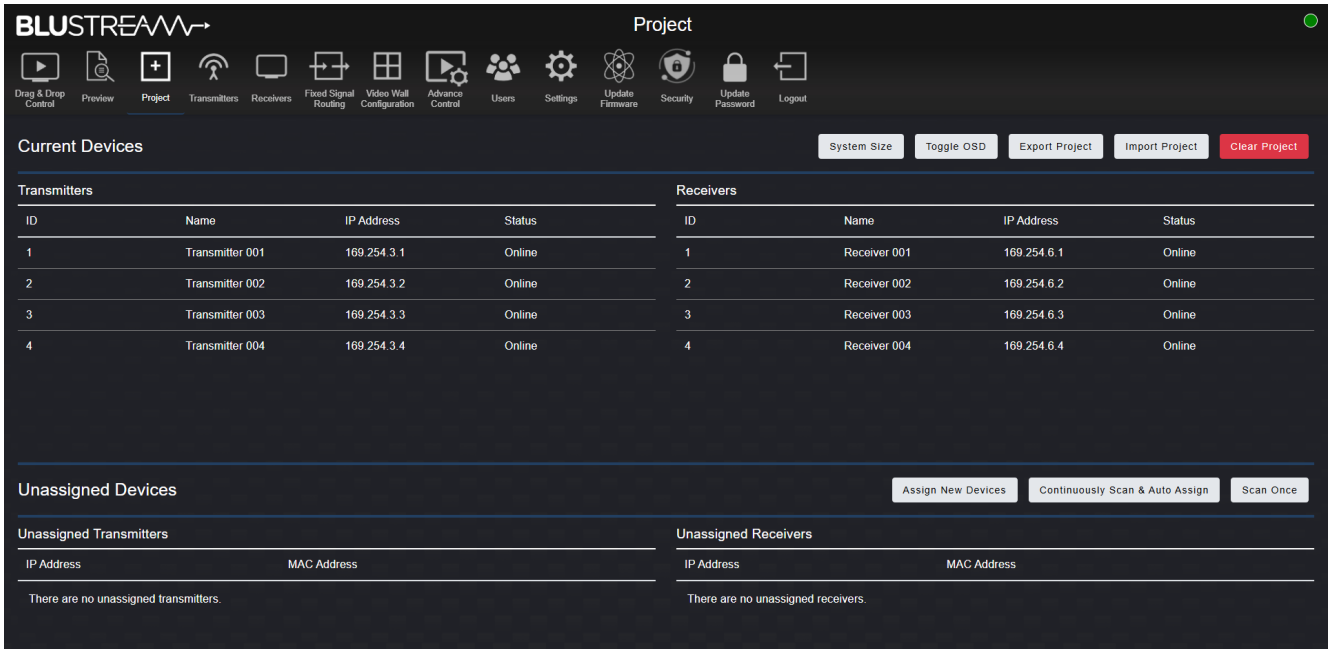
Preview - RX Assigned to Video Wall:



Web GUI - Project

The Project page shows an overview of the Transmitters and Receivers that are currently configured in the AVoIP system. Settings for the current project can be modified, and new devices can be added into the project.

Select any column header to sort the list in ascending or descending order based on that column's values.



Current Devices:

Displays the ID, Name, IP Address, and Status of all Transmitters and Receivers currently assigned to the project. Additional project settings can be configured using the following options:

System Size

During normal operation, the ACM1000 continuously polls connected AVoIP devices to retrieve status updates and screen captures. In larger systems (75 or more devices), this polling activity may impact performance. To optimise responsiveness, the global polling rate can be adjusted:

- Select the **System Size** button
- In the dialog box, choose either 0–75 Products or 75+ Products

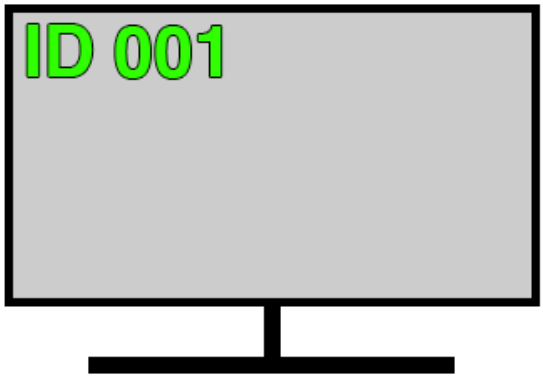
This can also be adjusted per device on the respective Transmitter and Receiver pages.

Toggle OSD (On Screen Display)

Receivers can display their ID number in the top-left corner of the HDMI output:

- Select the **OSD Toggle** button
- In the dialogue box, choose either OSD On or OSD Off

OSD Identifier:



Current Devices (continued)

Export Project

The current configuration of the ACM1000 can be saved for backup or transfer to another ACM1000:

- Select Export
- A .json file of the current project will be downloaded

Import Project

A saved ACM1000 configuration can be uploaded and applied to an existing ACM1000:

- Select Import Project
- Browse for a .json configuration file to upload
- Upload the file to apply the configuration

WARNING: This will overwrite the current configuration.

Clear Project

Clears the current project and launches the New Project Setup Wizard.

This will remove all Transmitters, Receivers and Video Walls that have been configured.

Unassigned Devices:

Displays the ID, Name, IP Address and Status of Transmitters and Receivers that have been discovered but not added into the current project. New devices can be discovered and assigned through the following options:

Assign New Devices

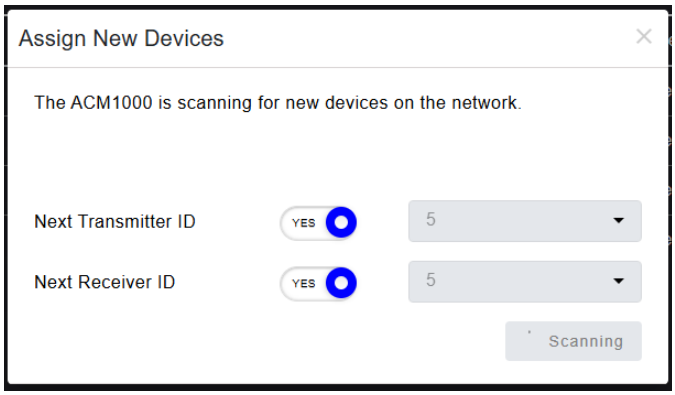
When connecting brand new or factory default devices, identified by the IP address **169.254.100.254**, select Assign New Devices.

The ACM1000 will scan the network for devices with the default IP address.

To assign a specific ID, set the Next Transmitter ID and Next Receiver ID to the desired value before assigning.

Please note: As all brand new and factory default Transmitters and Receivers share the same IP address, the ACM1000 cannot distinguish between them when assigning. To ensure correct ID assignment, connect and assign devices one at a time. Optionally, toggle either Next Transmitter ID or Next Receiver ID off to ensure only one type of device is added.

Assign New Devices:



Continuously Scan & Auto Assign

When connecting multiple devices simultaneously, select Continuously Scan & Auto Assign. The ACM1000 will continuously scan the network and automatically assign new AVoIP devices to the next available ID.

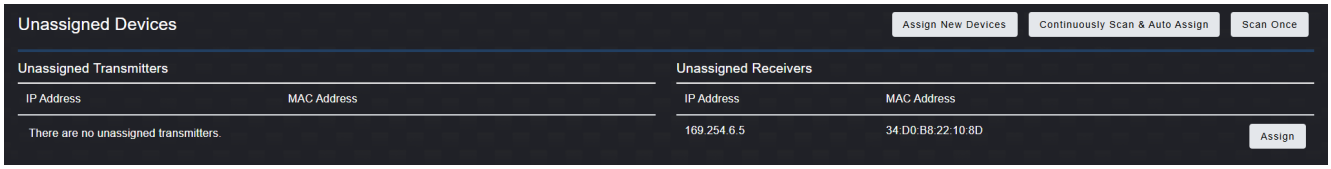
Unassigned Devices (continued)

Scan Once

For granular control, select Scan Once. The ACM1000 will scan the network for all unassigned devices.

Once the scan is complete, the unassigned devices can be added automatically using the previous method, or they can be left unassigned.

Unassigned devices will populate the below tables.



Devices can then be added to the Project individually by selecting **Assign**, and assigning an ID.

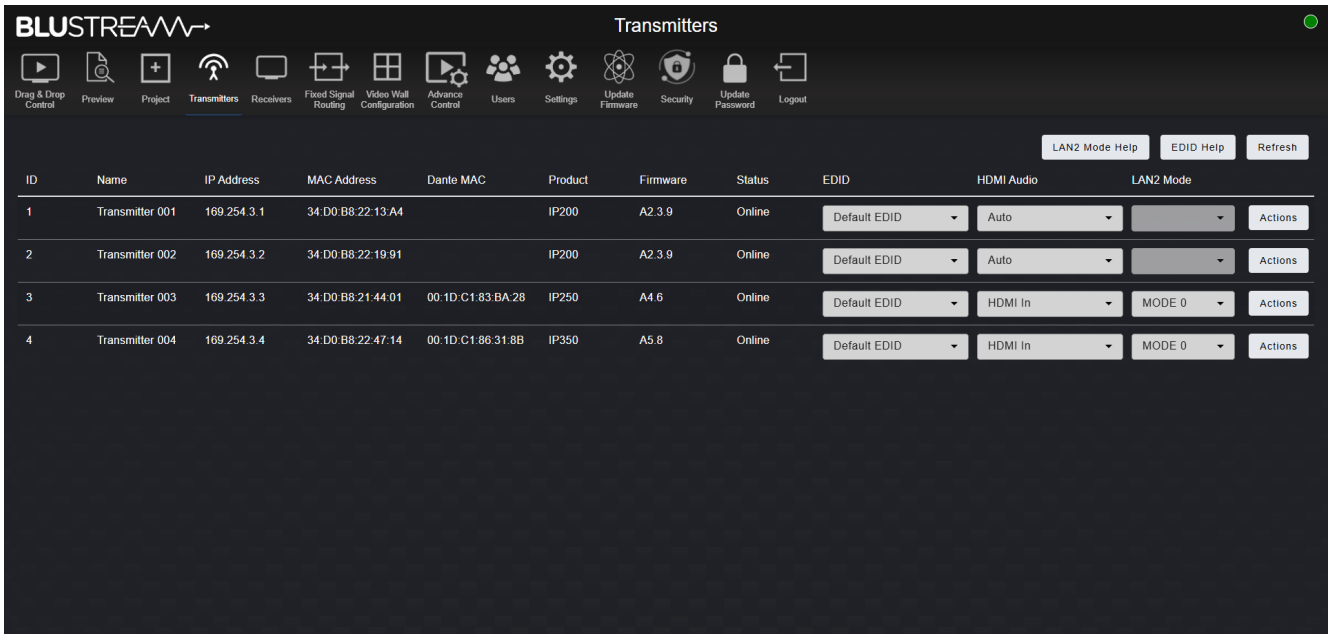
Web GUI - Transmitters

The Transmitters page shows a summary of all Transmitters in the system, and allows for configuration and maintenance of each Transmitter. Each Transmitter added to the project is listed into a separate column, and it's information and available options are displayed in the respective rows.

Select any column header to sort the list in ascending or descending order based on that column's values.

Information on EDID and LAN2 Mode settings can be found in the top right.

Refresh the list of Transmitters (helpful when making changes or testing commands) by selecting the **Refresh** button.



ID

- Displays the ID (input) number of the Transmitter, used to identify the Transmitters for API / 3rd party control

Name

- Displays the name assigned to the Transmitter during the New Project Setup Wizard (the name can be updated by using the respective **Actions** button)

IP Address

- Displays the IP address assigned to the Transmitter during the New Project Setup Wizard.

MAC Address

- Displays the MAC address of the VoIP interface (VoIP)

Dante® MAC (IP250UHD-TX & IP350UHD-TX only)

- Displays the MAC address of the Dante® interface

Product

- Displays the model of the Transmitter

Firmware

- Displays the firmware version of the Transmitter

Status

- Displays whether the Transmitter is Online or Offline

Web GUI - Transmitters (continued)

EDID

- 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. Pre-setting the video resolution and audio format reduces EDID handshake time, making switching faster and more reliable
- In a Blustream AVoIP system, each Transmitter connected to a HDMI source, performs an EDID handshake. As Transmitters can route to multiple Receivers, it's best to configure the EDID (Transmitter to source) to request the highest supported video format allowing each Receiver to scale the signal as needed
- The default EDID for Blustream equipment is: 1080p, 2ch audio
- The available EDIDs will change depending on the model of Transmitter
- **Please note:** Blustream AVoIP products do not down-mix Dolby Digital, DTS, or 5.1ch audio signals. If the displays only support 2ch PCM audio, the EDID must be set to match the supported audio formats across the system

HDMI Audio

- Select to transmit the original HDMI audio from the source, or embed external audio onto the HDMI signal
- Embedded audio can be sourced from the analogue input on the Transmitter or from a Dante® audio stream (IP250UHD-TX & IP350UHD-TX only)
- Set to Auto to automatically detect and embed external audio (IP200UHD-TX & IP300UHD-TX only)

LAN2 Mode (IP250UHD-TX & IP350UHD-TX only)

- Management of the LAN and SPF ports of the IP250UHD-TX & IP350UHD-TX allow flexible network configuration for separating Video over IP and Dante® audio traffic
- These ports can operate in multiple modes to support segregated networks for isolating video and audio traffic, combined networks for unified routing, or be disabled where needed
- For detailed configuration options, refer to the tables below:

IP250UHD-TX LAN2 Mode:

VLAN MODE	PoE/Lan	2nd RJ45	SFP
0 (default)	VoIP+Dante	Disabled	VoIP+Dante
1	VoIP	Dante	Disabled
2	VoIP/Dante	Follow PoE/Lan port	VoIP+Dante

IP350UHD-TX LAN2 Mode:

VLAN MODE	PoE/Lan1	Lan2	SFP
0 (default)	VoIP	Dante	VoIP
1	Dante	VoIP	Dante
2	VoIP+Dante	VoIP	VoIP+Dante
3	VoIP+Dante	Dante	VoIP+Dante
4	VoIP+Dante	Disabled	VoIP+Dante

Web GUI - Transmitters (continued)

Pressing the **Actions** button will open a sub-menu to configure the following options:

Name

- The name of the Transmitter can be updated from here; this is limited to 16 characters in length, and some special characters may not be supported

Update ID

- The ID of the Transmitter (and subsequently the IP address of the device) is able to be manually updated. Pressing the **Update ID** button will open a sub menu allowing a new ID to be assigned
- **WARNING:** The ACM1000 is designed to assign new AVoIP devices seamlessly. Manually updating the ID can lead to potential IP conflicts between devices, and is therefore recommended for advanced users only

System Size

- During normal operation, the ACM1000 continuously polls connected AVoIP devices to retrieve status updates and screen captures
- The polling rate can be adjusted at a device level, allowing for frequent updates (0-75 products) or infrequent updates (75+ products). For example, a device that will not be frequently monitored via the ACM1000 can be set to 75+ Products in order to reduce it's polling rate, not affecting any other device in the project

HDMI Audio

- Select to transmit the original HDMI audio from the source, or embed external audio onto the HDMI signal
- Embedded audio can be sourced from the 5-pin Phoenix analogue audio input or from the Dante® input (IP250UHD-TX & IP350UHD-TX only)
- Set to Auto to automatically detect and embed external audio (IP200UHD-TX only)

Analogue Audio (IP250UHD-TX & IP350UHD-TX only)

- Set the source of the 5-pin Phoenix analogue audio output to either the original HDMI audio or the Dante® input

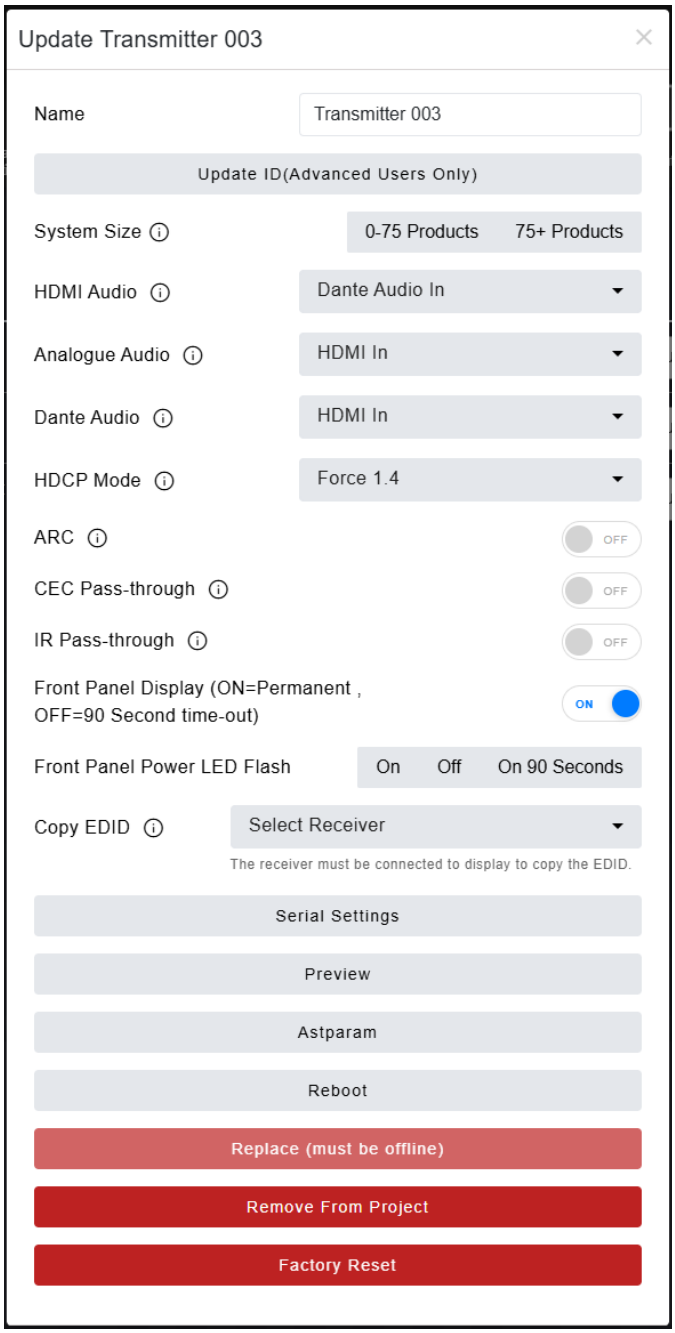
Dante® Audio (IP250UHD-TX & IP350UHD-TX only)

- Set the source for the Dante® output to either the original HDMI audio or the 5 pin Phoenix analogue audio input

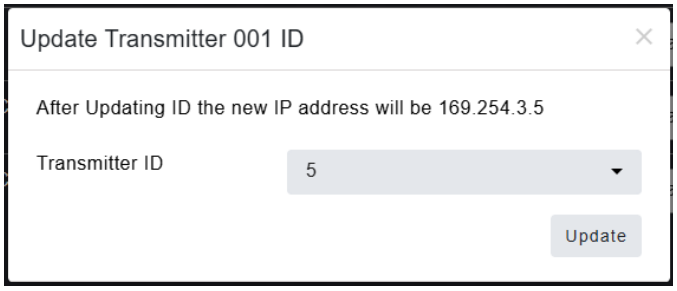
Switch Mode (IP300UHD-WP-TX only)

- The IP300UHD-WP-TX supports automatic input switching between the USB-C and HDMI input
- Input switching can be set to a priority when both are connected, disabled entirely, or set to allow manual selection only via the device's Select button or on the Control page in the Web GUI

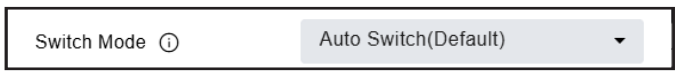
Actions Sub Menu:



Update ID:



IP300UHD-WP-TX Switch Mode:



Web GUI - Transmitters (continued)

HDCP Mode

- The HDCP Mode allows control of how HDCP is applied:
- Force 1.4 / 2.2 — HDCP is forced to follow a common compliance
- Bypass — HDCP is not added by the system. This is recommended when using commercial equipment (e.g., video conferencing systems) that does not output HDCP, and when connecting to non-HDCP-compliant devices (e.g., capture software)
- **Please note:** Bypass mode does not remove HDCP from an incoming HDMI signal. If the source signal includes HDCP, it will be passed through the system unchanged. If the source signal does not include HDCP, the AVoIP devices will not add it when in Bypass mode

ARC (IP300UHD-TX & IP350UHD-TX only)

- The IP300UHD and IP350UHD series have the ability to take either HDMI ARC, HDMI eARC, or Optical audio connectivity from a display connected to a Receiver, and distribute this back to the Transmitter
- ARC Mode must be enabled on the Receiver in order to pass ARC
- **Please note:** ARC is limited to a maximum of 5.1ch audio

CEC Pass-through

- Enables CEC (Consumer Electronics Control) commands to be sent and received between the HDMI input and output of the Transmitter and Receiver
- **Please note:** CEC Pass-through must also be enabled on the Receiver

IR Pass-through

- Enables IR commands to be sent and received between IR input and output of the Transmitter and Receiver
- **Please note:** IR Pass-through must also be enabled on the Receiver

Front Panel Display

- Enable or disable the LED display on the front panel of the Transmitter
- The display will automatically turn off after 90 seconds
- Press any button on the front of the device to wake the display when it is off

Front Panel Power LED Flash

- The Power LED on the front panel of the Transmitter can be set to blink steadily in order to identify the device after auto-configuration. The LED can be set to blink continuously or for 90 seconds before it returns to a steady state
- The LED will automatically turn off after 90 seconds
- Press any button on the front of the device to wake the LED when it is off

Copy EDID

- The Copy EDID feature allows the ACM1000 to retrieve the EDID information from a display connected to a Receiver and apply it to the Transmitters.
- Select the target Receiver to copy the EDID of the connected HDMI output. There must be a display connected to the HDMI output of the Receiver in order for this feature to work
- It's recommended to verify that the media from the Transmitter with the copied EDID displays correctly across all screens in the system
- Once the EDID has been successfully copied, disable the feature by selecting Select Receiver from the drop down menu, or the Transmitter will continue to update the EDID at each new connection
- **Please note:** To ensure accurate EDID capture, only one Receiver should be connected to the Transmitter during the copy process.

