

► Blustream Multicast AI2.0
 Advanced Integration Software
 User Manual



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Introduction

The Blustream UHD Multicast distribution platform allows distribution of HDMI video over a 1GB network switch. Using the latest HDMI compression technology, Blustream Multicast products are able to deliver HDMI and control signals over standard network architecture. With multiple configuration options available the Multicast solution is ideal for both commercial and residential applications.

The following guide will review the new Blustream Multicast AI 2.0 (Advanced Integration) Software, and new signal routing features, giving the installer the ability to completely configure a full Blustream HDMI over IP system with this software.

Prior to running the Blustream Multicast AI 2.0 Software...

Prior to running the Blustream Multicast AI 2.0 Software it is important that you have the following hardware available:

- PC with active LAN Network connection
- CAT network cables - straight connection
- Layer 3 Managed network switch (POE) **OR** 24-56V DC power supply to power each of the units locally

Supporting documentation & Multicast AI 2.0 Software download...

The relevant supporting documentation for Blustream Multicast products, and download for the AI2.0 Software can be found on the Blustream website on the Blustream Multicast product pages.



Supporting documentation for the Blustream Multicast range of products can be found by clicking on the 'Drivers & Protocols' button. The AI 2.0 Software can be directly downloaded from the adjacent button on the Blustream website.

AI 2.0 can also be downloaded by visiting the webpage:

<https://blustream.blob.core.windows.net/updatesai/Setup.exe>

Prior to Installation

Prior to commencing installation of your Multicast system, it is important that the Blustream Transmitter (IP100UHD-TX / IP200UHD-TX) or Receiver (IP100UHD-RX or IP200UHD-RX) products are loaded with the latest firmware. The new advanced signal routing features and auto system configuration option can only be achieved using Blustream firmware version A1.4.3 or later. The latest firmware can be found on the Blustream Website, using either the 'Drivers & Protocols', or 'Download Firmware' buttons - refer back to page 3 of this manual.

One key feature of the new Blustream firmware / AI 2.0 Software is the ability to independently route the following signals:

- Video over IP
- Audio over IP
- IR over IP
- Serial over IP
- USB / KVM over IP (IP200UHD units only)

Interoperability

The IP200UHD units can be used in conjunction, or added into existing IP100UHD Multicast systems. The following needs to be considered prior to adding in IP200UHD products to an existing (IP100UHD) Blustream Multicast system:

- USB connectivity and routing is not available with the IP100UHD units.
- The firmware version of all IPxxxUHD units should be the same for the full feature set of the Multicast system to be used, and the units to work seamlessly together.
- For firmware versions of the IP100UHD-TX / RX that are currently loaded with the firmware **A1.3.4** (or earlier), the internal MCU of the unit must be updated **before** updating the firmware. The MCU firmware update can only be undertaken by a member of the Blustream Support Team, and is not available for installers / integrators to carry out. Please contact us on the email address noted below / adjacent for more information.

IP100UHD / IP200UHD Firmware Update

Updating the Blustream Multicast product firmware can be achieved in 2 ways:

- 1) Using the 'Firmware Update' feature in the 'Advanced' section of the AI 2.0 Software.
- 2) Using the products own web-GUI interface.

The below instructions are a step-by-step guide to upgrading the firmware in each Multicast product for new units that are yet to be configured. The firmware process must be completed one-by-one due to all products being shipped with the same standard factory set default IP address. **Failure to do so may end up corrupting the firmware in the products, resulting in product failure.**

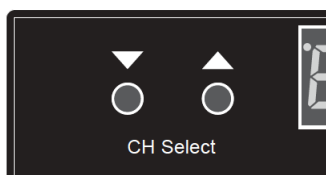
Prior to upgrading the firmware in Blustream Multicast products using either of the above methods it is important you first complete the below instructions.

- 1) In order to communicate with the Blustream Multicast hardware your computer will need to be physically connected to either:
 - a) A PoE network switch using an Ethernet network cable which is in turn connected to the Blustream Multicast product
 - b) The Blustream Multicast product directly which must be powered locally using a 24-56V DC 1A power supply (sold separately)
- 2) It is advised that prior to connecting the Blustream Multicast products to your network switch/local power supply, it is recommended that the product is forced into 'Firmware Update Mode'. Firmware Update Mode stops the Multicast products from streaming video and activates a status for only updating the products firmware.

To activate Firmware Update Mode:

- a) When the product is not powered, press both the '**CH SELECT UP**' and '**CH SELECT DOWN**' buttons located on the product front panel at the same time.

Whilst holding these buttons down...



- b) Insert the PoE network cable, or local 24-56V DC 1A power supply
- c) Do not release the buttons until the product shows 'PG' in the status window on the front panel

Product firmware can be updated without 'Firmware Update Mode' but you must stop any streaming service to/from the product before you proceed with the firmware upgrade. Failure to do so may result in loss of firmware transmission packets due to un-necessary traffic on the network.

- 3) In order to be able to communicate with the Blustream IP products your computer must also be in the same IP range as the Blustream Multicast default IP address. If you are unsure how to update your computer IP range follow the 'Changing your computer IP address' instructions at the rear of this guide.

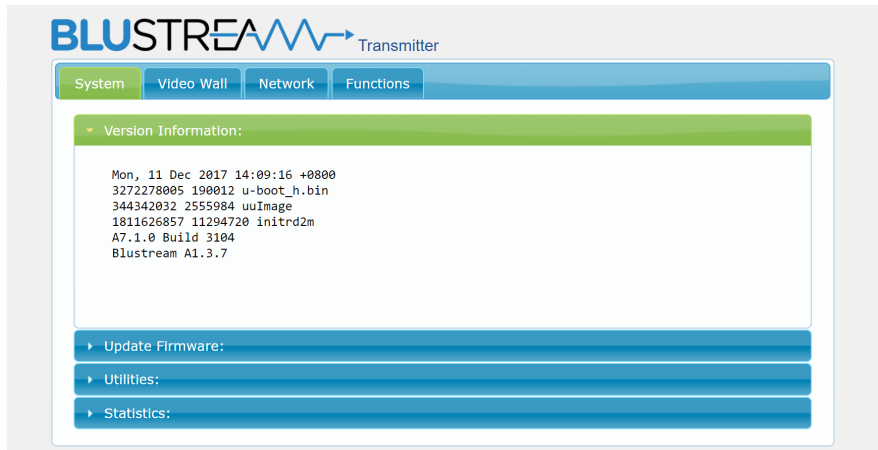
The default IP address of all new Multicast products is:

169.254.100.254

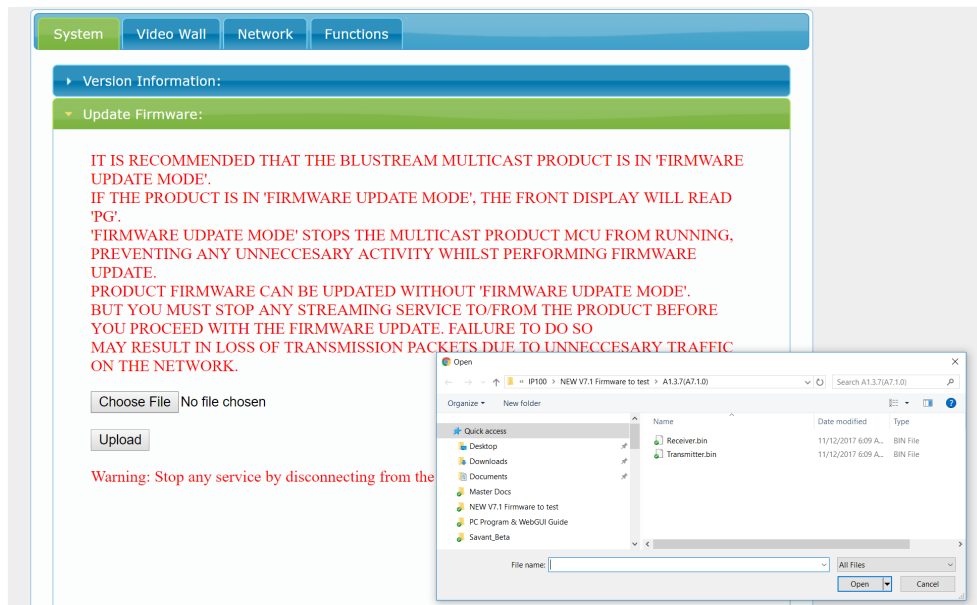
IP100UHD / IP200UHD Firmware Update - via Web-GUI Interface

Once you have completed all of the stages listed on page 5 you can connect to the Blustream Multicast product using the products own Web-GUI interface.

- 1) Open your computers internet browser (i.e. Google Chrome, Mozilla, Internet Explorer etc)
 - 2) Type the Blustream Multicast default IP address into the web browser bar - '**169.254.100.254**'
- The following window will open:



- 3) Click '**Update Firmware**'
- 4) Click '**Choose File**' and open the folder in which you have saved the recently downloaded firmware files.



- 5) Select the relevant 'Transmitter.BIN' or 'Receiver.BIN' file
- 6) Click 'Upload' which will begin the firmware upgrade process
- 7) Once the upgrade has completed please disconnect the network cable/power and re-connect to reboot the product. The Transmitter/Receiver display will no longer display 'PG' when complete.

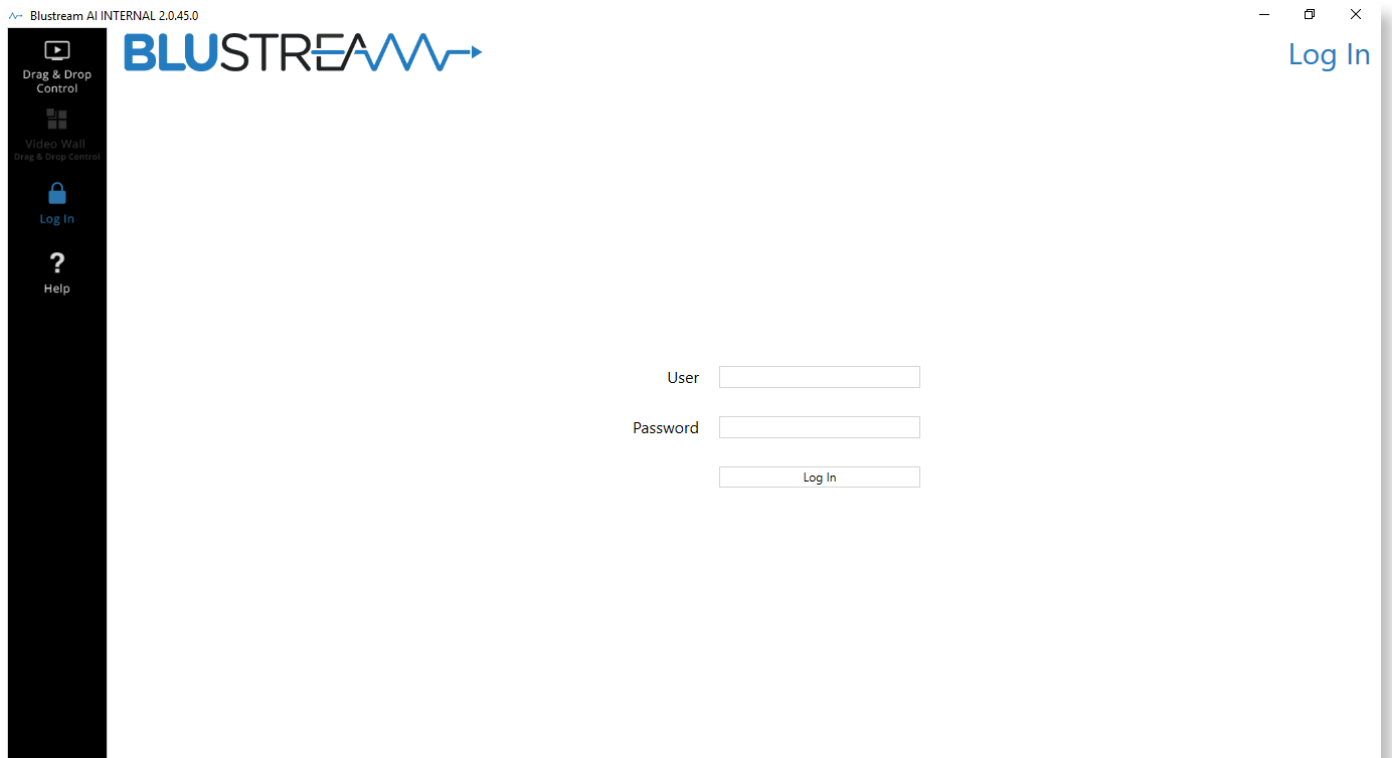
Please note:

DO NOT unplug the power or network connection to the Multicast product as this may result in failure to upgrade firmware, which may lead to possible failure of the unit.

Firmware upgrade process will take several minutes. Do not disconnect, or power down the unit that is being updated.

AI 2.0 Software Login

When you first open the Blustream AI 2.0 Software you will need to login before you have access to the configuration screens. Click on the menu button marked 'Log In' as highlighted below:



The default software login details are:

User: **blustream**

Password: **1234**

Once logged in, you will be greeted with an interoperability notice outlining that you will only be able to use this software with certain versions of Multicast hardware. Click '**I understand**' to proceed.

AI 2.0 Software Main Menu Overview

When you first run the Blustream AI 2.0 PC program you will see multiple options in the side menu for configuration and control of the Multicast system. The current page selected is highlighted in blue.



Drag & Drop Control - the control page is used for new 'drag & drop' control of source selection for each Multicast Receiver including image preview of source devices throughout

Video Wall Drag & Drop Control - the video wall control page is used for new 'drag & drop' control of source selection for each video wall array within the system, including image preview of source devices throughout

Status - the status page is an overview of all products installed in the system (both TX and RX), and their current online status. The system status is refreshed regularly to show if products are offline

Transmitter - page shows a summary of all Multicast Transmitters installed, with options for EDID management, checking FW version, updating settings, adding new TX's, replacing or rebooting products

Receiver - page shows a summary of all Multicast Receivers installed, with options for resolution output (HDR / scaling), function (video wall mode / matrix), updating settings, adding new RX's, replacing or rebooting products

Fixed Signal Routing - this page is used for new signal routing allowing independent routing of IR, RS-232, USB, Audio and Video signals

Video Wall Configuration - this page is used for the set-up and configuration of Multicast receivers to create a video wall array of up to a size of 7x7, including: bezel / gap compensation, monitor position layout, stretch / fit and rotation

Preview - used to show the active video stream from any connected Transmitter or Receiver

Advanced - used for bulk firmware updating Multicast transmitter or receiver products and for updating a Blustream control module

Search - find all active Multicast products installed if installer does not have the original saved system file

New Project - used to configure a new Blustream Multicast system

Save/Load - used to save or load system configuration files

Refresh All - used to refresh the status of all Multicast information

Toggle Logs - used to turn on/off detailed system feedback shown at the bottom of the screen

Clear Logs - used to clear the installer feedback shown at the bottom of the screen

Password - used to update / change the password of the current system

Log Out - ends the current session and logs the system out to the main home screen

Help - find contact details for Blustream Technical Support

New Project Configuration

The Blustream AI 2.0 Software includes a new simplified wizard for configuring all components of the Multicast system. It has been designed to speed up new system configuration as all default (new) Multicast products (TX & RX) can be connected to the network switch at the same time and NOT result in an IP conflict during the system configuration. This results in a system in which all components are assigned a name and IP address ready for basic system use.

Please see below summary of the setup process:

Step 1 - Connecting your PC to the network switch / Multicast product

In order to configure the Blustream Multicast products your PC must first be physically connected to the products, this can be achieved by:

- a) A PoE network switch using a Ethernet network cable which is in turn connected to the Blustream TX / RX products
- b) Connected directly to the Blustream Multicast product which must be powered locally using a 24-56V DC 1A power supply

Please note: It is advised to used method A (network switch connection) as the new system configuration process will greatly speed up system creation.

In order to communicate with the Blustream IP products your computer must also be in the same IP range as the Blustream Multicast default IP address. If you are unsure how to update your computer IP range follow the 'Changing your computer IP address' instructions at the rear of this guide.

Step 2 - Connect all new (factory default) Multicast products to the network switch

The new AI 2.0 Software allows you to connect both factory default Transmitters and Receivers to the Network switch at the same time. The software will only find products that are powered and have completed the booting process.

Step 3 - Setting a start ID & IP address for Multicast configuration

The new AI 2.0 Configuration has 2 options for IP address allocation:

Default IP - keeps to Blustream Multicast IP address allocation based around 169.254.x.x. **This IP address scheme MUST be used if you are using a Blustream CM100.** Altering the product IP address range from 169.254.x.x will result in the CM100 not working.

Custom IP - allows you to manually assign a start ID and IP address for Multicast Transmitters and Receivers. This means that the first product found will be assigned the custom IP address and additional products after this will be given an address in sequential order. **This IP address scheme will only be compatible with a Blustream ACM200 and will require your saved configuration file to be exported into the ACM200.** Custom IP addresses are not compatible with CM100 products.

