Blustream PC Program and Web-GUI Guide

updated - November 2016

BLUSTREAM

Contents

Introduction

The Blustream UHD Multicast distribution platform allows distribution of HDMI video over a 1GB network switch. Using visually lossless 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 Blustream Multicast PC program and Web GUI interface, giving the installer the knowledge to completely configure a full Blustream HDMI over IP system.

Prior to running the Blustream Multicast PC Software...

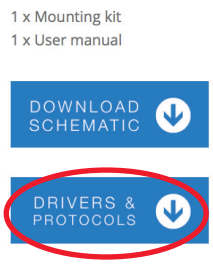
Prior to running the Blustream Multicast PC configuration software it is important that you have the following hardware available:

- 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 the units locally

Supporting documentation & Multicast PC Software...

The relevant supporting for the Blustream Multicast products can be found on the Blustream website: www.blustream.co.uk/ip100uhd

Click on the 'Drivers & Protocols' download button located on the individual Multicast product webpage:



This link will give access to the following information / documentation:

- CM100 Documentation - command sets, firmware, update program, 3rd party control drivers
- IP100UHDTX/RX Firmware - this will always be the most current version of firmware available
- Multicast PC Program download (.exe format)
- Multicast Documentation
- Multicast IR Control - IR key code set, IR commands
- Network Switch Instructions (Cisco, Ubiquiti etc)

IP100 Firmware Update

Prior to commencing installation of your Multicast system, it is important that the Blustream IP100UHD-TX/RX products are loaded with the latest firmware. The latest firmware can be found on the Blustream Website: www.blustream.co.uk/ip100uhd, using the Drivers & Protocols download button - see page 3 of this manual.

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

1) Using the 'Firmware Update' feature in the 'Advanced' section of the PC program. This is the easiest method.

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:-

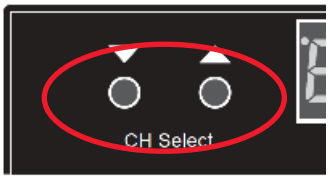
a) A PoE network switch using an Ethernet network cable which is in turn connected to the Blustream IP100UHD-TX/RX product

b) The Blustream IP100UHD product directly which must be powered locally using a 24-56V DC power supply (sold separately)

2) IMPORTANT: Prior to connecting the Blustream Multicast IP100 product to your network switch/local power supply, it is recommended that the product is forced into 'firmware update mode'. Firmware Upgrade Mode stops the Multicast products from streaming video and activates a status for only updating product firmware.

To activate Firmware Update Mode:

a) 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 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 IP100UHD-TX/RX 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.

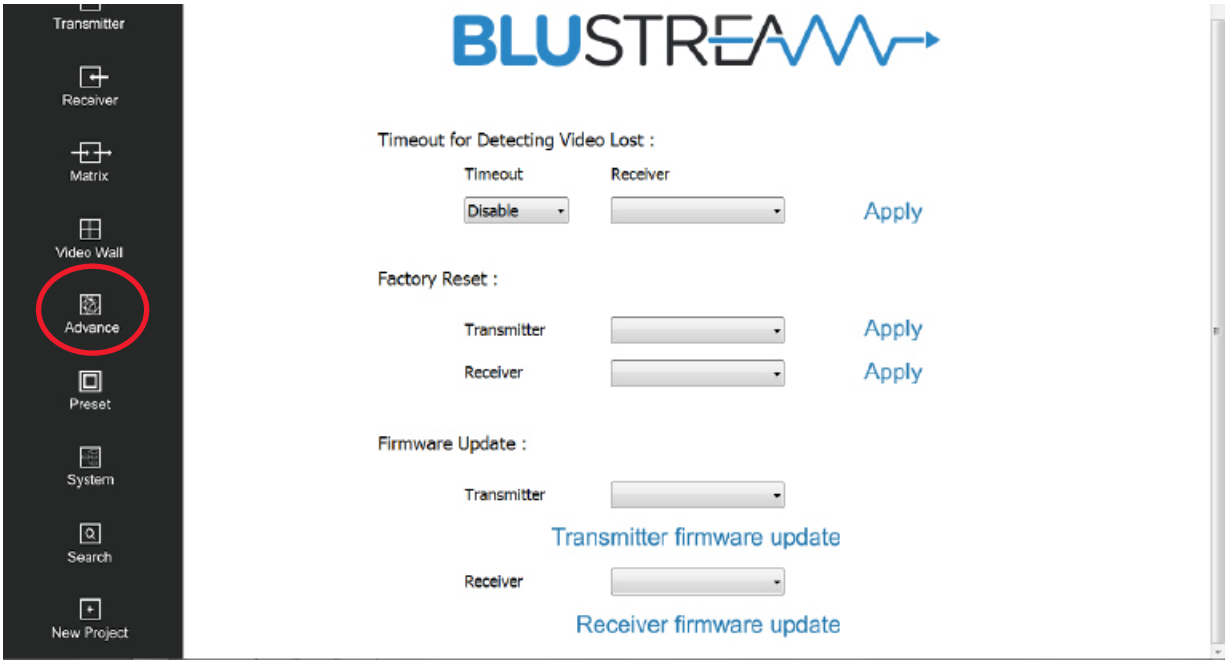
The default IP address of all new Multicast IP100UHD-TX/RX is:

169.254.100.254

IP100UHD Firmware Update - via Blustream PC Program

To update the firmware in either of the Transmitter or Receiver Multicast products using the Blustream PC program please follow the below steps:

1) Open the Blustream PC Program (see page 3 for instructions of how to download this program)
2) Select the 'ADVANCED' tab in the side menu. In the following screen you will see the '**FIRMWARE UPDATE**' option at the bottom of the Advanced settings page
3) Select the product you wish to update (Transmitter or Receiver) from the drop-down box. If the product is a new default unit select **'NEW PRODUCT (169.254.100.254)'**
4) Click 'TRANSMITTER/RECEIVER FIRMWARE UPDATE'
   A warning window will open and request that the product is put into Firmware Update Mode - please see page 4



5) Download the most recent IP100UHD-TX or -RX firmware from the Blustreasm website (see page 3). Click '**Browse'** and open the folder in which you have saved the Blustream IP100UHD-TX/RX firmware files.
6) Select the required 'Transmitter.BIN' or 'Receiver.BIN' file
7) Click '**UPLOAD'** which will begin the firmware upgrade process
8) 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 IP100UHD-TX/RX as this may result in failure to upgrade firmware, which may lead to possible failure of the unit.

The firmware upgrade process may take several minutes. Do not connect any other Blustream product that has the same IP address during this time.

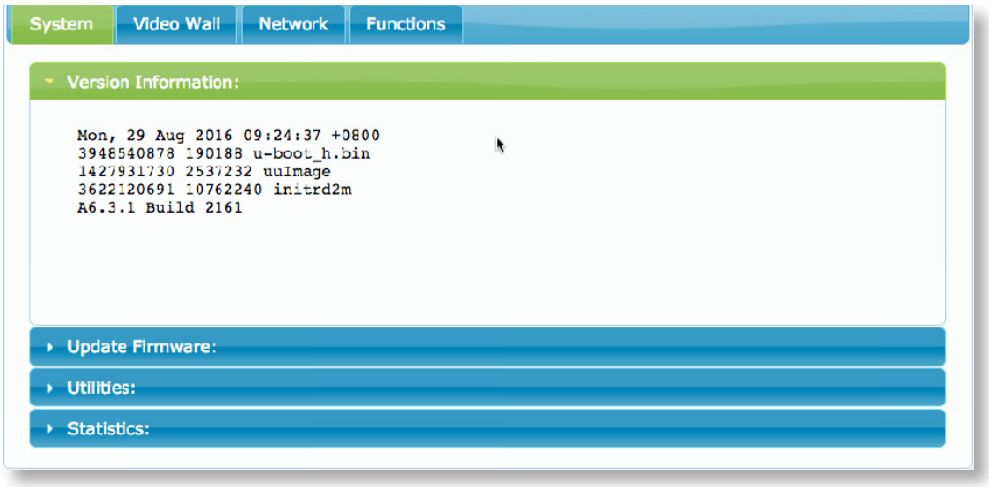
IP100UHD Firmware Update - via Web GUI Interface

Once you have completed all of the stages previously listed on page 4 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)

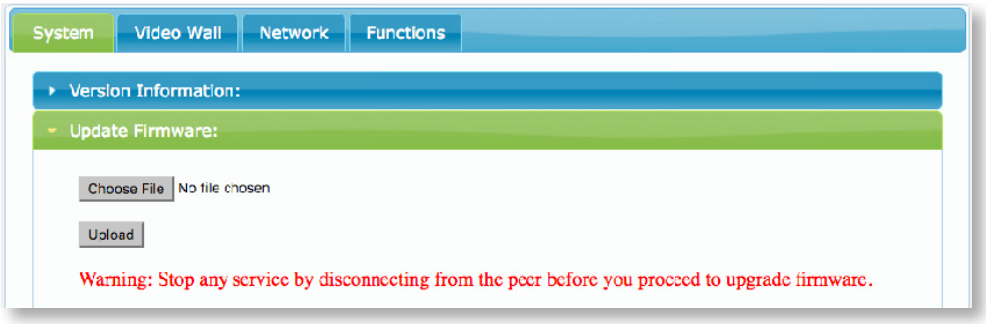
2) Type the Blustream Multicast default IP address into the web browser bar - '**169.254.100.254**'

The following window will open:-



3) Click '**UPDATE FIRMWARE**'

4) Click '**CHOOSE FILE'** and open the folder in which you have saved the **Blustream Firmware Update PC PROGRAM/Web GUI files.**



5) Select the require '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 IP100UHD-TX/RX 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 connect any other Blustream product that has the same IP address during this time.

PC Program Main Menu Overview

When you first run the Blustream PC Wizard you will see multiple options in the side menu for configuration and control of the Multicast system.

Transmitter - page shows a summary of all IP100UHD-TX (Transmitters) installed, with options for EDID management, checking FW version, updating settings, adding new transmitters, replacing or rebooting products etc.

Receiver - page shows a summary of all IP100UHD-RX (Receivers) installed, with options for resolution output (HDR and scaling), function (video wall mode or matrix), updating settings, adding new receivers, replacing or rebooting products etc.

Matrix - this page is used for system testing and includes a matrix switching control and video preview of any installed IP100 Transmitter and Receiver

Video Wall - page is used for the set-up, configuration and control of IP100UHD receivers to create a video wall array of up to a size of 16x16, including: bezel & gap compensation, monitor position layout, stretch / fit, and screen rotation

Advanced - page contains advanced settings for the Multicast products including firmware upgrading of transmitters or receivers and time out for video lost detection

Preset - create and recall advance presets, allowing a single button recall of custom system setup (8 presets maximum)

System - used to save or load system configuration files

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

New Project - used to configure a new Blustream Multicast system

New Project Configuration

The Blustream PC Program includes a wizard for configuring all components of the Multicast system. It has been designed to include a simple step-by-step tutorial that will guide you through the setup procedure, resulting in a system in which all components are assigned a name and IP address ready for basic system use.

It is important to follow the wizard instructions. Failure to do so will result in incorrectly configured Multicast products.