Web GUI - Transmitters (continued)

Serial Settings

- Selecting **Serial Settings** will open a sub menu to configure the serial settings for the 3-pin Phoenix port can be configured per Transmitter
- Serial Guest Mode enables RS-232 commands to be routed through the Blustream AVoIP system, allowing control of connected devices via TCP/IP or RS-232 through the ACM1000 (see page 06)
- Press **Update** to apply changes

Preview

- Selecting **Preview** will open a window to monitor the HDMI input on the Transmitter

Astparam

- Selecting **Astparam** displays internal settings and diagnostic information about the Transmitter. This tool is intended for troubleshooting and isn't required for normal operation

Reboot

- Reboots the Transmitter

Replace

- Transfers settings to a new Transmitter, avoiding manual setup. The original Transmitter must be offline, and the replacement must be a factory default device with IP address **169.254.100.254**

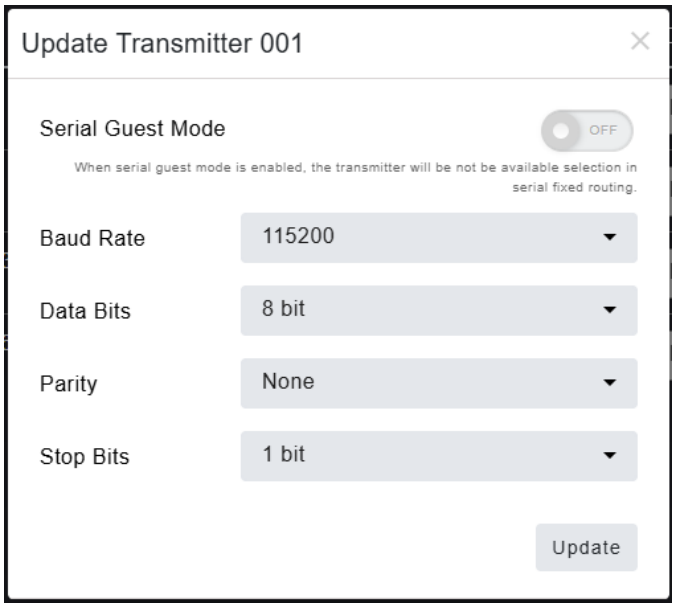
Remove From Project

- Removes the Transmitter from the project

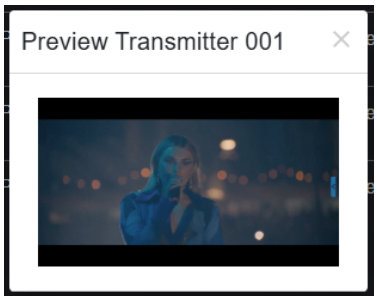
Factory Reset

- Removes the Transmitter from the project and restores it to its original default settings, setting the IP address to **169.254.100.254**

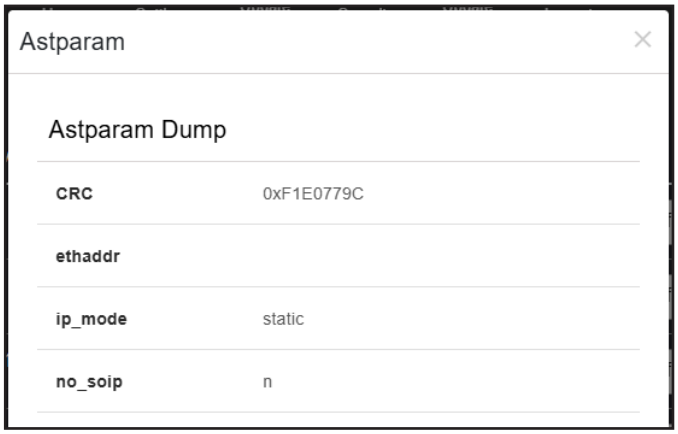
Serial Settings:



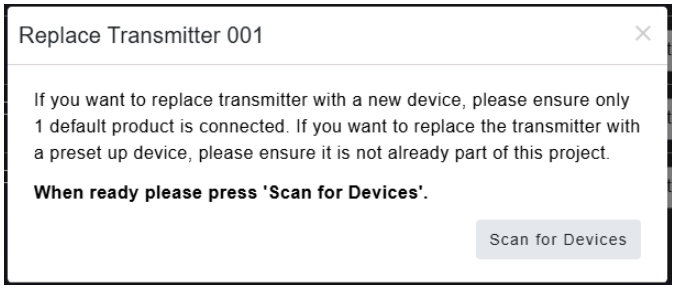
Preview Window:



Astparam Information:



Replace:



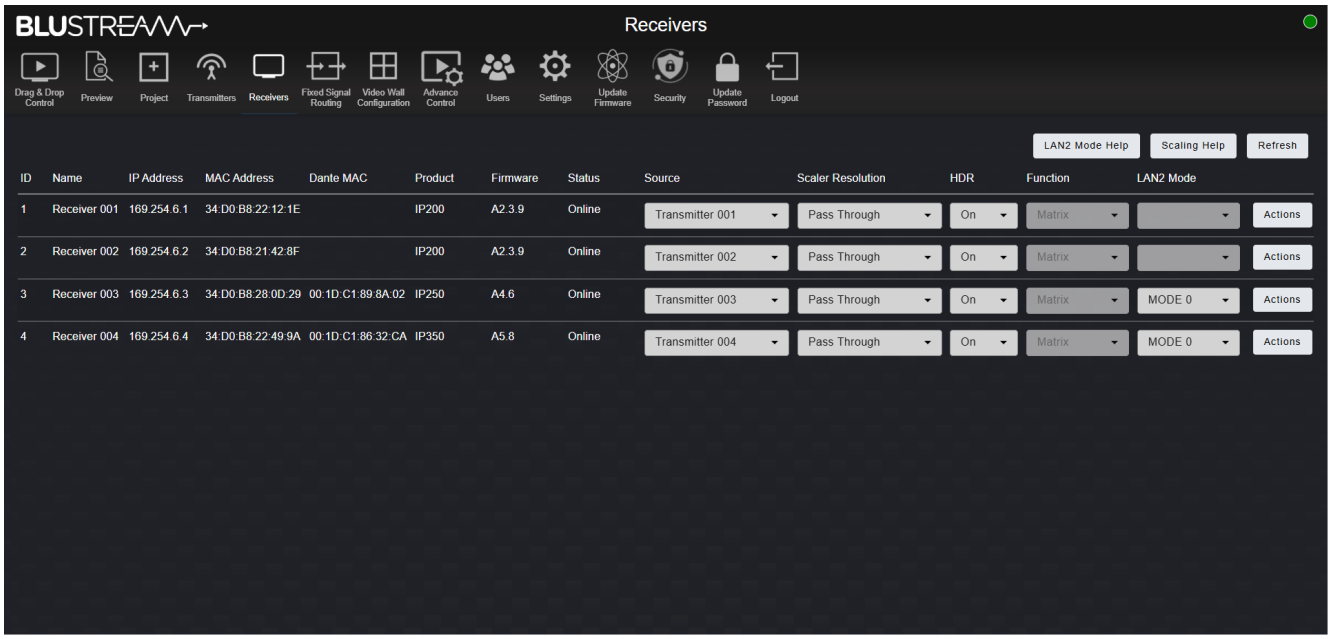
Web GUI - Receivers

The Receivers page shows a summary of all Receivers in the system, and allows for configuration and maintenance of each Receiver. Each Receiver added to the project is listed into a separate column, and it's information and available options are displayed in the respective rows.

Select any column header to sort the list in ascending or descending order based on that column's values.

Information on EDID, and LAN2 Mode settings can be found by selecting their respective **Help** buttons.

Refresh the list of Receivers (helpful when making changes or testing commands) by selecting the **Refresh** button..



ID

- Displays the ID (input) number of the Receiver, used to identify the Receiver for API / 3rd party control

Name

- Displays the name assigned to the Receiver during the New Project Setup Wizard (the name can be updated by using the respective **Actions** button)

IP Address

- Displays the IP address assigned to the Receiver during the New Project Setup Wizard

MAC Address

- Displays the MAC address of the VoIP interface (VoIP)

Dante® MAC (IP250UHD-RX & IP350UHD-RX only)

- Displays the MAC address of the Dante® interface

Product

- Displays the model of the Receiver

Firmware

- Displays the firmware version of the Receiver

Status

- Displays whether the Receiver is Online or Offline

Source

- Select which Transmitter to receive a signal from

Web GUI - Receivers (continued)

Scaler Resolution

- Each Receiver includes a built-in video scaler that can upscale or downscale the video signal, allowing each display to receive the optimal resolution. However, scaling can introduce a mismatch between the source device's refresh rate and the Receiver's output. This may cause visual stuttering, especially when the refresh rates are not compatible multiples of each other
- Ensure the Receiver's scaler output matches or is a compatible multiple of the Transmitter's refresh rate. It is recommended to set the scaler mode to Pass Through, which preserves the native resolution and refresh rate of the Transmitter's input
- Additionally, fixing the scaler output can improve switching speed between Transmitters, as displays won't need to renegotiate resolution changes
- The available Scaler Resolutions will change depending on the model of Receiver

HDR

- Toggles HDR (High Dynamic Range) compatibility
- **Please note:** only use with screens that support HDR

Function

- If a Receiver has been configured as a part of a Video Wall, the Receiver can be put back into matrix mode using the Function toggle without having to remove it from the Video Wall configuration
- This selection is greyed out when a Receiver is not part of a Video Wall array

LAN2 Mode (IP250UHD-RX & IP350UHD-RX only)

- Management of the LAN and SPF ports of the IP250UHD-RX & IP350UHD-RX allow flexible network configuration for separating Video over IP and Dante® audio traffic
- These ports can operate in multiple modes to support segregated networks for isolating video and audio traffic, combined networks for unified routing, or be disabled where needed
- For detailed configuration options, refer to the tables below:

IP250UHD-RX LAN2 Mode:

VLAN MODE	PoE/Lan	2nd RJ45	SFP
0 (default)	VoIP+Dante	Disabled	VoIP+Dante
1	VoIP	Dante	Disabled
2	VoIP/Dante	Follow PoE/Lan port	VoIP+Dante

IP350UHD-RX LAN2 Mode:

VLAN MODE	PoE/Lan1	Lan2	SFP
0 (default)	VoIP	Dante	VoIP
1	Dante	VoIP	Dante
2	VoIP+Dante	VoIP	VoIP+Dante
3	VoIP+Dante	Dante	VoIP+Dante
4	VoIP+Dante	Disabled	VoIP+Dante

Web GUI - Receivers (continued)

Pressing the **Actions** button will open a sub-menu to configure the following options:

Name

- The name of the Receiver can be updated from here; this is limited to 16 characters in length, and some special characters may not be supported

Update ID

- The ID of the Receiver (and subsequently the IP address of the device) is able to be manually updated. Pressing the **Update ID** button will open a sub-menu allowing a new ID to be assigned
- **WARNING:** The ACM1000 is designed to assign new AVoIP devices seamlessly. Manually updating the ID can lead to potential IP conflicts between devices, and is therefore recommended for advanced users only

System Size

- During normal operation, the ACM1000 continuously polls connected AVoIP devices to retrieve status updates and screen captures
- The polling rate can be adjusted at a device level, allowing for frequent updates (0-75 products) or infrequent updates (75+ products). For example, a device that will not be frequently monitored via the ACM1000 can be set to 75+ Products in order to reduce it's polling rate, not affecting any other device in the project

HDMI Audio (IP250UHD-RX & IP350UHD-RX only)

- Select the audio source of the HDMI output to either the original HDMI audio or embed the Dante® input

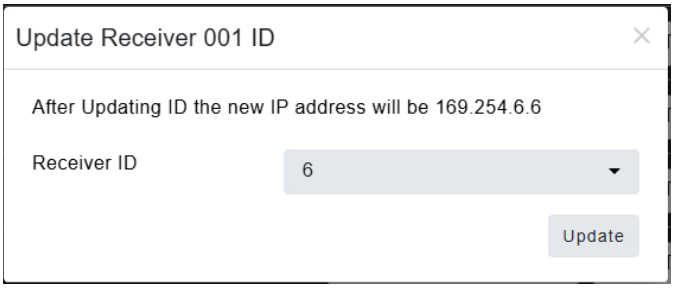
Analogue Audio (IP250UHD-RX & IP350UHD-RX only)

- Set the source of the 5-pin Phoenix analogue audio output to either the original HDMI audio or the Dante® input

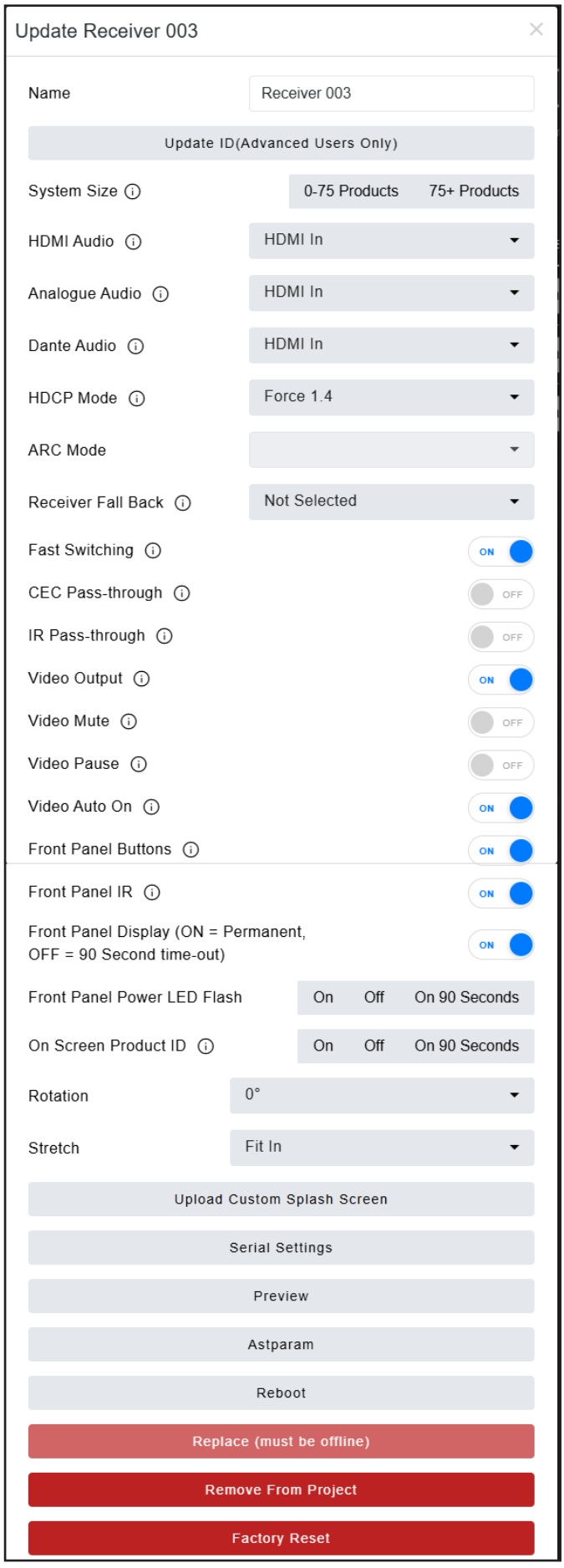
Dante® Audio (IP250UHD-RX & IP350UHD-RX only)

- Set the source for the Dante® output to either the original HDMI audio or the 5 pin Phoenix analogue audio input

Update ID:



Actions Sub Menu:



Web GUI - Receivers (continued)

HDCP Mode

- The HDCP Mode allows control of how HDCP is applied:
- Force 1.4 / 2.2 — HDCP is forced to follow a common compliance
- Bypass — HDCP is not added by the system. This is recommended when using commercial equipment (e.g., video conferencing systems) that does not output HDCP, and when connecting to non-HDCP-compliant devices (e.g., capture software)
- **Please note:** Bypass mode does not remove HDCP from an incoming HDMI signal. If the source signal includes HDCP, it will be passed through the system unchanged. If the source signal does not include HDCP, the AVoIP devices will not add it when in Bypass mode

ARC Mode (IP300UHD-RX & IP350UHD-RX only)

- The IP300UHD and IP350UHD series have the ability to take either HDMI ARC, HDMI eARC, or Optical audio connectivity from a display connected to a Receiver, and distribute this back to the Transmitter
- ARC Mode must be enabled on the Transmitter in order to pass ARC
- **Please note:** ARC is limited to a maximum of 5.1ch audio

Receiver Fall Back

- The Receiver can automatically switch to another Transmitter when no signal is detected from the assigned Transmitter
- Select the desired fallback Transmitter from the drop down menu

Fast Switching

- Enabling Fast Switching improves video switching speed by prioritising video first
- Audio, IR, RS-232, and USB/KVM follow shortly after
- **Please note:** While the video appears instantly, other signals may take slightly longer to complete the switch

CEC Pass-through

- Enables CEC (Consumer Electronics Control) commands to be sent and received between the HDMI input and output of the Transmitter and Receiver
- **Please note:** CEC Pass-through must also be enabled on the Receiver

IR Pass-through

- Enables IR commands to be sent and received between IR input and output of the Transmitter and Receiver
- **Please note:** IR Pass-through must also be enabled on the Receiver

Video Output

- Enables or disables the HDMI output, requiring a new HDMI handshake when turning back on

Video Mute

- Toggles the HDMI output to a black screen, maintaining the HDMI handshake

Video Pause

- Freezes the HDMI Video at the current frame, allowing audio to continue
- When resumed, the video continues from the live feed

Video Auto On

- Turns off HDMI output when no signal is detected
- Output resumes automatically when media playback starts

Front Panel Buttons

- Disables the front panel buttons, preventing local control at the Receiver

Web GUI - Receivers (continued)

Front Panel IR

- Enables or disables the Receiver from accepting IR commands

Front Panel Display

- Enable or disable the LED display on the front panel of the Receiver
- The display will automatically turn off after 90 seconds
- Press any button on the front of the device to wake the display when it is off

Front Panel Power LED Flash

- The Power LED on the front panel of the Receiver can be set to blink steadily in order to identify the device after auto-configuration. The LED can be set to blink continuously or for 90 seconds before it returns to a steady state
- The LED will automatically turn off after 90 seconds
- Press any button on the front of the device to wake the LED when it is off

On Screen Product ID

- Displays the Receiver's ID on the HDMI output in the top left of the screen

Rotation

- Rotate the HDMI output
- The output can be rotated 90 degrees, 180 degrees or 270 degrees; 0 degrees rotation indicates no rotation applied

Stretch

- Re-sizes the image to either 'Stretch' to the aspect ratio of the display, or 'Maintain Aspect Ratio' of the source device output

Upload Custom Splash Screen

- A custom splash screen can be applied to the Receiver, displaying when no Transmitter has been assigned, or when the assigned Transmitter has lost signal or gone offline
- Maximum size file: 700kB; supported file type: .jpg

Serial Settings

- Selecting **Serial Settings** will open a sub menu to configure the serial settings for the 3-pin Phoenix port can be configured per Receiver
- Serial Guest Mode enables RS-232 commands to be routed through the Blustream AVoIP system, allowing control of connected devices via TCP/IP or RS-232 through the ACM1000 (see page 06)
- Press **Update** to apply changes

