


ECLER VEO-XTI2L Low latency 4K over IP Video Extenders with KVM and Videowall User Manual

VEO-XTI2L / VEO-XRI2L
VIDEO DISTRIBUTION OVER IP
Low latency 4K over IP Video Extenders with KVM and Videowall


USER MANUAL

Contents

IMPORTANT REMARK

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING (If applicable): The terminals marked with symbol of “ ” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.
WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.
WARNING: An apparatus with Class I construction shall be connected to the main socket-outlet with a protective earthing connection.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or

the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the apparatus during lightening sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Disconnecting from mains: Switching off the POWER switch all the functions and light indicators of the amplifier will be stopped, but fully disconnecting the device from mains is done unplugging the power cord from the mains input socket. For this reason, it always shall remain readily operable.
15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.
16. The marking information is located at the bottom of apparatus.
17. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on apparatus.

NOTE: This equipment has been tested and found to comply with the limits for a ClassA digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this
equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

 **WARNING:** This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment centre.
NEEC AUDIO BARCELONA, S.L. accepts no liability for any damage that may be caused to people, animal or objects due to failure to comply with the warnings above.

IMPORTANT NOTE

Thank you for choosing our VEO-XTI2L / VEO-XRI2L low latency 4K over IP video extenders. IT IS VERY IMPORTANT to carefully read this manual and to fully understand its contents before making any connection in order to maximize your use and get the best performance from this equipment.
To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.
The VEO-XTI2l / VEO-XRI2l come with a 3-year warranty.

INTRODUCTION

VEO-XTI2L and VEO-XTI2L represent a very versatile solution for audio, video and control signal distribution over Local Area Network (LAN). They can be used as 4K audio video and KVM extenders over IP in multiple configurations such as point to point, point to multi-point, multi-point to multi-point and video wall composition. They also include control features like USB, RS-232 and IR pass-through, with easy setup and management with Web GUI and PC GUI.

Features:

- 4K UHD HDMI over IP/Fiber Extension
- USB 2.0 over IP extension
- Supports transmission distance up to 120m over single Cat5e/6 cable
- Supports fiber optic extension up to 60Km (Single Mode)
- Supports up to 3840X2160@60hz YUV 4:2:0 input and 3840X2160@30hz outputs
- HDCP 2.2 / HDCP1.4 compliant
- Supports bi-directional Wide Band IR (38KHZ-56KHZ) pass-through
- Supports RS-232 pass-through and Telnet control
- Includes IR remote/front panel control of Group ID channel, with LED display to show the Group ID in use
- Supports Dolby True HD, DTS-HD Master Audio formats
- Supports 3D video format
- SPDIF 5.1 and L/R analog stereo embedding and de-embedding
- Videowall composition (Max 8×8)
- Easy installation over Gigabit IGMP compliant LAN Network
- Supports PoE (Power over Ethernet) or external 5V-18V power supply

PACKAGE CONTENTS

VEO-XTI4U Package

- 1 x 4K over IP Transmitter
- 1 x Remote control
- 1 x IR TX cable
- 2 x IR RX cable
- 1 x Phoenix plugs for RS-232 cable termination
- 4 x screws
- 2 x detachable mounting ears
- 1 x Power 5V DC adapter with international blades