Please see below summary of the setup process:-

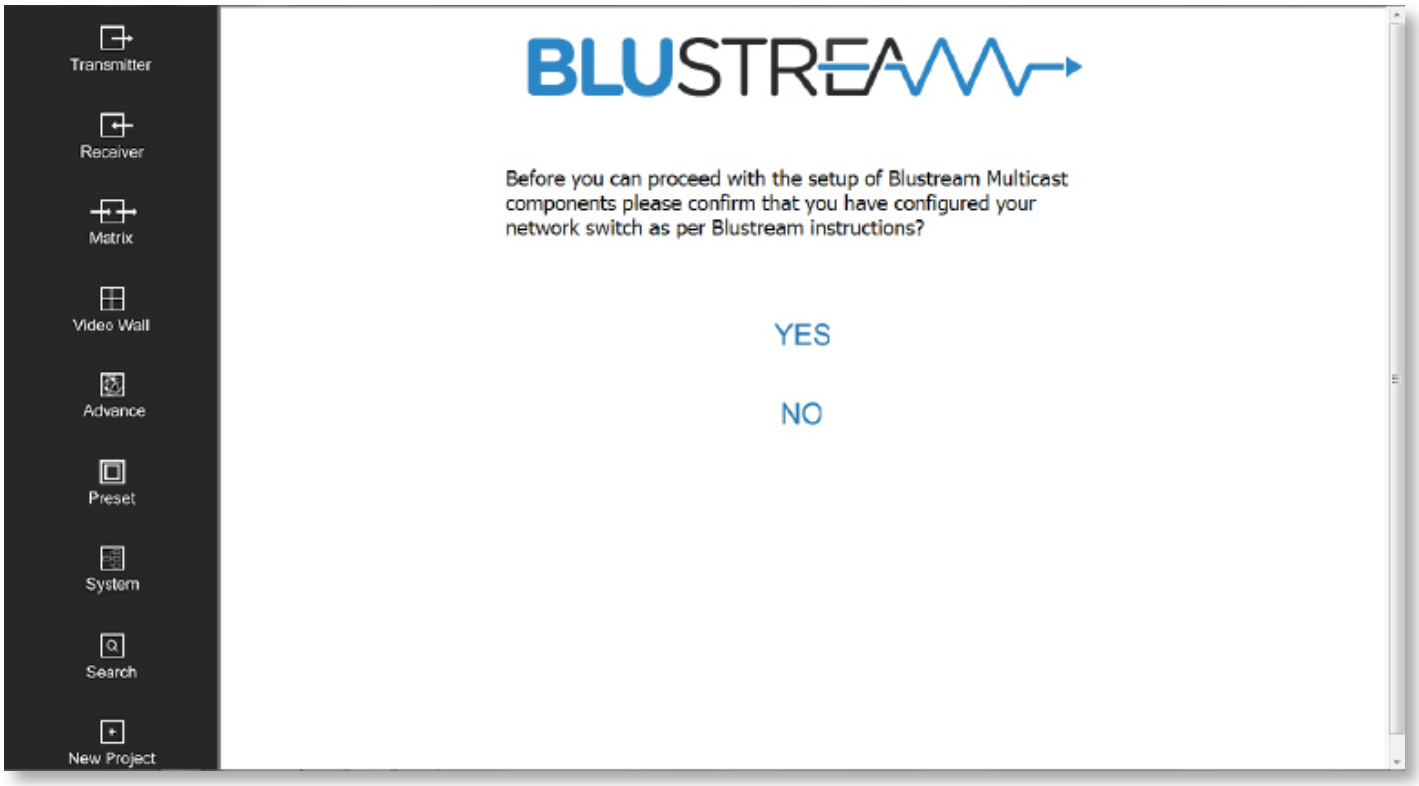
Step 1 - Connecting your PC to the network switch/Multicast product

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

a) A PoE network switch using a Ethernet network cable which is in turn connected to the Blustream IP100UHD-TX/RX products

b) Connected directly to the Blustream IP100UHD product which must be powered locally using a 24-56V DC power supply

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 IP100UHD-TX/RX 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.



Click '**YES**' to continue with the wizard configuration

New Project Configuration

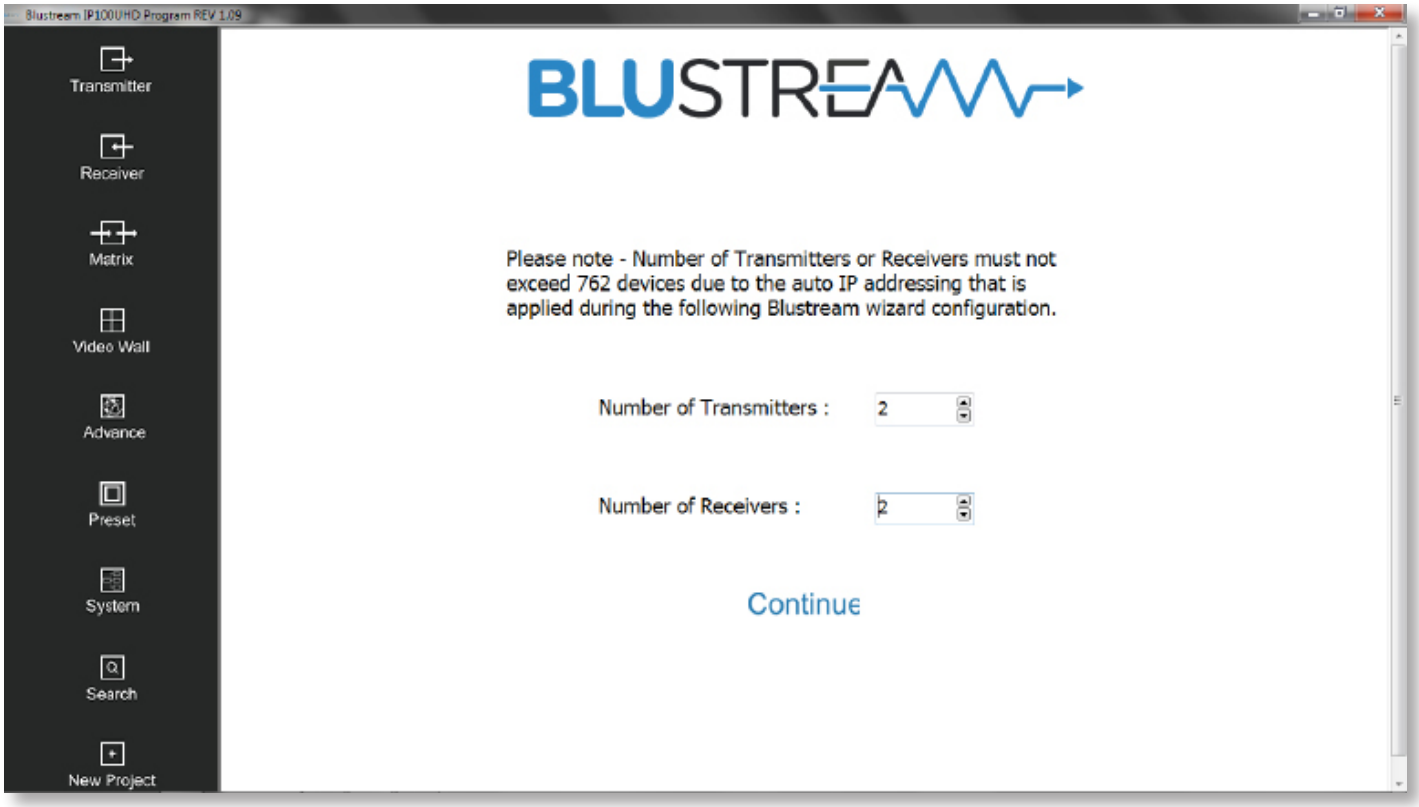
Step 2- Confirming the number of Multicast Transmitter and Receiver products to be setup

The following window is used to confirm how many Transmitter and Receiver products you are about to configure.

It is important that these totals are correct as the wizard will guide you through the setup of each product one-by -one. You can add tranmistters or receivers to the system at a later stage if required.

During the setup of each product the PC wizard will automatically assign an IP address to each product.

The number of Transmitters or Receivers must not exceed 762 devices due to the auto IP address configuration. If you plan to connect more than 762x transmitters or 762x receivers to the system, please contact Blustream Support.



Transmitters

The first product to be assigned an IP address is an IP100UHD-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 and so on....

Once the IP range of 169.254.3.x is filled (254 units), the PC wizard 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 PC wizard 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 the PC wizard will automatically assign an IP address to the Multicast Receivers. The first IP100UHD-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 and so on....

Once the IP range of 169.254.6.x is filled (254 units) the PC wizard 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 PC wizard 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.

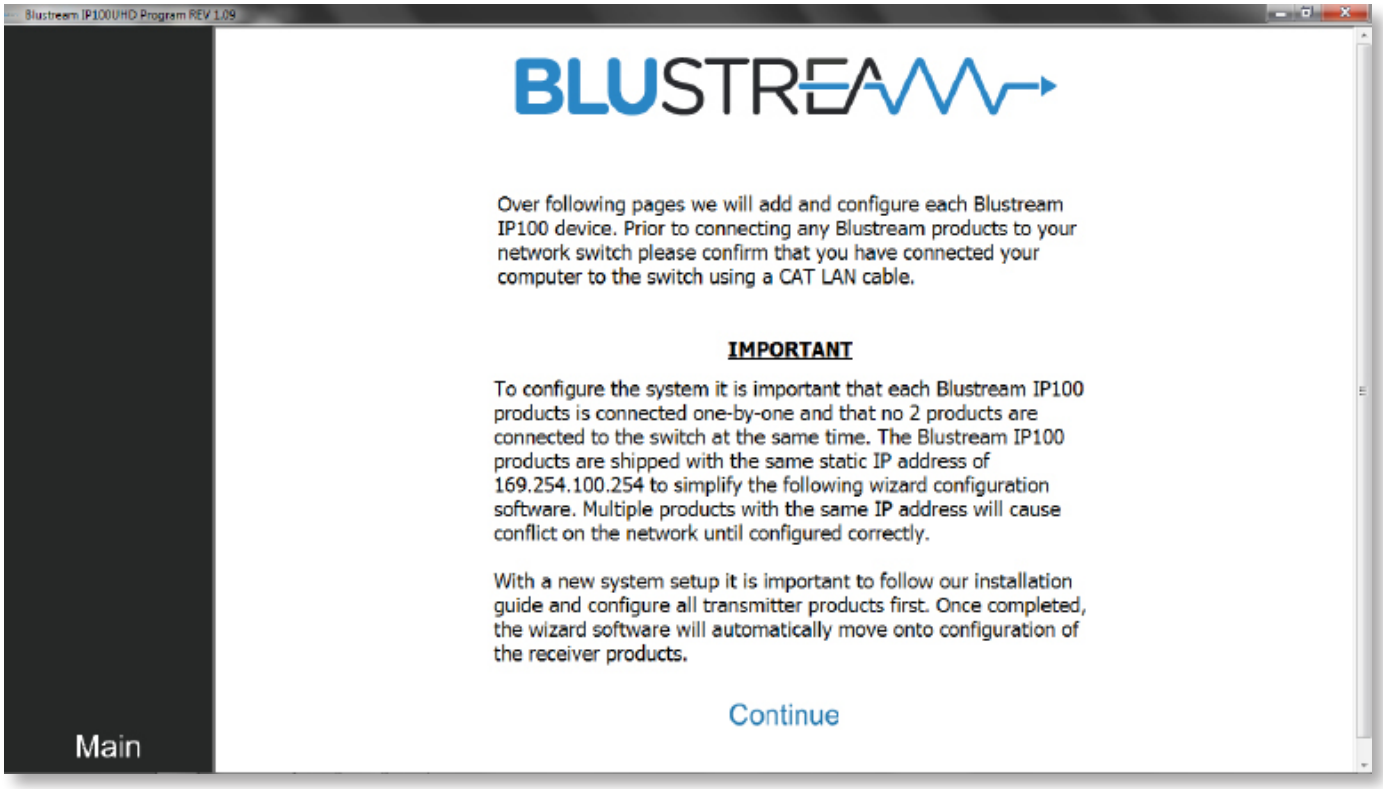
New Project Configuration

Step 4 - Setup warning!

Each Blustream Multicast products is shipped with the default IP address of 169.254.100.254

Each time the PC wizard looks for a new Multicast component to configure it is looking for the default IP address ONLY.