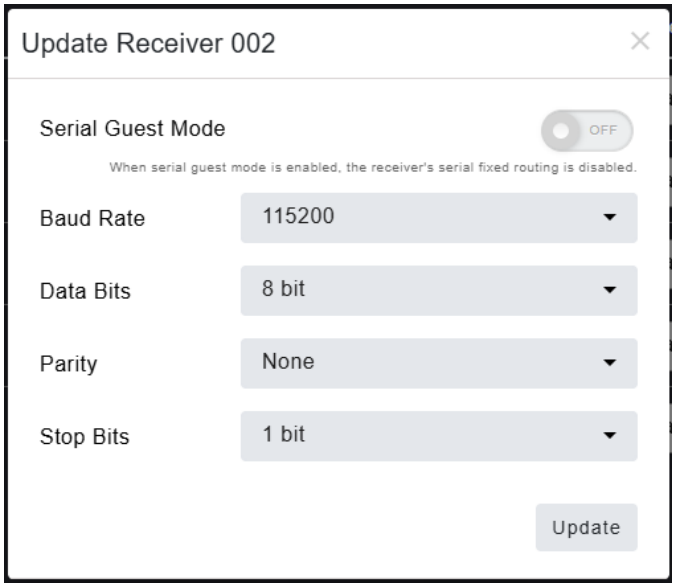
Preview

- Selecting **Preview** will open a window to monitor the HDMI input on the Receiver

Astparam

- Selecting **Astparam** displays internal settings and diagnostic information about the Receiver. This tool is intended for troubleshooting and isn't required for normal operation

Serial Settings Sub Menu:



Reboot

- Reboots the Receiver

Replace

- Transfers settings to a new Receiver, avoiding manual setup. The original Receiver must be offline, and the replacement must be a factory default device with IP address **169.254.100.254**

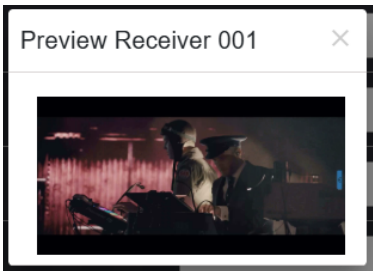
Remove From Project

- Removes the Receiver from the project

Factory Reset

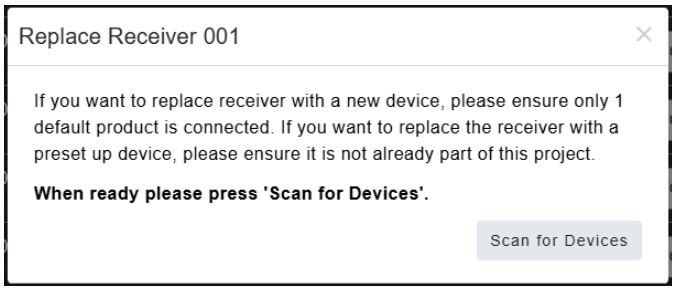
- Removes the Receiver from the project and restores it to its original default settings, setting the IP address to **169.254.100.254**

Preview Window:



Astparam Information:

Replace:



Web GUI - Fixed Signal Routing

The Fixed Signal Routing page allows configuration of permanent routes of various signals between AVoIP devices.

The ACM1000 is capable of advanced independent routing of the following signals:

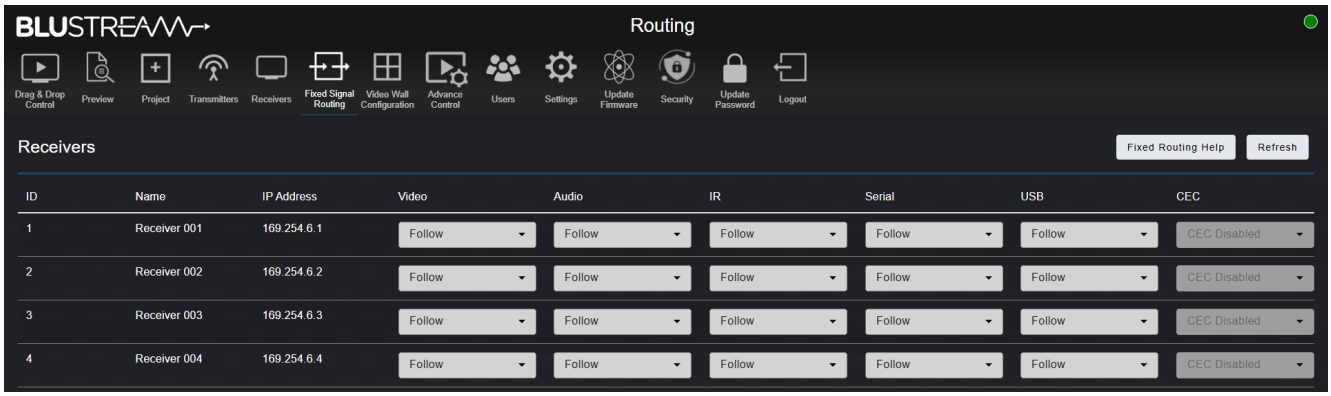
- Video
- Audio (IP300UHD series & IP350UHD series only for ARC)
- Infrared (IR)
- RS-232
- USB / KVM
- CEC (Consumer Electronic Command)
- ARC (Audio Return Channel)

Please note: CEC and ARC are disabled by default, but can be enabled under the Actions sub menu in the respective Web GUI page.

Select any column header to sort the list in ascending or descending order based on that column's values.

Information on Fixed Routing can be found by selecting the **Help** button.

Refresh the list of Fixed Signal Routes (helpful when making changes or testing commands) by selecting the **Refresh** button.



By default, Video, Audio, IR, Serial, USB and CEC are set to Follow, meaning each signal type follows the Transmitter selected by the Receiver.

To set a fixed route, select the target Transmitter from the drop down menu of the desired Receiver.

When a signal type is fixed, it is no longer affected when issuing regular switching commands from the Web GUI, API, IR, or the Receiver's front panel buttons.

For example, if audio is fixed, switching inputs on the Receiver will affect other signals but leave audio routing unchanged.

This can be useful for IR, CEC or RS-232 control of products by using the AVoIP system to extend commands from a third party control solution, or a manufacturers IR remote.

Please note: Although routing can only be set up from Receivers to Transmitters, the communication is bi-directional between the two devices.

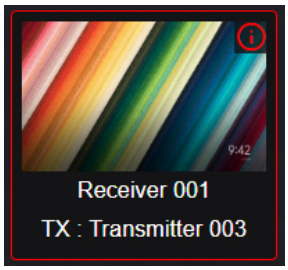
Fixed Signal Routing can be cleared by selecting Follow from the Receiver's drop down menu.

Fixed Signal Routing - Video:

When Video is set to a fixed route, the Receiver can no longer be switched via the Drag and Drop Control page or through control commands. The Receiver's window on the control page will be highlighted in red to indicate that video switching is locked.

Other signal types can still be routed independently using the Fixed Signal Routing drop downs or control commands.

Fixed Video Route:



Fixed Signal Routing - Audio:

When Audio is set to a fixed route, the Receiver will continue output audio from the fixed Transmitter, regardless of any switching applied.

This can be used to maintain audio playback while switching Video, or to embed the audio of another Transmitter.

Fixed Signal Routing - IR:

When IR is set to a fixed route, a bi-directional IR link between a Receiver and Transmitter is created.

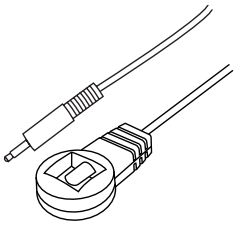
This can be useful for sending IR from a centrally located 3rd party control solution through the AVoIP system as a method of extending IR out to a display or another device. As the fixed route is bi-directional, IR can also be sent back the opposite way simultaneously.

The follow equipment and connections can be utilised in order to achieve desired IR routing:

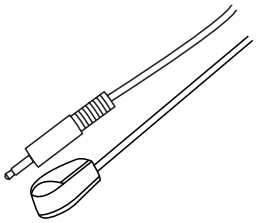
- A Blustream IR Receiver (IRR), or 3rd party IR device, connected to the IR IN port on the Transmitter or Receiver
- A Blustream IR Emitter (IRE1 or IRE2), or 3rd party IR device, connected to the IR OUT port on the Transmitter or Receiver.

Please note: A Blustream 5V IRR Receiver or Blustream IRCAB (3.5mm stereo 12V to mono 5V IR converter cable) must be used as all Blustream Infrared products are all 5V and **NOT** compatible with alternative IR solutions.

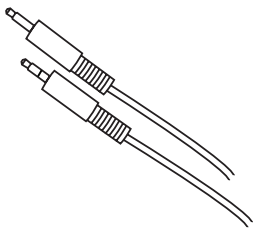
IRR:

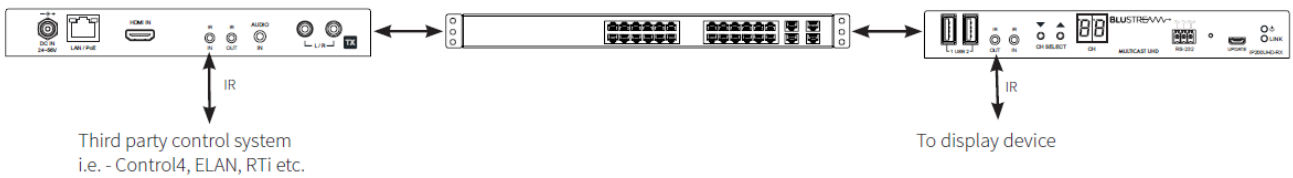


IRE:



IRCAB:





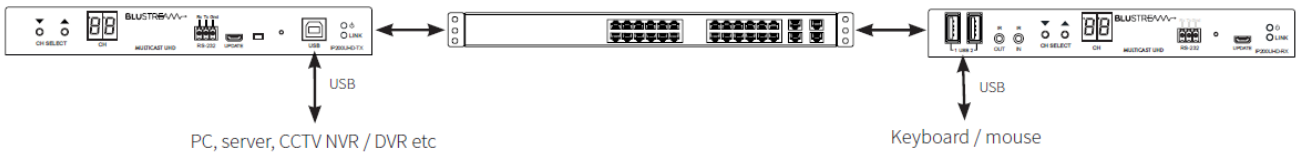
Fixed Signal Routing - Serial:

When Serial is set to a fixed route, the TX and RX pin of the 3 pin Phoenix port can be used to transmit and receive serial command to and from a Transmitter or Receiver.

Serial Fixed Signal Routing will be disabled for any Receiver or Transmitter in Serial Guest Mode.

Fixed Signal Routing - USB

When USB is set to a fixed route, a USB link is established where the Transmitter serves as the host connection and the Receiver is used to connect peripheral devices. This can be useful for transmitting KVM (Keyboard, Video, Mouse) signals from a remote station to a centrally located system such as a PC, server, or CCTV DVR/NVR.



Fixed Signal Routing - CEC

CEC, or Consumer Electronics Control, is a protocol that enables control commands, such as power on/off and volume adjustments, to be sent between HDMI connected devices. The Blustream AVoIP system supports transparent transmission of CEC signals between source and display devices.

To enable CEC communication via the AVoIP system, CEC must be activated on both the source and the display devices. The system does not interpret or modify CEC commands; it simply passes them through as-is.

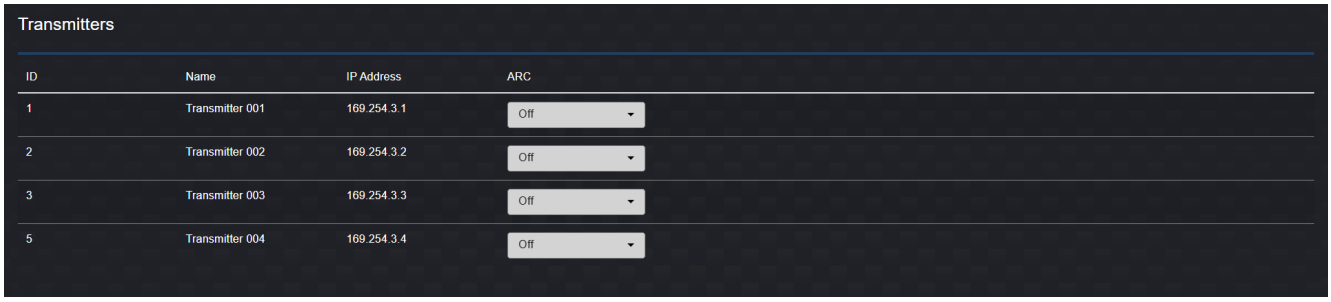
Please note: The Blustream AVoIP system passes-through CEC commands transparently, it does not modify or interpret them. It is recommended to verify that the source and display devices can communicate effectively via CEC when connected directly. Any issues present in direct CEC communication will also occur when using the AVoIP system, as it does not alter or enhance the protocol.

Fixed Signal Routing - ARC (IP300UHD series & IP350UHD series only):

The IP300UHD series and IP350UHD series have the ability to take either HDMI ARC, HDMI eARC, or Optical audio from a display connected to a Receiver, and distribute this back to the HDMI or Optical output on a Transmitter

Please note: ARC is limited to a maximum of 5.1ch audio

The routing of ARC is managed from the bottom of the Fixed Signal Routing page of the Web GUI:



By default, ARC is disabled on both Transmitters and Receivers. To enable ARC, navigate to the Action sub menu via the respective Web GUI page. CEC must also be enabled for ARC.

Once ARC is enabled, a route can be selected from the available Receivers in the drop down menu

Web GUI - Video Wall Configuration

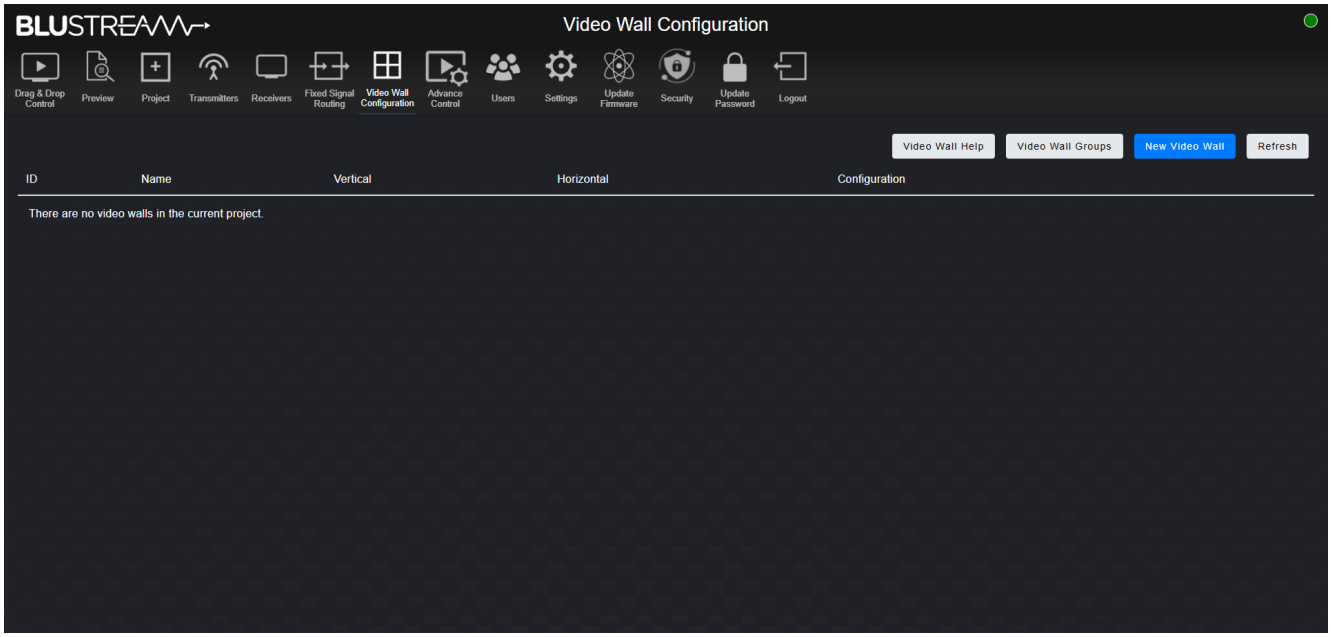
The ACM1000 supports the creation and management of Video Wall arrays using connected Receivers. Up to nine unique Video Wall configurations can be stored within the system, with flexible layout options ranging from 1x2 and 2x1 up to a maximum of 9x9.

Each Video Wall configuration can include multiple screen groups, which are especially useful for organizing and managing larger Video Wall setups. Within a single Video Wall configuration, up to nine group configurations can be created.

Select any column header to sort the list in ascending or descending order based on that column's values.

Information on Video Walls can be found by selecting the **Help** button.

Refresh the list of Video Walls (helpful when making changes or testing commands) by selecting the **Refresh** button.



To configure a new Video Wall array, select **New Video Wall**.

Please note: Before configuring a Video Wall, ensure that the Receivers intended to be assigned to a Video Wall have already been added to the Project. It is recommended to assign clear and descriptive names to each Receiver, such as 'VW 1 Top Left', for easy identification.

Video Wall ID

- Assign an ID to the Video Wall, used for identification for API / 3rd party control

Name

- Enter a descriptive label for the Video Wall, to be used for display within the Web GUI

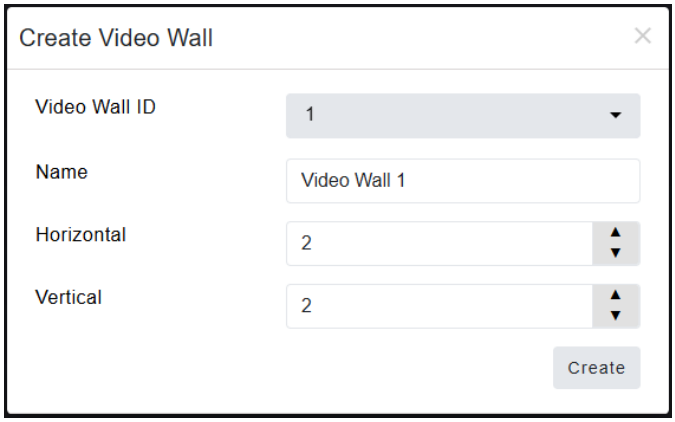
Horizontal

- Set the amount of horizontal screen in the Video Wall array

Vertical

- Set the amount of vertical screens in the Video Wall array

New Video Wall:



Select Create to proceed. For this example, 2x2 Video Wall will be created.

Video Wall Settings:

Once created, the Video Wall can be configured from it's Settings page.

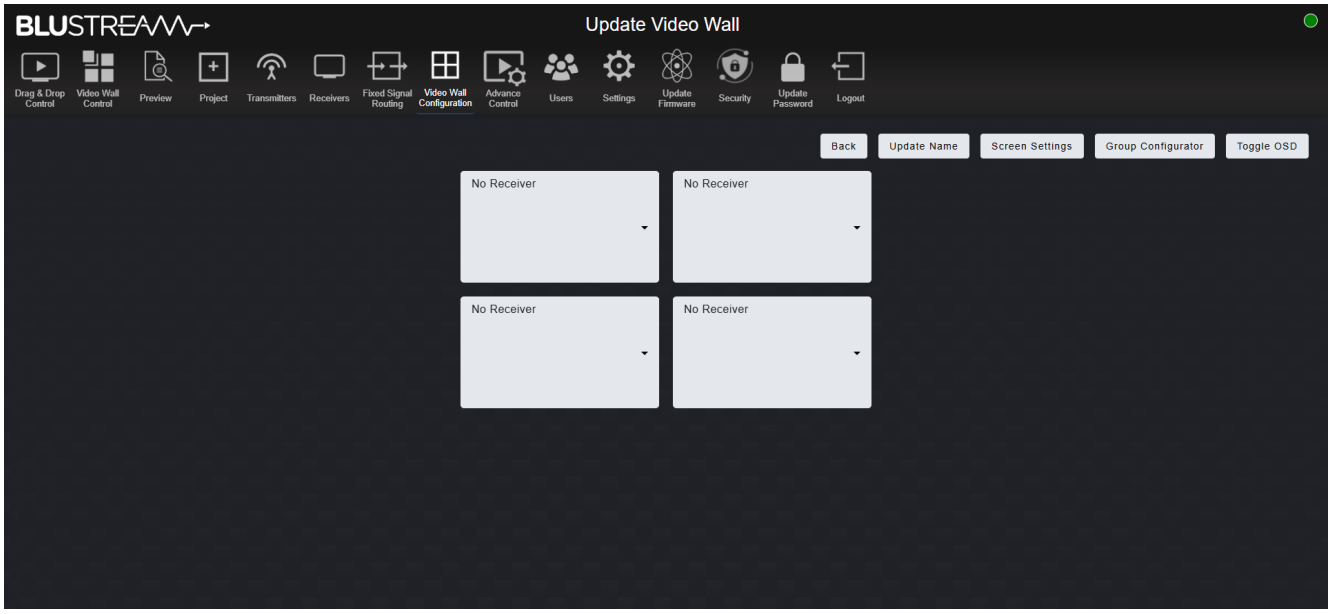
Select Back to return to the previous page.