Transmitter ID must start on 1 for a new system

The screenshot shows a configuration window with the following fields and controls:

- Next Transmitter ID: 1
- Next Transmitter Address: 169.254.3.1
- Next Receiver Address: 169.254.6.1
- Auto Save:
- Start: [Start Button]

Below the fields is a table with columns for IP Address and Status.

IP Address	Status

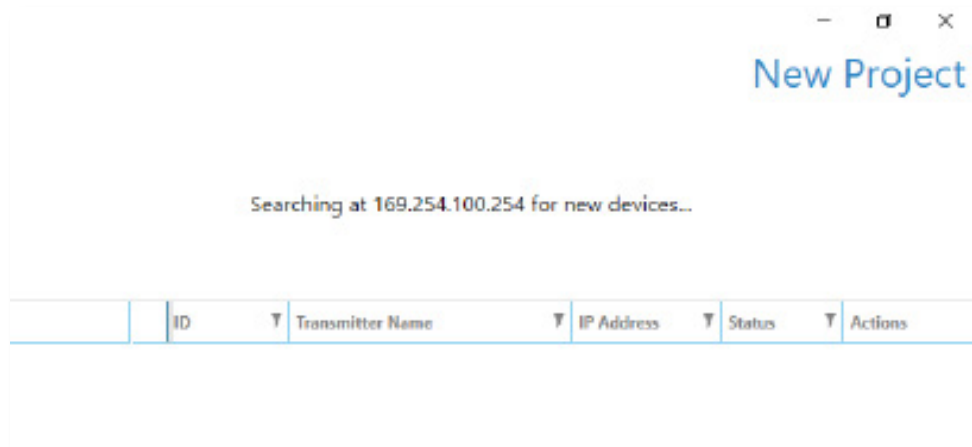
New Project Configuration - continued...

Step 4 - Press the 'START' button to begin the auto configuration process



When the configuration wizard begins it will repeat the following steps:

- 1) Search for a factory default Multicast product (RX or TX) on IP address 169.254.100.254



New Project Configuration - continued...

2) Once a product has been found the AI 2.0 software will check if the product is a Transmitter or Receiver and assign this an IP address relevant to product type.

Transmitters:

The first Transmitter will be given the IP address of 169.254.3.1. The next Transmitter will be assigned an IP address of 169.254.3.2 and so on....

Once the IP range of 169.254.3.x is filled (254 units), the software will auto assign an IP address of 169.254.4.1 and so on...

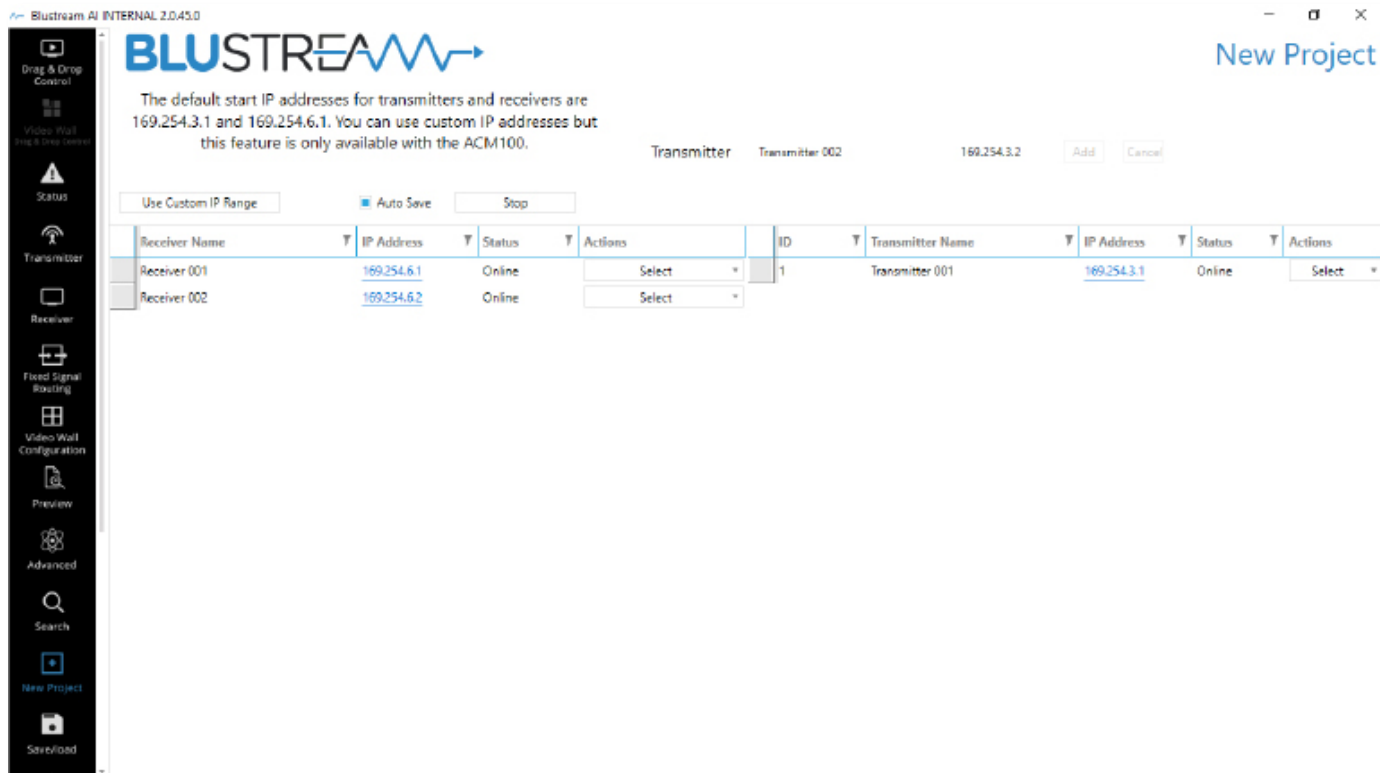
Once the IP range of 169.254.4.x is filled the software will auto assign an IP address of 169.254.5.1 and so on until 169.254.4.254

Receivers:

The first Receiver will be given the IP address of 169.254.6.1. The next Receiver will be assigned an IP address of 169.254.6.2 and so on....

Once the IP range of 169.254.6.x is filled (254 units) the software will auto assign an IP address of 169.254.7.1 and so on...

Once the IP range of 169.254.7.x is filled the software will auto assign an IP address of 169.254.8.1 and so on until 169.254.8.254



The above automatic IP configuration is why the system component quantity limitations are 762x Transmitters and 762x Receivers.

3) Once the IP address has been configured the Multicast product will reboot with default EDID (for Transmitters) and Scaler (for Receivers) settings

4) The PC program will repeat the process until all default IP products have been configured, or the 'Stop' button has been pressed.

It is possible to pause system configuration by pressing the 'Stop' button. This will be helpful during the configuration of larger systems. After pressing 'Stop', simply connect new factory default products and continue the configuration by pressing the 'Start' button. This will continue the ID and IP allocation from the current stage.

Multicast Transmitter Summary

The Blustream Multicast Transmitter summary window gives an overview of all the Transmitter products that have been configured in the system, with the ability to update, and add new transmitters to the existing system.

ID	Name	IP Address	MAC Address	Status	Multicast IP	Firmware	EDID	Audio Select	Actions
1	Transmitter 001	169.254.3.1	00:19:FA:00:63:4C	Online	225.0.100.1	m A1.4.3	Default EDID	Auto	Select
2	Transmitter 002	169.254.3.2	00:19:FA:00:63:4D	Online	225.0.100.2	m A1.4.3	Default EDID	Auto	Select

Features of the Transmitter summary page include:

- ID / Input** - automatically assigned during the AI 2.0 configuration. This input number is used for control of the Multicast system when using third party drivers.
- Name** - during the AI 2.0 configuration the Transmitters are automatically assigned default names Transmitter 1 etc. Transmitter names can be amended by simply double clicking on the Transmitter name box and typing the name of the source device you will be connecting.
- IP Address** - the IP address assigned to the unit during configuration. Clicking this will open the web GUI of the selected Transmitter.
- MAC Address** - shows the unique MAC address of the Transmitter.
- Status** - shows the online / offline status of each individual product
- Multicast IP address** - shows the current Multicast IP address which is used for video routing by the network switch.
- Firmware** - displays the product firmware version currently loaded onto the product.
- EDID** - allows you to fix the EDID value for each Transmitter (source). This is used to request specific video and audio resolutions that you wish for the source device to output.
- Audio Selection** - selects either original HDMI audio ,or replaces the embedded audio with a local analogue audio input on the Multicast Transmitter. Default setting will be 'Auto'.
- Actions** - see following page
- Add New** - if an additional Transmitter is required in the system, the AI 2.0 software will assist in configuring the new Transmitter to become a part of the existing system. This process is the same process as described in 'NEW PROJECT CONFIGURATION' (page 9).
- Refresh All** - will refresh the product details shown on screen.

Multicast Transmitter Summary - continued...

Actions

There are multiple options within the 'ACTIONS' drop-down selection. This is the same for both Transmitter and Receiver products:



ID	Name	IP Address	MAC Address	Status	Multicast I	Firmware	EDID	Audio Select	Actions
1	Transmitter 001	169.254.3.1	00:19:FA:00:63:4C	Online	225.0.100.1	m A1.4.3	Default EDID	Auto	Select
2	Transmitter 002	169.254.3.2	00:19:FA:00:63:4D	Online	225.0.100.2	m A1.4.3	Default EDID	Auto	Refresh Reboot Flash LED 15s Flash LED On Flash LED Off Configure Update ID Replace Remove Device Reset

1. **Refresh** - will refresh the individual product details, updating any information changed from recent configuration changes
2. **Reboot** - will reboot the product
3. **Flash LED 15s** - will flash the power LED on the front panel of the TX to help identify the product. The LED will flash for 15 seconds and automatically turn off
4. **Flash LED ON** - will flash the power LED on the front panel fo the TX to help identify the product. The LED will remain flashing until turned off
5. **Flash LED OFF** - will turn off the flashing power LED on the front panel of the TX
6. **Configure** - will all you to update network settings of the selected Transmitter product - see following page
7. **Update ID** - allows you to manually update the ID number of the unit as shown in the first column
8. **Replace** - allows you to replace a faulty Transmitter product. All product settings will be copied to a new factory default Transmitter product that is sat on IP address 169.254.100.254
9. **Remove** - remove the selected Transmitter product from the current system
10. **Device Reset** - resets the Transmitter unit back to factory default settings, including default IP address (169.254.100.254)

Transmitter & Receiver Configuration

The below image is the 'Configure Transmitter' pop-up screen - the same information is available to be amended within the Receiver configuration pop-up:

169.254.12 00:19:44:00:634D Online 225.0.100.2 m AI 4.3 Default EDID

Configure Transmitter X

Name

IP Address

Subnet

Gateway

From this configuration page you can modify any previously configured Multicast product:

1. Name the Source (TX) or Display / Zone (RX) - i.e. Apple TV, Laptop, or, Reception Video Wall, Meeting Room 1 etc.
2. IP Address, Subnet & Gateway - the AI 2.0 software will automatically assign the products IP address details as explained on page 11.

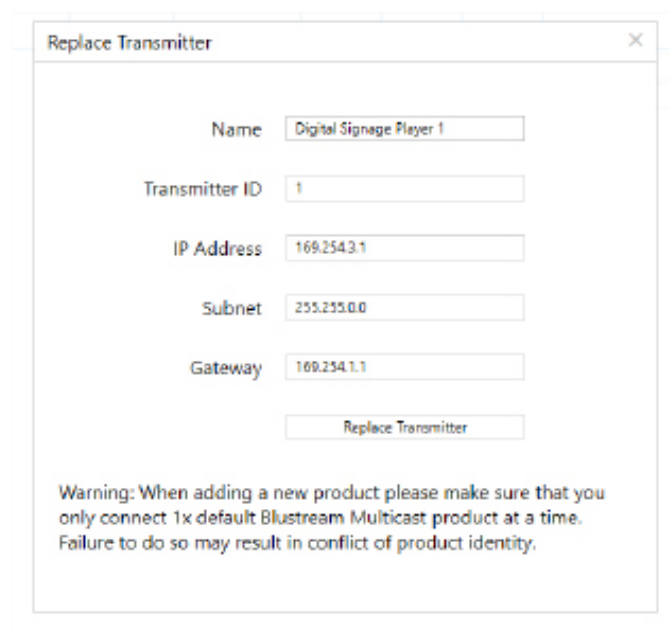
Please note: It is not advised that network details of Multicast products are manually configured as the Blustream CM100 and drivers are configured to the default AI 2.0 Software IP address ranges. Manually assigning IP addresses will prevent a CM100 control module from working. Custom network details are only intended to be used with the Blustream ACM200.

Click **'Apply'** when finished to apply the changes to the relevant Blustream Transmitter or Receiver. The Multicast unit will automatically reboot itself in order for the settings to be applied. This may take a couple of minutes.

Check the product is powered and connected and visible in your system once the unit has re-booted.

Transmitter & Receiver Replacement

The below image is the 'Replace Transmitter' pop-up screen - this the same for the Replace Receiver pop-up:



Replace Transmitter

Name

Transmitter ID

IP Address

Subnet

Gateway

Warning: When adding a new product please make sure that you only connect 1x default Blustream Multicast product at a time. Failure to do so may result in conflict of product identity.

From the 'Replace Transmitter' of 'Replace Receiver' page you can replace any previously configured Multicast product. This is helpful should you experience a product failure as this will copy all existing settings across to a new factory default product.

To replace a Multicast product follow the below steps:

1. Select the relevant faulty product from the Transmitter or Receiver summary page
2. Select 'Replace' from the Actions drop-down box
3. The faulty product details will automatically be entered into all set-up fields
4. Connect a new factory default Multicast TX or RX to the network switch and make sure the unit has booted before proceeding
5. Click 'Replace Transmitter' or 'Replace Receiver'. Settings will be applied to the new product which will reboot after being configured.

Check the product is powered and connected and visible in your system once re-booted

Multicast Receiver Summary

The Blustream Multicast Receiver summary window gives an overview of all the Receiver products that have been configured within the system, the ability to update, and add to the system.

ID	Name	IP Address	MAC Address	Status	Firmware	Source	HDR	Resolution	Function	Actions
1	Receiver 001	192.254.1	00:19:FA:00:75:0A	Online	m A1.4.3	Transmitter 001	On	Pass Thro...	Matrix	Select
2	Receiver 002	192.254.2	00:19:FA:00:76:2D	Online	m A1.4.3	Transmitter 001	On	Pass Thro...	Matrix	Select

Features of the Receiver summary page include:

- ID / Output** - automatically assigned during the AI 2.0 configuration. This output number is used for control of the Multicast system when using third party drivers.
- Name** - during the AI 2.0 configuration the Receivers are automatically assigned default names Receiver 1 etc. Receiver names can be amended by simply double clicking on the Receiver name box and typing the name of the display device / zone you will be connecting.
- IP Address** - the IP address assigned to the unit during configuration. Clicking this will open the web GUI of the selected Receiver.
- MAC Address** - shows the unique MAC address of the Receiver.
- Status** - shows the online / offline status of each individual product.
- Firmware** - displays the product firmware version currently loaded onto the product.
- Source** - shows the current source selected at each Receiver. You can change source selection by choosing a new Transmitter from the drop-down selection.
- HDR On/Off** - turns on HDR compatibility - only use on screens that support HDR.
- Resolution** - adjust the output resolution using the built-in video scaler inside the Multicast Receiver. The scaler is capable of both upscaling and downscaling the incoming video signal. Output resolutions include:
 - Pass Through - the Receiver will output the same resolution that the source is outputting up to 4K 30Hz (no scaling)
 - 2160p @ 30Hz
 - 2160p @ 24Hz
 - 1080p @ 60Hz
 - 1080p @ 50Hz
 - 720p @ 60Hz
 - 720p @ 50Hz
 - 1280x1024 @ 60Hz
 - 1024x768 @ 60Hz
 - 1360x768 @ 60Hz
 - 1440x900 @ 60Hz
 - 1680x1050 @ 60Hz
- Function** - shows if the Receiver is set as a standalone product (Matrix mode) or as part of a Video Wall.
- Actions** - see page 13 for breakdown of additional actions options
- Add New** - if an additional Receiver is required in the system the AI 2.0 software will assist in configuring the new Receiver to become part of the existing system setup. This process is the same process as described in 'NEW PROJECT CONFIGURATION' (page 09).
- Refresh All** - will refresh the product details shown on screen.