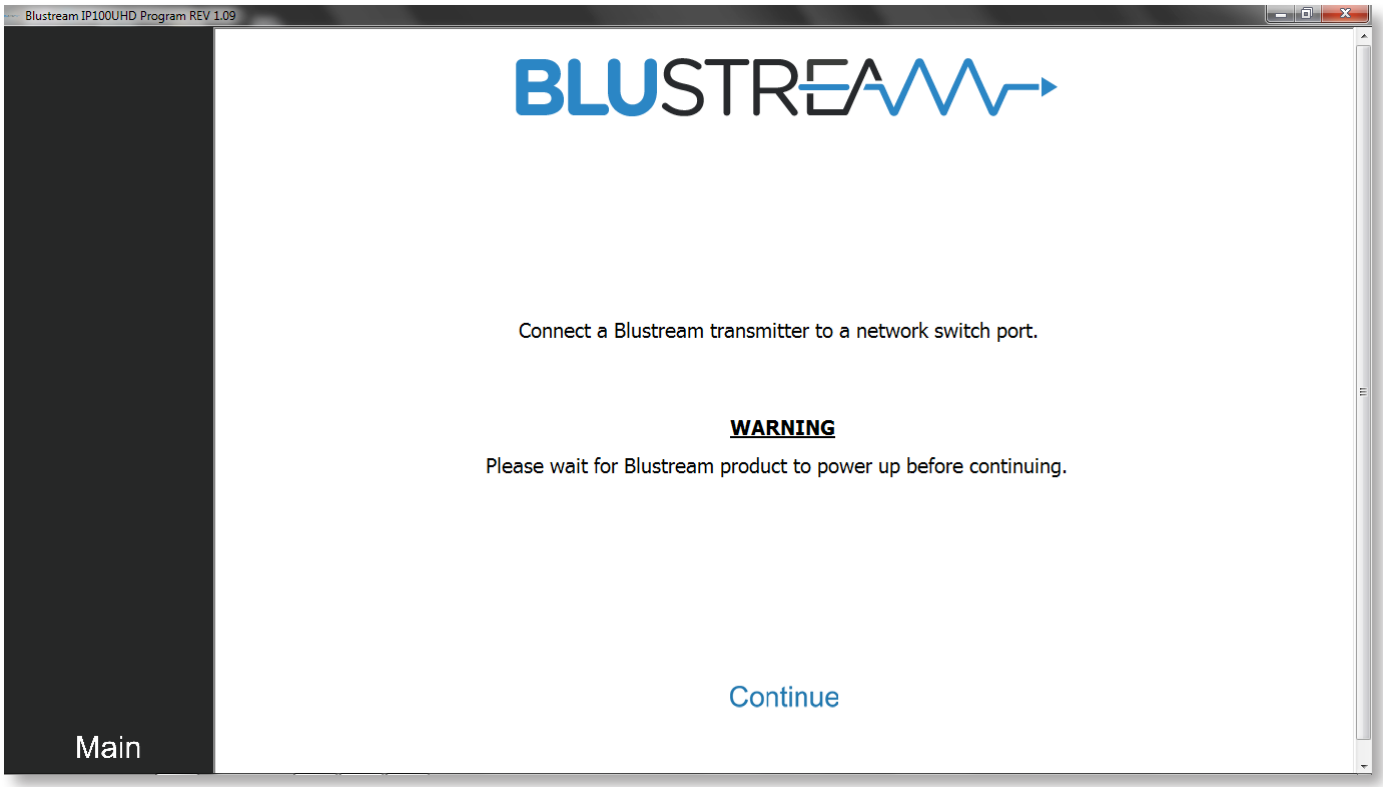
It is important that only 1 new Blustream Multicast product is connected/configured at a time. Multiple products with the same IP address will cause an IP conflict on the network until configured correctly.



New Project Configuration

Step 5- Connect the first Blustream IP100HD-TX Transmitter

The PC wizard now prompts you to connect your first Multicast Transmitter.



Please wait for the product to power up (both the CHANNEL ID LEDs and POWER LED should be lit). On connecting the transmitter, the CH display will rotate until powered and connected.

Once the unit is powered click 'CONTINUE'

Step 6 - Unable to find new product

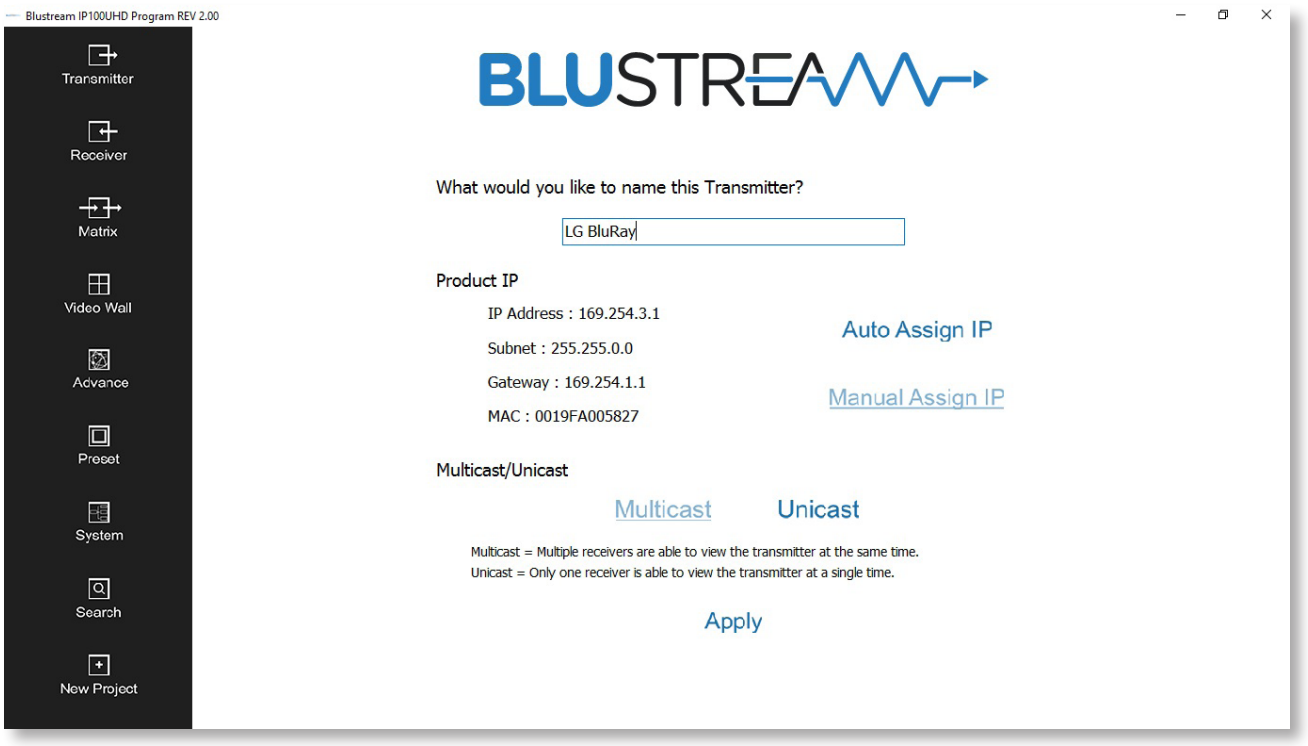
Should you press 'CONTINUE' prior to the Multicast product being connected or powered you will see the below warning window.

Check the product is powered and connected and click 'OK' to try again.

New Project Configuration

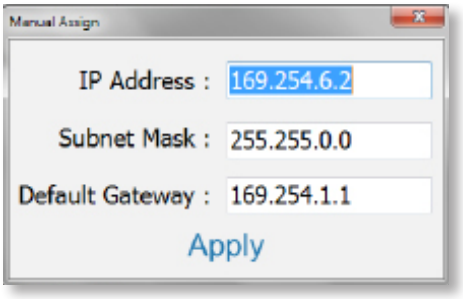
Step 7- Transmitter configuration

The below image is the Transmitter summary screen



From this configuration page you can:

1. Name the Source device the transmitter will be connected to (i.e. Apple TV, Laptop, Blu-Ray etc.)
2. Auto Assign IP - the PC Wizard will assign the product IP address as explained on page 9. Manual Assign IP - Installer can manually assign IP address details. For example:



Please note: It is not advised that IP address of Multicast products are manually confugured as the Blustream CM100 and drivers are configured to the default PC wizard IP address range. Manually assigning IP addresses will prevent the CM100 control module from working.

3. Multicast mode - standard default setting that allows multiple Receivers (display) to view the source (Transmitters) at the same time.
4. Unicast Mode - setting that limits each Transmitter (source) to only be viewed by a single display (Receiver) at the same time. This mode is not advised.

Press '**CONTINUE**' when finished to apply the changes to the Blustream Transmitter. You will note the Transmitter 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 click 'OK' to try again.

New Project Configuration

Step 8- Transmitter configuration (continued)

Repeat the Transmitter configuration process for all products.

Remember to not connect any additional Transmitter products until the previous unit has rebooted and been assigned its new IP address.

Step 9- Receiver configuration

Once all the Blustream Multicast Transmitters have been configured the PC wizard will automatically move onto configuring the Receiver products.

Configuration of the Receivers is identical to the Transmitters, simply name the Receivers as required (i.e Study, Kitchen TV, Gym etc.)

Step 10 - Configuration complete!

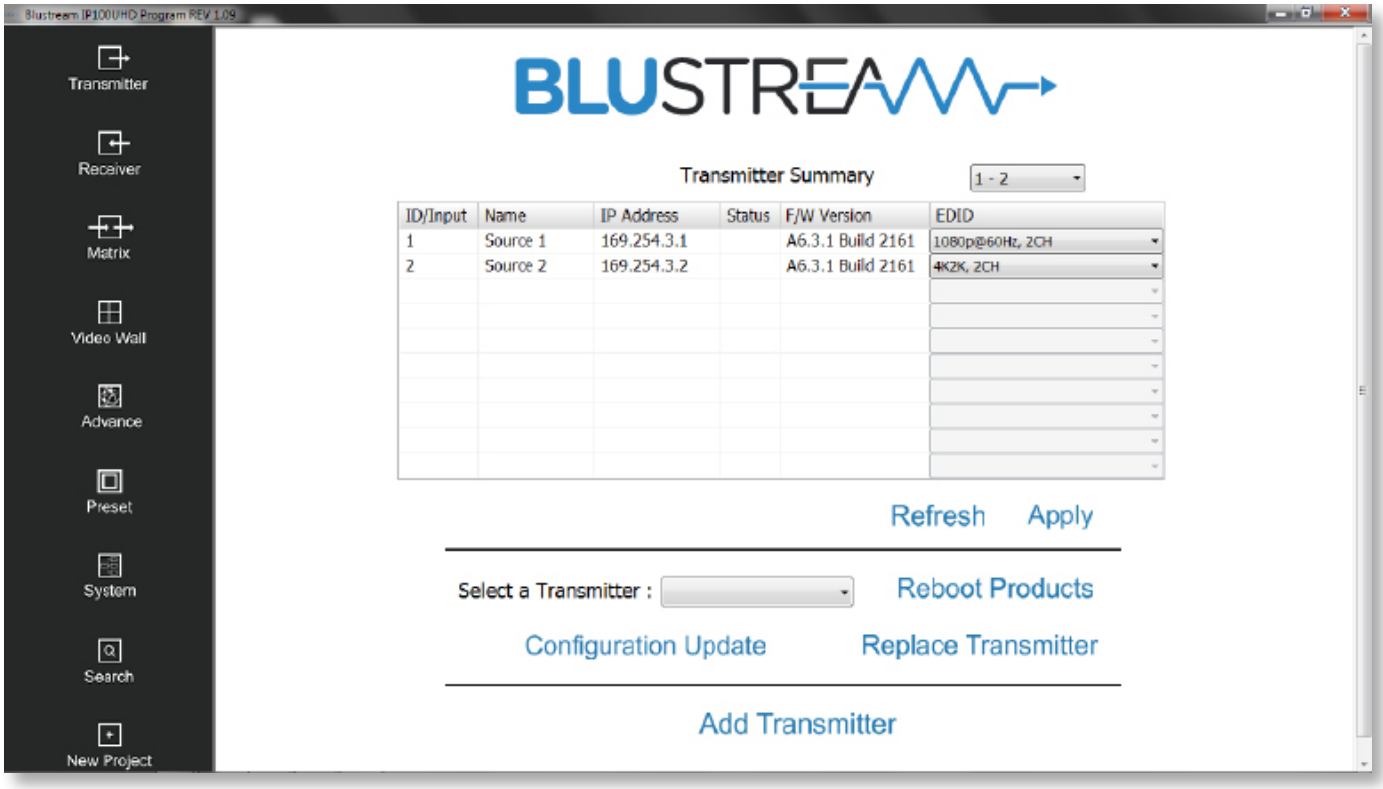
Once all Transmitter and Receiver products have been configured click '**FINISH**' which will take you to the Transmitter summary window.