Select Update Name to amend the name of the Video Wall.

Select Screen Settings to edit the bezel settings for each screen.

Select Group Configurator to create and modify groups within the current Video Wall.

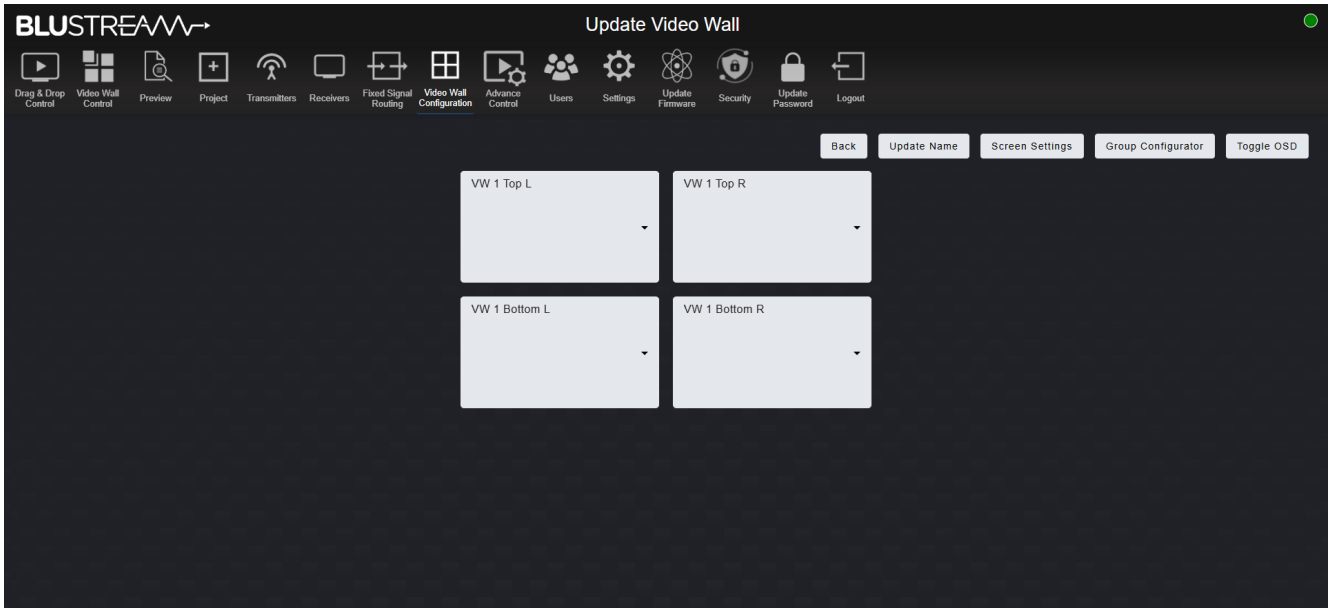
Select Toggle OSD to enable or disable the On Screen Display (OSD). When enabled, this will display the Receiver's ID on the HDMI output in the top left of the screen allowing for easier identification of the displays during configuration and setup.



The Video Wall settings displays a visual layout of all available screens. By default, no Receivers are assigned.

To assign a Receiver, select a screen to open a drop down menu. From the list, choose the appropriate Receiver to link it to that screen in the Video Wall array.

Please note: A Receiver can only be assigned to a single Video Wall.



A Transmitter can now be set to display across the Video Wall in the Video Wall Control page.

Screen Settings:

Because Video Walls may use different monitor models or have varying physical gaps between screens, the ACM1000 includes bezel and gap compensation settings to ensure a seamless display. These settings allow fine-tuning to how the image is rendered across the Video Wall, allowing for differences in screen borders and spacing.

Select Back to return to the previous screen.

Select Bezel help to open a quick reference infographic.

Select Update to save any changes.

Refresh the list of Screens (helpful when making changes or testing commands) by selecting the **Refresh** button.

Screen

- Displays the Screen position within the Video Wall

Rotation

- Each screen in the Video Wall can be rotated 90 degrees, 180 degrees or 270 degrees; 0 degrees rotation indicates no rotation applied

Stretch

- Controls how the image fits to the screen:
- Stretch: Expands the image to fill the entire screen area
- Fit: Maintains the original aspect ratio, adding borders if necessary

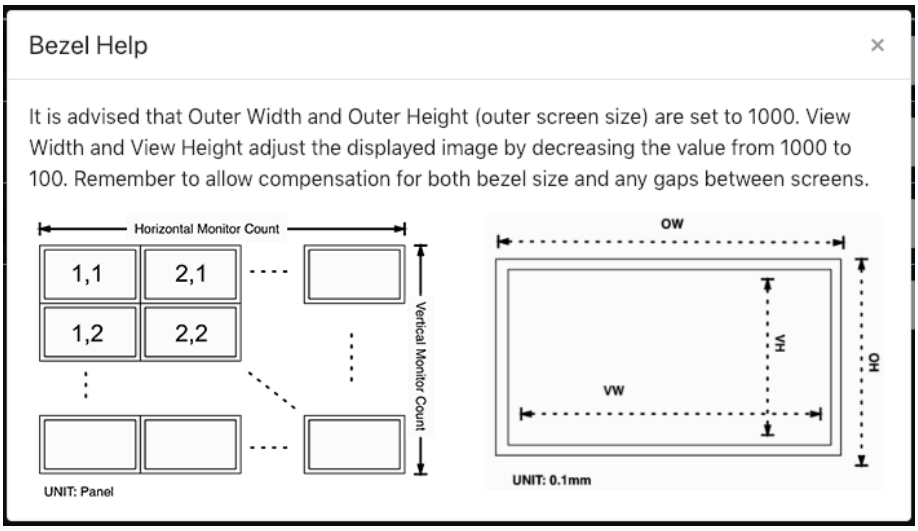
Outer Width, View Width, Outer Height, View Height

- By default, the system inserts bezels between segments of the image, effectively splitting the content so that no part of the image is obscured by the physical screen borders
- To modify this behaviour, the Outer Width (OW) and View Width (VW), along with Outer Height (OH) and View Height (VH) can be edited. Use these parameters to position the image so that bezels sit over the content, rather than between it, ideal for achieving a more immersive or edge-to-edge visual effect
- All values are initially set to 1000, which represents a screen with no bezel or gap. This is an arbitrary reference scale, not a physical measurement. For best results, leave Outer Width (OW) and Outer Height (OH) at 1000 and adjust View Width (VW) and View Height (VH) to compensate for bezels and gaps
- Reducing VW and VH decreases the displayed image size within the outer frame, ensuring that the image does not extend into the bezel area. For example, if the screens have a 10 mm bezel on each side, reduce VW and VH proportionally to account for that space

Screen Settings (continued)

If all the screens are identical, selecting Copy Bezels to All can be utilised to quickly copy the bezel settings for one screen to all screens.

Bezel Help:



Group Configurator:

By using the Group Configurator, multiple saved configurations can be quickly switched between, changing layouts without manually reassigning Receivers. This flexibility makes it easy to modify part of the Video Wall or the entire array.

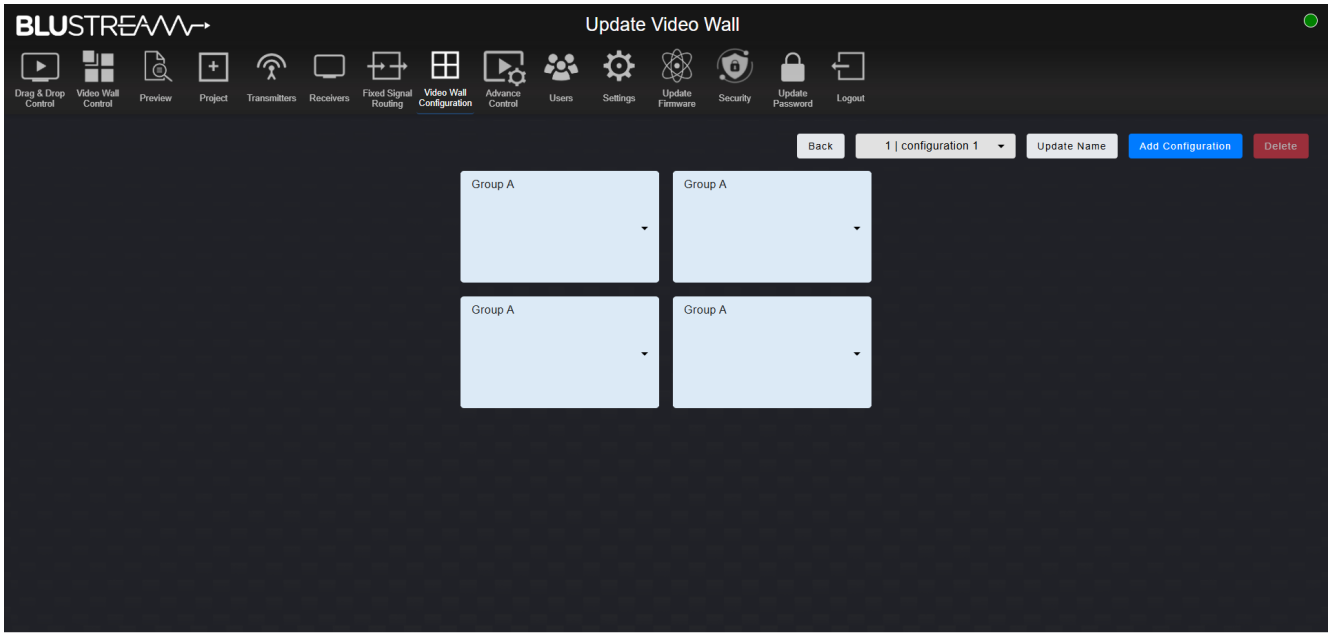
Select Back to return to the previous page.

Select the drop down menu to edit a saved Group Configuration.

Select Update Name to amend the name of the Group Configuration.

Select Add Configuration to create a new Group Configuration.

Select Delete to delete the current Group Configuration.



The Group Configurator displays a visual layout of the grouping for the current configuration. By default, all screens are assigned to Group A.

To reassign a screen, select that screen to open a drop down menu. From the list, select the desired group, or set the screen to Single.

Group Configurator (continued)

An example of Group Configuration being utilised has been provided on this page, using a 3x3 Video Wall.

A 3x3 Video Wall can support multiple layout presets, such as:

Independent Screens

- Each of the nine screens displays a different source
- Leave all drop downs set to Single

Full Video Wall

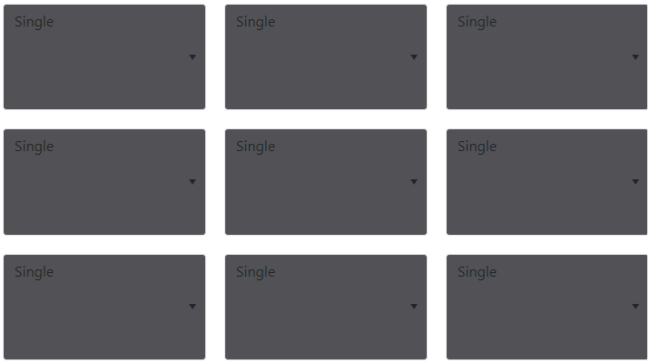
- One source spans all nine screens
- Set every screen to Group A

Partial Video Wall (2x2 within 3x3)

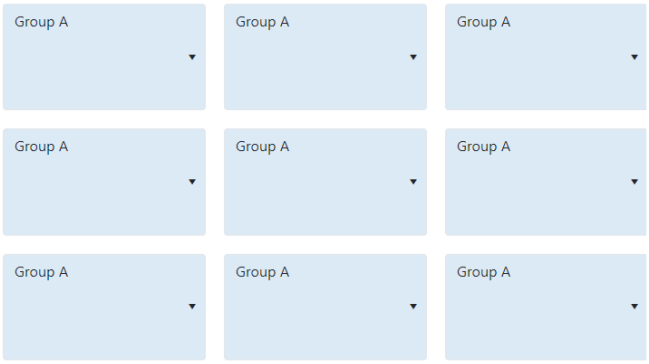
- Create a 2x2 group inside the 3x3 array while the remaining screens operate independently.
- Position the 2x2 group in any corner: assign the four screens in the 2x2 block to Group B and leave the others as Single, or assign an additional 1x2 Video Wall to Group C

Please note: It is recommend to create a second configuration where all screens are set to Single. This setup allows each display to operate independently, showing individual source content without having to reconfigured the Video Wall every time.

Group Configuration - All Single:

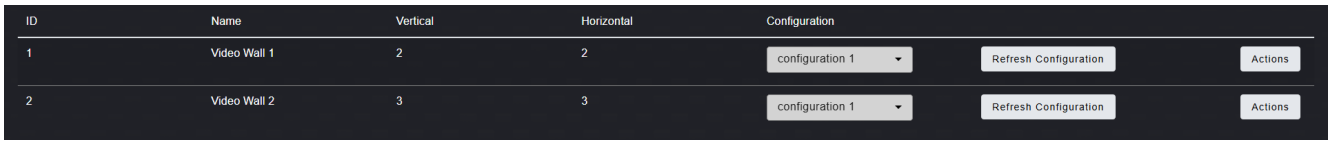


Group Configuration - Single Source:



Group Configuration - Mixed:

Once the Video Wall has been created, named accordingly, and Groups / Presets have been assigned, the configured Video Wall can be viewed from the main Video Wall Configuration page.



Web GUI - Advanced Control

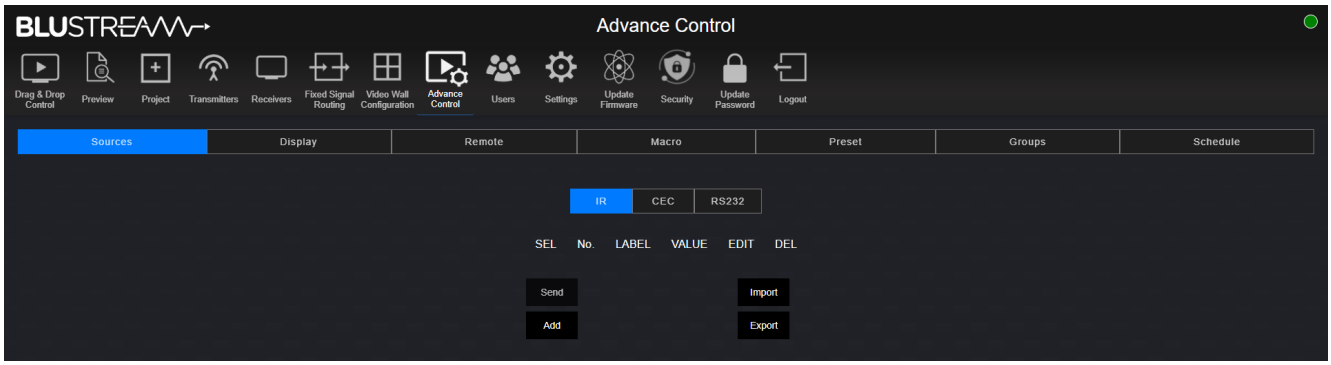
The Advanced Control page allows for IR, CEC & RS-232 commands to be stored, generated and sent to Transmitters and Receivers across the AVoIP system.

Stored commands can be configured into an On Screen Remote for usage on the Drag and Drop Control page, or be configured to trigger under specified conditions in a Macro. Macros can then be set to run on a specified schedule.

Transmitters and Receivers can also be assigned into Presets for ease of switching, and Receivers can be assigned into Groups for ease of Macro management.

Sources:

IR, CEC & RS-232 commands intended to be sent to Transmitters (i.e.: devices connected to Transmitters) can be stored, sent, imported and exported from here.



To store a source command, select **Add** to open a sub menu to configure the following options:

Label

- Enter a name to identify the command

Value:

- Input the command data string

Ending (RS-232 only):

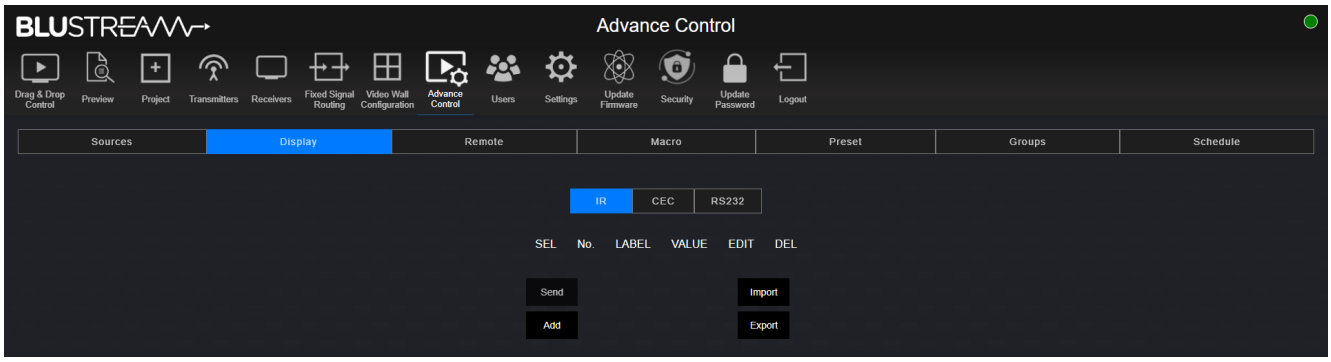
- If adding an RS-232 command, select the appropriate control characters to append to the end of the string:
- CR+LF (Carriage Return 0x0D /r + Line Feed 0x0A /n)
- CR (Carriage Return 0x0D /r)
- LF (Line Feed 0x0A /n)
- None

Once commands have been added to the list, they can be selected using the **SEL** button. To transmit a selected command, press **Send**. A dialogue box to choose which Transmitter/s should receive the command will appear.

After selecting the desired Transmitter/s, press the blue **Send** button to initiate transmission. The command will then be sent to the selected Transmitter/s.

Display:

IR, CEC & RS-232 commands intended to be sent to Receivers (i.e.: devices connected to Receivers) can be stored, sent, imported and exported from here.



To store a display command, select **Add** to open a sub menu to configure the following options:

Label

- Enter a name to identify the command

Value:

- Input the command data string

Ending (RS-232 only):

- If adding an RS-232 command, select the appropriate control characters to append to the end of the string:
- CR+LF (Carriage Return 0x0D /r + Line Feed 0x0A /n)
- CR (Carriage Return 0x0D /r)
- LF (Line Feed 0x0A /n)
- None

Once commands have been added to the list, they can be selected using the **SEL** button. To transmit a selected command, press **Send**. A dialogue box to choose which Receiver/s should receive the command will appear.

After selecting the desired Receivers/s, press the blue **Send** button to initiate transmission. The command will then be sent to the selected Receiver/s.

Remote:

To simplify control of devices connected to Transmitters and Receivers, the ACM1000 features a customisable On Screen Remote available on the Drag and Drop Control page. The remote can be tailored individually, allowing each Transmitter and Receiver to have a unique remote with device-specific commands.

Once configured, the remote becomes selectable on the Receiver preview windows, appearing as an icon in the top-left corner. Stored commands can be recalled via the remote buttons.

This feature allows guest users to control external devices without granting full access to the ACM1000.

Please note: The On Screen Remote will only appear once at least one Display command has been configured. This is a prerequisite for enabling Source command transmission via the remote.

To program the remote, first select to store commands for sources (connected to Transmitters) or displays (connected to Receivers).

The Sources remote will send commands to the assigned Receiver. The Display remote will send commands to the Transmitter the Receiver is routed to.

Remote (continued)

Select TX / Select RX:

- Select the device ID to display the On Screen Remote for. This configuration will be accessible via the corresponding Receiver's preview window on the Drag and Drop Control page

Pop-up Layout:

- Choose where the On Screen Remote will appear on the Control Page

Button ID

- Displays the ID for each button for usage with API

Enabled

- Toggle the button on or off

Label

- Enter a name for the button as it will appear on the remote

Control Type

- Select the type of command to be sent (IR, CEC, or RS-232)

Command Selection

- Use the dropdown menu to choose from stored commands based on the selected control type

Icon

- Assign an icon to visually represent the button on the remote

Action

- Press **Save** to apply any changes.