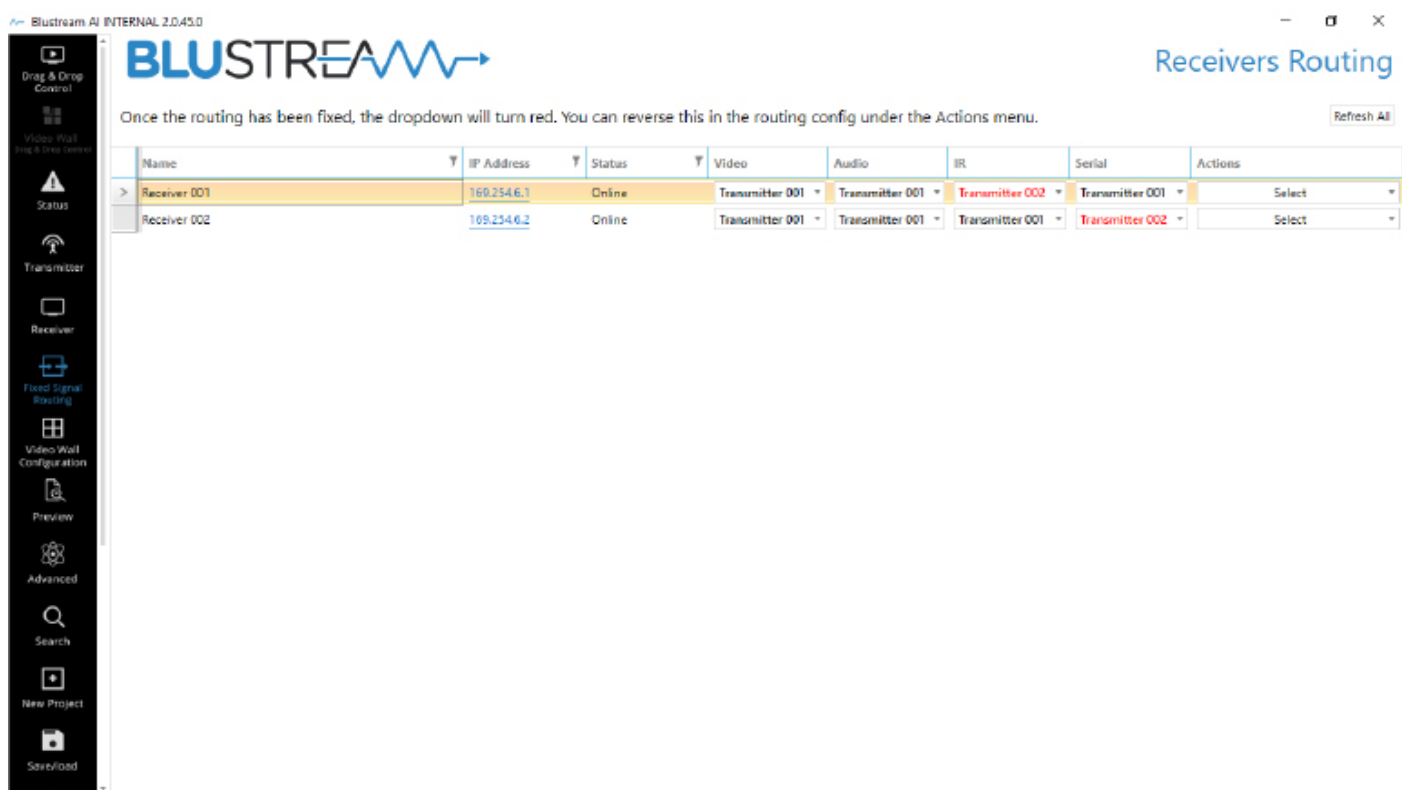
Fixed Signal Routing

The new Blustream Multicast firmware now features advanced independent routing of the following signals:

- Video
- Audio
- IR
- RS-232
- USB / KVM (coming soon)

This now allows each signal to be fixed from one Multicast product to another and not be affected by standard video switching. This can be useful for IR or RS-232 control of products in the field using the Multicast system to extend control commands from a third party control solution.

Please note: All routing can only be fixed from a Receiver **TO** a Transmitter product. Although the routing can only be setup one way, the communication is bi-directional between the two products.



Manual routing of signals is very simple. For each Receiver or Transmitter there are options for manually fixing the signal **TO** a Multicast Transmitter product. For each signal type simply select the desired Transmitter that you wish to fix the signal routing to from the drop-down selection.

When the signal has been fixed the text will turn **RED** to indicate that the signal has been fixed.

For example:

Name	IP Address	Status	Video	Audio	IR	Serial
Receiver 001	169.254.6.1	Online	Transmitter 001	Transmitter 001	Transmitter 002	Transmitter 001
Receiver 002	169.254.6.2	Online	Transmitter 001	Transmitter 001	Transmitter 001	Transmitter 002

Receiver 1:

- Video routing is not fixed
- Audio routing is not fixed
- IR is fixed routing to Transmitter 002 (TX002)
- RS-232 routing is not fixed

Receiver 2:

- Video routing is not fixed
- Audio routing is not fixed
- IR routing is not fixed
- RS-232 is fixed routing to Transmitter 002 (TX002)

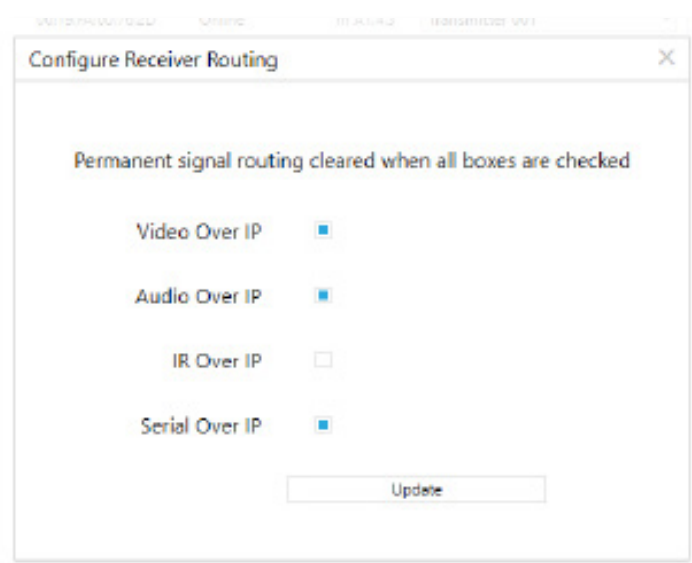
Fixed Signal Routing - continued...

Once a signal type has been fixed it is removed from the 'auto switching' list. This means that when switching sources using the ACM200 or from the the AI 2.0 softwares Drag & Drop control page, the signal types not fixed are the only ones that will be affected by the 'switch'.



The routing summary for each Receiver can be accessed within the 'Actions' drop-down tab, from here select 'Routing'

The example below shows that after fixing the IR routing for Receiver 001, the IR checkbox is no longer including when auto switching:



Should you wish for the IR signal to be included in auto switching, and no longer have fixed routing simply re-check the tick-box. When returning to the main 'Fixed Routing' menu you will note that the fixed signal type will no longer be highlighted in RED.

Fixed Signal Routing - Advanced Routing Commands

It is important to understand that the latest Blustream firmware uses new switching commands in order to manage switching and routing of these differing signal types.

The original CM100 switching commands are:

- **'OUTxxxFRyyy'**

This switching command routes: Video, Audio, IR and RS-232 at the same time with no independent control over any.

The latest Blustream firmware allows independent signal routing, so new switching commands have been added into both the Blustream control products.

The advanced switching commands are:

- **'OUTxxxFRVyyy'** - Switch **video** only of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRAyyy'** - Switch **audio** only of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRIRyyy'** - Switch **IR** only of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRSERyyy'** - Switch **RS-232** only of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRVAyyy'** - Switch **video and audio** of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRVAIRyyy'** - Switch **video, audio & IR** of Receiver (xxx) from Transmitter (yyy)
- **'OUTxxxFRVASERyyy'** - Switch **video, audio & RS-232** of Receiver (xxx) from Transmitter (yyy)

It is also possible to route signals from Transmitter to Transmitter product the following commands can also be used:

- **'INxxxFRIRyyy'** - Switch **IR** only to Transmitter (xxx) from Transmitter (yyy)
- **'INxxxFRSERyyy'** - Switch **RS-232** only to Transmitter (xxx) from Transmitter (yyy)

It is important to use the correct switching commands to match the configured fixed signal routing so that saved fixed routing is not over-written by the above switching commands. Please see examples below:

Example 1:

If you have fixed the IR routing set-up in the routing configuration page, but all other signal types are active, then the command that must be sent into the Blustream Control unit will be **'OUTxxxFRVASERyyy'**

Example 2:

If you have fixed the RS-232 routing only and all other signal types are active, then the command that must be sent into the Blustream Control unit will be **'OUTxxxFRVAIRyyy'**

Example 3:

If you have fixed RS-232 and IR routing, and Video and Audio signal types are active then the command that must be sent into the Blustream Control unit will be **'OUTxxxFRVAyyy'**

Please note: If the original switching commands 'OUTxxxFRyyy' are used with any Blustream Control unit, they will switch all signal types (Video, Audio, IR & RS-232) and ignore any configured fixed signal routed.

It is also important not to use original third-party control drivers with the Blustream Control units if fixed signal routing has been configured as these use the 'OUTxxxFRyyy' switching command which will over-write any fixed signal routing you have implemented.

Fixed Routed IR

The fixed IR routing feature of the latest Blustream firmware allows a fixed bi-directional IR link between 2x Multicast products. The IR signal is only routed between configured RX to TX products **or** TX to TX products. This can be useful for sending IR from a centrally located third party control solution (ELAN, Control4, RTi, Savant etc) and using the Blustream Multicast system as a method of extending IR out to a display or product in the field. The IR signal can also be sent back the opposite way at the same time.

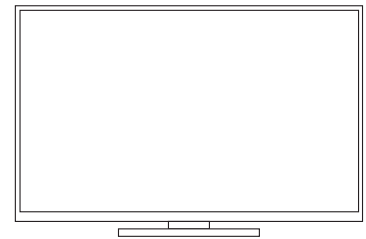


IR

Third party control system
i.e. - Control4, ELAN, RTi etc.



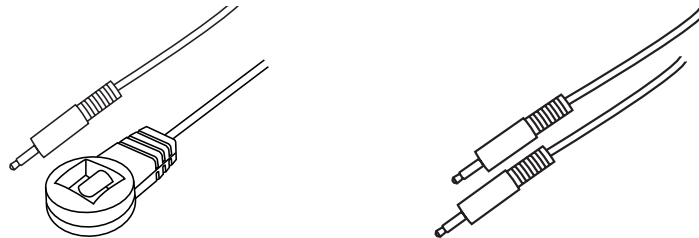
IR



Connections:

The third party control processor IR, or Blustream IR receiver, is connected to the IR RX socket on the Multicast Transmitter or Receiver.

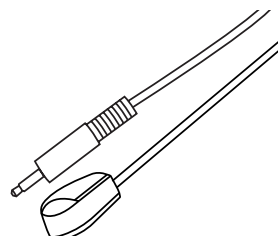
Please note: You must use Blustream 5V IRR (Receiver) or Blustream IR-CAB (3.5mm to 3.5mm 12V to 5V IR converter cable). Blustream InfraRed products are all 5V and **NOT** compatible with alternative manufacturers InfraRed solutions.



The Blustream 5V IR1 (Emitter) is connected to the IR TX socket on the Multicast Transmitter or Receiver.

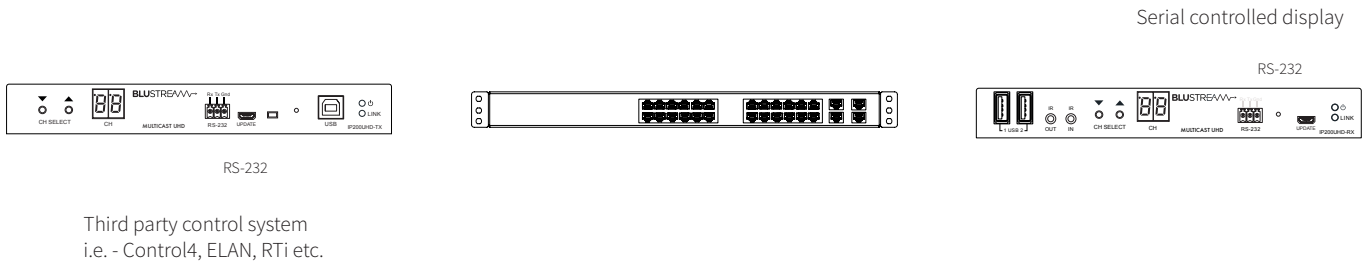
The Blustream IR1 & IR2 Emitters are designed for discrete IR control of hardware.

(IR2 - Dual Eye Emitter sold separately)



Fixed Routed RS-232 (Serial) Bi-Directional Pass-Through

The fixed RS-232 routing feature of the latest Blustream firmware allows a fixed bi-directional RS-232 link between 2x Multicast products. The RS-232 signal is only routed between configured RX to TX products **or** TX to TX products. This can be useful for sending RS-232 serial commands from a centrally located third party control solution (ELAN, Control4, RTi, Savant etc) and using the Blustream Multicast system as a method of extending RS-232 out to a display or product in the field. The RS-232 serial signal can also be sent back the opposite way at the same time.



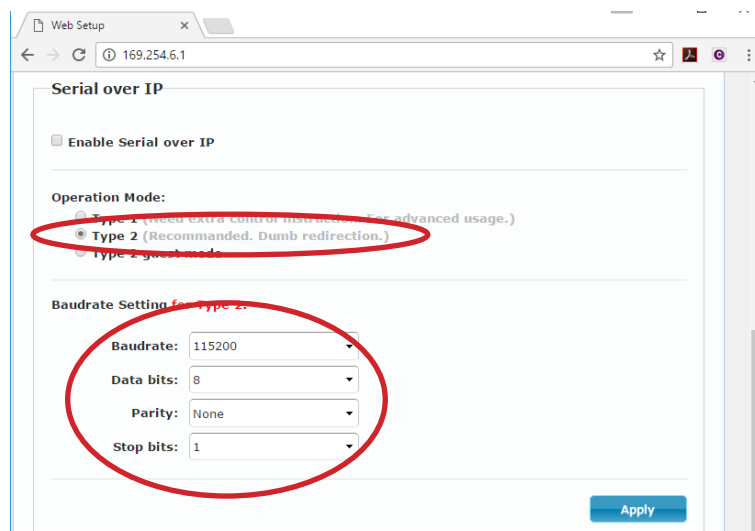
Connections

The third party control solution or serial controlled products are connected to the 3-pin phoenix socket on the Multicast Transmitter of Receiver (pin functions are labelled on the Multicast products).

Baud Rate Set Up

The Baud Rate must be configured within the web-GUI of the Multicast products you are using to distribute RS-232 serial commands. Whatever command is passed through the Multicast product will be output on the TX/RX product at the preset Baud Rate settings.

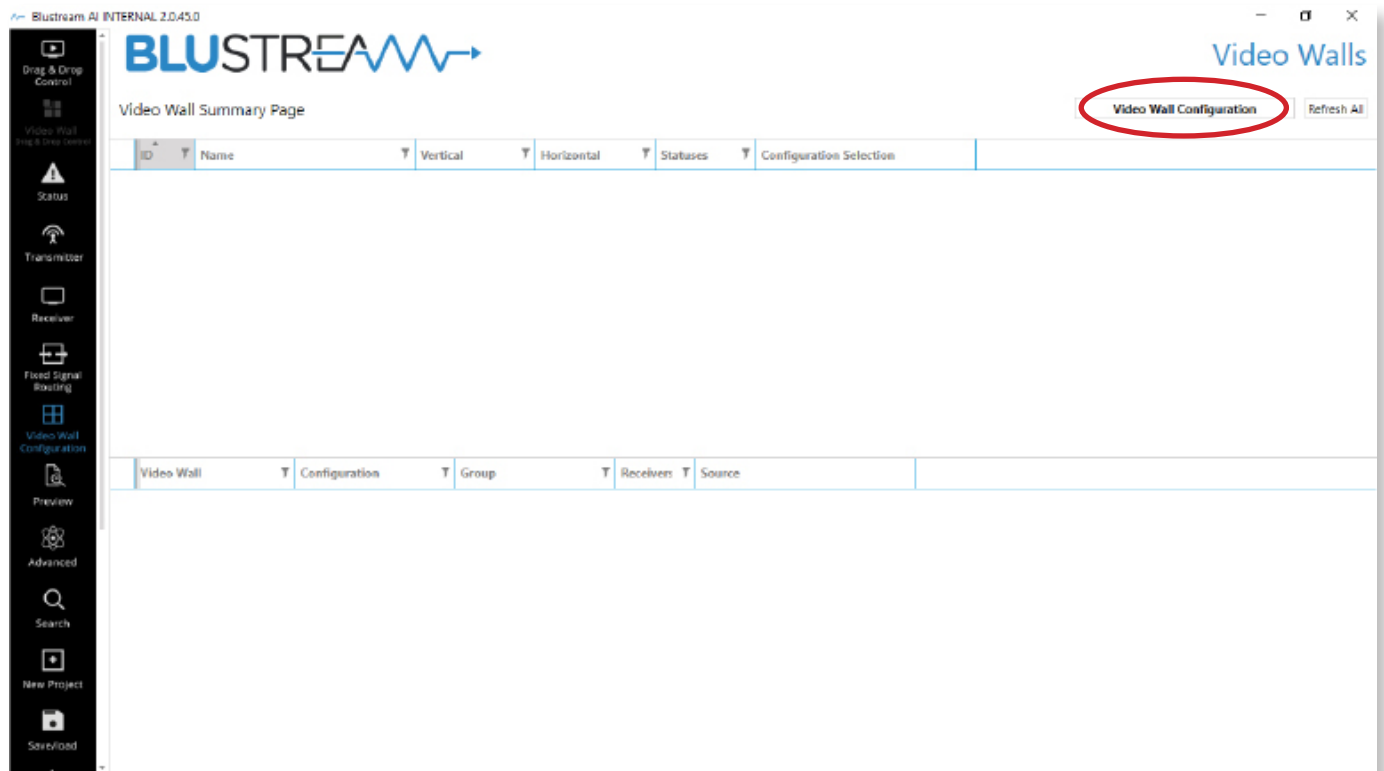
- 1) **'TYPE 2'** mode must be enabled in each Transmitter and Receiver unit in order to use this functionality. Connect to the Web GUI of the Transmitter or Receiver that you wish to enable Guest Mode for by entering its IP Address in your web browser, and navigate to the Functions' tab. For example: 169.254.6.1 is the default IP address for RX ID001
- 2) Select the checkbox for 'Enable Serial over IP'
- 3) Select the checkbox for 'Type 2'
- 4) Set the appropriate Baud Rate
- 3) Click **'Apply'** to save the settings



Video Wall Configuration

Blustream Multicast receivers can be setup to be part of a video wall array. Each Multicast system can contain multiple Video Wall arrays of differing sizes.