It is advised that once basic configuration has been completed you review the additional settings in the Multicast products such as:

- Fixing the EDID values for the Transmitter products (see page 14)
- Adjusting the Scaler resolutions for the Receiver products (see page 16)

Transmitter Summary

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



Features of the Transmitter summary page include:

1. Transmitter summary (page drop down) - each page can show a summary of 10 Transmitter products connected to the system. To view further products in the system select further pages from the drop-down box.
2. ID/Input - automatically assigned during the PC wizard configuration. This number is used for control of the Multicast system using third party drivers.
3. Name - configured during the PC wizard configuration, can be amended using the Configuration Update button on the same page.
4. IP Address - the IP address assigned to the unit during configuration, can be amended using the Configuration Update button on the same page.
5. Status - shows the online / offline status of a product
6. F/W Version - this should marry up with the firmware version that you can find on the Blustream website (see page 3 for more details)
7. EDID - allows you to fix the EDID value for each Transmitter (source)
8. Refresh - will refresh the product details shown. When the Transmitter summary window is first selected you will need to press '**Refresh**' in order to display system details.
9. Apply - press apply once any details or settings have been updated within this page
10. Select Transmitter - when using the three function in this section of the page (Reboot / Configuration / Replace) you must first use the drop down box to select the Transmitter you wish to address
11. Reboot Product - you must select the Transmitter to reboot (using the adjacent drop-down selection box) prior to pressing '**Reboot Products**'
12. Configuration Update - allows you to update the IP address, name and multicast/unicast settings of each Transmitter. You must select the Transmitter using the adjacent drop-down selection box prior to pressing '**Configuration Update**'
13. Replace Transmitter - should a Blustream IP100UHD Transmitter unit become faulty, the PC program has a simplified way of replacing the product. Please see page 15 for detailed instructions.
14. Add Transmitter - if an additional Transmitter is required in the system the PC wizard will assist in configuring the new IP100UHD-TX to become part of the existing system setup. This process is the same process as described in 'NEW PROJECT CONFIGURATION' (page 12).

Transmitter Summary (continued)

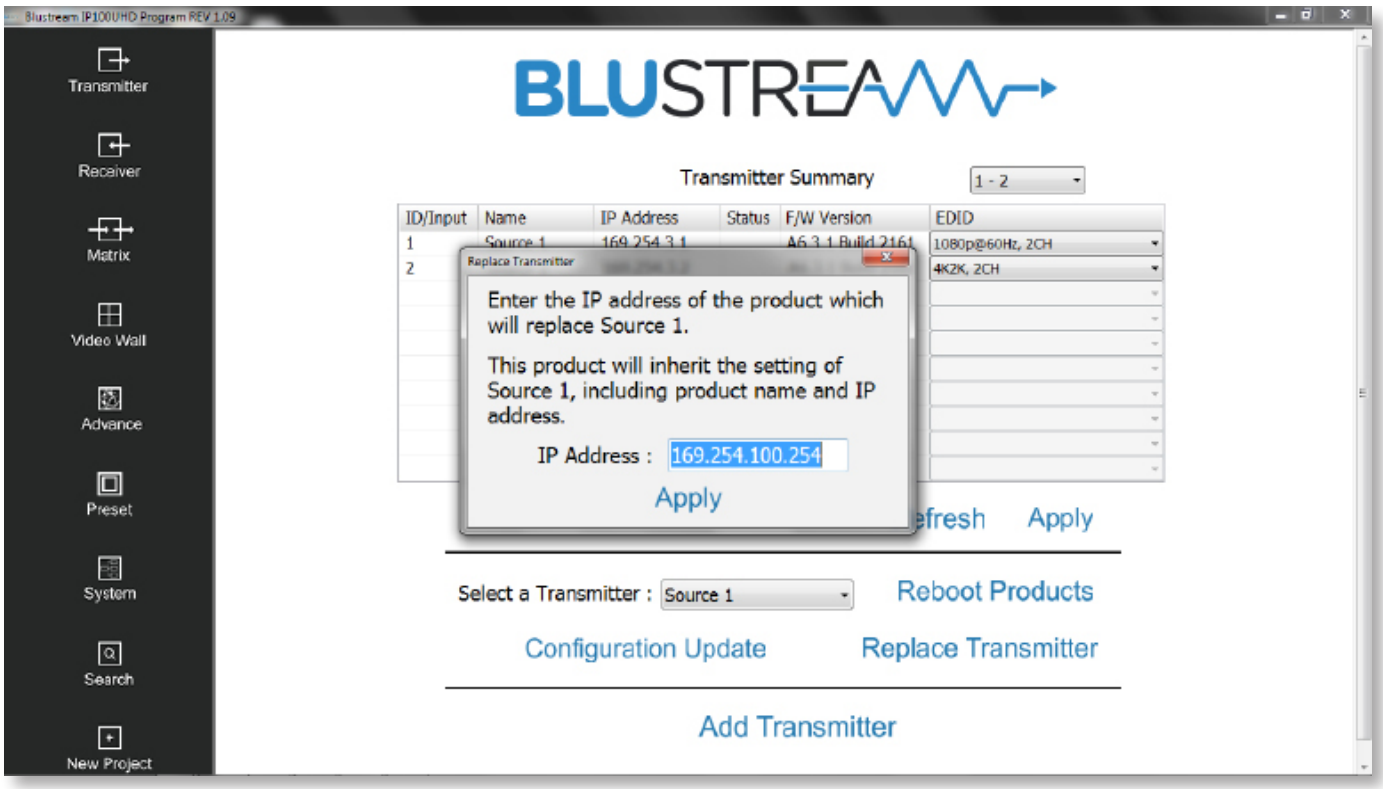
Replacing a Transmitter

There may be a time in which a Blustream Multicast product has stopped working. Using the summary window the product will show 'OFFLINE' in the status window. If after reviewing the faulty product with Blustream Technical Support it is deemed necessary to replace the unit please follow the below steps:

1) Select the faulty Transmitter from the drop down box

2) Click '**Replace Transmitter**'

The following window will open:



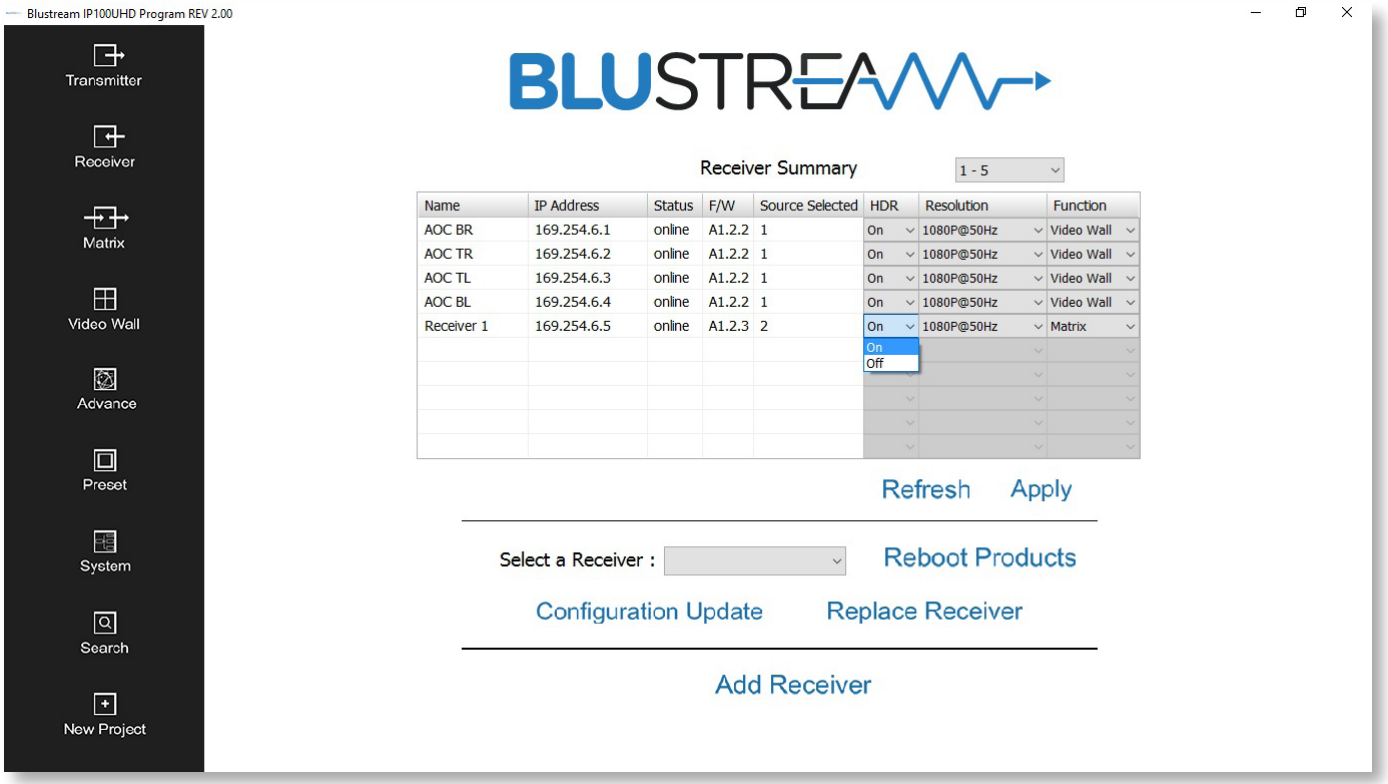
3) Enter the IP address of the product that will be used to replace the faulty unit. If this is a new factory default unit the IP address will be '169.254.100.254'

4) Click '**Apply**'

5) The Transmitter will reboot and will now be configured with the same ID, name, and IP address as the unit that has been replaced.

Receiver Summary

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



Features of the Receiver summary page include:

1. Receiver summary (page drop down) - each page can show a summary of 10 Receiver products connected to the system. To view further products in the system select further pages from the drop-down box.
2. ID / Output - automatically assigned during the PC wizard configuration. This number is used for control of the Multicast system using third party drivers.
3. Name - configured during the PC wizard configuration, can be amended using the Configuration Update button on the same page.
4. IP Address - the IP address assigned to the unit during configuration, can be amended using the Configuration Update button on the same page.
5. Status - shows the online / offline status of a product
6. F/W Version - this should marry up with the firmware version that you can find on the Blustream website (see page 3 for more details)
7. HDR On/Off - turns on HDR compatibillity - only use on screens that support HDR
8. Resolution - adjust the output resolution using the built-in video scaler inside the IP100UHD-RX Receiver. The scaler is cable 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 (no scaling)
   - 2160p @ 30Hz
   - 2160p @ 24Hz
   - 1080p @ 60Hz
   - 1080p @ 50Hz
   - 720p @ 60Hz
   - 720p @ 50Hz
   - 1280x1024 @ 60Hz
   - 1024x768 @ 60Hz
   - 1360x768 @ 60Hz
   - 1440x900 @ 60Hz
   - 1680x1050 @ 60Hz

Receiver Summary (continued)

1. Function - switch Multicast receiver between 'MATRIX' mode and 'VIDEO WALL' mode.
2. Refresh - will refresh the product details shown. When the Transmitter summary window is first selected you will need to press '**Refresh**' in order to display system details.
3. Apply - press apply once any details or settings have been updated within this page
4. Reboot Product - you must select the Receiver to reboot (using the adjacent drop-down selection box) prior to pressing '**Reboot Product**'
5. Configuration Update - allows you to update the IP address, name and multicast/unicast settings of each Receiver. You must select the Receiver using the adjacent drop-down selection box prior to pressing '**Configuration Update**'
6. Replace Receiver - should a Blustream Receiver unit become faulty, the PC program has a simplified way of replacing the product. Please see below for detailed instructions.
7. Add Receiver - if an additional Receiver is required in the system the PC wizard will assist in configuring the new IP100UHD-RX to become part of the exisiting system setup. This process is the same process as described in 'NEW PROJECT CONFIGURATION' (page 13).