Remote (continued)

The following pages walk through a basic remote setup:

To configure the remote, at least one command must be stored in the Sources and Display tabs. In this example, three CEC source commands and three CEC display commands have been added.

Next, commands need to be assigned in the Remote Tab.

Open the Remote tab and choose Source to create a remote for devices connected to a Transmitter, or choose Display to create a remote for devices connected to a Receiver.

From the Select TX / Select RX dropdown, choose the Transmitter or Receiver the remote will control.

Enable the desired button to configure and enter a label.

Select the control type (CEC in this case).

From the command drop down, choose the desired command.

Select the icon selector to open a menu to pick an icon.

Select Save to apply changes.

To access the On Screen Remote, navigate to the Drag and Drop Control page.

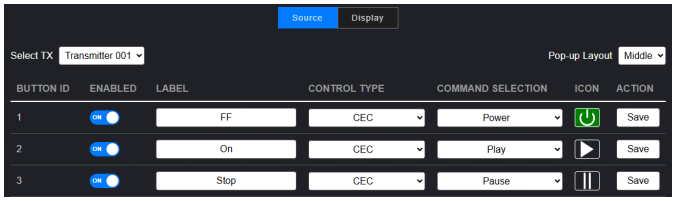
A remote icon will appear in the top-left corner of the preview window for any Receiver with a configured remote.

Select the icon to open the On Screen Remote.

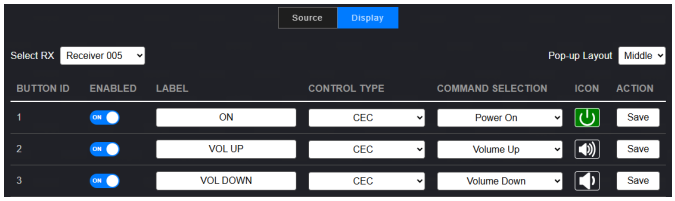
Source CEC Commands:

Display CEC Commands:

Source Remote:



Display Remote:



Receiver Preview - Remote Icon:

Remote (continued)

The Remote will open in a pop-up dialogue box.

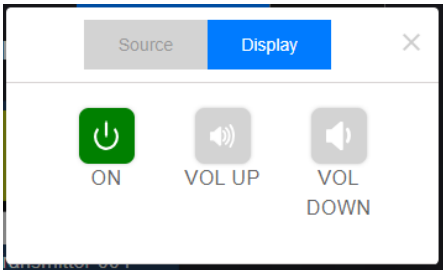
By default, the Remote will open to the Display Remote, allowing commands to be sent to devices connected to the Receiver.

In this example, Receiver 5 had a Remote configured. As Transmitter 3 didn't have a Remote configured, the Source Remote isn't selectable.

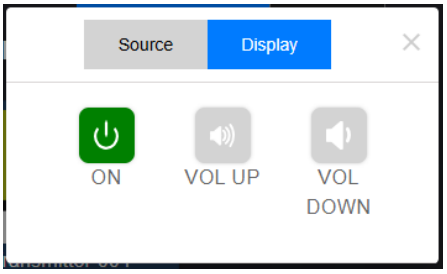
By routing Receiver 5 to Transmitter 1, and then reopening the On Screen Remote for Receiver 5, the Source Remote can now be selected, as a remote was programmed for Transmitter 1.

Switching to the Source Remote allows commands to be sent to devices connected to the Transmitter.

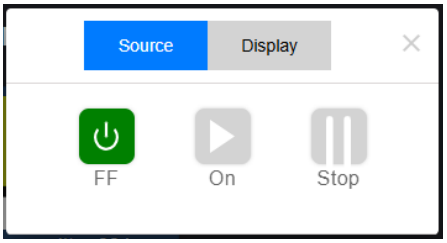
On Screen Remote (No Remote For Routed Transmitter):



On Screen Remote (Transmitter With Remote Routed):



On Screen Remote (Source Commands):

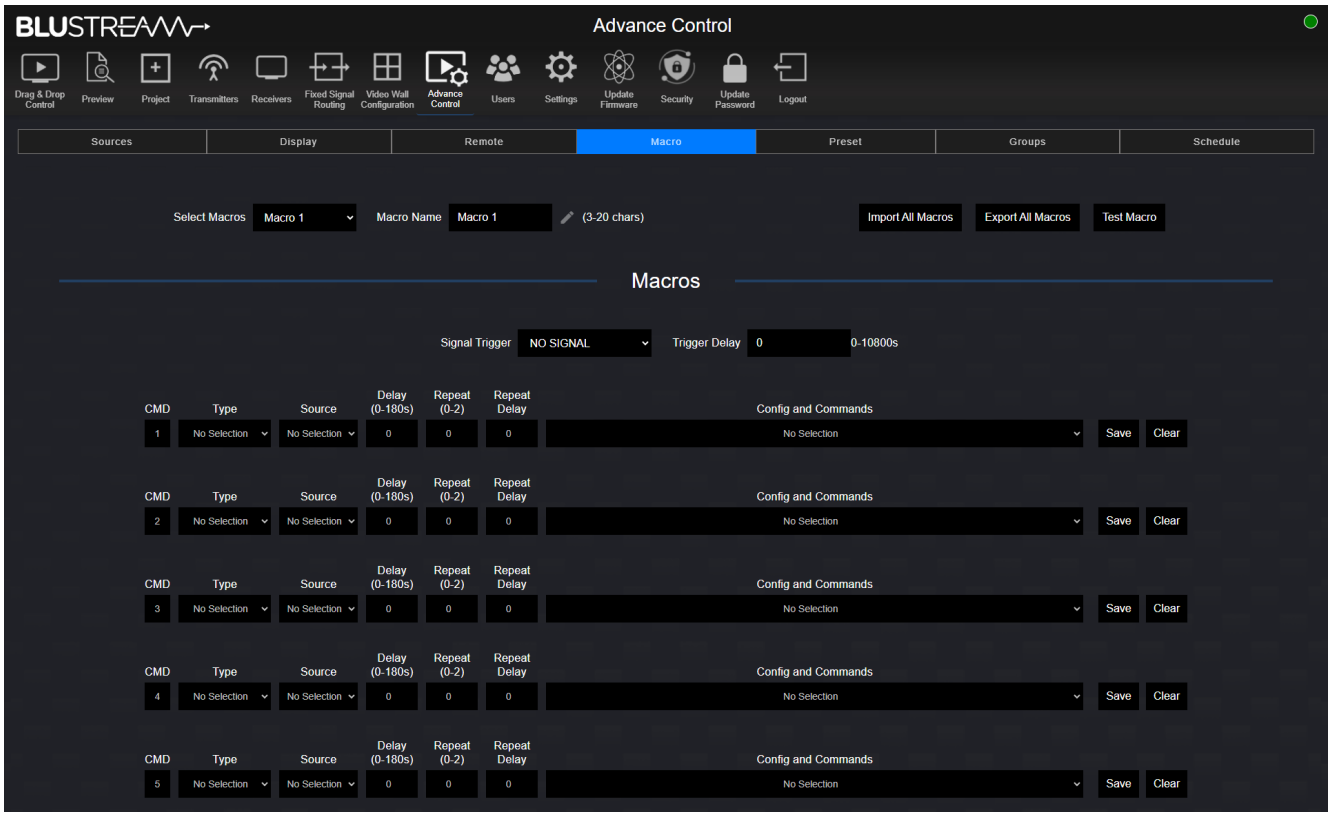


Macro:

The ACM1000 is capable of streamlined automation by combining different control protocols, optional time delays and repeats to send up to 10 commands with a single definable trigger.

Macros can be imported and exports via .json by using the respective **Import All Macros** and **Export All Macros** buttons.

Once a Macro has been configured, the **Test Macro** button can be utilised to verify functionality within the Macro tab.



Select Macros

- Up to 30 Macros can be stored and triggered

Macro Name

- Enter the Macro name and select the Tick to apply any changes

Import All Macros

- Select to upload a .json file backup of Macros to import to the ACM1000

Export All Macros

- Select to download a .json file containing all Macros that can be saved for backup or transferred to another ACM1000

Test Macro

- Trigger the current Macro to run instantly, allowing for quick and easy testing of the configured Macro

Signal Trigger

- Set an action to trigger the Macro to run
- This can be set to the GPIO inputs pins receiving a HIGH or LOW signal, or to particular Receiver or Transmitter that goes offline or loses signal

Trigger Delay

- Set how long to wait after the specified trigger has been activated before executing the commands in the Macro

Macro (continued)

CMD

- Displays the command number, which determines the execution order

Type

- Select which type of command to send (IR, CEC, RS-232). Pre Configured Commands are also available for selection here:
- Reboot
- Source Selection
- Video Off
- Video Mute
- Video Pause
- OSD
- Preset

Target Category (Source)

- Choose whether the Macro applies to Transmitters, Receivers, or Groups

Target Devices (Transmitters, Receivers, Groups)

- After selecting a category, choose the specific Transmitters, Receivers, or groups that the command should control

Delay

- Set a delay in seconds. Set to 0s for no delay

Repeat (only when Type is IR, CEC or RS-232)

- Set how many times the command should repeat before moving onto the next command. Set to 0 for no repeat

Repeat Delay (only when Type is IR, CEC or RS-232)

- Set a delay in seconds. Set to 0s for no delay

Config and Commands

- After selecting a command Type, select a corresponding command of that type

Save

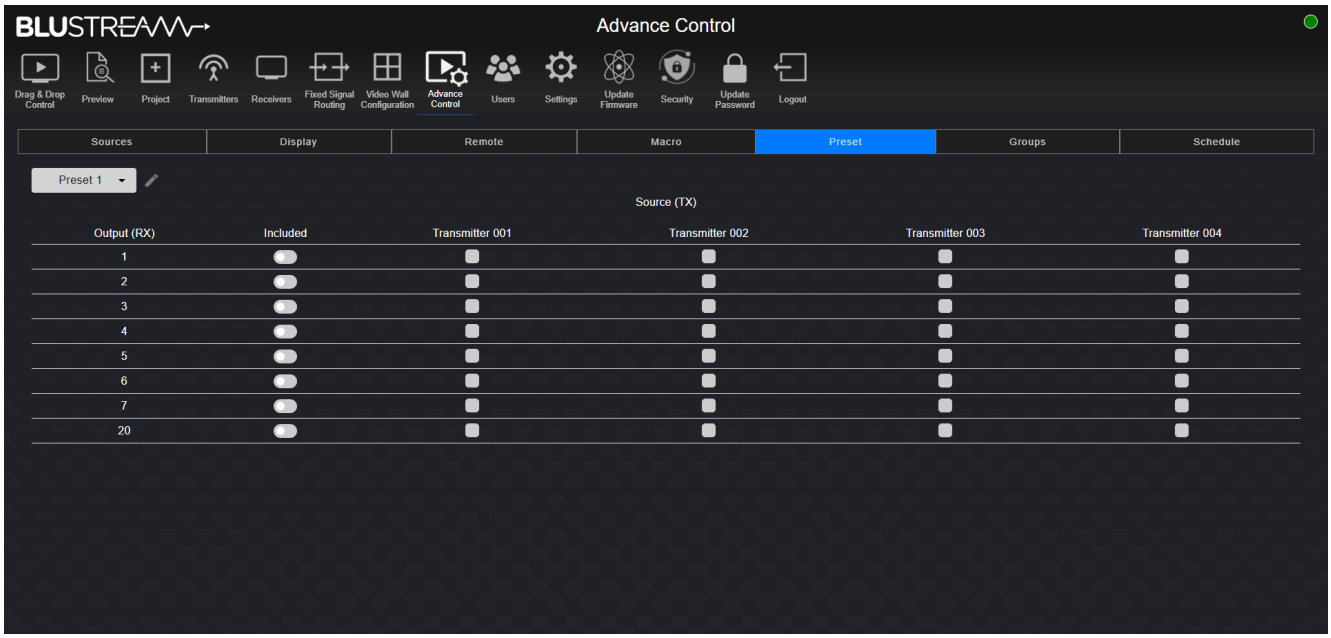
- Press **Save** to apply any changes

Clear

- Press **Clear** to clear the entire command line

Preset:

Presets can be configured to set up predefined Receiver to Transmitter routing, and to make programming Macros easier. Up to 30 Presets can be configured from the drop down menu. To rename a Preset, select the Pencil Icon, enter a new name, and select the Tick icon.



Output

- Displays Receivers in the Project. Each row represents one Receiver, identified by their ID

Included

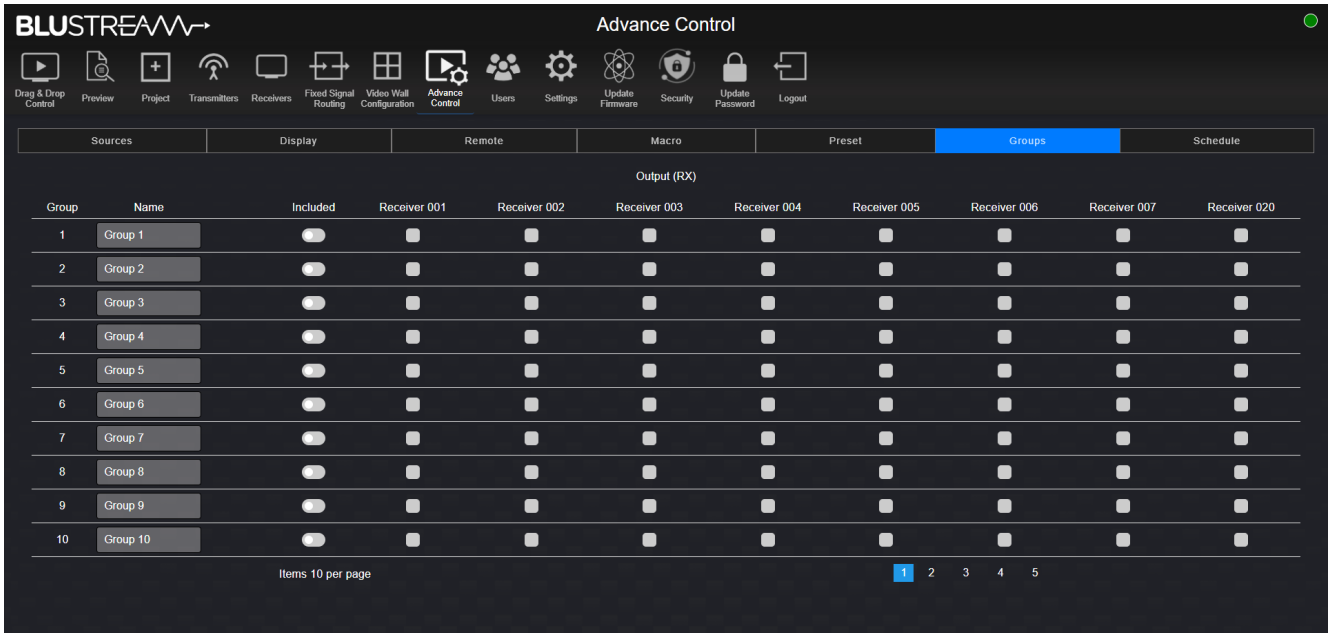
- Toggle on to include the Receiver as a part of the Preset Routing

Transmitters

- For each row, select the desired Transmitter to route to that Receiver

Groups:

Receivers can be assigned into groups for easier control, (i.e.: grouping Receivers by room). Up to 50 groups can be configured.



Groups (continued)

Use the toggle to activate the group, and check the boxes for the desired Receivers to include in the group. Each row, represents a Group.

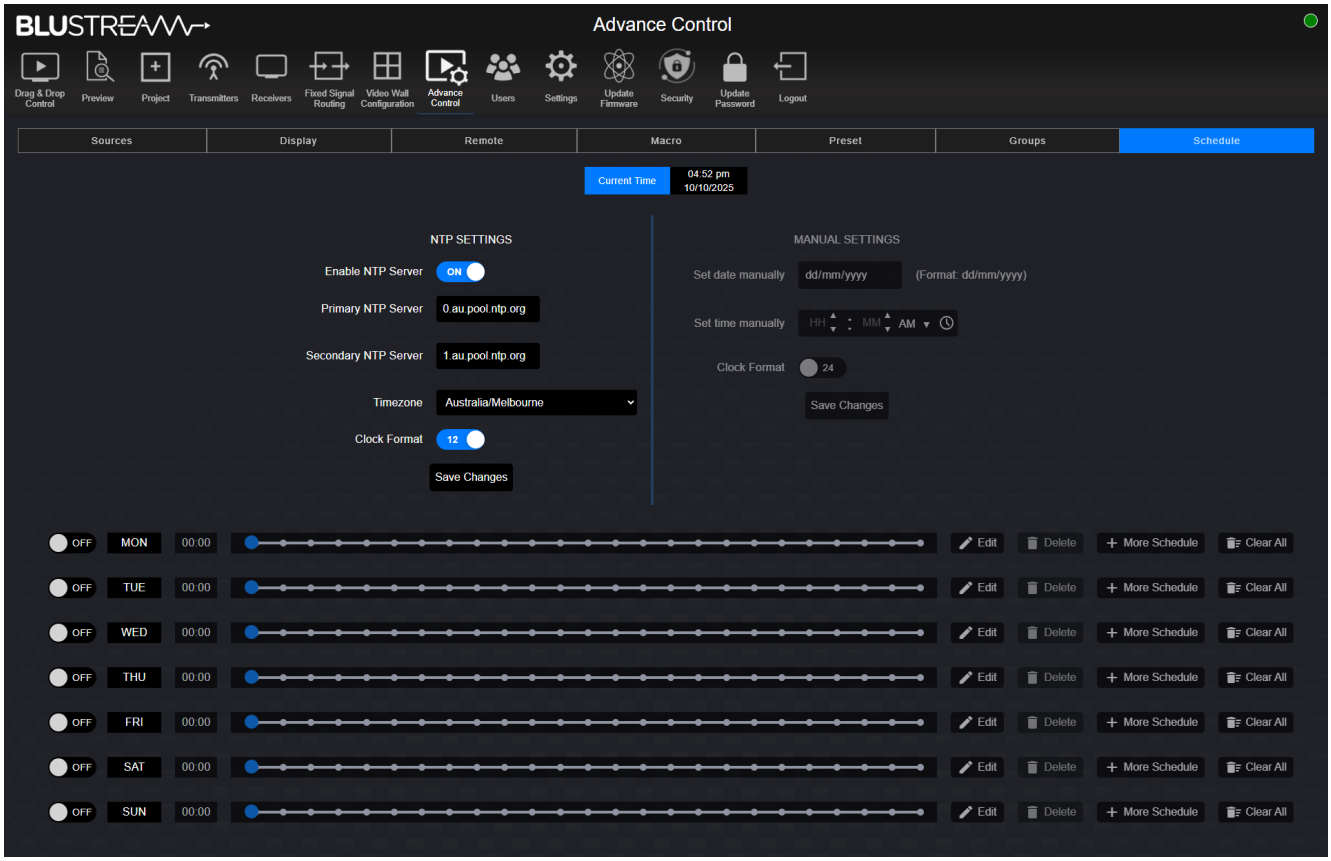
Receivers can belong to multiple groups. If adding a Receiver to more than one group, a warning dialogue box will appear.

To access more Groups, use the page numbers at the bottom of the page.

Schedule:

The Schedule enables Macros to be run at specific times instead of waiting for a trigger signal.

For scheduling to work correctly, the internal clock of the ACM1000 must be accurate. The time can be set manually or synchronized with an NTP server.



NTP Settings

- Enable NTP Server — Enable Manual Settings / Disable NTP Settings
- Primary NTP Server — Set the Primary NTP Server Address
- Secondary NTP Server — Set the Secondary NTP Server Address
- Timezone — Set the Timezone offset
- Clock Format — 12 Hour / 24 Hour

Select Save Changes once configured.

Please note: NTP servers operate in UTC (Universal Coordinated Time) so DST must be set manually according to locale.

Ensure the ACM1000 can access the internet through the LAN ports for NTP functionality.

Schedule (continued)

Manual Settings

- Set Date Manually — Enter the date (dd-mm-yyyy)
- Set Time Manually — Enter the time (hh:mm)
- Clock Format — 12 Hour / 24 Hour

Select Save Changes once configured.

Please note: In order to change Manual Settings, 'Enable NTP Server' under NTP Settings must be turned off.