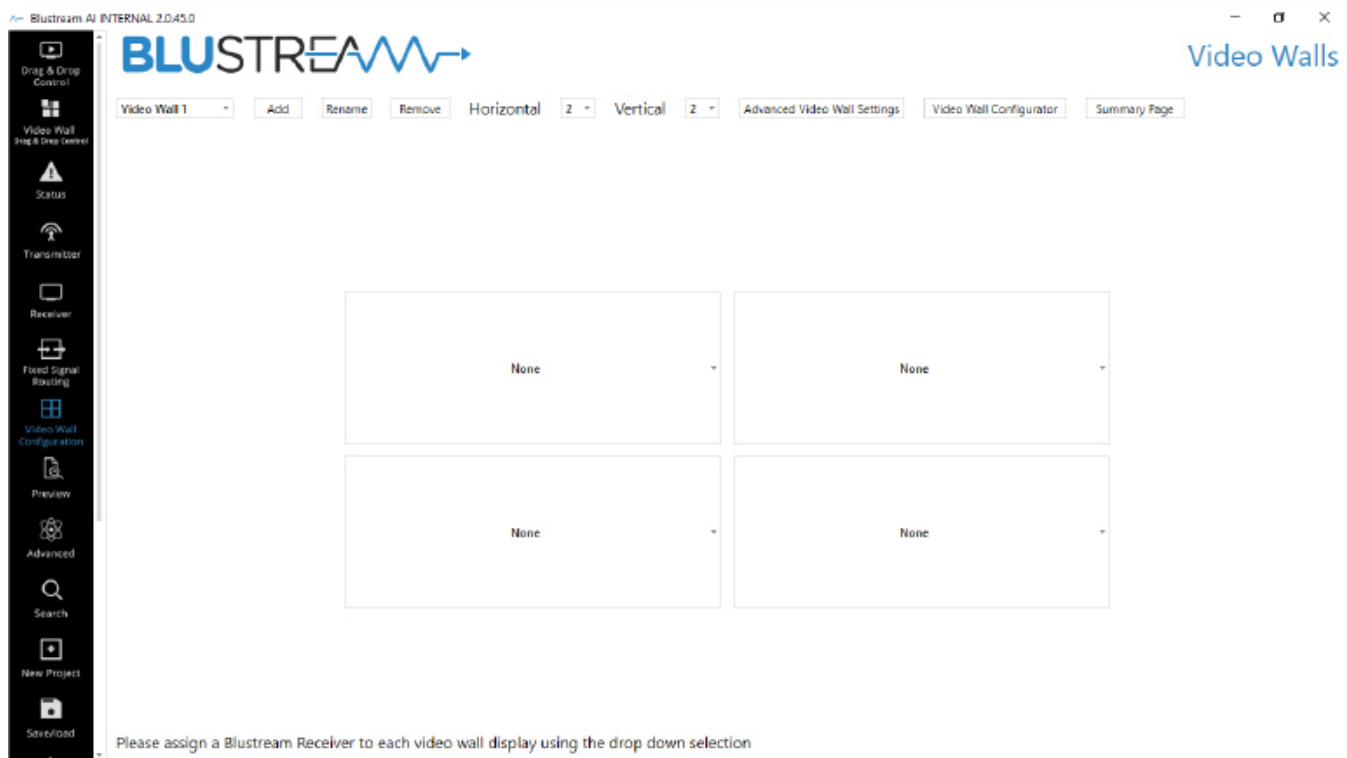
Each video wall can be assigned a number of screens and differing layouts that range from 1x2 up to 7x7 within the AI 2.0 Software. Larger video wall arrays can be configured (up to a size of 16x16) when using the Video Wall set-up tab within the individual products web-GUI.



To configure a new Video Wall array, navigate to the Video Wall Configuration menu and you will be greeted by the Video Wall Summary Page. This page will show all current Video Walls that have been configured in the system. To configure a new Video Wall, click the button marked 'Video Wall Configuration' as marked at the top of the screen.

Please note: You must have first configured your Multicast Receivers before proceeding past this point. It is good practice to have already named the Multicast Receivers for ease of configuration from this point i.e. "VW1 Top Left".

Video Wall Configuration - continued...

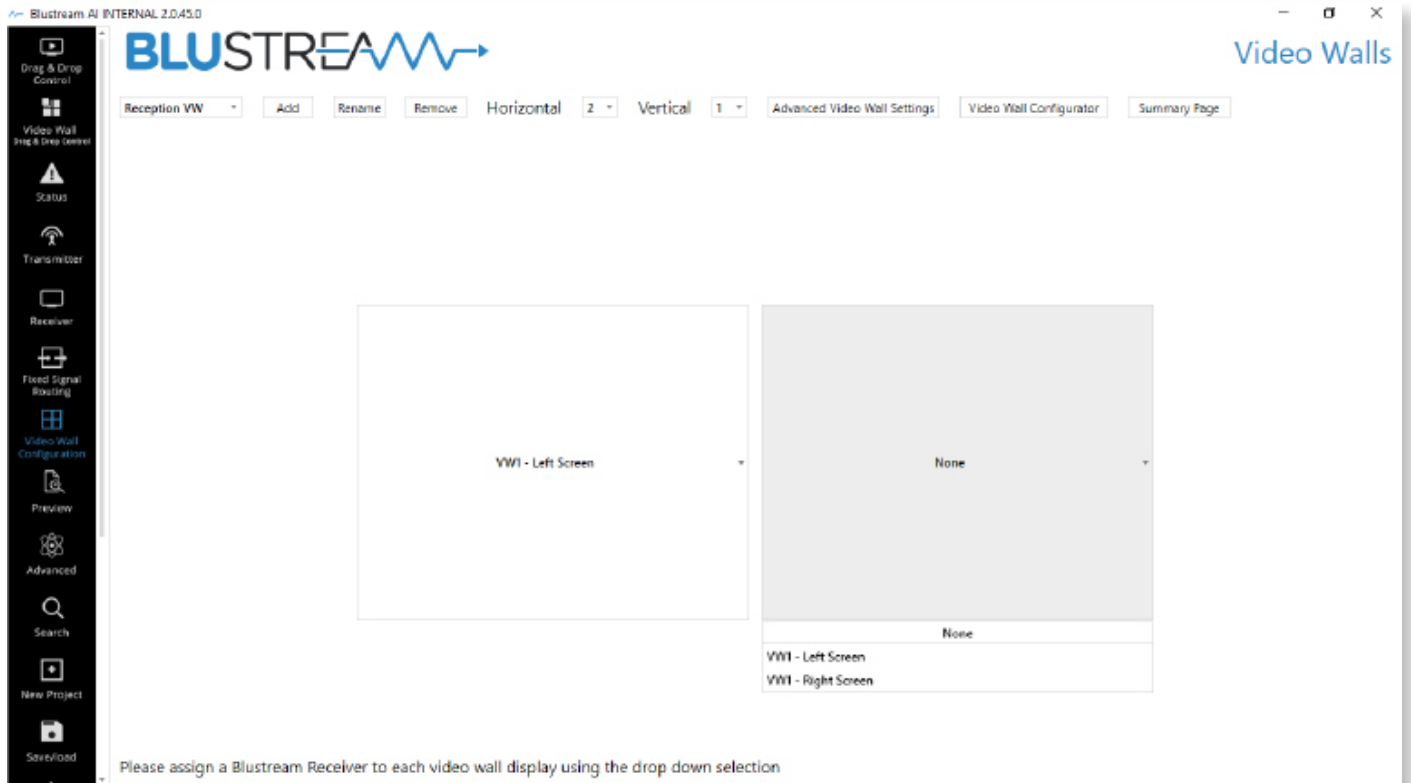


The Set-Up window for a new Video Wall array has the following options. From here you can also amend the settings for any existing Video Wall arrays that have been configured within your system:

- 1. Video Wall Dropdown** - this dropdown allows you to switch between different Video Wall arrays in your system. The first time you create a new Video Wall, it will be named 'Video Wall 1', each subsequent Video Wall that is created will be given a sequential number and appear within this drop-down menu.
- 2. Add** - adds a new Video Wall to the system. Each time you click this button it will create a new Video Wall array that can be selected from the drop-down to the left.
- 3. Rename** - allows you to rename the Video Wall array from Video Wall 1 to a name of your choice i.e. 'Reception Video Wall'. The drop-down menu in the top left will update the arrays name once you have named it.
- 4. Remove** - removes the currently selected Video Wall from the system. **Please note:** this does not remove any pre-configured Multicast Receivers from the system.
- 5. Horizontal** - allows you to amend the number of screens horizontally within the Video Wall array. As you amend this value (up or down), the graphical representation of the Video Wall you are working with changes underneath.
- 6. Vertical** - allows you to amend the number of screens vertically within the Video Wall array. As you amend this value (up or down), the graphical representation of the Video Wall you are working with changes underneath.
- 7. Advanced Video Wall Settings** - allows you to adjust for bezel / gap compensation and the clockwise rotation of the image being displayed on the screens (0, 90, 180 & 270 degrees). **Please note:** you cannot adjust for bezel / gap compensation until you have assigned the Multicast Receivers to the array. See page 24 for assigning Receivers to the Video Wall. See page 25 for Advanced Video Wall Settings.
- 8. Video Wall Configurator** - allows for the configuration of differing presets within a Video Wall array i.e. have all screens working independently showing sources individually, or grouping screens together to spread the image over multiple screens. **Please note:** you cannot create preset Groups until you have assigned the Multicast Receivers to the array. See page 24 for assigning Receivers to the Video Wall. See page 26 for creating Groups.
- 9. Summary Page** - takes you back to the Video Wall Summary page (as shown on page 22).

Video Wall Configuration - Assigning Receivers to a Video Wall

Once you have created a new Video Wall, renamed the array and selected the number of screens (both horizontally and vertically), you can now assign the individual Multicast Receiver units to each position within the array:

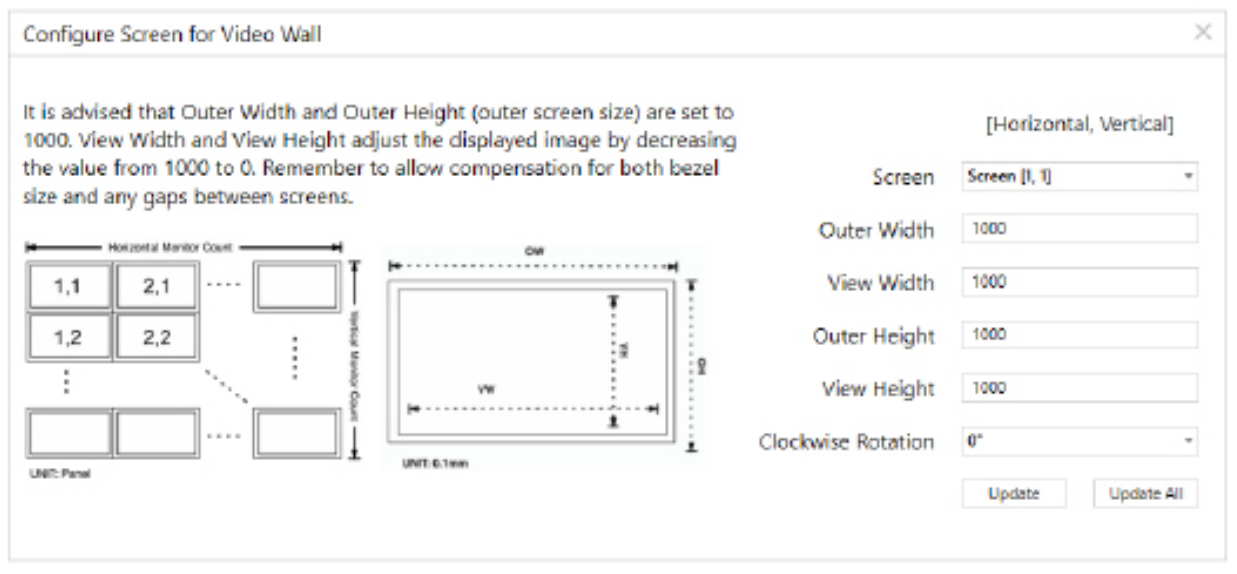


Use the drop down boxes of the graphical display of the Video Wall to select the Multicast Receivers that are going to be positioned at each point of the array. Once you have selected the correct Multicast Receiver, it's name will appear inside the screen representation.

Please note: You cannot assign the same Multicast Receiver to different points within a Video Wall array. Should you position a Multicast Receiver that has already been given a position within a Video Wall array, the new selection will be applied and the original position of the Multicast Receiver will be removed.

From this point, your Video Wall has been set into a basic configuration and each Multicast Receiver you select will now be part of the array. In the example above, a 2x1 Video Wall has been created with the 'VW - Left Screen' assigned and the 'VW - Right Screen' ready to be dropped onto the right hand screen space.

Video Wall Configuration - Advanced Video Wall Settings

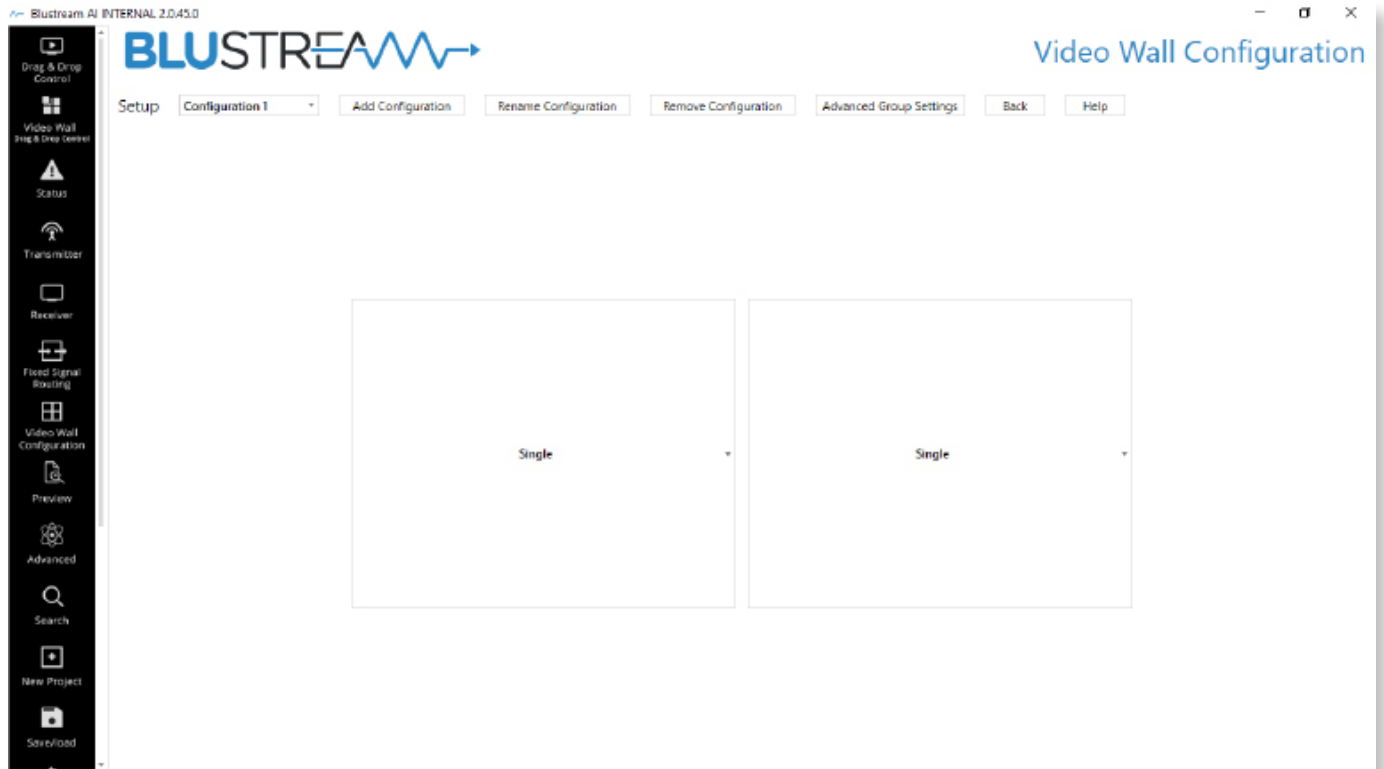


Within the Advanced Video Wall Settings pop-up, you will need to individually address each screen (or Multicast Receiver) by using the drop-down menu at the top. Use the screen position grid on the left of the pop-up to calculate which screen position you are adjusting. For example: the left column of screens are all horizontal location 1 and the vertical location increases by 1 each time you drop down a row.