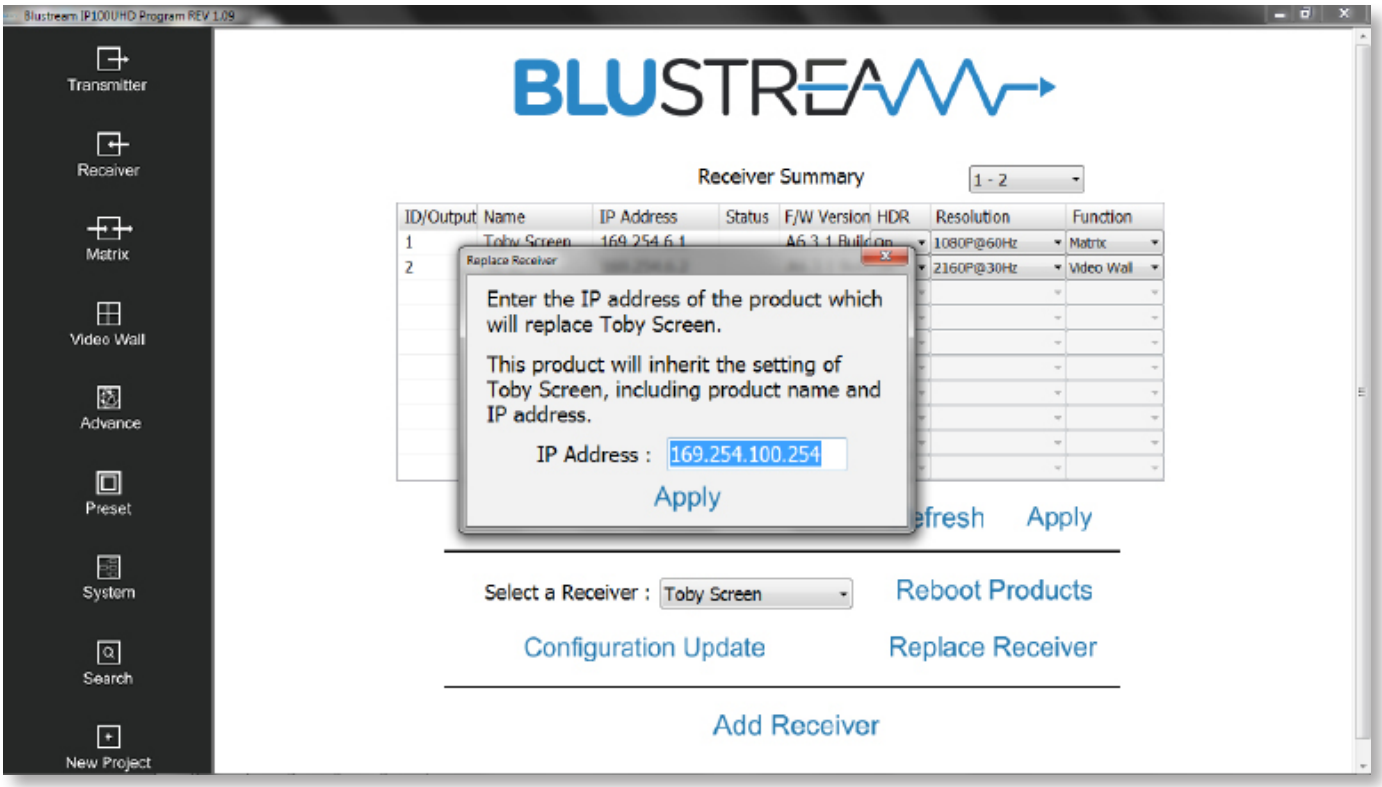
Replacing a Receiver

There may be a time in which a Blustream Multicast product has stopped working. Using the summary window the product will show 'OFFLINE' in the status window. If after reviewing the faulty product with Blustream Technical Support it is deemed necessary to replace the unit please follow the below steps:

1) Select the faulty Receiver from the drop down box

2) Click '**Rplace Receiver**'

The following window will open:



3) Enter the IP address of the product that will be used to replace the faulty unit. If this is a new factory default unit the IP address will be '**169.254.100.254**'

4) Click 'Apply'

5) The Receiver will reboot and be configured with the same ID, name and IP address as the unit it has replaced.

Matrix Control

The Blustream PC software Matrix control page is used to quickly and simply change source inputs (Transmitters) for each display (Receiver). This page has been designed to allow for the installer to quickly switch the I/O configuration, not for end user control.

Once the system has been configured the Matrix Control page will show all online Multicast Transmitter and Receiver products. Due to the display window if the number of Transmitters and Receivers is above 10 products it is advised you use the advanced matrix switching control within the 'VIDEO PREVIEW' window. Please see page 19 for further details.

All Displays (Receivers) are displayed along the horizontal axis

All Sources (Tansmitters) are displayed along the vertical axis

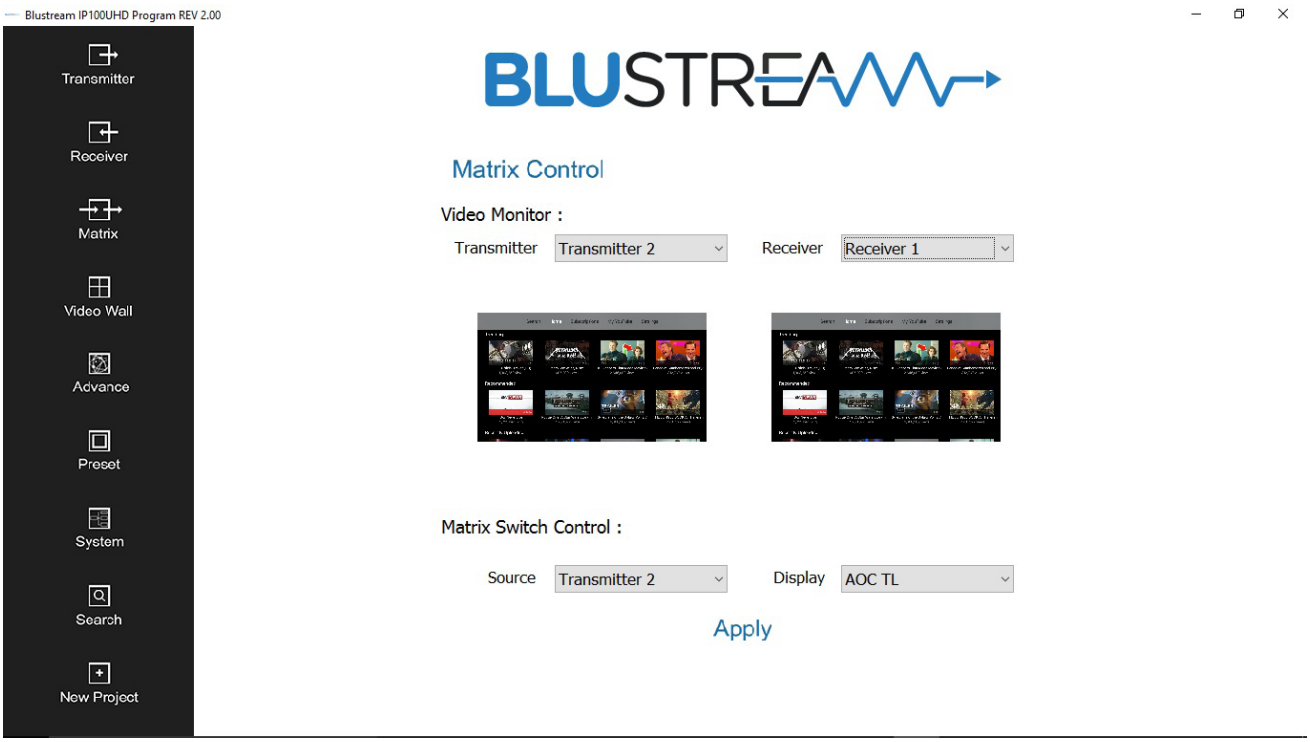
To switch sources simply click on the required source per Receiver. The selected source box will turn **BLUE** to symbolise the current selection.

Video Preview

The video preview screen is selected from within the 'Matrix Control' page by pressing the '**Video Preview**' page button.

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

The preview windows are 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 signal to the display. This can all be acheived 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 that is shown in both preview windows is a single frame that is refreshed every 2 seconds.

Matrix Switch Control

If the number of Transmitter and Receiver units are too many to display in the previous 'MATRIX CONTROL' window it may be easier to use the matrix switch control option at the bottom of the 'VIDEO PREVIEW' page.

To switch sources to different screens:

1) Select the required source from the Source drop-down box

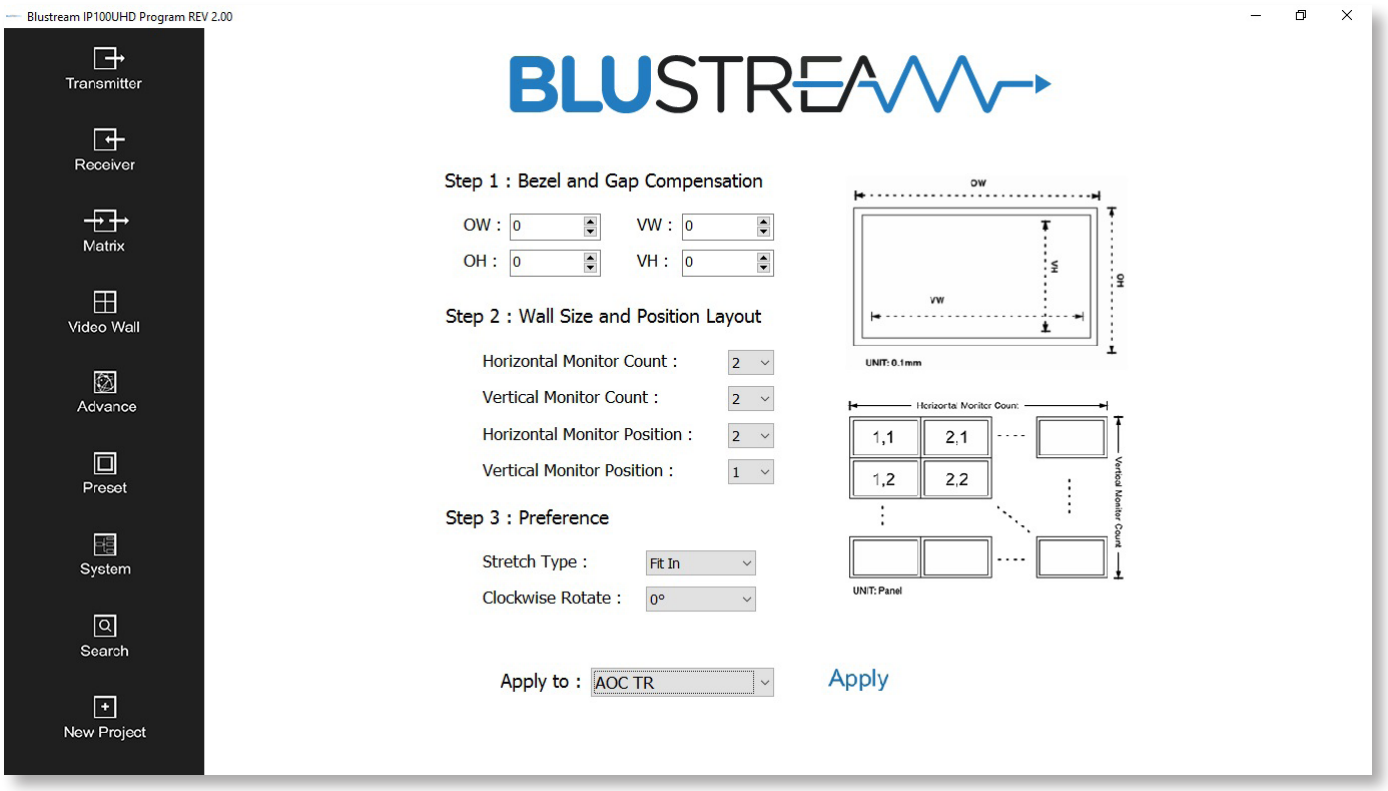
2) Select the display you wish to view the previously selected source (Transmitter) using the Display drop-down box

3) Click 'Apply' for the input changes to apply

4) The video preview function can be utilised to eensure the switch has taken place

Video Wall Configuration

Blustream Multicast receivers can be setup to be part of a video wall array. Each system can contain mulitple video wall arrays of differing sizes. Each video wall can be assigned a number of screens and different layouts that range from 1x2 up to 16x16.