The Schedule operates on a 24-hour clock across a 7-day calendar. Specific times can be set for Macros to run automatically:

- Enable a day in the Schedule by turning on the toggle. A dialogue box will open.
- Select the Macro to schedule from the drop down menu.
- Set the trigger time entering the time in the HH:MM field, or selecting the clock icon to choose a time using the analogue clock.
- Select **Create** to add the Macro to the schedule

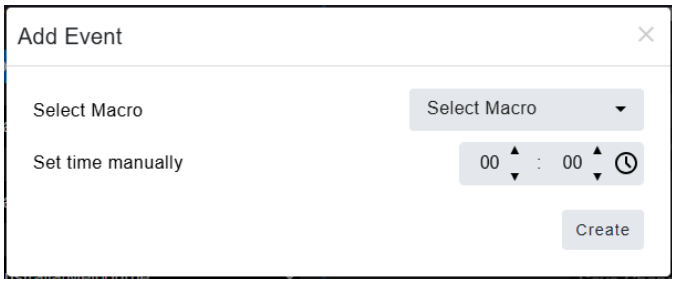
To adjust the Macro time trigger, drag the blue dot along the timeline to change the time, or select the HH:MM time next to the day label to enter a new time manually.

To schedule additional Macros or multiple triggers on the same day, select **+ More Schedule** to add another timeline.

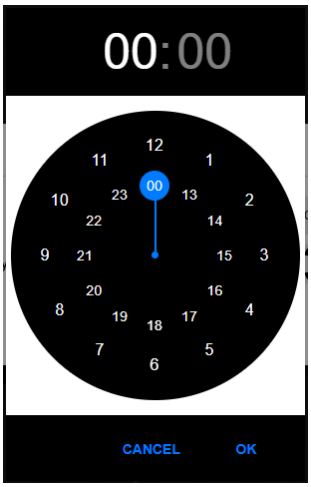
Select **Delete** to Remove a specific scheduled Macro

Select **Clear All** to Remove all triggers for that day.

New Schedule:



Set Time - Clock:



+ More Schedule:

Web GUI - Users

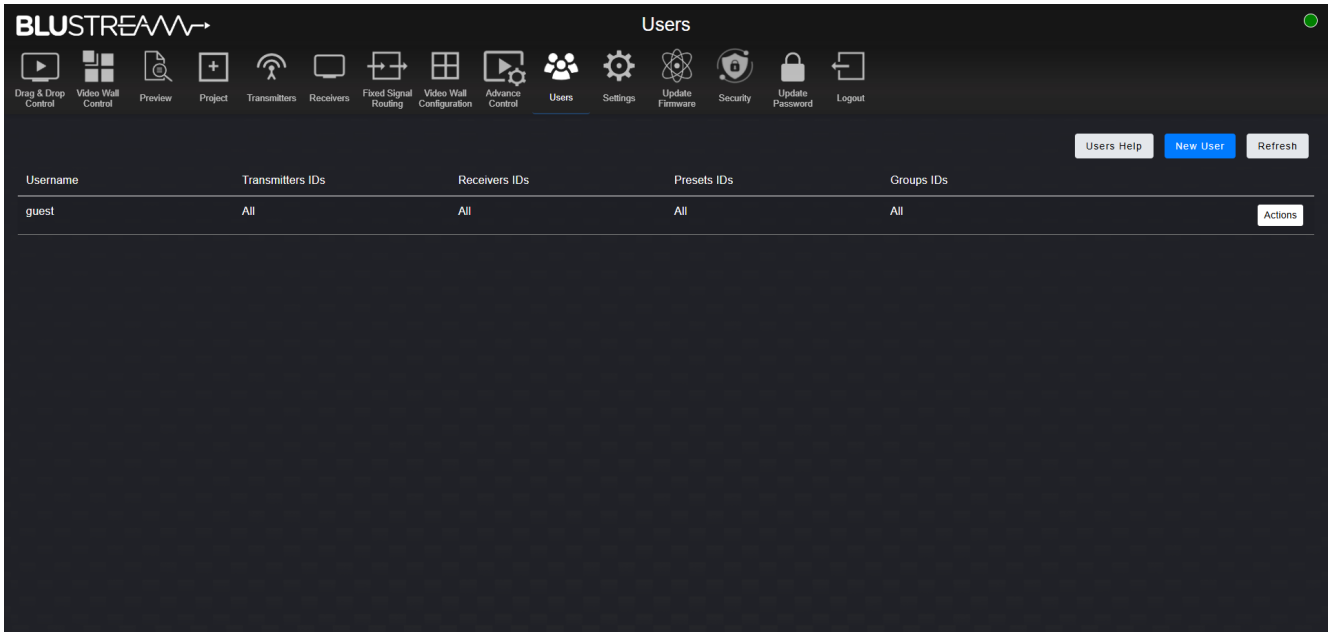
The ACM1000 offers flexible user management, allowing multiple users to be configured with unique log ins and customisable control privileges. Each user can be granted access to control specific Transmitters, Receivers, Presets and Groups on the Drag and Drop Control page and the Video Wall Control page.

Select any column header to sort the list in ascending or descending order based on that column's values

Information on Users can be found by selecting the **Help** button.

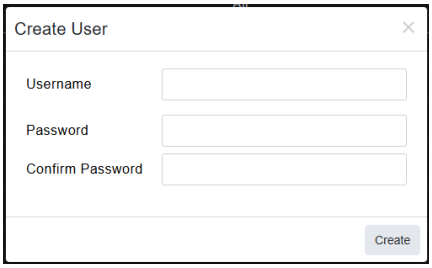
Refresh the list of Users (helpful when testing commands from a 3rd party control system) by selecting the **Refresh** button.

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.



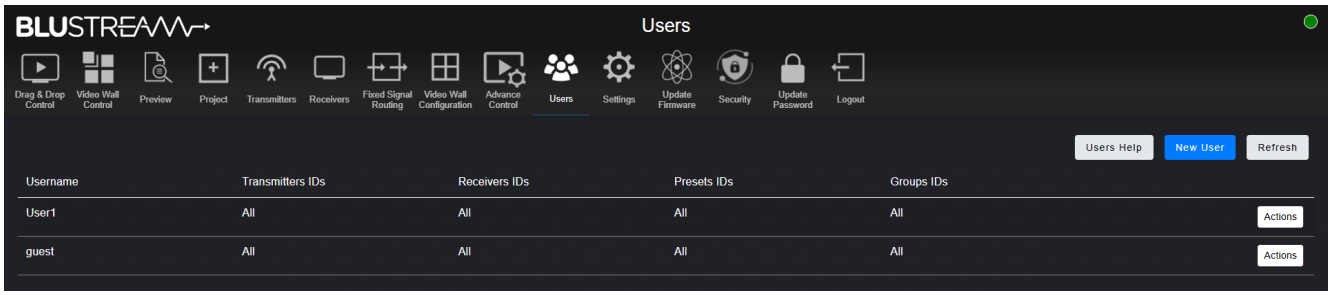
To create a new user, press the **New User** button.

New User:



Set a username and password and press **Create**.

The new user will appear in the list.



Users (continued)

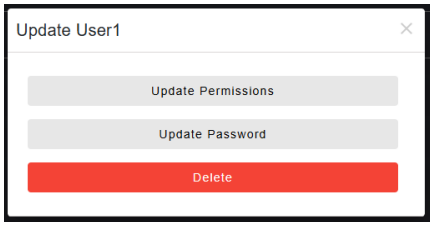
Pressing **Actions** will open a sub menu to configure the following options:

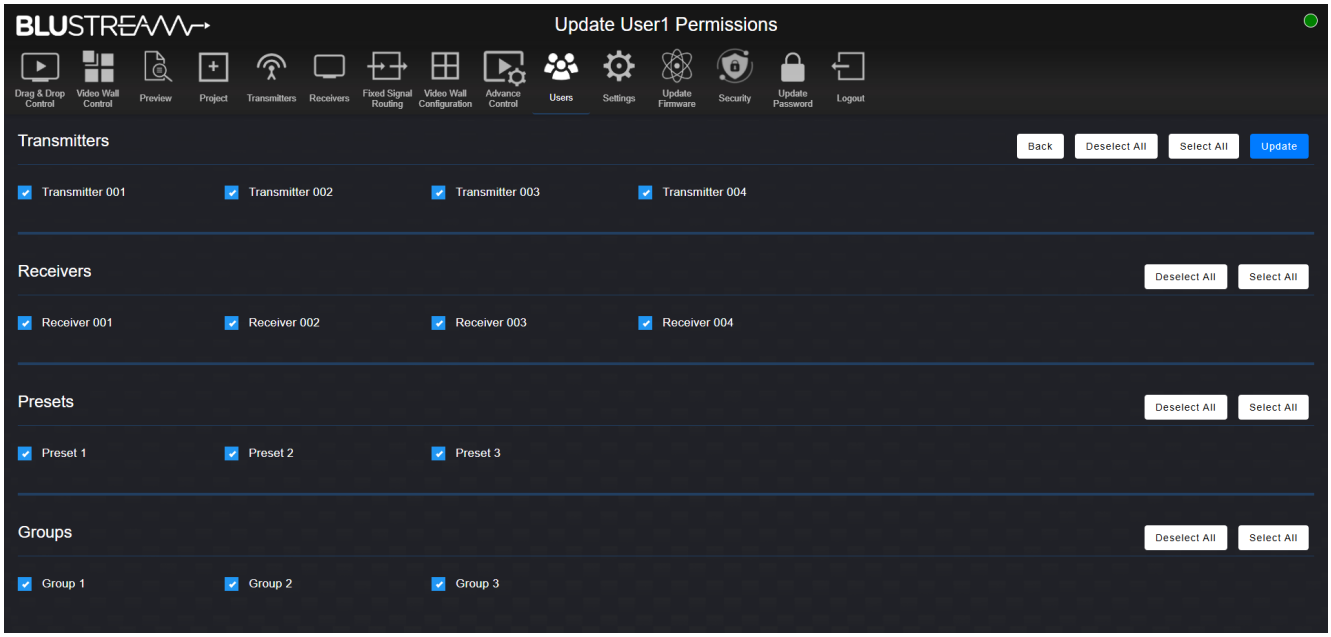
Update Permissions

- Select the checkboxes on the desired devices for the user to have permission to control
- The **Deselect All** and Select **All buttons** can be used to quickly make a selection

Press the **Update** button to apply the permissions.

New User:

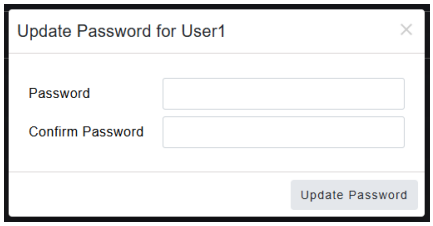




Update Password

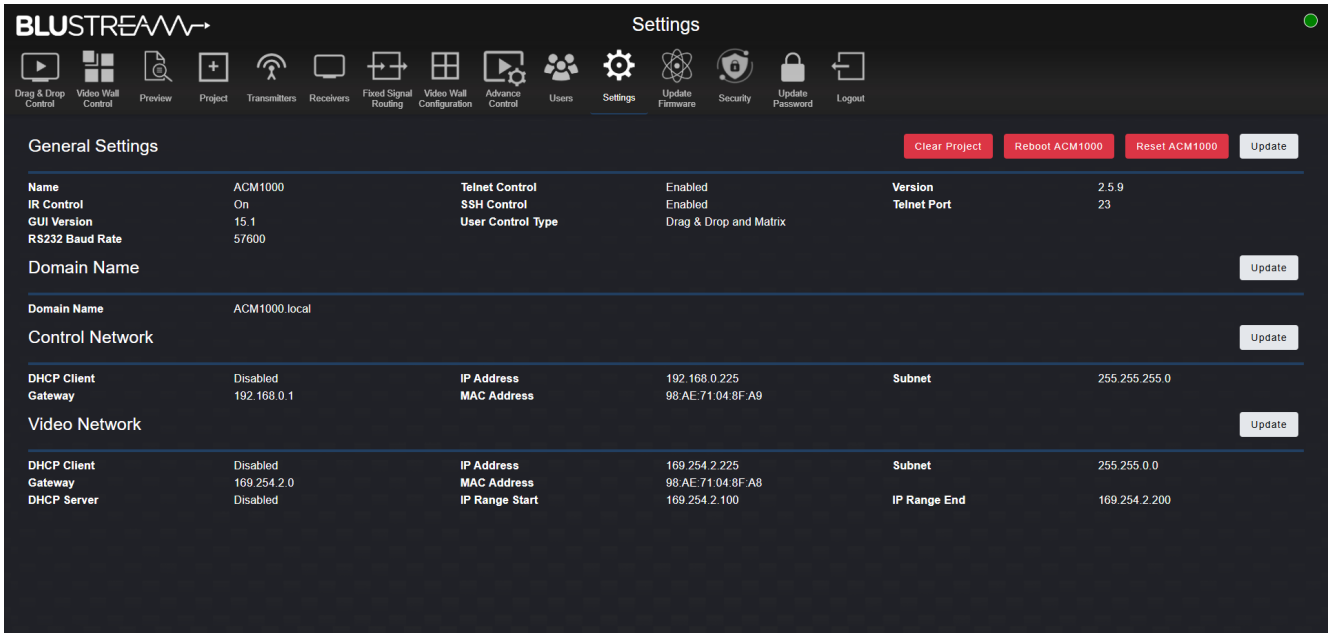
- Enter a new password for the selected user

Update Password:



Web GUI - Settings

System settings for the ACM1000 can be viewed and modified from this page.



Clear Project:

- Clear the current project, all Transmitter and Receiver mappings, and return to the New Project Setup Wizard

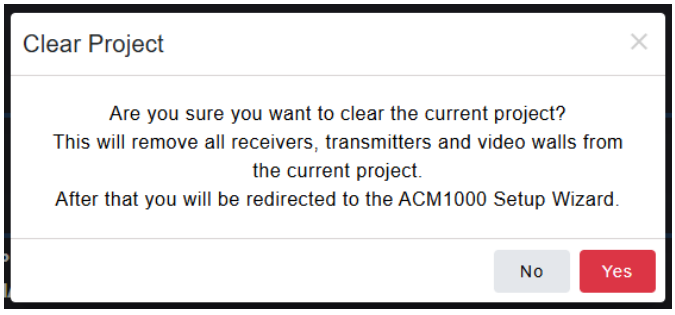
Reboot ACM1000:

- Reboots the ACM1000

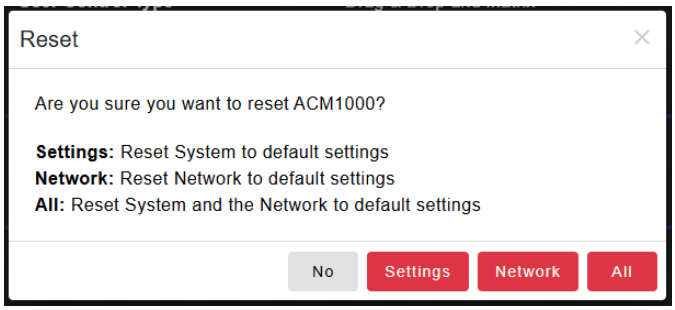
Reset ACM1000

- Opens a sub menu with reset options for Settings, Network, or All

Clear Project:



Reset ACM1000:



General Settings:

The General Settings section shows system and network information. The Update button will open a sub menu to configure the following items:

IR Control

- Toggle IR control for the ACM1000

Telnet Control

- ON/ OFF

SSH Control

- ON / OFF

Telnet Port

- Default 23

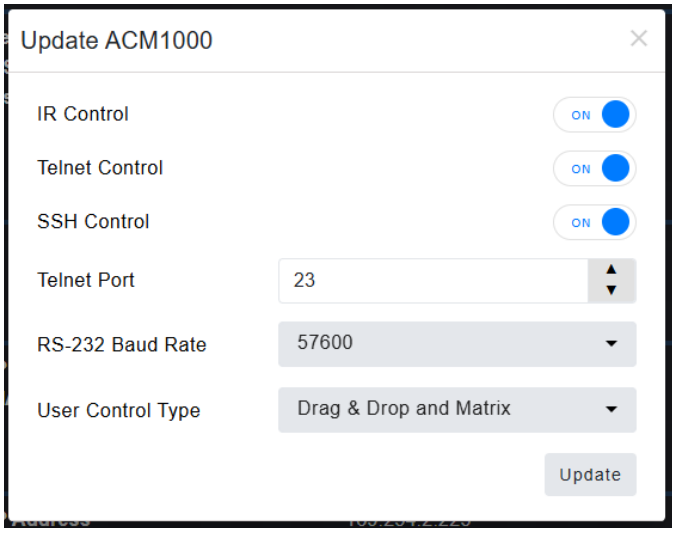
RS-232 Baud Rate

- 9600 / 19200 / 38400 / 57600 (default) / 115200

User Control Type

- Sets which control is available on the Drag and Drop Control page:
- Drag and Drop Only / Matrix Only / Drag and Drop and Matrix

Reset ACM1000:



Domain 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 ACM1000 is able to be accessed via the hostname if the IP address is not known.

The default Domain name is: **acm1000.local**

Select Update to configure the Domain name.

Domain Name:

Control Network:

The Control Network section allows for configuring IP settings of the Control Network LAN port. The Update button will open a sub menu to configure the following items

DHCP

- When DHCP is enabled, the port will get its IP address via the DHCP server/router on the network and the static IP settings will be disabled
- When DHCP is disabled, static IP settings can be set

IP Address

- Set the static IP address of the Control Network LAN port.

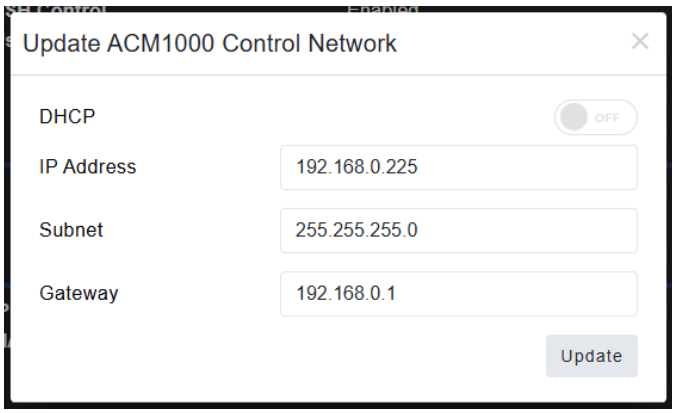
Subnet

- Set the subnet mask of the Control Network LAN port.

Gateway

- Set the gateway address of the Control Network LAN port.

Control Network:



Video Network:

The Video Network section allows for configuring IP settings of the Video Network LAN port. The Update button will open a sub menu to configure the following items:

DHCP Client

- When DHCP is enabled, the port will get its IP address via the DHCP server/router on the network and the static IP settings will be disabled

IP Address

- Set the static IP address of the Video Network LAN port.

Subnet

- Set the subnet mask of the Video Network LAN port.

Gateway

- Set the gateway address of the Video Network LAN port.

DHCP Server

The ACM1000 is able to act as a DHCP server for all of the Transmitters and Receivers on the Video Network.

To utilise DHCP, when creating a new project, close the wizard and navigate to the Settings page and activate DHCP Server.

Next, each device must be powered on and connected to it's Web GUI. From there, enable DHCP on the device.

The Transmitters and Receivers can now be added to the Video Network via DHCP.

Currently, due to legacy device operation, DHCP can only be enable using this method.