This pop-up allows you to compensate for the size of each screen bezel, alternatively any gaps in-between screens. By default, the Multicast system will insert the bezels of the Video Wall screens “in-between” the overall image. This will mean that the bezels of the screens do not sit “over” any part of the image. By adjusting the Outer Width (OW) vs View Width (VW), and the Outer Height (OH) vs View Height (VH), you can allow for the screen bezels to sit “on top” of the image being displayed.

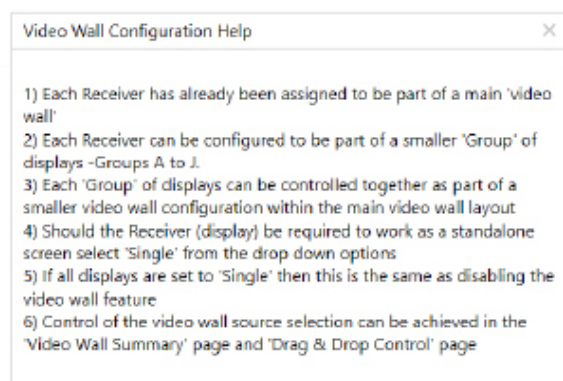
Clockwise Rotation - each screen image can be adjusted to rotate through 0, 90, 180 & 270 degrees.

Video Wall Configuration - Video Wall Configurator



Once you have set-up your Video Wall array, you can now configure the Video Wall for different display options. The Video Wall Configurator allows for presets to be created for deploying the Video Wall to display different groups of imagery across the array. The options within this screen are:

1. **Configuration** Dropdown - this drop-down allows for you to address each different configuration for the Video Wall selected. The first time you create a new Video Wall Configuration, it will be named 'Configuration 1', each subsequent Configuration that is created will be given a sequential number and appear within this drop-down menu.
2. **Add Configuration** - adds a new configuration option to the Video Wall selected. Each time you click this button it will create a new Video Wall Configuration that can be selected from the drop-down to the left.
3. **Rename Configuration** - allows you to set the name of the configuration i.e. 'Single Screens' or 'Video Wall'. The drop-down menu in the top left will update the configuration name once you have named it.
4. **Remove Configuration** - removes the selected configuration as shows in the drop down on the left of the page.
5. **Advanced Group Settings** - allows for you to adjust the aspect ratio of the media being displayed over the selected video wall configuration. See page 27 for Advanced Group Settings.
6. **Back** - takes you back to the Video Wall Set-Up screen (as shown on page 24).
7. **Help** - gives a basic summary of the options available on this page, as shown below:

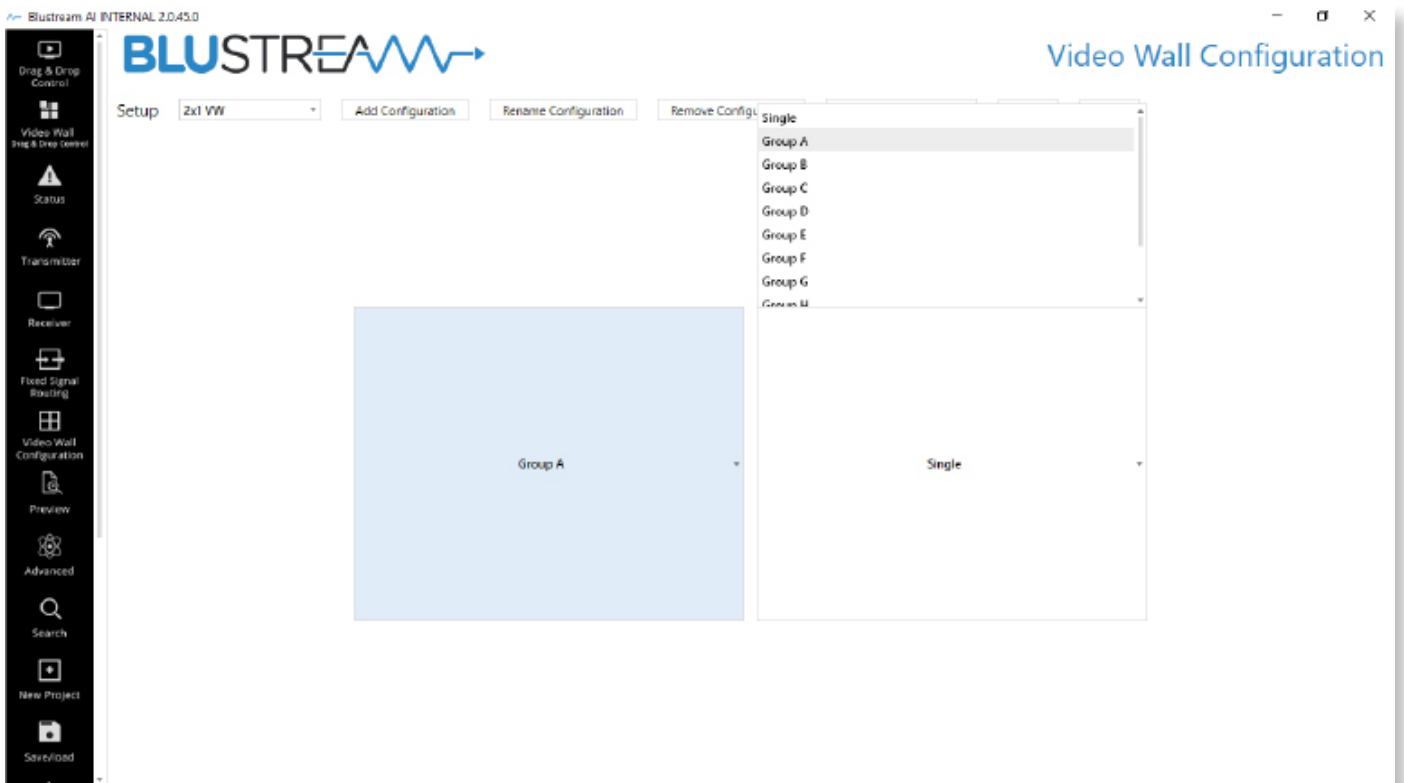


Video Wall Configuration - Video Wall Configurator - continued...

There are options to be able to create multiple configurations for each Video Wall array within your Multicast system. The grouping allows for the Video Wall to be deployed in multiple ways i.e. grouping different numbers of screens together to create different sized walls within an array. For example: a 3x3 Video Wall array can have multiple configurations:

- For displaying 9x different source medias - so that all screens work independently with each individual screen showing a single source - not grouped (Single).
- As a 3x3 Video Wall - displaying one source media across all 9 screens (Group A).
- For displaying a 2x2 Video Wall image within the 3x3 array. This can have 4x different options:
 - With the 2x2 in the top left of the 3x3, with 5x individual screens to the right and bottom (Group B).
 - With the 2x2 in the top right of the 3x3, with 5x individual screens to the left and bottom (Group C).
 - With the 2x2 in the bottom left of the 3x3, with 5x individual screens to the right and top (Group D).
 - With the 2x2 in the bottom right of the 3x3, with 5x individual screens to the left and top (Group E).

With the above example, you would need to create 6 different configurations for the Video Wall array, allocating the grouped screens to a Group using the selection dropdown. You can rename the Configurations / Groups as required using the 'Rename Configuration' option.



The Advanced Group Settings option allows for you to select how each configured Group shows the media across the Video Wall array. By default the Multicast system will 'Maintain Aspect Ratio' of the source media, however, you can 'Stretch' the media out to fill the display area. This setting can be applied to the individual Group / Configuration, or to all Groups / Configurations.



Video Wall Configuration - continued...

By going back to the main Video Wall Summary page, you will see the configured Video Wall arrays.

The top Summary will list the Video Wall arrays in the Multicast system and will show you:

1. The Video Wall ID.
2. The name of the Video Wall array.
3. The total number of Vertical columns of screens within the Video Wall array.
4. The total number of Horizontal rows of screens within the Video Wall array.
5. The Status of the Video Wall array - online, or offline.
6. The current Configuration that is being displayed by the Video Wall array. Use the dropdown to switch between the different Configurations that you have set up.

The screenshot shows the 'Video Walls' software interface. The main window is titled 'Video Walls' and contains a 'Video Wall Summary Page'. On the left is a vertical navigation menu with icons for 'Drag & Drop Control', 'Video Wall Drag & Drop Control', 'Status', 'Transmitter', 'Receiver', 'Fixed Signal Routing', 'Video Wall Configuration', 'Preview', 'Advanced', 'Search', 'New Project', and 'Save/Load'. The main content area has a 'Video Wall Configuration' dropdown and a 'Refresh All' button. Below this is a table with the following data:

ID	Name	Vertical	Horizontal	Statuses	Configuration Selection
1	Reception VW	1	2	Online	2x1 VW

Below the summary table is a detailed view of the selected 'Reception VW' array:

Video Wall	Configuration	Group	Receivers	Source
Reception VW	2x1 VW	Group A	2	Digital Signage Player 1

The second row of information will give you further information on the set-up of the Video Wall array you have highlighted at the top. This will display:

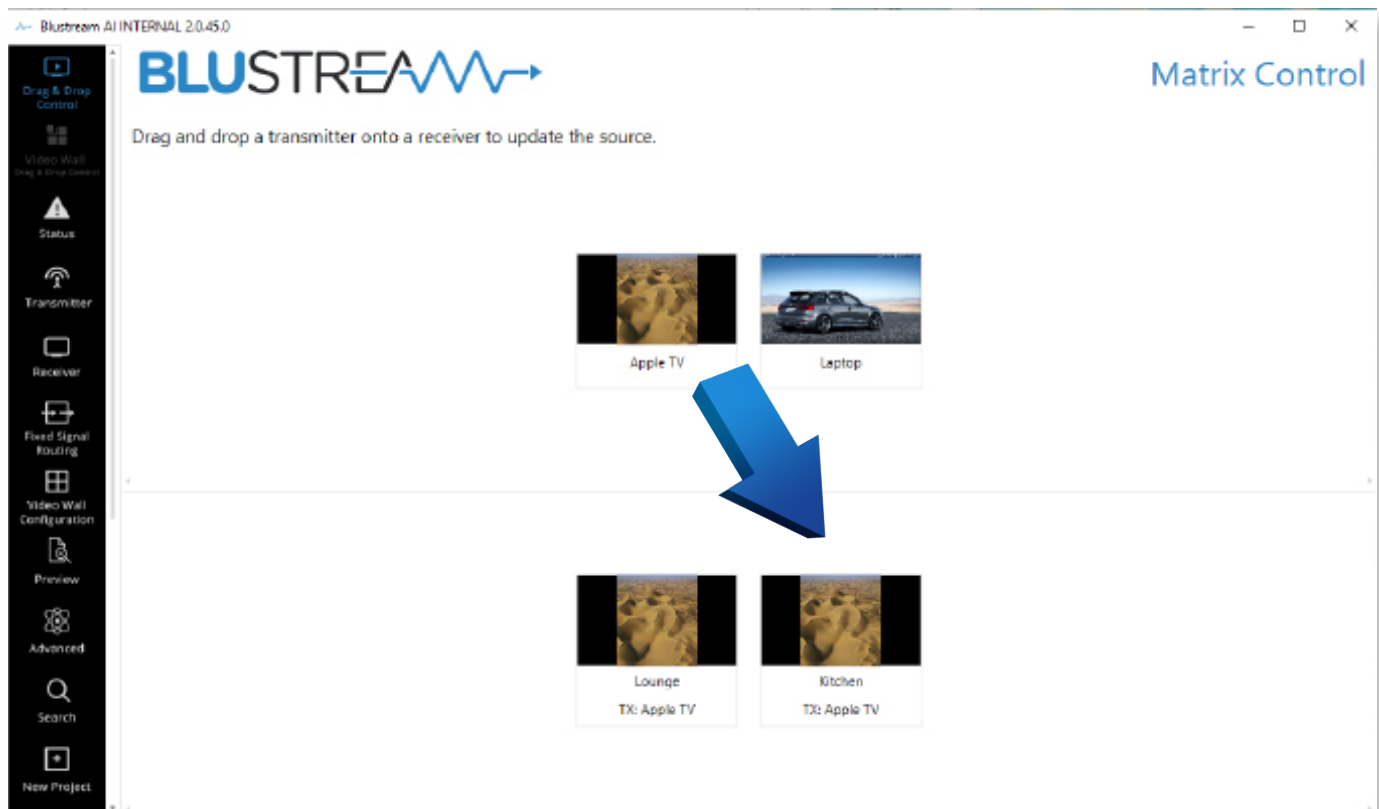
1. The Video Wall array name.
2. The current configuration which will equal the configuration as selected at the top of the screen.
3. The screen Group that was selected for this Configuration.
4. The number of Receivers within this Group / Configuration.
5. The source device (Transmitter) that the Group of Multicast Receivers are currently receiving media from.

Drag & Drop Control

The Blustream AI 2.0 software control page is used to quickly and intuitively change source inputs (Transmitters) for each display (Receiver). This page has been designed to allow the installer to quickly switch the I/O configuration of the system.

Once the system has been configured the Drag & Drop Control page will show all online Multicast Transmitter and Receiver products. All Multicast products will display the active stream from the device which refreshes every 2 seconds.

Due to the size of the display window, should the number of Transmitters and Receivers be above 8 products you will have to scroll through available devices.



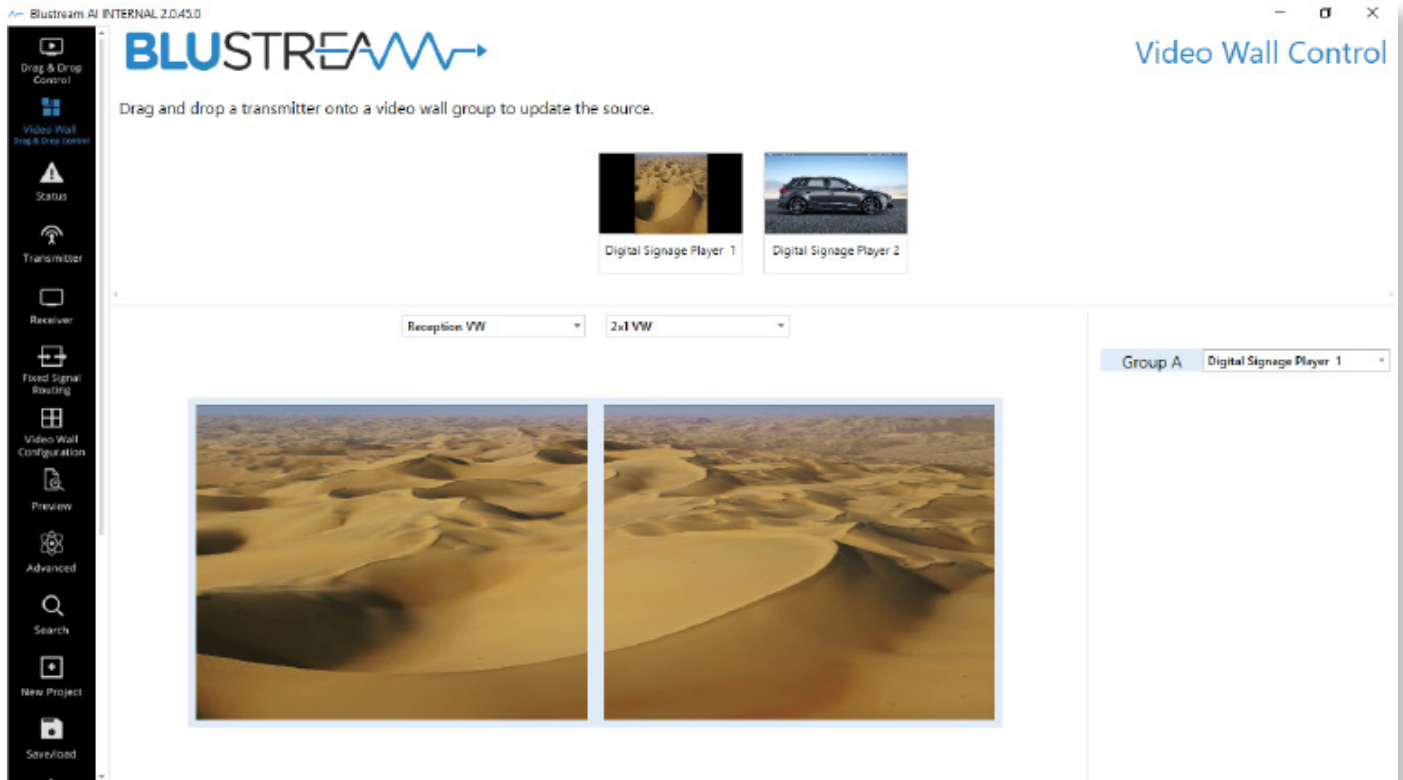
To switch sources simply click on the required source to 'drag and drop' the Transmitter preview onto the required Receiver product. The Receiver preview window will update with the new live stream of current source selected once switched.