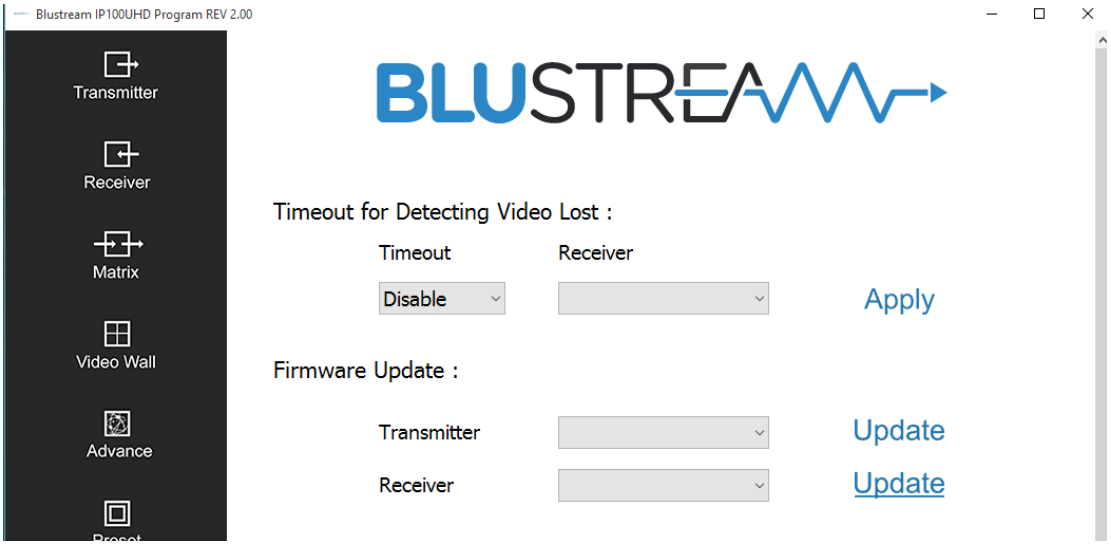
Features of the Video Wall setup page include:

1. Bezel and Gap Compensation - this allows you to alter the overall size (OW) and visable image (VW) displayed per screen. This allows you to compensate for the size of each screen bezel, alternatively any gaps in-between screens.
2. Wall Size and Position - this is broken down into 4 settings:
   Vertical Monitor Count = how many screens there are vertically (overall video wall array size)
   Horizontal Monitor Count = how many screens there are horizontally (overall video wall array size)
   Vertical Monitor Position = assigns the vertical location of one individual IP100UHD-RX Receiver. For example the top row of screens are all vertical location 1.
   Horizontal monitor position = assigns the horizontal location of one individual IP100UHD-RX Receiver. For example the left column of screens are all horizontal location 1.
3. Stretch Type - adjusts the picture to fit to new video wall confuration size. There are 2 modes:
   Fit In - displays the normal aspect ratio of the image as output by the source (usually 16:9)
   Stretch Out - will 'stretch-to-fit' the image into the video wall array area
4. Clockwise Rotation - each screen image can be adjusted to rotate through 0, 90, 180 & 270 degrees.
5. 'Apply To' - once you have made changes to video wall configuration you can select the Receiver that you wish to apply the changes to from the drop-down box and click **'Apply**'

Please note: each Multicast Receiver must be configured individually to be part of a video wall configuration. When being controlled via a third party control system each IP100UHD Receiver needs to be sent the relevant video wall switching command individually. Examples of Blustream Multicast control commands can be found in the CM100 (Control Interface Module) user guide.

Advanced Settings

The advanced settings page has further configuration settings for the Blustream Multicast range.



Features of the Advanced Settings page include:

1. Time out - once there is no video signal the Receiver will turn off. Time-out ranges from 'Disable' (unit will never turn off) up to 60 seconds. To apply this to a Receiver please select the appropriate Receiver from the drop-down box and click '**Apply'.**
2. Firmware update - used to update Multicast product firmware. Please see page 5 for further details.

Preset Control

The Preset control page allows you to save and recall system presets from within the PC program, saving the need for individually changing sources and system settings for each Multicast product one-by-one. Please note that the Preset set-up is only available within the PC program.

For example: Receiver 1 viewing Transmitter 3

Receiver 2 viewing Transmitter 4

Receiver 3 assigned as top left screen in a 2x2 video wall, viewing Transmitter 1

Receiver 4 assigned as top right screen in a 2x2 video wall, viewing Transmitter 1

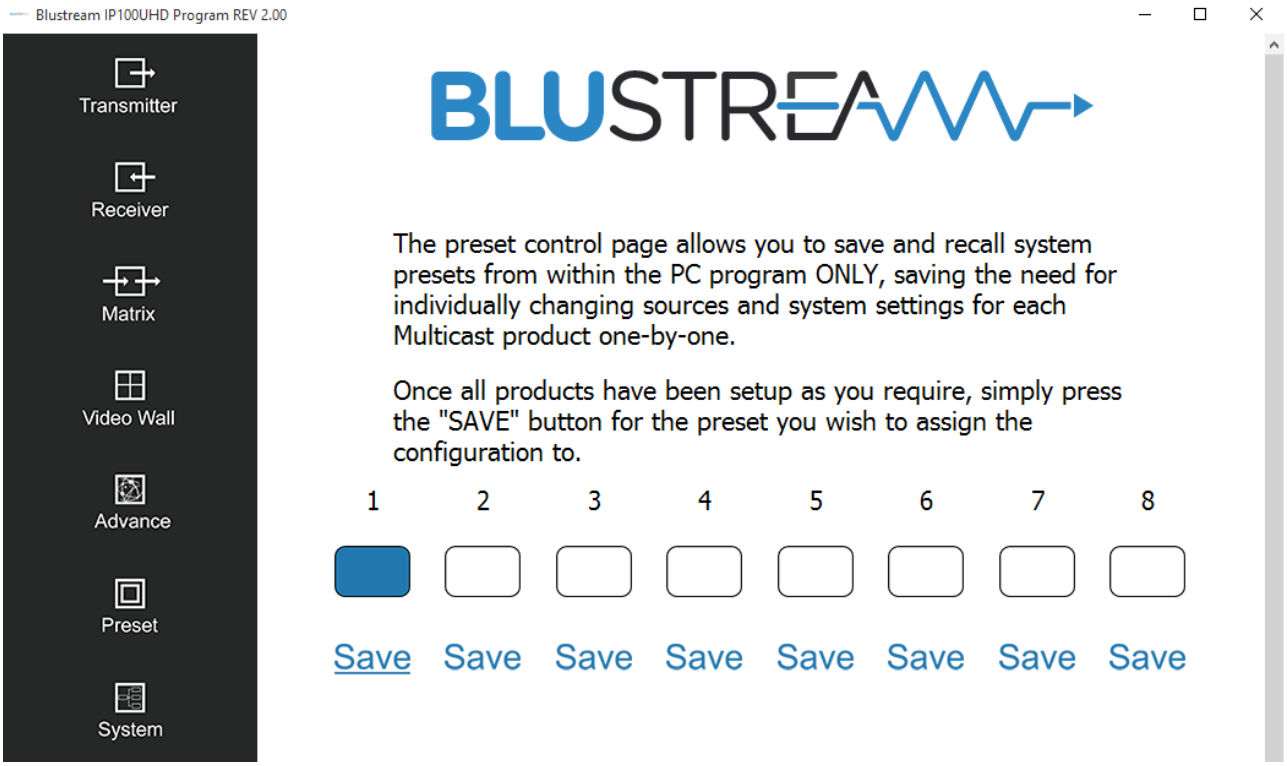
Receiver 5 assigned as bottom left screen in a 2x2 video wall, viewing Transmitter 1

Receiver 6 assigned as bottom right screen in a 2x2 video wall, viewing Transmitter 1

Once all Receivers have been setup as you require simply press the '**SAVE**' button for the preset you wish to assign the configuration to.

When 'PRESET 1' button is pressed all receivers will return to this saved state.

Repeat this process for presets 1-8 (8 presets max)



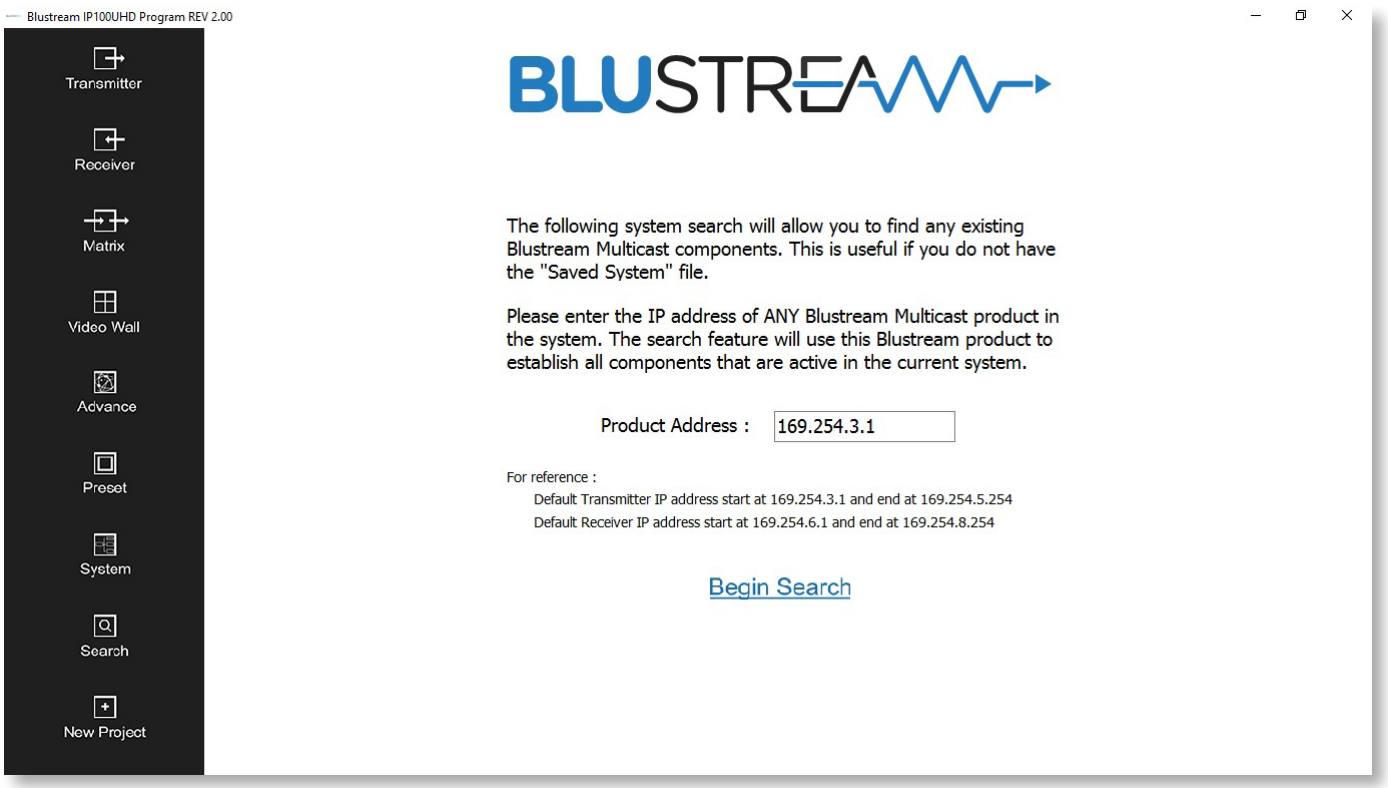
Please note:

- All Multicast Receivers will reboot when a preset mode is selected
- You must configure all Multicast products in the system and not just the ones you wish to change as the Preset mode saves the configuration of every Multicast product within each preset.
- Presets can only be recalled using the PC program. Presets cannot be recalled using external third party control systems.