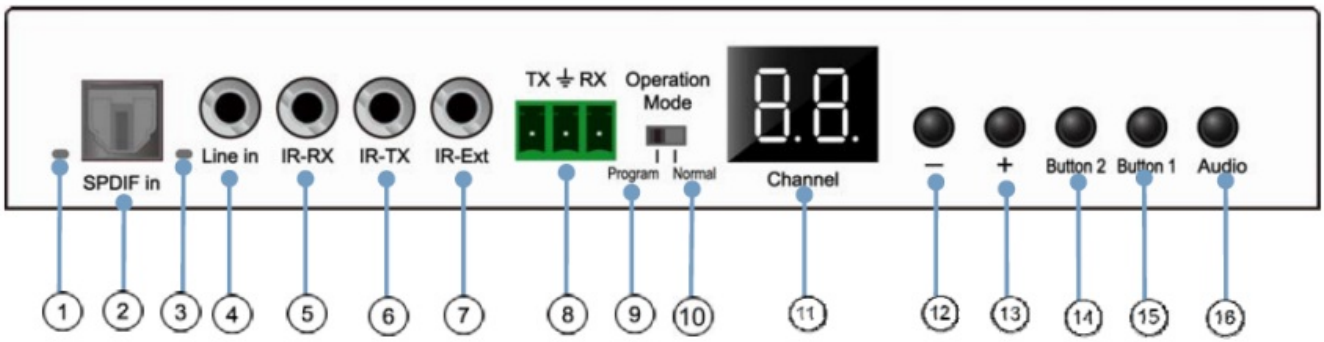
VEO-XRI4U Package

- 1 x 4K over IP Receiver
- 1 x Remote control
- 1 x IR TX cable
- 2 x IR RX cable
- 1 x Phoenix plugs for RS-232 cable termination
- 4 x screws
- 2 x detachable mounting ears
- 1 x Power 5V DC adapter with international blades

PANEL DESCRIPTION

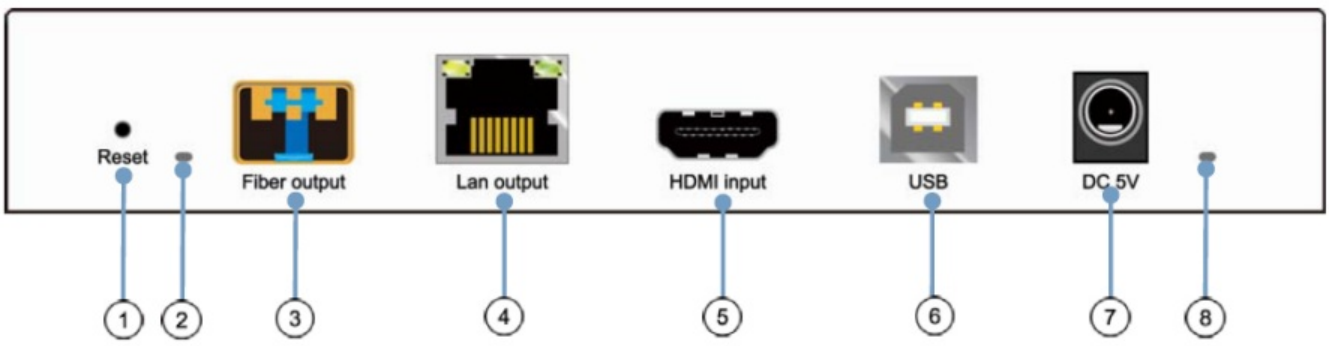
6.1. Transmitter

6.1.1. Front Panel



1. Not currently in use
2. Not currently in use
3. Analog audio status indicator
4. Analog audio line Input connector
5. IR-RX connector for IR Sensor
6. IR-TX connector for IR Blaster
7. IR Sensor for Remote control
8. RS-232 full-duplex port
9. Program Mode: In this mode RS-232 port is used to control the unit, disabling IR-EXT port
10. Normal Mode: In this mode RS-232 port will act as pass-through extension
11. ID Group LED display
12. ID Group DEC button
13. ID Group INC button
14. Functional button (see chapter 5.2)
15. Functional button (see chapter 5.2)
16. HDMI, S/PDIF or Analog Audio selection button: default audio selection is HDMI.