Should 'No Signal' be displayed in the Transmitter preview window, please check the source device is powered on, outputting a signal and is connected via HDMI to the Multicast Transmitter unit. If 'No Signal' is being displayed inside the Receiver preview window, please check the unit is connected and powered from the network (switch) and has a valid connection to a working Transmitter unit.

Please note: This menu option is available after logging out of AI 2.0. An end user can therefore be left with AI 2.0 to use the Drag & Drop Control option without the ability for them to access any of the configuration options contained within the software.

Video Wall Drag & Drop Control

To assist with simplified Video Wall control, there is a separate Video Wall Drag & Drop Control page. This menu option is only available once a Video Wall has been configured into the Multicast system.



The source (Transmitter) preview windows are shown at the top of the page with the graphical representation for the Video Wall displayed below. To switch the Video Wall array from one source to another you can either:

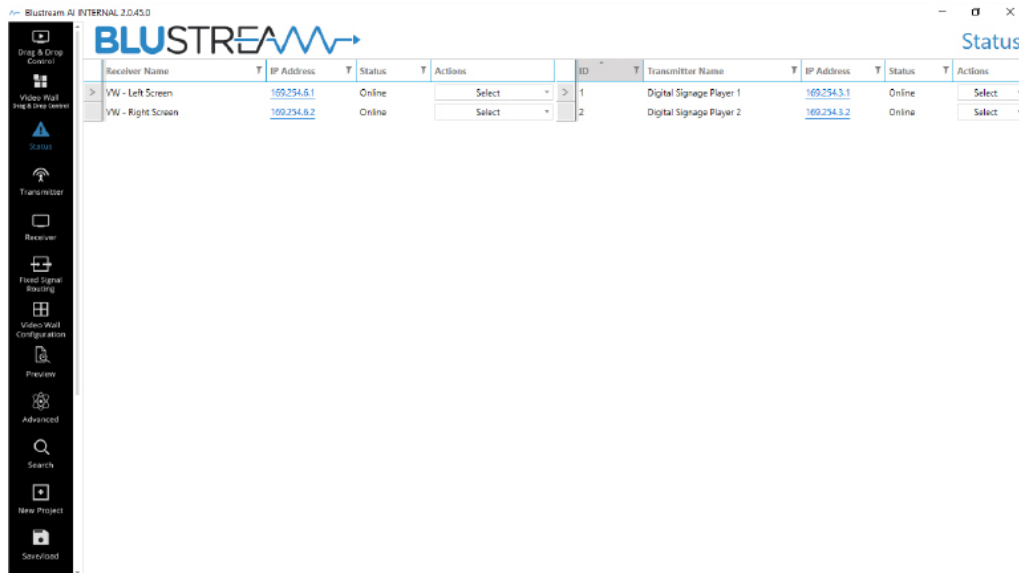
- Drag & Drop the source preview window onto the VW array preview underneath
- or
- Use the drop down selection to the right of the arrays preview to switch sources

Switching between different Video Wall arrays and for the pre-defined Configurations set up for each Video Wall can also be carried out by using the drop down boxes above the Video Wall preview.

Please note: This menu option is available after logging out of AI 2.0. An end user can therefore be left with AI 2.0 to use the Drag & Drop Control option without the ability for them to access any of the configuration options contained within the software.

System Status

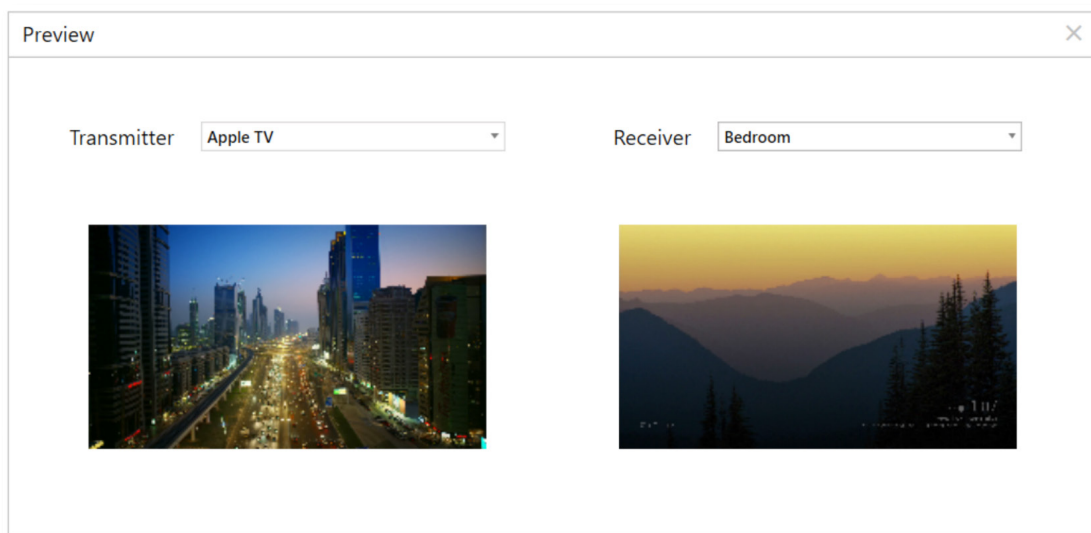
The Status page displays information of all products that are active in the configured Multicast system. Products shown will be from a new system configuration, or from an existing / previous system search. The status page auto-refreshes information every 60 seconds so will show products that are 'Offline' and highlight these in RED.



Preview

The video preview screen allows you to view what video signal is passing through all Transmitters and Receivers in the live system.

The preview window is a tool to help diagnose faults with the video distribution system, allowing you to see if each Transmitter is receiving a signal from the source, and whether each Receiver is transmitting a HDMI signal to the display. This can all be achieved from your computer, meaning you do not have to walk to each display in the system.



To view the video output from a source (Transmitter) simply select the required Transmitter from the Transmitter drop-down box.

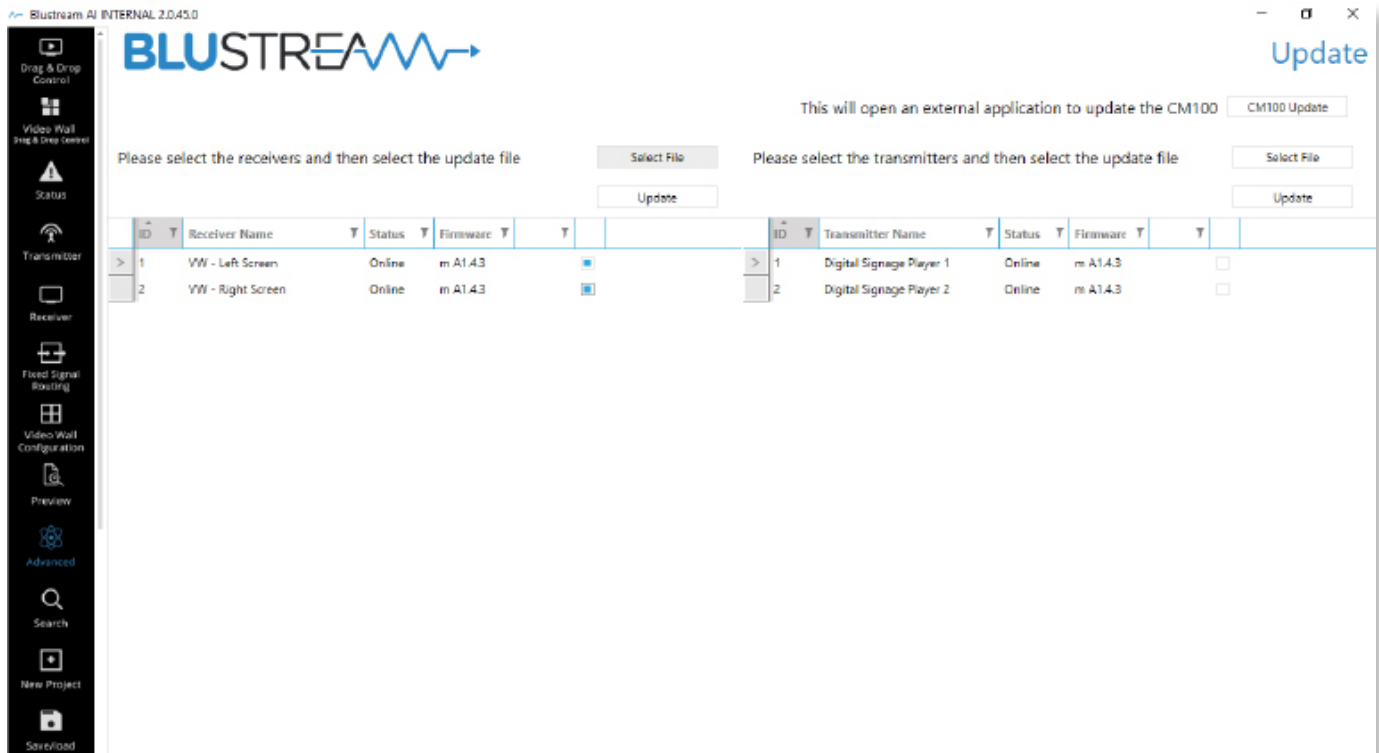
To view the video output to a display from a Receiver simply select the Receiver from the Receiver drop-down box.

The image shown in either preview windows is a single frame that is refreshed every 2 seconds.

Advanced

The Advanced menu page is used for firmware upgrading Blustream Transmitters or Receivers to newer releases of Blustream Multicast firmware. You can also use the firmware upgrade processes to do this as outlined on pages 5 and 6.

The Advanced menu allows for multiple units to be firmware upgraded simultaneously. We would recommend putting the units to be updated into 'Firmware Update Mode' as outlined on page 5, but the product firmware can be updated without 'Firmware Update Mode' but you must stop any streaming service to/from the product before you proceed with the firmware upgrade. Failure to do so may result in loss of firmware transmission packets due to un-necessary traffic on the network.



1. Select the Transmitter or Receiver products by clicking the select box to the right of the firmware column.
2. Click 'Select File' and open the folder in which you have saved the recently downloaded firmware files.
3. Click 'Update' which will begin the firmware upgrade process.
4. Once the upgrade has completed, the product/s will reboot automatically.

IMPORTANT:

DO NOT unplug the power or network connection to the Multicast product/s as this may result in failure to upgrade firmware, which may lead to possible failure of the unit.

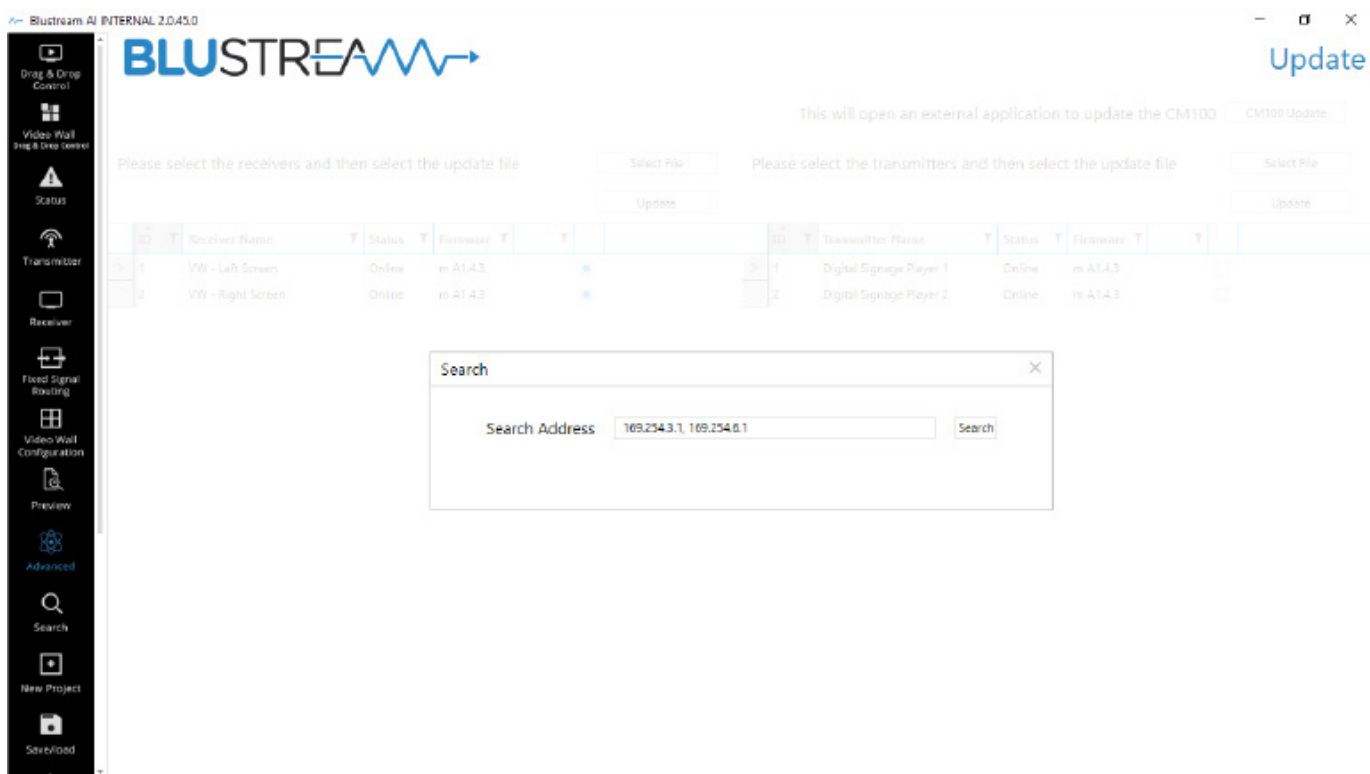
Firmware upgrade process will take several minutes. Do not disconnect, or power down the unit that is being updated.

Please note: Whilst multiple Transmitters and Receivers can be updated simultaneously, it is recommended that you only update 5x units at a time. This has been found to be the most efficient number of units to update simultaneously taking into account the data transfer from your computer to multiple units.

Search

The system search page is used for times when you do not have a saved system file nor have not configured a system from scratch. Using the search system you are able to find all 'ACTIVE' Blustream Multicast products that are on the system. The search will not find products that are not actively connected to the LAN switch at the time of the search.

In order for the search function to work you must know the IP address of at least **ONE** of the Multicast products installed. If you have used the AI PC program then we would advise to use the first product that is configured which is a Blustream IP100UHD-TX with the address of 169.254.3.1.



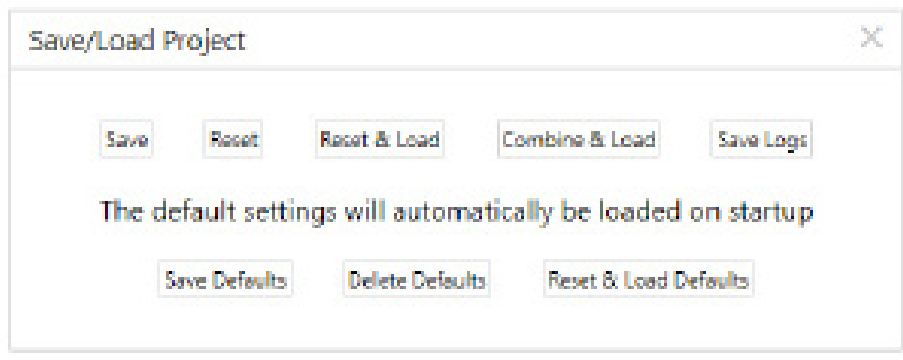
Enter the Multicast product IP address and click '**SEARCH**'. The system will report back all online Multicast products found.