System Search

The system search page is used for times when you do not have a saved system file, have not configured a system from scratch, or yoou need to interrupt the New Project wizard andf come back t the set-up at a later date/time. 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 PC wizard 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 '**BEGIN SEARCH'.** The system will report back all Multicast products found.

Please note:-

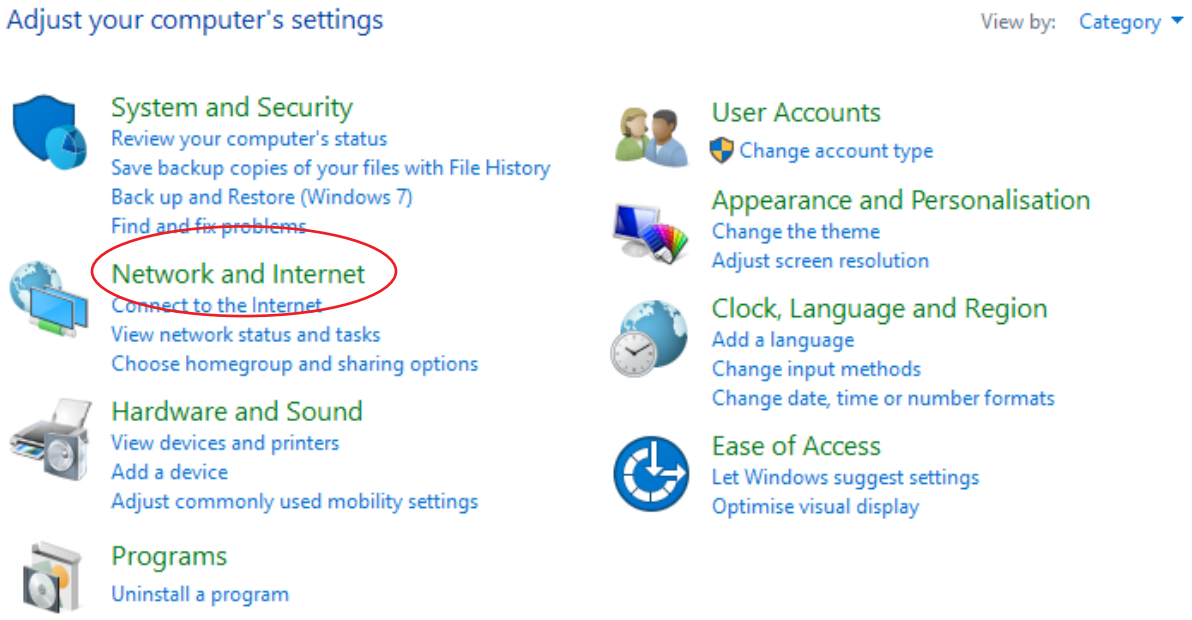
- The search feature will not recall custom assigned names of the Multicast products, only ID and IP address. For this information you will require the saved system file.
- If you use your own static IP address for the Multicast products (not advised) then you will need to find the IP address of a single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

Changing your computer IP address to communicate with the Cisco network switch / Multicast products

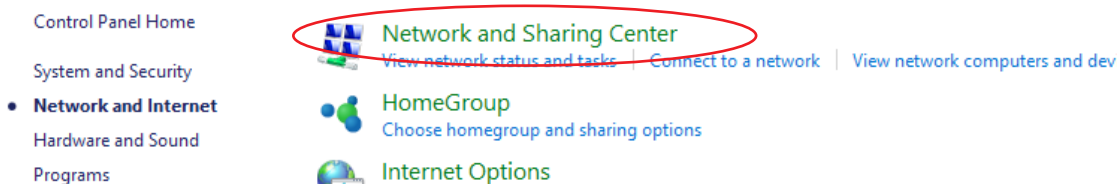
1) Connect your computer to your network switch using an Ethernet cable

2) In the Windows toolbar navigate to 'CONTROL PANEL'

3) Select 'NETWORK AND INTERNET'



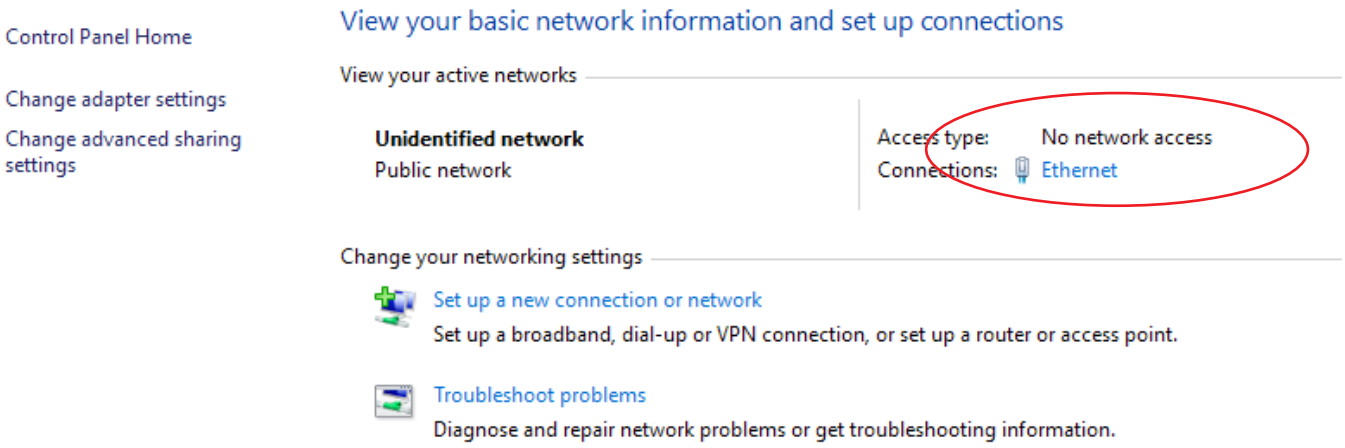
5) Select 'NETWORK AND SHARING CENTER'



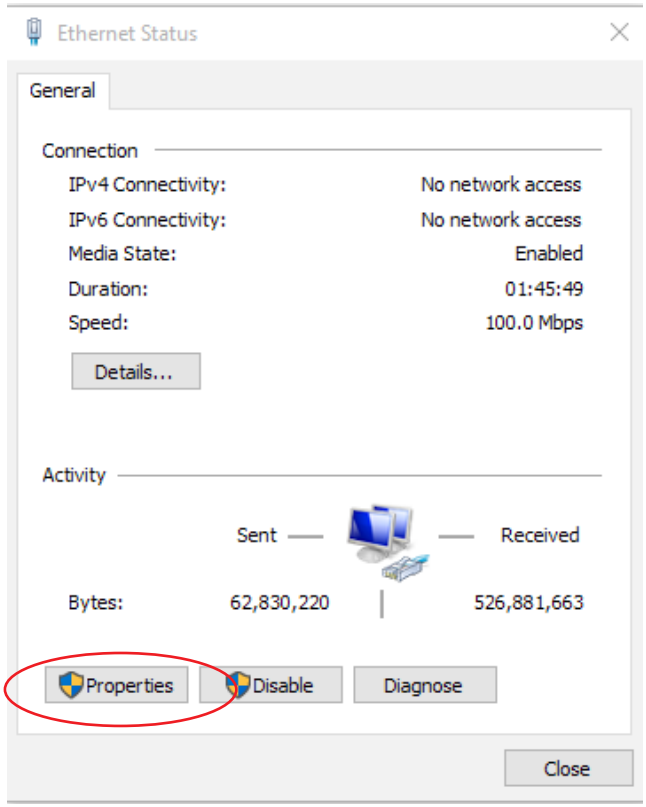
6) Under 'View your Active Networks' you can see connection types available.

The example below shows both LAN (local area connection) and Wireless.

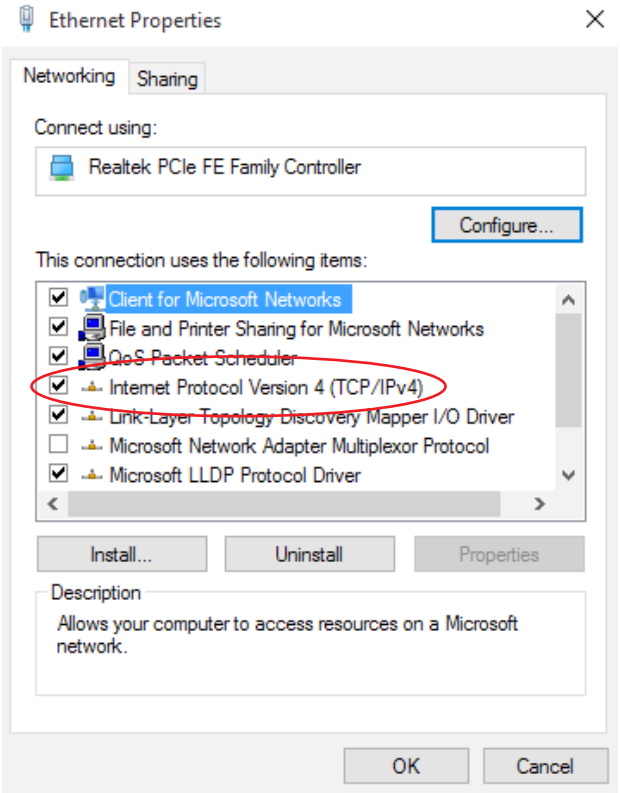
Select 'Local Area Connection' as this is the method of communication you are using with the switch.



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'

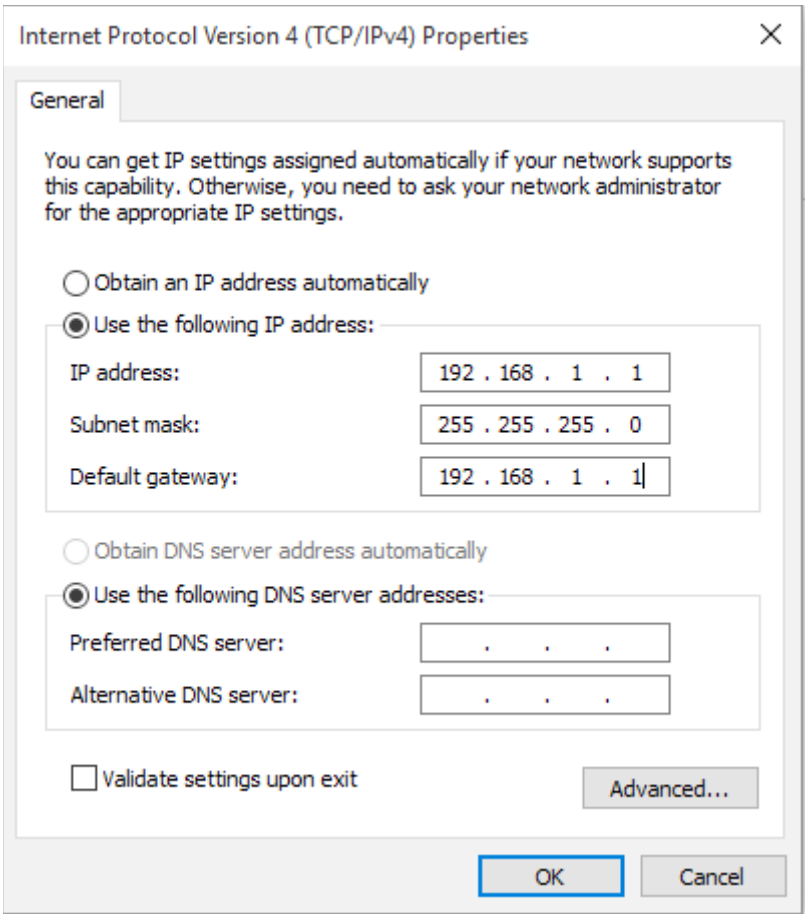
B. Enter the following FIXED IP network details for your **Network Switch** (check with the manufacturer of the LAN switch if this address is relevant in advance)

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 IP100 Transmitter or Receiver.