DHCP Server

- Enable / Disable

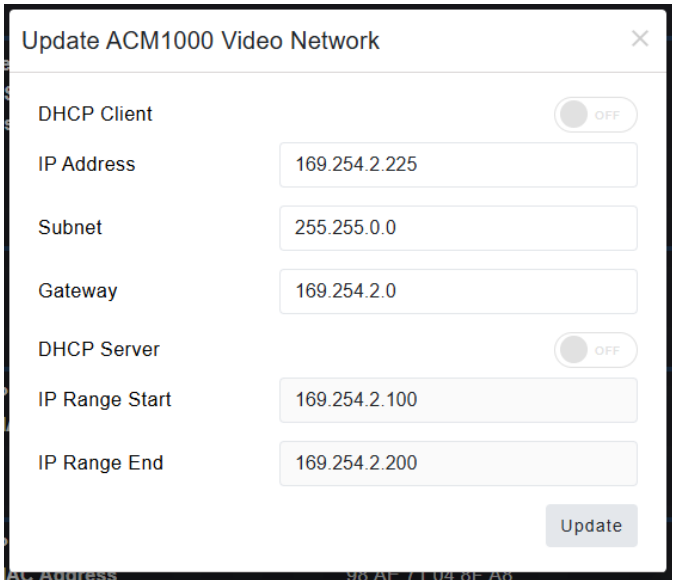
IP Range Start

- Set the DHCP address start address

IP Range Stop

- Set the DHCP address stop address

Video Network:



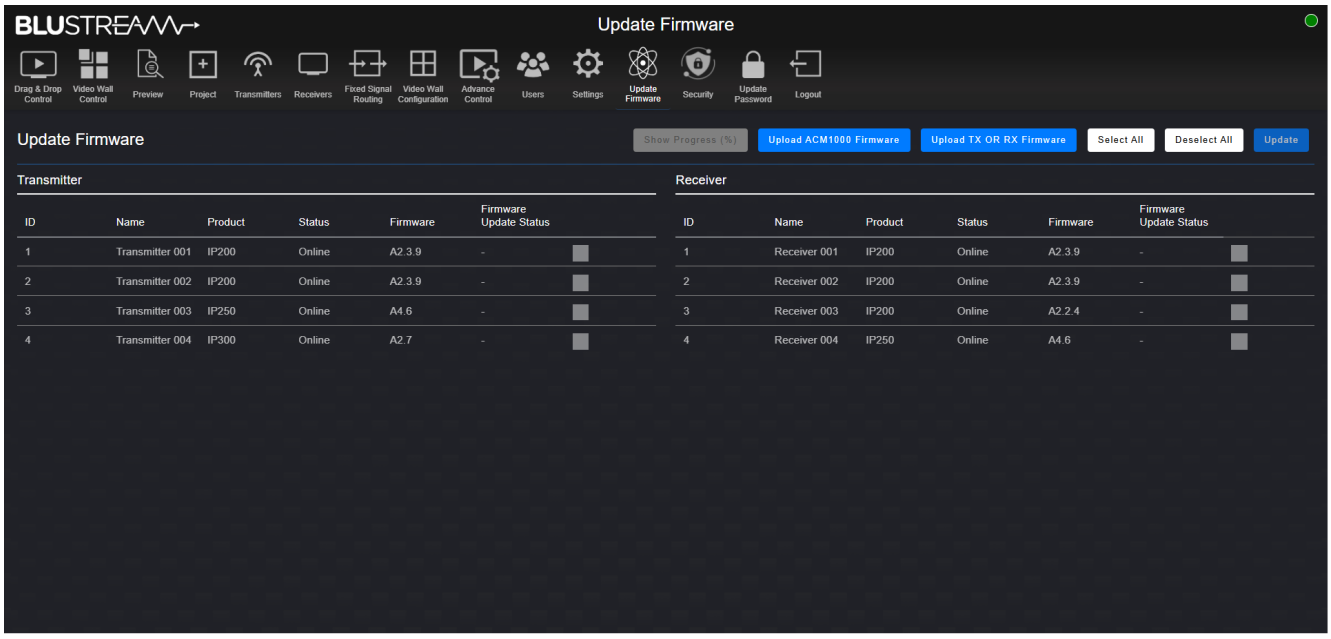
Web GUI - Update Firmware

The Update Firmware page shows an overview of the firmware version of the Transmitters and Receivers that are currently configured in the AVoIP system.

The firmware of the ACM1000 and all connected Transmitters and Receivers can be updated from here. Multiple, different Transmitter and Receivers can be updated simultaneously by uploading their respective firmware files.

Select any column header to sort the list in ascending or descending order based on that column's values.

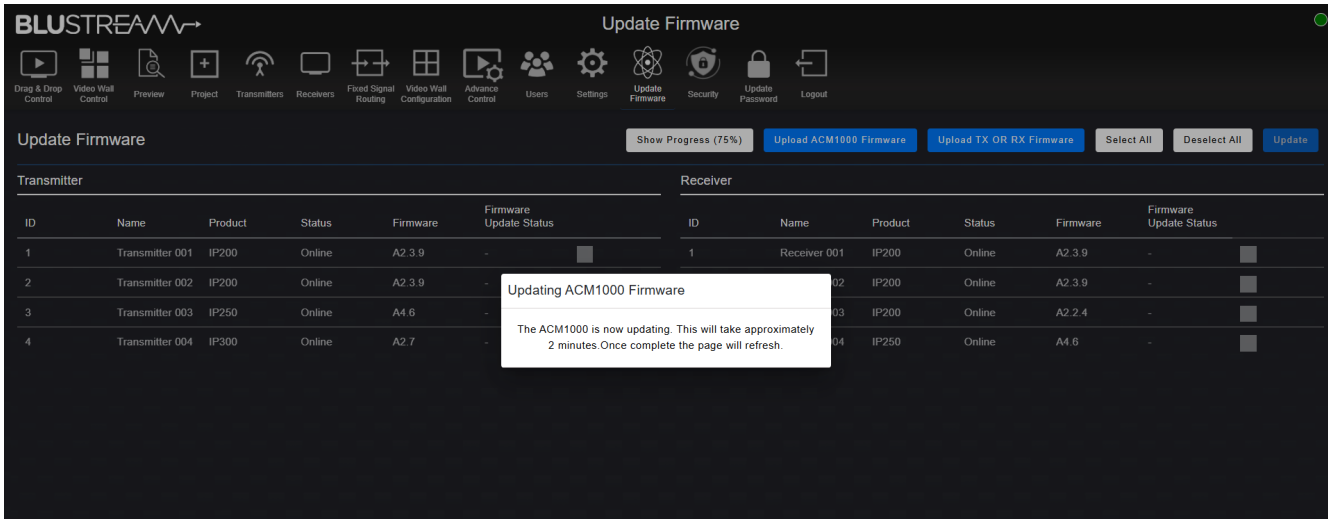
The Show Progress (%) box displays the completion percentage when updating the ACM1000 firmware.



Upload ACM1000 Firmware

- Download the latest firmware for the ACM1000 from the Blustream website
- Select Upload ACM1000 firmware to upload the firmware file to the ACM1000
- The update process will begin, displays it's progress
- The Web GUI will automatically refresh when the update is complete

ACM1000 Firmware Update:

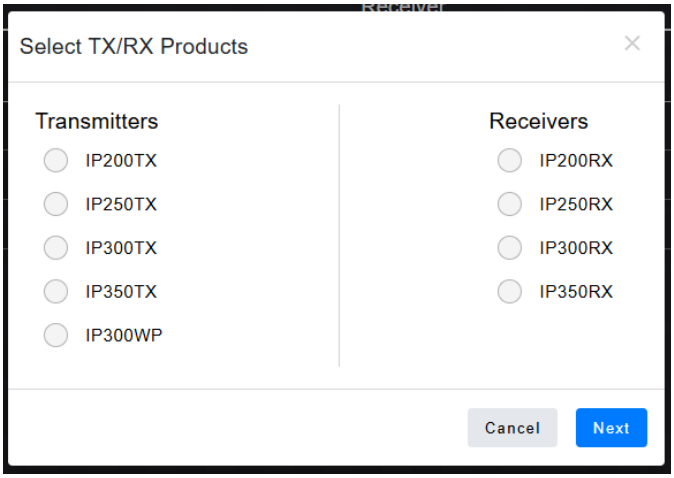


Web GUI - Update Firmware

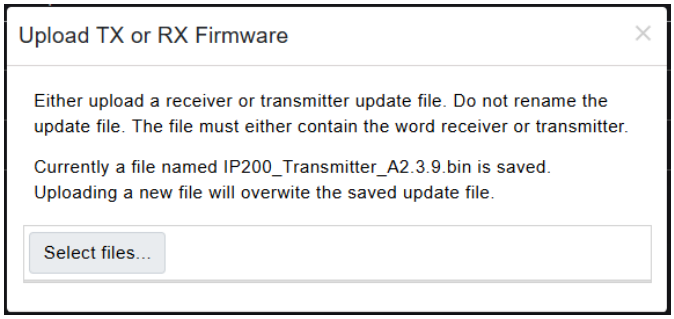
Upload TX or RX Firmware

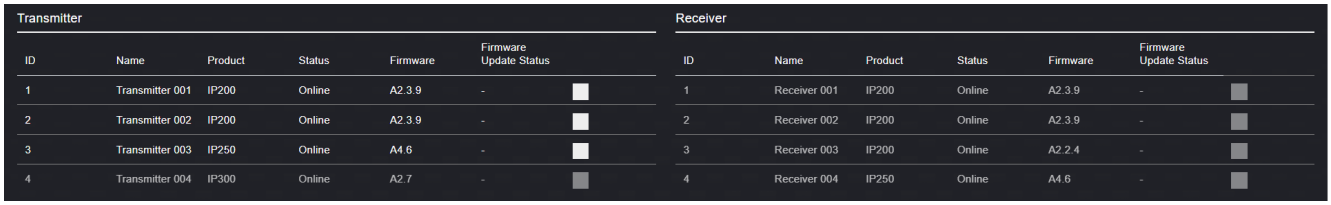
- Download the appropriate firmware for the AVoIP device to be updated
- Select the model that the firmware file correspond to and select Next to upload the firmware file to the ACM1000
- **Please note:** The ACM1000 is able to store firmware files for future firmware updates. If a firmware file for the selected AVoIP device has already been uploaded, the new firmware file will overwrite the previously stored firmware file
- This can be repeated for all firmware files for each model to be uploaded
- The Update Firmware page will refresh, displaying the devices which have firmware files stored on the ACM1000, and can be selected to update

Upload TX or RX Firmware:



Overwrite Warning:





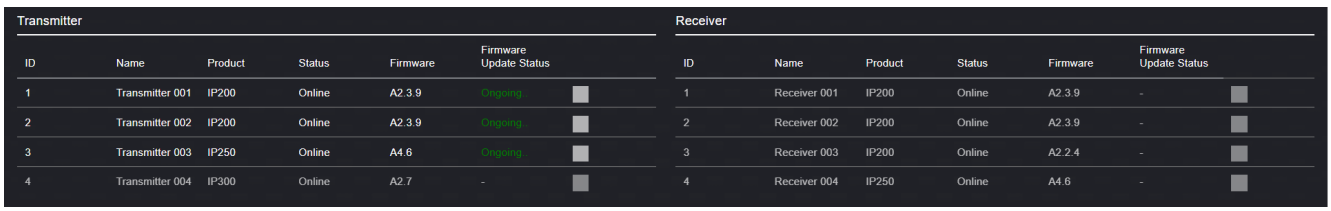
Transmitter

ID	Name	Product	Status	Firmware	Firmware Update Status	
1	Transmitter 001	IP200	Online	A2.3.9	-	
2	Transmitter 002	IP200	Online	A2.3.9	-	
3	Transmitter 003	IP250	Online	A4.6	-	
4	Transmitter 004	IP300	Online	A2.7	-	

Receiver

ID	Name	Product	Status	Firmware	Firmware Update Status	
1	Receiver 001	IP200	Online	A2.3.9	-	
2	Receiver 002	IP200	Online	A2.3.9	-	
3	Receiver 003	IP200	Online	A2.2.4	-	
4	Receiver 004	IP250	Online	A4.6	-	

- Once all firmware files have been uploaded, select the Transmitters and Receivers to update
- Alternatively, in large systems, the **Select All** and **Deselect All** buttons can be used to quickly select all device of a certain Receiver or Transmitter model
- Select Update to update the selected devices



Transmitter

ID	Name	Product	Status	Firmware	Firmware Update Status	
1	Transmitter 001	IP200	Online	A2.3.9	Ongoing	
2	Transmitter 002	IP200	Online	A2.3.9	Ongoing	
3	Transmitter 003	IP250	Online	A4.6	Ongoing	
4	Transmitter 004	IP300	Online	A2.7	-	

Receiver

ID	Name	Product	Status	Firmware	Firmware Update Status	
1	Receiver 001	IP200	Online	A2.3.9	-	
2	Receiver 002	IP200	Online	A2.3.9	-	
3	Receiver 003	IP200	Online	A2.2.4	-	
4	Receiver 004	IP250	Online	A4.6	-	

- Devices being updated will, display ‘Ongoing Update’ until finished

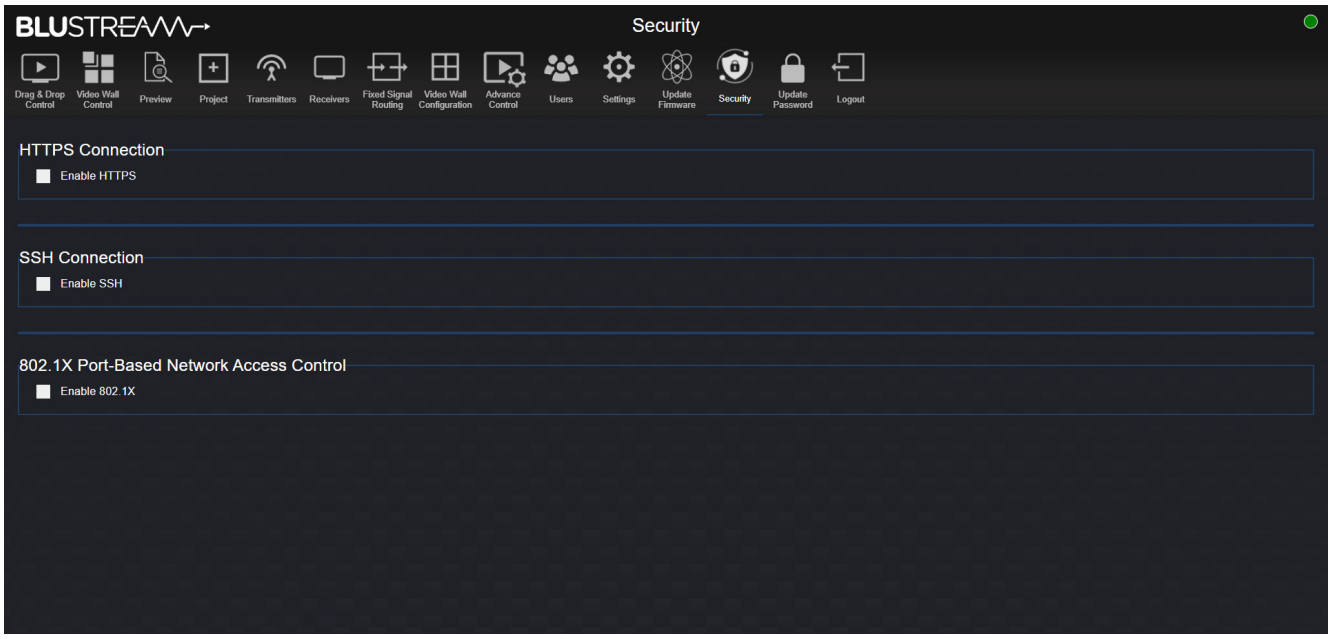
Please note: The firmware file is uploaded directly to the ACM1000, and the update is applied from there. Once the upload box has closed and the Firmware Update Status has changed to Ongoing Update, the page can be safely navigated away from.

The ACM1000 firmware can also be upgraded via the Upgrade USB-A Port:

Save the firmware file in a folder named “OTA” on the root of the drive. Insert the drive into Upgrade USB-A Port to start the update.

Web GUI - Security

From the Security page, key protection features can be enabled including: HTTPS for secure web access, SSH for encrypted remote management, and 802.1X port authentication for network access control.



HTTPS Connection

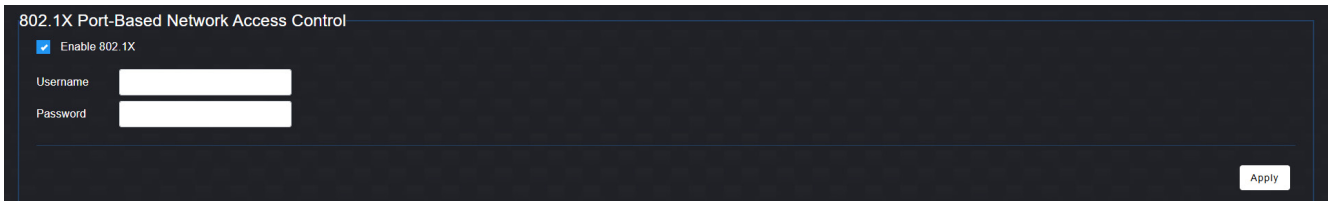
- Select the checkbox to enable

SSH Connection

- Select the checkbox to enable

802.1X Port-Based Network Access Control

- Select the checkbox to enable
- Enter the username and password
- Select Apply to save any changes



Specifications

- **Ethernet port:** 2x 1Gb LAN RJ45 connector (1x PoE support)
- **RS-232 serial port:** 2x 3-Pin Phoenix connector
- **I/O port:** 1x 6-Pin Phoenix connector
- **IR Input ports:** 1x 3.5mm stereo jack
- **Product upgrade:** 1x Micro USB, 1x USB Type-A, female
- **Dimensions (W x D x H):** 190.4 mm x 93mm x 25mm
- **Shipping Weight (Kit):** 0.6kg (TBC)
- **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:** PoE or 12V/1A DC

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

Package Contents

- 1 x ACM1000
- 1 x IR Control Cable - 3.5mm to 3.5mm Cable
- 4 x Rubber Feet
- 1 x Mounting Kit
- 1 x Quick Reference Card

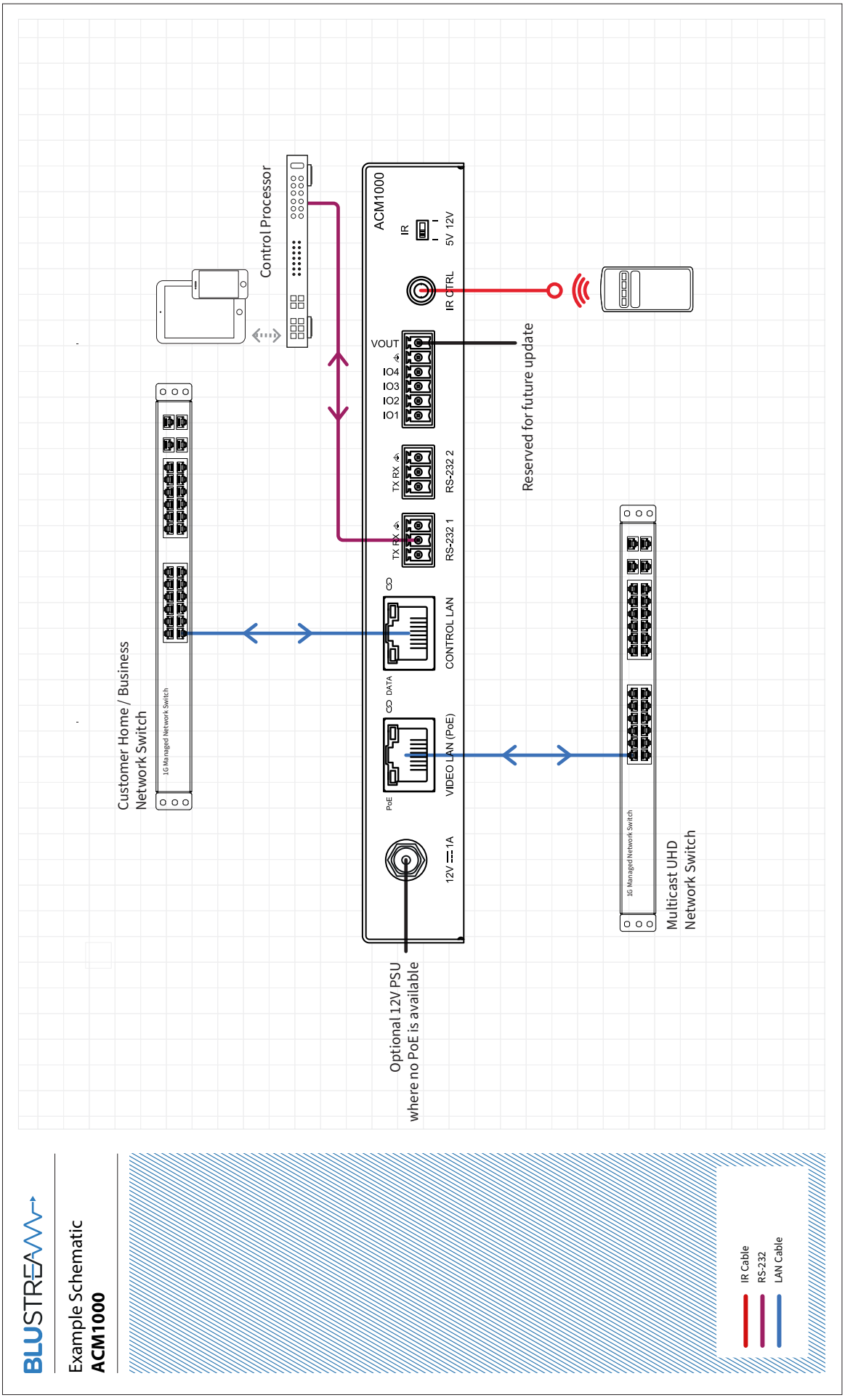
Maintenance

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

Connection Schematic

BLUSTREAM

Example Schematic
ACM1000



RS-232 Configuration and Telnet Commands

The ACM1000 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 ACM1000 and connected AVoIP devices.
OUToooFRyyy	Routing a Receiver to a Transmitter
	Example: OUT001FR001 (This would set Receiver 001 to follow Transmitter 001)
PRExxAP	Recall Preset xx
	Example: PRE01AP (This would apply Preset 01 to the corresponding AVoIP devices)