6.1.2. Transmitter Rear Panel

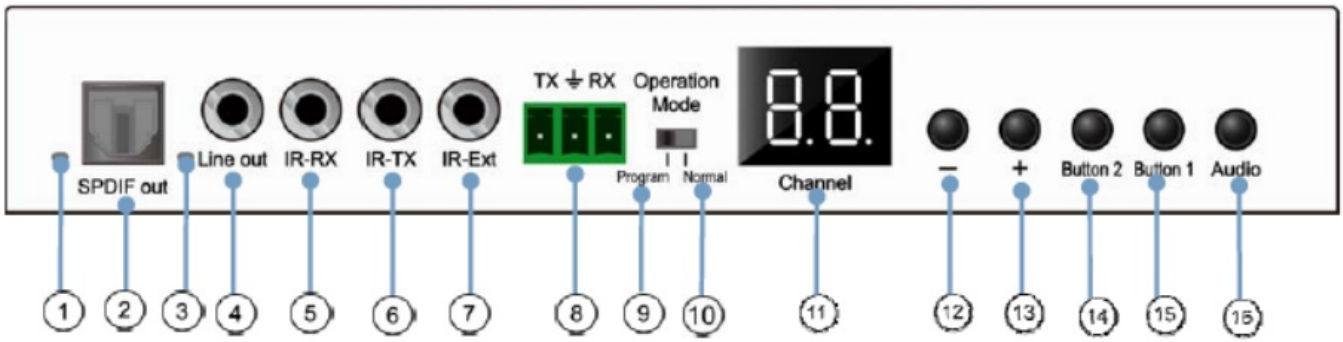


1. Factory Reset Button
2. Fiber Optic connection Indicator
3. Fiber Optic SFP receptacle
4. Cat5e/6 Connector

5. HDMI Input Port
6. USB type B input
7. DC 5V Input connector
8. Power supply LED Indicator

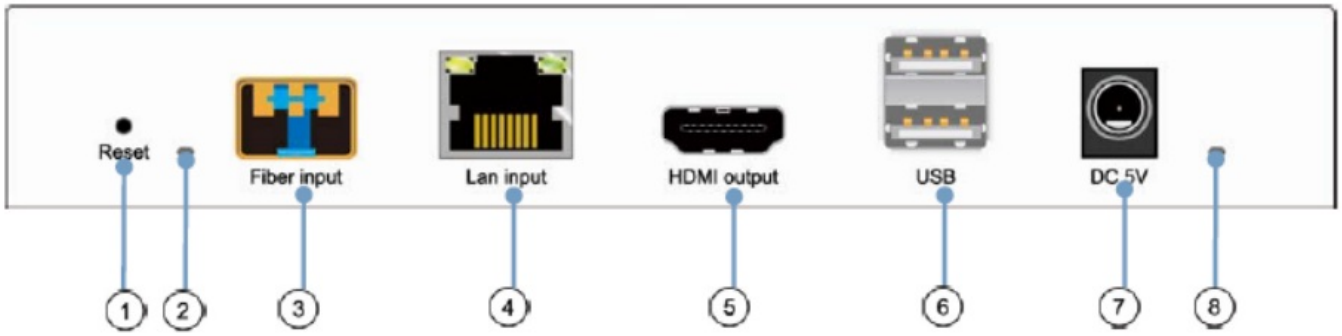
6.2. Receiver

6.2.1. Front Panel



1. S/PDIF status indicator
2. S/PDIF Audio Output connector
3. Analog audio status indicator
4. Analog audio line Output connector
5. IR-RX connector for IR Sensor
6. IR-TX connector for IR Blaster
7. IR Sensor for Remote control
8. RS-232 full-duplex port
9. Program Mode: In this mode RS-232 port is used to control the unit, disabling IR-EXT port
10. Normal Mode: In this mode RS-232 port will act as pass-through extension
11. ID Group LED display
12. ID Group DEC button
13. ID Group INC button
14. Functional button (see chapter 5.2)
15. Functional button (see chapter 5.2)
16. HDMI, S/PDIF or Analog Audio selection button: default audio selection is HDMI.

6.2.2. Rear Panel



1. Factory Reset Button
2. Fiber Optic connection Indicator
3. Fiber Optic SFP receptacle
4. Cat5e/6 Connector
5. HDMI Output Port
6. USB type A input
7. DC 5V Input connector
8. Power supply LED Indicator

6.2. IR Sensor and IR Blaster connection

6.3. Group ID Selection with Remote Control

The Group ID can be selected using the included IR remote control. Ensure that IR-Ext sensor is connected (refer to 5.1). The remote control can be used to change Group ID as described below.

- When double digit ID Group number is shown, press “+” or “–” to select the Group ID.
- Press the number keys to select the desired Group ID. For example, if you need to change to 01, press “0”, then press“1”.

Example:

6.4. Functional Buttons

Transmitter		Receiver	
Button One	Button Two	Button One	Button Two
Link ON/OFF	Video/Graphic Mode	Link ON/OFF	Video/Graphic Mode

Feature	Description
Link	Pressing this button allows to sequentially switch video streaming ON or OFF
Video/Graphic Mode	User can select between Video Mode / Graphic Mode by pressing this button. The bu tton state is saved to the internal flash memory, and it is restored after rebooting. Video Mode: It automatically trades-off bandwidth and video quality to ensure smooth video playing experience. Graphic Mode: It will fix the trade-off to ensure best graphic/text viewing experience.

INSTALLATION AND CONFIGURATION

7.1. Device Connection

1. Check if power supply is unplugged.
2. Connect Transmitter to video source with HDMI cable, and connect Receiver to monitor or display with HDMI cable.
3. Connect USB cables from Transmitter to PC, and connect additional devices such as USB mouse, USB keyboard and USB pen drive to Receiver.
4. Connect Transmitter and Receiver to Ethernet switch with network cable.
5. Power-on and activate all connected devices.
6. Power-on the Transmitter, Receiver or the PoE switch.
7. Connect the IR extension cable with Transmitter and the IR receiver cable with Receiver for remote control.