Please note:-

- The search feature will not recall custom assigned names of the Multicast products, only ID and IP address. For this information you will require the saved system file.
- If you use your own static IP address for the Multicast products (not advised) then you will need to find the IP address of a single unit. Blustream would recommend using programs such as 'FING', 'IP SCANNER' or 'BONJOUR BROWSER'.

Save & Load

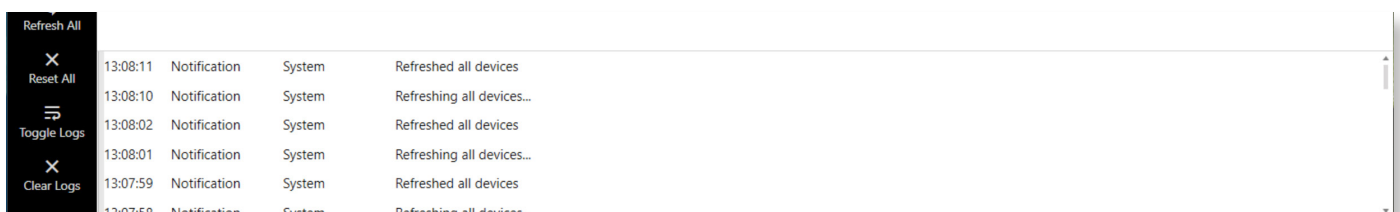
The save and load page allows you to backup or load configured system files.



1. **Save** - saves the current configured system.
2. **Reset** - clears any configured system details shown on-screen.
3. **Reset & Load** - clears and configured system displayed and allows you to load new system details from a saved configuration file.
4. **Combine & Load** - allows you to load multiple projects at the same time. Useful if you have large installations that you have configured at different times and wish to combine into a single project (to review the status of all installed TX & RX hardware).
5. **Save Logs** - a log of all events carried out by the AI 2.0 software during a session can be saved should an issue arise with the system. A member of the Blustream Technical Support team may require a copy of the system logs to assist with troubleshooting.
6. **Save Defaults** - a copy of the current system settings can be saved as default values (i.e. names, EDID settings etc). These are required by other users of the Multicast system if accessing the system using AI 2.0 (for instance, if leaving AI 2.0 for a customer to use as a basic control system). This default file is what will be loaded on start up of AI 2.0 on the PC the file (.json) is saved to.
7. **Delete Defaults** - this removes the default values for the current system ready for new defaults to be saved.
8. **Reset & Load Defaults** - removes the default values currently associated with a users computer and allows for a new default system file to be loaded instead.

System Logs

At the bottom of the AI PC program is an area that can display current system logs. These give information of commands sent and received and current system status. This can be useful for installers monitoring system performance.



Toggle Logs - should you wish to hide the system log window simply press 'Toggle Logs' to hide or display the information window.

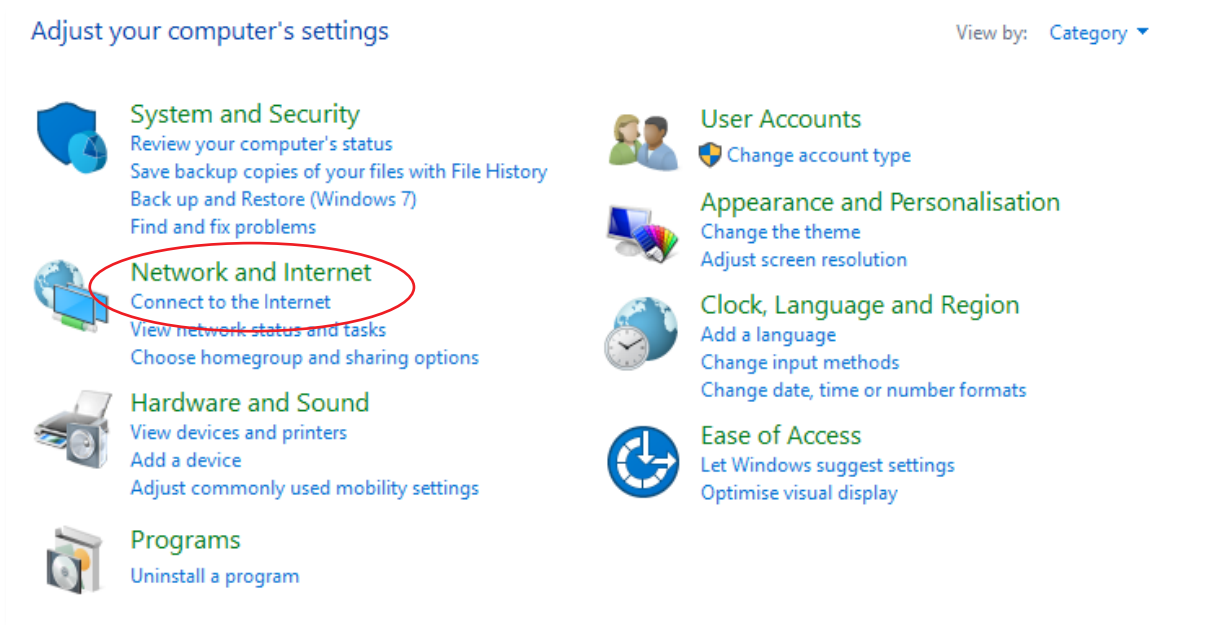
Clear Logs - clears the system log information window.

Please note: Once the logs have been cleared, there is no way to retrieve the information previously held in this area. We would recommend saving a copy of the log file on completion of a system configuration.

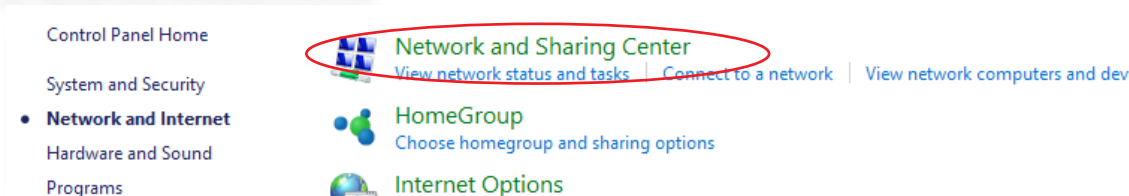
Computer IP Address Configuration

Your computer must be in the same IP range to communicate with the Cisco network switch / Multicast products. You can update your computer settings by following the below instructions:

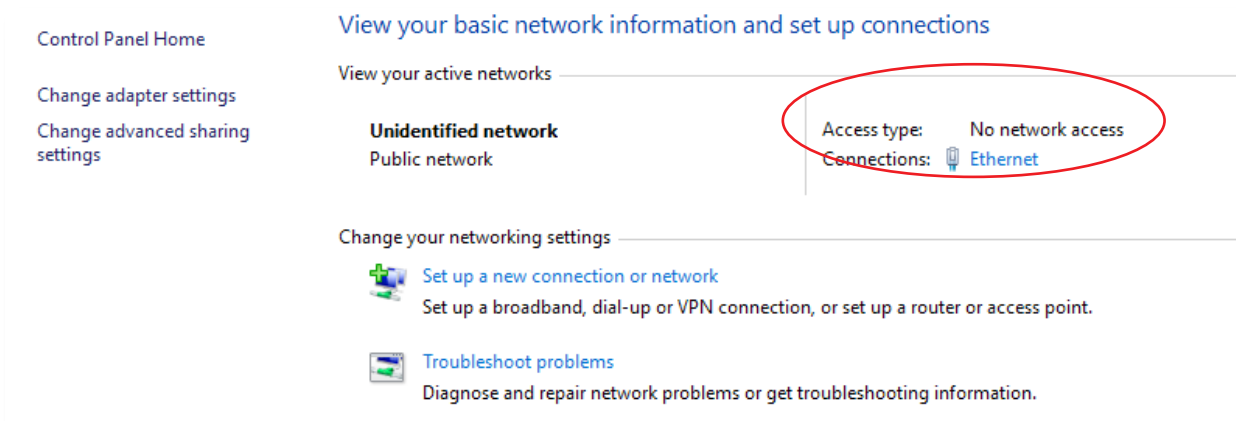
- 1) Connect your computer to your network switch using an Ethernet cable
- 2) In the Windows toolbar navigate to 'CONTROL PANEL'
- 3) Select 'NETWORK AND INTERNET'



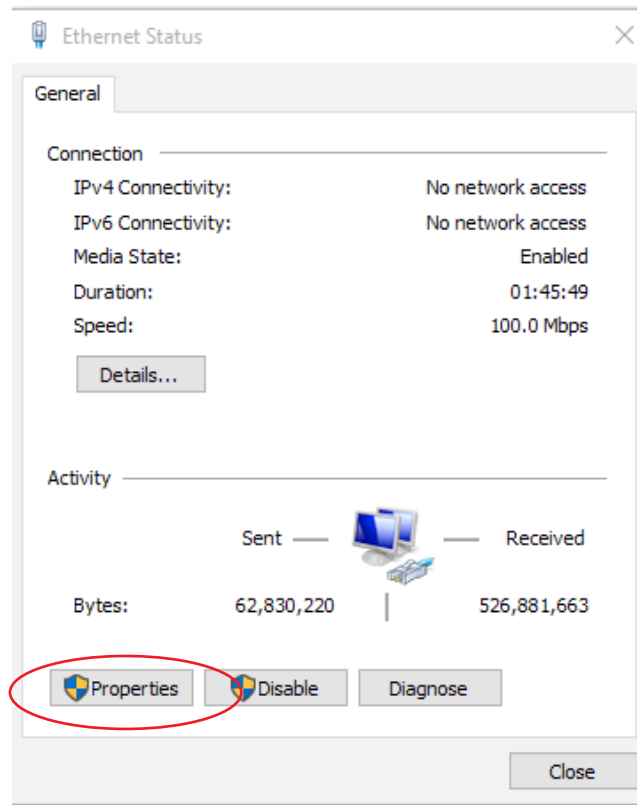
- 5) Select 'NETWORK AND SHARING CENTER'



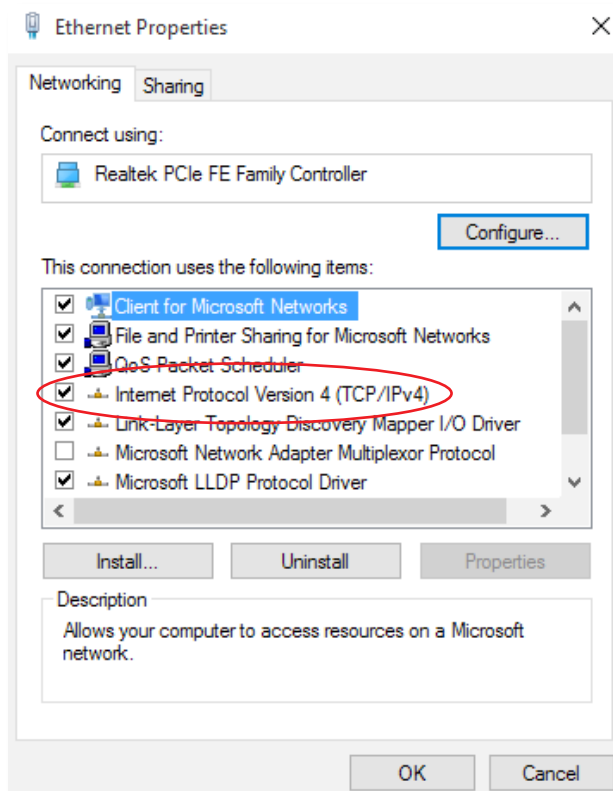
- 6) Under 'View your Active Networks' you can see connection types available. The example below shows both LAN (local area connection) and Wireless. Select 'Local Area Connection' as this is the method of communication you are using with the switch.



7) In the next window select 'PROPERTIES'



- 8) A. In the 'NETWORKING' window highlight/select 'INTERNET PROTOCOL VERSION 4 (TCP/IPv4)'
- B. Select 'PROPERTIES', or double click on 'INTERNET PROTOCOL VERSION 4 (TCP/IPv4)'



9) A. Under the 'General' tab select 'USE THE FOLLOWING IP ADDRESS'

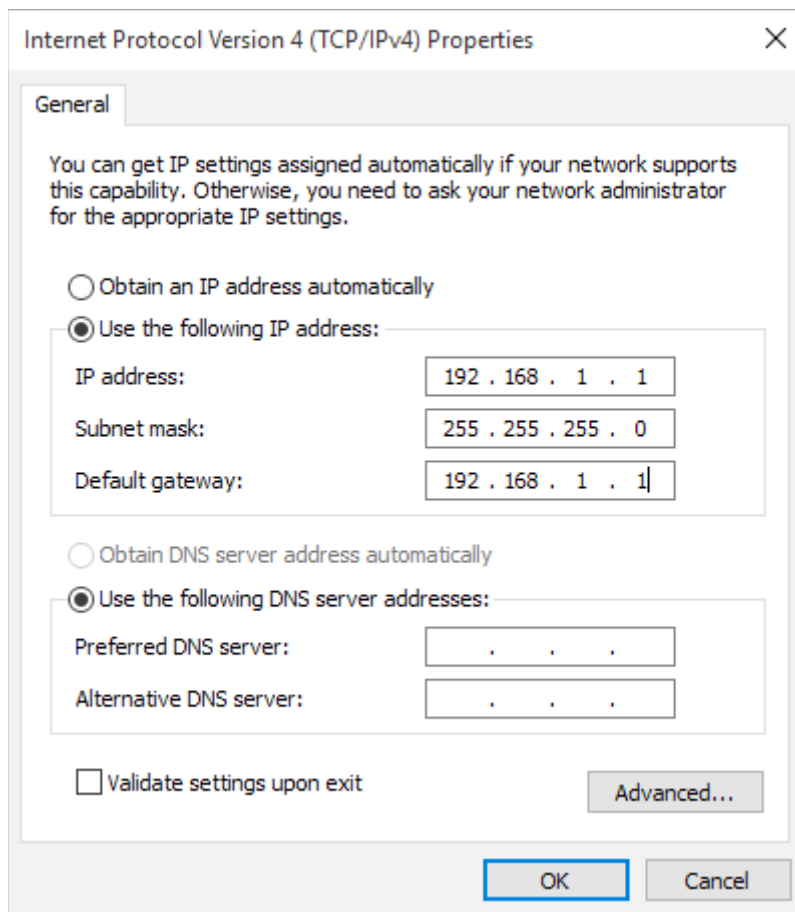
B. Enter the following FIXED IP network details for your **Network Switch** (check with the manufacturer of the LAN switch if this address is relevant in advance)

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.169.1.1

C. Enter the following FIXED IP network details for **Blustream Multicast products**

IP Address	169.254.1.100
Subnet Mask	255.255.0.0
Default Gateway	169.254.1.1

It is important that you have the IP address range of your PC configured to the correct range when setting up your LAN switch. Once you have finished setting up your LAN switch, you will need to amend the IP address range of your PC to utilise the features of the PC Wizard and set up your Multicast system.



10) Click 'OK' and exit the network setup

11) Enter the default Network Switch or Blustream Multicast address in your web browser and check that you can connect to the unit. If you have already configured the Transmitter and Receiver products enter the address of one of these (it is advised to use 169.254.3.1 which will be the default first Transmitter IP address).

Multicast Web-GUI Interface

Each Blustream Multicast product comes out of the box with a fixed IP address of 169.254.100.254. Once your PC network is amended to work in the same IP range as the fixed IP of the Multicast products (please refer to pages 24-26 of this guide), you can communicate directly with the built-in web server in each Multicast IP Transmitter or Receiver.

Once a Multicast product has been configured using AI2.0, manual configuration or the Web GUI interface, it will have a different IP address to that of the factory default unit. If you are unsure of the IP address of the Multicast product you can press and hold the 'UP' channel button on each product for several seconds which will show the product ID/IP address. You can also use the AI2.0 software 'Search' feature to show all available Multicast products on the system.

Entering the fixed IP address (for new units), or the configured IP address of an already set-up unit, into a web browser on your PC, gives you access to the units configuration for monitoring, resetting, firmware upgrading (see page 6), or further configuration.

Transmitters

The first product to be assigned an IP address when using AI2.0 is an IPxxxUHD-TX Transmitter which will be given the IP address of 169.254.3.1. The next Transmitter will be assigned an IP address of 169.254.3.2 and so on...

Once the IP range of 169.254.3.x is filled (254 units), AI2.0 will continue the auto assign of an IP address from 169.254.4.1 and so on...