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, this token may be 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
IR ON/OFF	Set ACM1000 IR Control On Or Off
PREVIEW IMAGE ON/OFF	Set ACM1000 Preview Image On Or Off
RSB x	Set RS232 Baud Rate to X bps x=[0:115200 1:57600, 2:38400, 3:19200, 4:9600]"
RESET	Reset ACM1000 System To Default Settings, Excluding Network Settings
RESET NB	Reset ACM1000 Network To Default Settings
RESET ALL	Reset ACM1000 System And Network To Default Settings (Type ""Yes"" To Confirm Reset, ""No"" To Discard)
OUT ooo ON/OFF	Set Output ooo On Or Off
OUT ooo ID id	Set Output ooo To ID id, If New ID Exists Than Swap Them, Note: DEVICE MUST BE ONLINE
OUT ooo FR yyy	Set Output ooo From Input yyy
OUT ooo VFR yyy	Fix Video Output ooo From Input yyy
OUT ooo AFR yyy	Fix Audio Output ooo From Input yyy
OUT ooo RFR yyy	Fix IR Output ooo From Input yyy
OUT ooo SFR yyy	Fix RS232 Output ooo From Input yyy
OUT ooo UFR yyy	Fix USB Output ooo From Input yyy
OUT ooo CFR yyy	Fix CEC Output ooo From Input yyy
OUT ooo FAST ON/OFF	Set Output ooo Fast Switching On Or Off
OUT ooo HDR ON/OFF	Set Output ooo HDR On Or Off
OUT ooo CEC ON/OFF	Set Output ooo CEC On Or Off
OUT ooo OSD ON [time]	Set Output ooo Show ID OSD On Display for time Seconds
OUT ooo OSD OFF	Set Output ooo Hide ID OSD
OUT ooo FLS ON [time]	Set Output ooo Flash Power LED for time Seconds
OUT ooo FLS OFF	Set Output ooo Disable Flash Power LED
OUT ooo DEL	Delete Output ooo From Current Project Config
OUT ooo RES rr	Set Output ooo Resolution To rr
OUT ooo ROTATE tt	Set Output ooo Rotation To tt
OUT ooo STRETCH ON/OFF	Set Output ooo Stretch On Or Off
OUT ooo HTTPS ON/OFF	Set Output ooo HTTPS On Or Off
OUT ooo AUDSD	Set Output ooo SPDIF Input To Dante® Output
OUT ooo AUDHA	Set Output ooo HDMI Source To Analogue Output
OUT ooo AUDHH	Set Output ooo HDMI Source To HDMI Output
OUT ooo AUDHD	Set Output ooo HDMI Source To Dante® Output
OUT ooo AUDDA	Set Output ooo Dante® Input To Analogue Output
OUT ooo AUDDH	Set Output ooo Dante® Input To HDMI Output
OUT ooo LAN2M0	Set Output ooo LAN2 Mode To Mode 0
OUT ooo LAN2M1	Set Output ooo LAN2 Mode To Mode 1
OUT ooo LAN2M2	Set Output ooo LAN2 Mode To Mode 2
OUT ooo LAN2M3	Set Output ooo LAN2 Mode To Mode 3
OUT ooo LAN2M4	Set Output ooo LAN2 Mode To Mode 4
OUT ooo ARC OFF	Set Output ooo ARC function OFF

COMMAND	ACTION
OUT ooo ARC HDMI	Set Output ooo ARC port To HDMI
OUT ooo ARC OPT	Set Output ooo ARC port To OPTICAL
OUT ooo NAME name	Set Output ooo Device Name To name
OUT ooo MODE MX/VW	Set Output ooo To Matrix Or Video Wall Mode
OUT ooo DBG ON/OFF	Set Output ooo Debug Mode On Or Off
OUT ooo BTN ON/OFF	Set Output ooo Front Panel Button Enable On Or Off
OUT ooo IR ON/OFF	Set Output ooo Front Panel IR Enable On Or Off
OUT ooo MUTE ON/OFF	Set Output ooo Mute On Or Off
OUT ooo PAUSE ON/OFF	Set Output ooo Pause On Or Off
OUT ooo AUTOON ENABLED/DISABLED	Set Output ooo Automatically on Enabled Or Disabled
OUT ooo LED ee	Set Output ooo Front Panel LED Auto Off After ee*10 Seconds
OUT ooo SG [ON/OFF] [BR br] [BIT bit]	Set Output ooo Serial Guest Mode Config
OUT ooo GUEST	Start Serial Guest Mode To Output ooo
OUT ooo HDCP BYP/V14/V22	Set HDCP overrider mode To Output ooo
OUT ooo SSM L/N	Set System Size To Output ooo Note: To Close Guest Mode Use Command CLOSE-ACMGUEST
OUT [ooo] STATUS	Show Output ooo Detailed Status
OUT ooo RB	Reboot Output ooo And Apply New Config
OUT ooo RESET	Reset Output ooo To Factory Default Setting
OUT PARAMETERS	ooo=000: Select All Output Ports ooo=[001...n]: Select One Output Port id=[001...767]: ID value yyy=[001...n]: Select One Input Port yyy=AUTO: V/A/R/S/U/C/P follow ""OUT ooo FR yyy"" command rr=[0:Bypass 3:1080P@50Hz 4:1080P@60Hz] [7:720P@60Hz 8:720P@50Hz] [9:1280x1024@60Hz 10:1024x768@60Hz] [11:1360x768@60Hz 12:1440x900@60Hz 13:1680x1050@60Hz] [14:4K 30 Hz 15:4K 24 Hz 16:4K 50 Hz 17:4K 60 Hz] [18:DCI 4K 25Hz 19:DCI 4K 30Hz 20:DCI 4K 50Hz 21:DCI 4K 60Hz] [22:1280x800@60Hz 23:1920x1200@60Hzz] NOTE : This value is valid for IP300-350 rr=[0:Bypass 1:2160P@30Hz 2:2160P@24Hz 3:1080P@50Hz 4:1080P@60Hz] [5:1080i@50Hz 6:1080i@60Hz 7:720P@60Hz] [8:720P@50Hz 9:1280x1024@60Hz 10:1024x768@60Hz] [11:1360x768@60Hz 12:1440x900@60Hz 13:1680x1050@60Hz] NOTE : This value is valid for IP200-250 tt=[0:Bypass 1:90 2:180 3:270] ee=[0:Always On 1...9:10~90Seconds] br=[0:300 1:600 2:1200 3:2400 4:4800 5:9600] [6:19200 7:38400 8:57600 9:115200] bit=Data Bits + Parity + Stop Bits, example: 8n1 Data Bits=[5...8], Parity=[n o e], Stop Bits=[1..2] name: Max 16 Characters
IN iii ID id	Set Input iii To ID id, If New ID Exists Than Swap Them, Note: DEVICE MUST BE ONLINE

RS-232 Configuration and Telnet Commands (continued)

COMMAND	ACTION
IN iii DEL	Delete Input iii From Current Project Config
IN iii RB	Reboot Input iii And Apply New Config
IN iii RESET	Reset Input iii To Factory Default Setting
IN iii AUD AUTO	Set Input iii Audio To Auto
IN iii AUD HDMI	Set Input iii Audio To HDMI
IN iii AUD ANA	Set Input iii Audio To Embedded Analogue L/R
IN iii HTTPS ON/OFF	Set Input iii HTTPS On Or Off
IN iii AUDAH	Set Input iii Analogue Input To HDMI Output
IN iii AUDAD	Set Input iii Analogue Input To Dante® Output
IN iii AUDHA	Set Input iii HDMI Input To Analogue Output
IN iii AUDHH	Set Input iii HDMI Input To HDMI Output
IN iii AUDHD	Set Input iii HDMI Input To Dante® Output
IN iii AUDDA	Set Input iii Dante® Input To Analogue Output
IN iii AUDDH	Set Input iii Dante® Input To HDMI Output
IN iii LAN2M0	Set Input iii LAN2 Mode To Mode 0
IN iii LAN2M1	Set Input iii LAN2 Mode To Mode 1
IN iii LAN2M2	Set Input iii LAN2 Mode To Mode 2
IN iii LAN2M3	Set Input iii LAN2 Mode To Mode 3
IN iii LAN2M4	Set Input iii LAN2 Mode To Mode 4
IN iii NAME name	Set Input iii Device Name To name
IN iii CEC ON/OFF	Set Input iii CEC On Or Off
IN iii FLS ON [time]	Set Input iii Flash Power LED time Seconds
IN iii FLS OFF	Set Input iii Disable Flash Power LED
IN iii LED ee	Set Input iii Front Panel LED Auto Off After ee*10 Seconds
IN iii SG [ON/OFF] [BR br] [BIT bit]	Set Input iii Serial Guest Mode Config
IN iii GUEST	Start Serial Guest Mode To Input iii
IN iii HDCP BYP/V14/V22	Set HDCP overrider mode To Input iii
IN iii SSM L/N	Set System Size To input iii
IN iii EFR ooo	Set Input iii ARC channel to ooo Note: To Close Guest Mode Use Command CLOSE-ACMGUEST
IN iii ARC ON/OFF	Set Input ooo ARC function On Or Off
IN TGMODE xx	Switch Wallplate To Input xx xx = 0: HDMI Input xx = 1: USB-C Input
IN iii SWMODE xx	Set Switch Mode of Wallplate To xx xx = 1: Auto Switch(Default) xx = 2: Auto Switch USB-C Priority xx = 3: Auto Switch HDMI Priority xx = 4: USB-C Only xx = 5: HDMI Only xx = 6: Button Only
IN [iii] STATUS	Show Input iii Detailed Status iii=000: Select All Input Ports iii=[001...n]: Select One Input Port id=[001...254]: ID value name: Max 16 Characters
EDID iii CP ooo	Set Input iii EDID Copy From Output ooo

COMMAND	ACTION
EDID iii DF zz	Set Input iii EDID To zz 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: DVI 1280x1024@60Hz, Audio None zz=13: DVI 1920x1080@60Hz, Audio None zz=14: DVI 1920x1200@60Hz, Audio None zz=15: HDMI 4K@30Hz 4:4:4, Audio 7.1CH(Default) zz=16: HDMI 4K@60Hz 4:2:0, Audio 2CH PCM zz=17: HDMI 4K@60Hz 4:2:0, Audio 5.1CH DTS/DOLBY zz=18: HDMI 4K@60Hz 4:2:0, Audio 7.1CH DTS/DOLBY/HD zz=19: HDMI 4K@60Hz 4:4:4, 8-bit Audio 2CH PCM zz=20: HDMI 4K@60Hz 4:4:4, 8-bit Audio 5.1CH DTS/DOLBY zz=21: HDMI 4K@60Hz 4:4:4, 8-bit Audio 7.1CH DTS/DOLBY/HD zz=22: HDMI 4K@60Hz 4:4:4, 10-bit Audio 2CH PCM zz=23: HDMI 4K@60Hz 4:4:4, 10-bit 5.1CH DTS/DOLBY zz=24: HDMI 4K@60Hz 4:4:4, 10-bit 7.1CH DTS/DOLBY/HD zz=25: HDMI 4K@60Hz 4:4:4, 12-bit Audio 2CH PCM zz=26: HDMI 4K@60Hz 4:4:4, 12-bit 5.1CH DTS/DOLBY zz=27: HDMI 4K@60Hz 4:4:4, 12-bit 7.1CH DTS/DOLBY/HD zz=28: HDMI 4K@60Hz 4:4:4, 10-bit Inc DV Audio 2CH PCM zz=29: HDMI 4K@60Hz 4:4:4, 10-bit Inc DV 5.1CH DTS/DOLBY zz=30: HDMI 4K@60Hz 4:4:4, 10-bit Inc DV 7.1CH DTS/DOLBY/HD zz=31: HDMI 4K@60Hz 4:4:4, 12-bit Inc DV Audio 2CH PCM zz=32: HDMI 4K@60Hz 4:4:4, 12-bit Inc DV 5.1CH DTS/DOLBY zz=33: HDMI 4K@60Hz 4:4:4, 12-bit Inc DV 7.1CH DTS/DOLBY/HD NOTE : The value of zz = 0 to 18 is valid for IP200-250 The value of zz = 0 to 33 is valid for IP300-350
PRE xx AP	Recall Preset xx
MACRO xx	Trigger Macro with Index xx
VW idx CREATE ccXrr [name]	Create Video Wall idx Of size Column cc X Row rr
VW idx NAME name	Set Video Wall idx Name To name
VW idx DEL	Delete Video Wall idx
VW idx OUT ooo Hh-hVvv	Video Wall idx Assign Receiver ooo To Position Horizontal hh And Vertical vv

RS-232 Configuration and Telnet Commands (continued)

COMMAND	ACTION
VW idx C cidx CREATE [name]	Create Video Wall idx Config cidx
VW idx C cidx NAME name	Set Video Wall idx Config cidx Name To name
VW idx C cidx APPLY	Apply Video Wall idx Config cidx
VW idx C cidx DEL	Delete Video Wall idx Config cidx
VW idx C cidx G gidx HhhVvv	Set Video Wall idx Config cidx Position hh,vv To Group gidx
VW idx C cidx G gidx FR iii	Set Video Wall idx Config cidx Group gidx From Input iii
VW idx C cidx S HhhVvv	Set Video Wall idx Config cidx Position hh,vv To Single Mode
VW idx C cidx S HhhVvv FR iii	Set Video Wall idx Config cidx Group gidx From Input iii
VW idx HhhVvv OWaa VWww	Set Video Wall idx Position hh,vv Outer Width aa And View Width ww
VW idx HhhVvv OHaa VHww	Set Video Wall idx Position hh,vv Outer Height aa And View Height ww
VW [idx] STATUS	Print Video Wall Status idx=[01...09]: Select Video Wall Index cidx=[01...09]: Select Config Index gidx=[A...J]: Select Group Index cc=[01...09]: Number Of Columns In Video Wall rr=[01...09]: Number Of Rows In Video Wall hh=[01...09]: Horizontal Position In Video Wall vv=[01...09]: Vertical Position In Video Wall ooo=000: Remove Receiver From hhvv Position ooo=[001...n]: Select One Output Port iii=[001...n]: Select One Input Port name: Max 16 Characters aa=[100...1000]: Screen Outer Width/Height ww=[100...1000]: Screen View Width/Height
SCAN	Scan Network For All Input And Output Devices
SCAN STATUS	Print Scan Results
SCAN RESET	Reset Scan Results
SCAN OSD ON/OFF	Show Scan Index On All Receiver Displays
ASSIGN RESET	Reset All Input/Output/Videowall/Scan Configurations
ASSIGN DF IN iii	Assign Device At Default IP To Input iii
ASSIGN DF IN iii REPLACE	Assign Device At Default IP To Replace Input iii
ASSIGN INDEX ddd IN iii	Assign New Device At Index ddd To Input iii
ASSIGN INDEX ddd IN iii REPLACE	Assign New Device At Index ddd To Replace Input iii
ASSIGN DF OUT ooo	Assign Device At Default IP To Output ooo
ASSIGN DF OUT ooo REPLACE	Assign Device At Default IP To Replace Output ooo
ASSIGN INDEX ddd OUT ooo	Assign New Device At Index ddd To Output ooo
ASSIGN INDEX ddd OUT ooo REPLACE	Assign New Device At Index ddd To Replace Output ooo
ASSIGN AUTO	Auto Assign All New Scanned Devices To Current Project ddd=[01...n]: Scan List Index value iii=[001...n]: Select One Input Port ooo=[001...n]: Select One Output Port

COMMAND	ACTION
GPIO VCC SET VOLTS 5/12	Set voltage of VCC pin to 5v/12v
GPIO gg SET VOLTS 5/12	Set voltage of gpio pin to 5v/12v
GPIO gg SET CURR 0/1	Set current of gpio pin to LOW/HIGH
GPIO gg SET 0/1	Set IO Output gg To Low(0)/High(1) Level
GPIO gg GET	Get IO Port gg Real Input Level
GPIO [gg] STATUS	Print IO Port gg Status gg = 01 : O/P1 This is an OUTPUT port which can provide High(5V-12V) and Low(0V) voltage. gg = 02 : O/P2 This is an OUTPUT port which can provide High(5V-12V) and Low(0V) voltage. gg = 03 : I/P1 This is an INPUT port which can accept High(5V-12V) and Low(0V) voltage. gg = 04 : I/P2 This is an INPUT port which can accept High(5V-12V) and Low(0V) voltage.
NET LAN2 DHCP ON/OFF	Set LAN2 (Control LAN) DHCP To On Or Off
NET aaaa IP xxx.xxx.xxx.xxx	Set IP Address To xxx.xxx.xxx.xxx
NET aaaa GW xxx.xxx.xxx.xxx	Set Gateway Address To xxx.xxx.xxx.xxx
NET aaaa SM xxx.xxx.xxx.xxx	Set Subnet Mask Address To xxx.xxx.xxx.xxx aaaa=LAN1: Set Video LAN(POE) Config aaaa=LAN2: Set Control LAN(Web GUI) Config
NET RB	Reboot Network And Apply New Config Call This Command After LAN Config Is Changed To Reboot Network
NET TN xxxx	Set Telnet Port To xxxx
NET DNS xxxx	Set DNS Domain Name To xxxx
IN iii ASTPARAM	Getting Detailes of input iii
IN iii HOTPLUG ON/OFF	Set input iii hotplug to on or off
OUT ooo ASTPARAM	Getting Detailes of input ooo
OUT ooo HOTPLUG ON/OFF	Set output ooo hotplug to on or off
OUT ooo FALLBACK iii	Set Output ooo fallback to input iii
PRE idx ADD RX ooo TX iii	Add TX iii and RX ooo in preset idx
PRE idx RM RX ooo TX iii	remove TX iii and RX ooo in preset idx
PRE idx ON/OFF	preset idx enable/disable
GRP idx ON/OFF	group idx enable/disable
GRP idx AD ooo	Add RX ooo in group idx
GRP idx RM ooo	remove RX ooo in group idx
GRP idx FR iii	group idx apply command
ACM REBOOT	Reboot ACM1000
EVENT MACRO ADD:macro_idx TIME:HH:SS DAY:DD SS:1	configure event scheduler in position idx
EVENT MACRO EDIT:macro_idx TIME:HH:SS DAY:DD EVENT_ID:eidx	edit event scheduler in position idx with respective eidx

RS-232 Configuration and Telnet Commands (continued)

COMMAND	ACTION
EVENT MACRO DEL:macro_idx TIME:HH:SS DAY:DD EVENT_ID:eidx	Del scheduler in position idx with respective eidx
EVENT MACRO CLEAR DAY:idx	Clear All Day idx event scheduler HH : Hour SS : Seconds DD : Day eidx : event scheduler macro position

IR Codes

The ACM1000 can be controlled using local IR control. Blustream provides a comprehensive set of 80 input and 80 output IR commands. These commands allow source selection across up to 80 Transmitters and 80 Receivers.

The following pages contain the first 16 input and 16 output of the NEC and HEX IR commands. For systems larger than 16x16, the full 80x80 IR code set can be downloaded from the Blustream website.

The ACM1000 is compatible with both 5V and 12V IR systems. Before connecting, ensure the voltage selector switch (located adjacent to the IR port) is set to match the IR line voltage of the control system

Please note: The IR codes only allow for source selection. Advanced features required RS-232, TCP/IP, or the Web GUI.

I/O	NEC IR: CUSTOMER CODE 1898	HEX IR
Input (TX) 1	30	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 2	31	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 3	32	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 4	33	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 5	34	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 6	35	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 7	36	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 8	37	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 9	38	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 10	39	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 11	3A	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 12	3B	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689

IR Codes (continued)

I/O	NEC IR: CUSTOMER CODE 1898	HEX IR
Input (TX) 13	3C	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 14	3D	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 15	3E	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Input (TX) 16	3F	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0689
Output (RX) 1	C0	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 2	C1	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 3	C2	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 4	C3	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 5	C4	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 6	C5	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 7	C6	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 8	C7	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 9	C8	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 10	C9	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689
Output (RX) 11	CA	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0689

IR Codes (continued)

I/O	NEC IR: CUSTOMER CODE 1898	HEX IR
Output (RX) 12	CB	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0689
Output (RX) 13	CC	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0689
Output (RX) 14	CD	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0689
Output (RX) 15	CE	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0689
Output (RX) 16	CF	0000 006D 0000 0022 0157 00AC 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0016 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0016 0015 0041 0015 0041 0015 0016 0015 0041 0015 0016 0015 0041 0015 0041 0015 0016 0015 0016 0015 0689

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
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