Once a Multicast product has been configured using the PC Wizard program, 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 Blustream Multicast Wizard PC programs '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 the PC Wizard is an IP100UHD-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), the PC wizard 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 the PC wizard will auto assign an IP address of 169.254.5.1 and so on until 169.254.4.254

Receivers

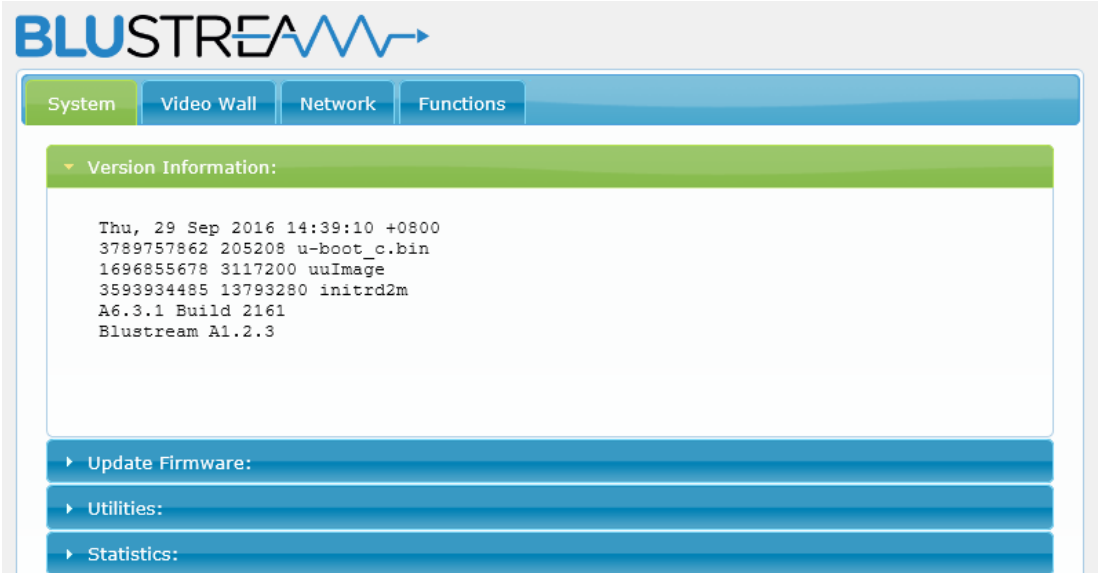
After all Transmitter products have been setup the PC wizard will automatically assign an IP address to the Multicast Receivers. The first IP100UHD-RX Receiver will be given the IP address of 169.254.6.1. The next Receiver will be assigned an IP address of 169.254.6.2 and so on....

Once the IP range of 169.254.6.x is filled (254 units) the PC wizard 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 the PC wizard 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 comunicating 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:



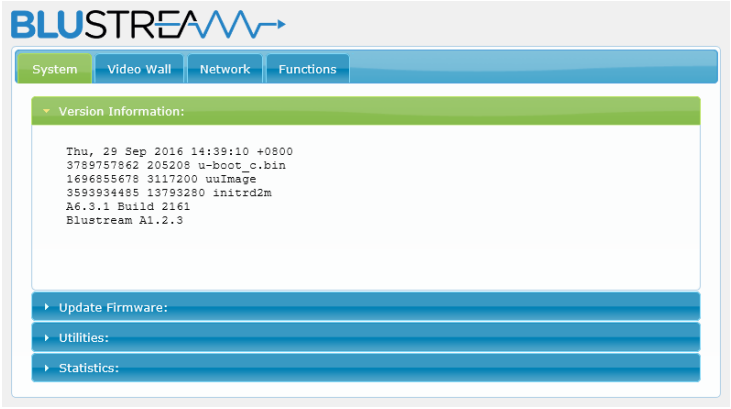
Multicast Web-GUI Interface - IP100UHD-TX - Transmitter

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 IP100UHD-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

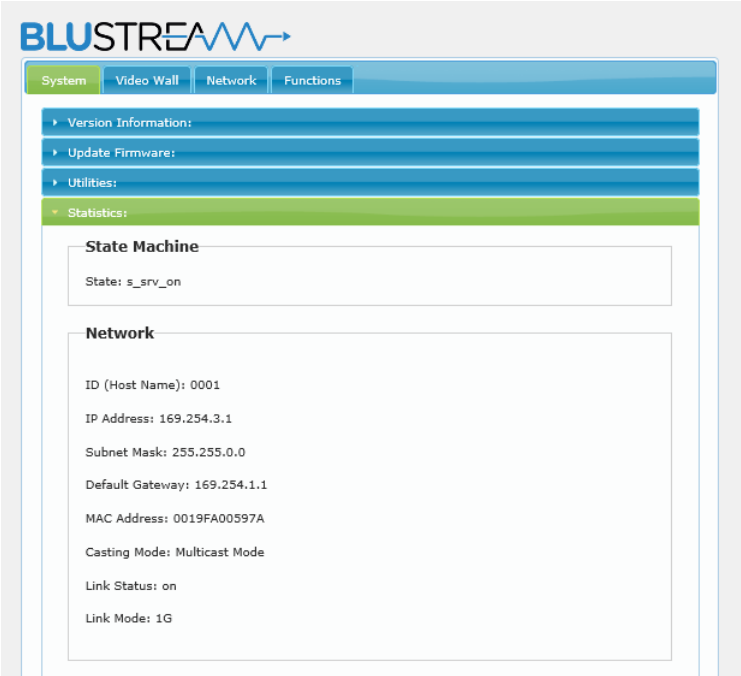
Console API Command - please use the CM100 to provide API commands to this unit

Output - this section is the feedback from the API command above - please utilise the CM100 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.

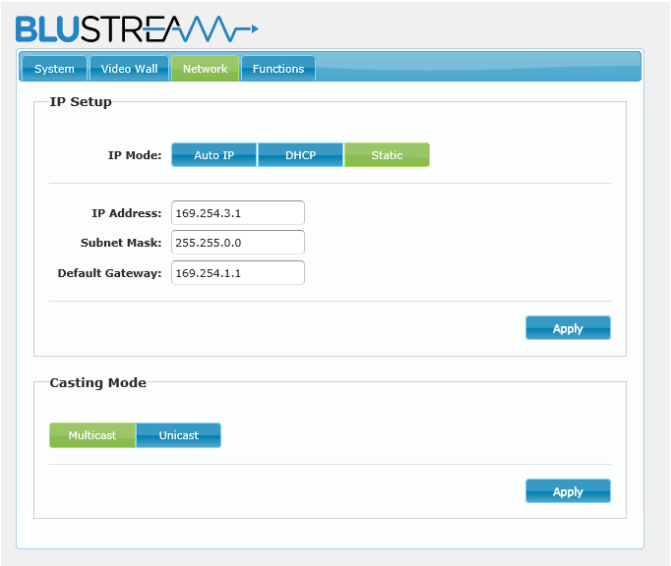


VIDEO WALL:

Please see Page 20 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 Miltcast 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:

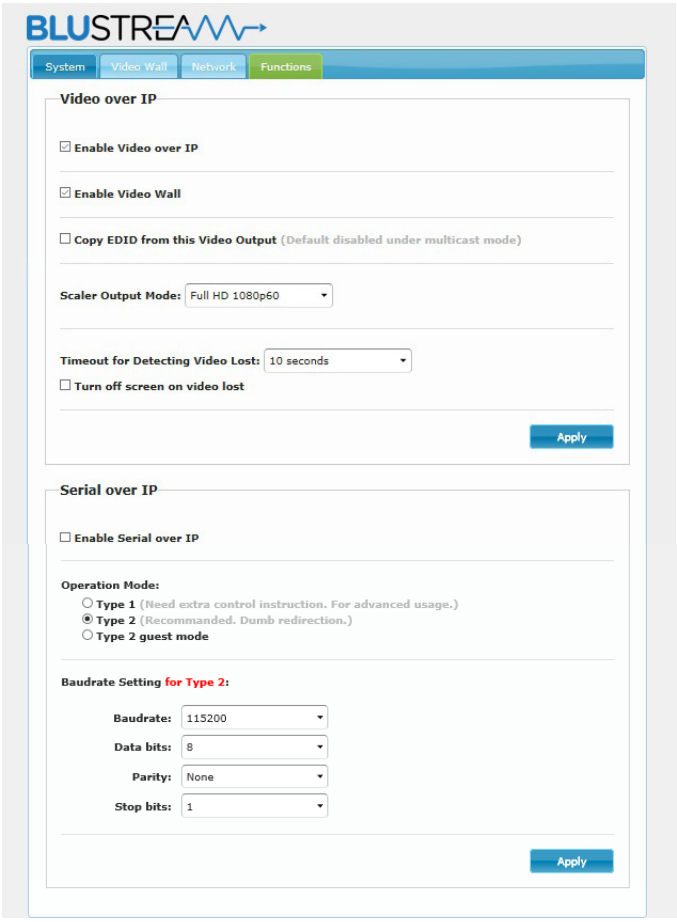
You can manually alter the bit-rate if the data stream from the source into the switch using the options within the drop down box. Please note: image quality will be degraded when setting this to anything less than 'Best Effort' - if the Multicast video network is kept independent to other networks there will be no additional network traffic and therefore the Mulitcast 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 separate Blustream manual 'Advanced Multicast RS-232 Distribution' which can be found on the Blustream website.



Multicast Web-GUI Interface - IP100UHD-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 IP100UHD-RX

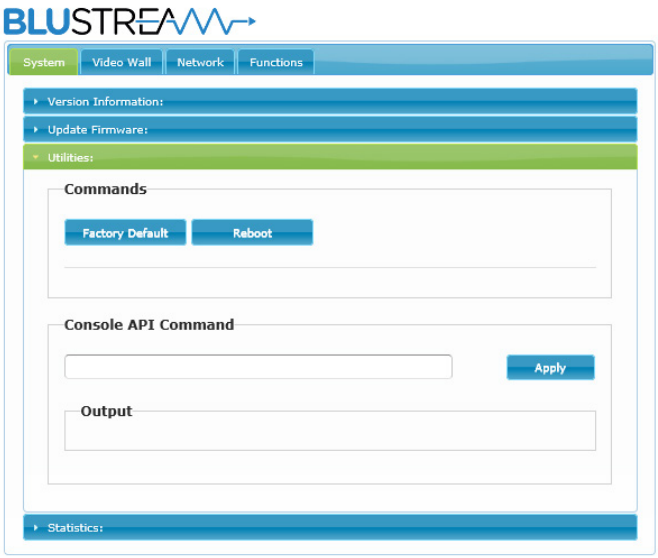
Utilities:

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 to provide API commands to this unit

Output - this section is the feedback from the API command above - please utilise the CM100 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 20 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 20

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 IP100UHD-TX Transmitter that is selected by the IP100UHD-RX Receiver will copy the EDID from the display connected. It is advised that this is only done for 1 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:

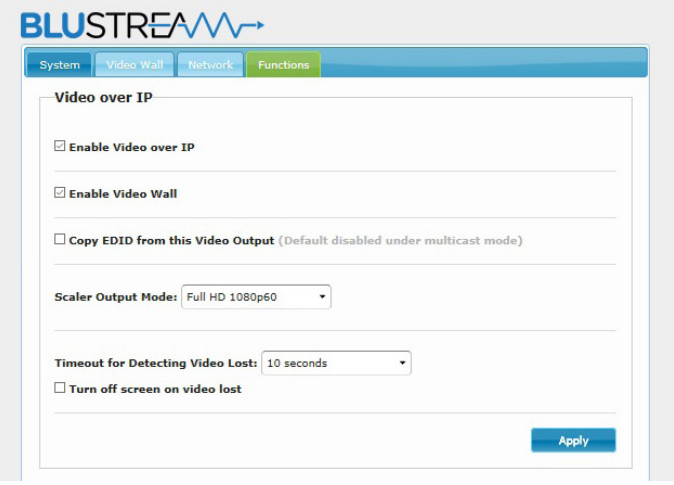
Blustream Multicast receivers have their own Multicast logo that will display on the connected screen after a set amount of time when no video signal is sensed. Please select from time options in the drop-down box.

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 thrird party products using RS-232. For full details please refer to the separate Blustream manual 'Advanced Multicast RS-232 Distribution' which can be found on the Blustream website.



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