Once the IP range of 169.254.4.x is filled AI2.0 will auto assign an IP address of 169.254.5.1 and so on until 169.254.4.254

Receivers

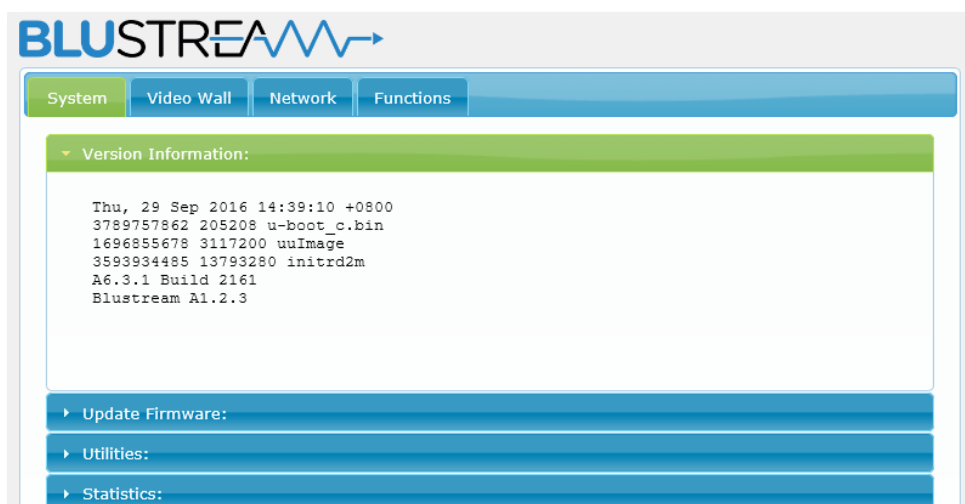
After all Transmitter products have been setup AI2.0 will automatically assign an IP address to the Multicast Receivers. The first IPxxxUHD-RX Receiver will be given the IP address of 169.254.6.1. The next Receiver will be assigned an IP address of 169.254.6.2 and so on....

Once the IP range of 169.254.6.x is filled (254 units) AI2.0 will continue the auto assign of an IP address from 169.254.7.1 and so on...

Once the IP range of 169.254.7.x is filled AI2.0 will auto assign an IP address of 169.254.8.1 and so on until 169.254.8.254

Once a system has been set-up, it can be difficult to know what products have been configured within the system. This part of the guide will explain the use of directly communicating with an individual unit. It is assumed therefore that you will already know the IP address of the unit you want to communicate with. The Web-GUI is similar in function to the Blustream Multicast PC Program with the majority of options on the Web-GUI being concurrently available within the PC program, however the Web-GUI should primarily be used as a tool for checking configuration, or problem solving, rather than as a method for setting up a new system.

Below is the 'home' screen of both the Transmitter and Receiver units that will be displayed on entering the IP address of the unit you are connected to:



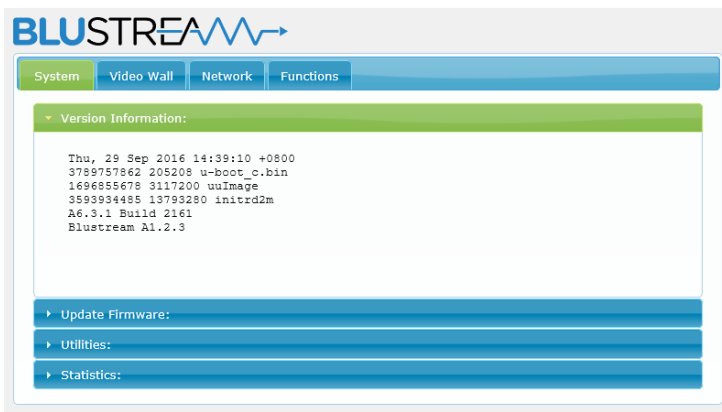
Multicast Web-GUI Interface - IPxxxUHD-TX - Transmitter

The menu structure for the built-in Web-GUI is as follows...

SYSTEM:

Version Information:

This gives the user an overview of the individual unit you are connected to, including model number and firmware version



Update Firmware:

Please see Page 6 for more information on firmware upgrading your IPxxxUHD-TX

Utilities:

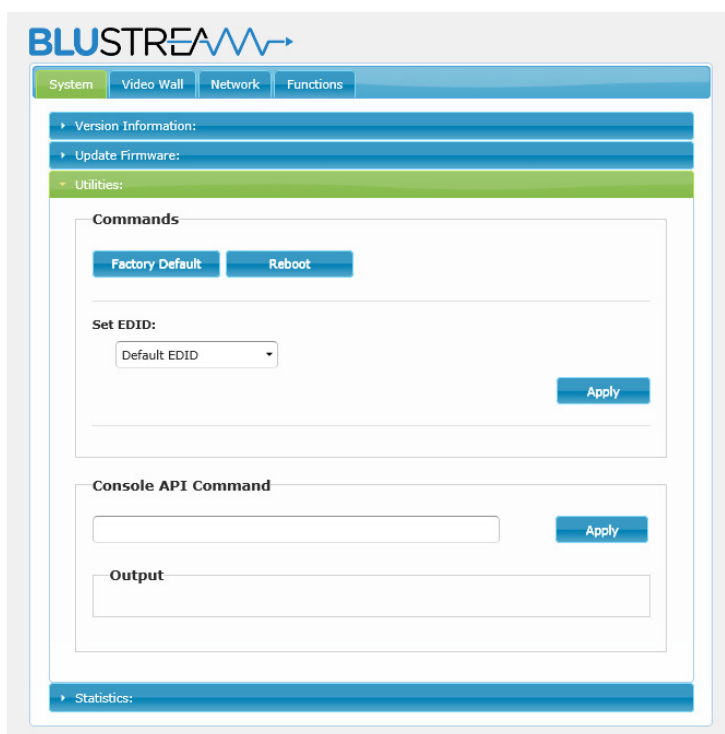
Factory Default - resets your transmitter unit back to factory settings. The IP address will revert to: 169.254.100.254

Reboot - reboots the transmitter unit

Set EDID - as per page 14, allows you to fix the EDID value for each Transmitter (source), click Apply to save new settings

Console API Command - please use the CM100 or ACM200 to provide API commands to this unit

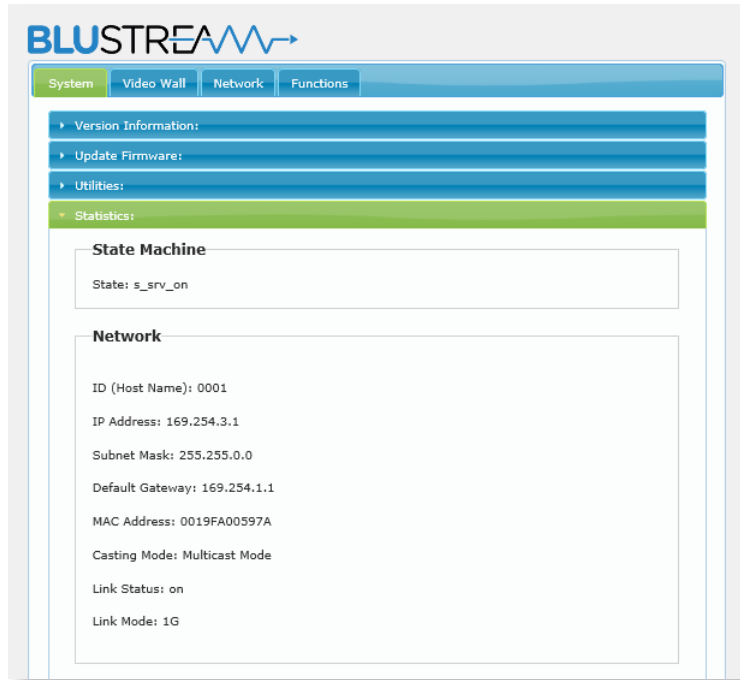
Output - this section is the feedback from the API command above - please utilise the CM100 or ACM200 for feedback routing



Statistics:

Network - details information about the connection status of the unit you are communicating directly with (unit ID, IP address, subnet, gateway, MAC address, casting mode (Multicast / Unicast), link status and link mode). Changes to the units IP address details can only be viewed from this section, please refer to the Network tab to amend the IP structure of the unit

Video - this is the EDID response from the piece of equipment you are connected to. Not required.

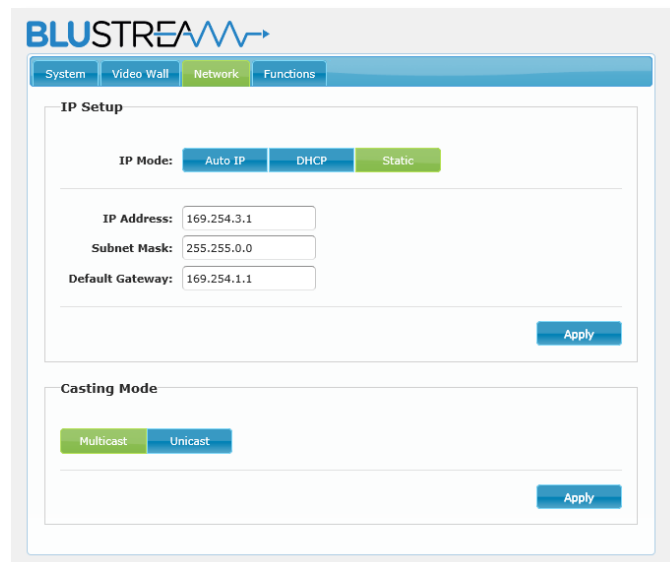


VIDEO WALL:

Please see Page 22 of this manual for the details on Video Wall array configuration.

NETWORK:

The network tab allows for the address details for the unit to be amended to fit in with alternative IP address ranges. You can also swap between Unicast and Multicast functionality of the transmitter. Please note: amending the IP address of Multicast products will prevent the Multicast CM100 control unit from working as this has been configured using default Blustream Multicast IP addresses (169.254.x.x). This is not recommended.



FUNCTIONS:

Enable Video over IP:

This check box should always be ticked

Enable Video Wall:

This check box should always be ticked

Maximum Bit Rate:

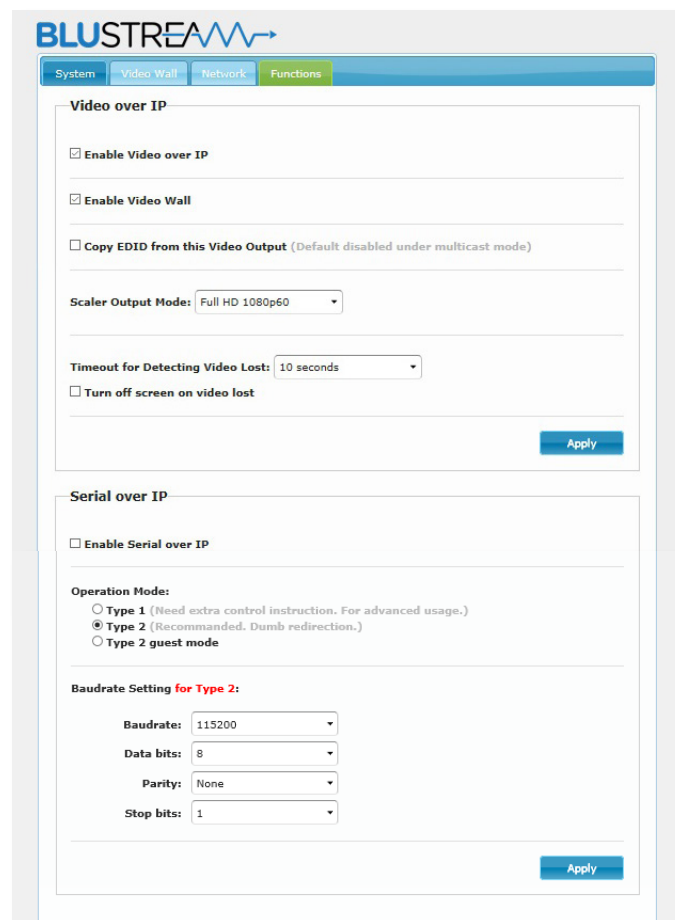
You can manually alter the bit-rate if the data stream from the source into the switch using the options within the drop down box. Please note: image quality will be degraded when setting this to anything less than 'Best Effort' - if the Multicast video network is kept independent to other networks there will be no additional network traffic and therefore the Multicast products will continue to stream 4K HDMI at the maximum possible picture quality without needing to lower the Bit rate.

Maximum Frame Rate:

Allows for the adjustment of the number of frames captured / distributed across the IP network. It is recommended to keep this at 100%

Serial over IP:

To enable RS232 pass through from the transmitter, please utilise this section to configure the serial settings of your system. Please refer to the 'ROUTING CONTROL' section of this manual for further details.



Multicast Web-GUI Interface - IPxxxUHD-RX - Receiver

The menu structure for the built-in Web-GUI is as follows...

SYSTEM:

Version Information:

This gives the user an overview of the individual unit you are connected to, including model number and firmware version

Update Firmware:

Please see Page 6 for more information on firmware upgrading your IPxxxUHD-RX

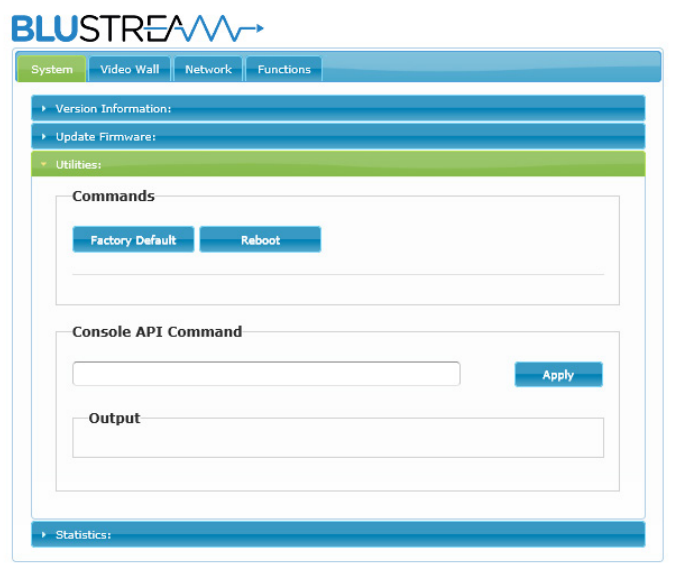
Utilities:

Factory Default - resets your receiver unit back to factory settings. The IP address will revert to: 169.254.100.254

Reboot - reboots the receiver unit

Console API Command - please use the CM100 or ACM200 to provide API commands to this unit

Output - this section is the feedback from the API command above - please utilise the CM100 or ACM200 for feedback



Statistics:

Network - details information about the connection status of the unit you are communicating directly with (unit ID, IP address, subnet, gateway, MAC address, casting mode (Multicast/ Unicast), link status and link mode). Changes to the units IP address details can only be viewed from this section, please refer to the Network tab to amend the IP structure of the unit

Video - this is the EDID response from the piece of equipment you are connected to. Not required.

VIDEO WALL:

Basic Set-Up:

Please see Page 22 of this manual for the details on video wall set-up

Advanced Set-Up:

This is sub-section is a continuation of the Video Wall section within the Blustream PC Program - please refer to Page 22

NETWORK:

The network tab allows for the address details for the unit to be amended to fit with alternative IP address ranges. You can also swap between Unicast and Multicast functionality of the receiver. Please note: amending the IP address details manually will complicate the use of the Blustream PC Software when working with a system - not recommended

FUNCTIONS:

Enable Video over IP:

This check box should always be ticked

Enable Video Wall:

This check box should always be ticked

Copy EDID from this Video Output:

This is an advanced feature if the EDID settings within the Blustream PC Wizard program, Web GUI interface, or manual configuration are not compatible with the display. As soon as this feature is selected any IPxxUHD-TX Transmitter that is selected by the IPxxUHD-RX Receiver will copy the EDID from the display connected. It is advised that this is only done for one Transmitter at a time and this feature is turned off prior to selecting other Transmitter/sources.

Scaler Output Mode:

Select the output resolution to the maximum the screen will handle, or the resolution you require the in-built scaler to output.

Timeout for Detecting Video Lost:

Blustream Multicast receivers have their own Multicast logo that will display on the connected screen after a set amount of time when no video signal is sensed. Please select from time options in the drop-down box.

Turn Off Screen on Video Lost:

Should you not wish for the Blustream Multicast logo to be shown when no video signal is sensed then select the adjacent tickbox. This feature may be used for commercial displays that can automatically turn off when no video feed is present.

Serial over IP:

The Blustream Multicast system can be used to control third party products using RS-232. Please refer to the 'ROUTING CONTROL' section of this manual for further details.

The screenshot shows the 'Functions' tab in the Blustream AI 2.0 Software Web GUI. The 'Video over IP' section is expanded, showing the following settings:

- Enable Video over IP
- Enable Video Wall
- Copy EDID from this Video Output (Default disabled under multicast mode)
- Scaler Output Mode: Full HD 1080p60
- Timeout for Detecting Video Lost: 10 seconds
- Turn off screen on video lost

An 'Apply' button is located at the bottom right of the configuration area.



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