7.2. IP Address Settings and Network Requirements
7.2.1. Auto IP Settings (Factory default)

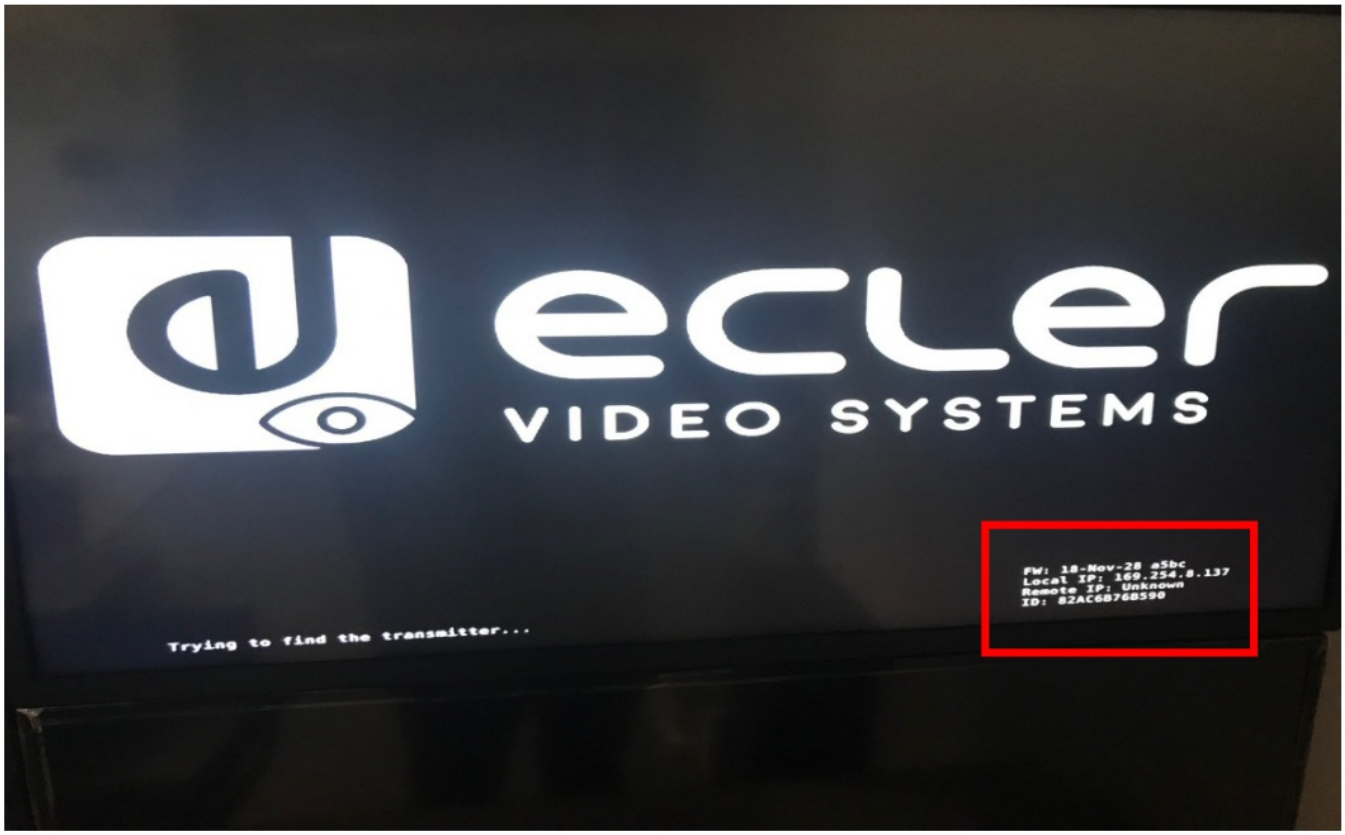
Auto IP provides automatic IP address assignment when more devices are connected to the same network. The default IP subnet is 169.254.x.y.
In order to discover the IP of each device, the following method can be used:

Transmitter

- Connect the TX without any HDMI input source connected to the RX. Connect display to the RX HDMI output and select the same ID Group for both devices using front panel buttons.
  The IP address information for both devices will be displayed in the lower right corner of the monitor. ‘Local IP’ is the RX IP address and ‘Host IP’ is the TX IP address.

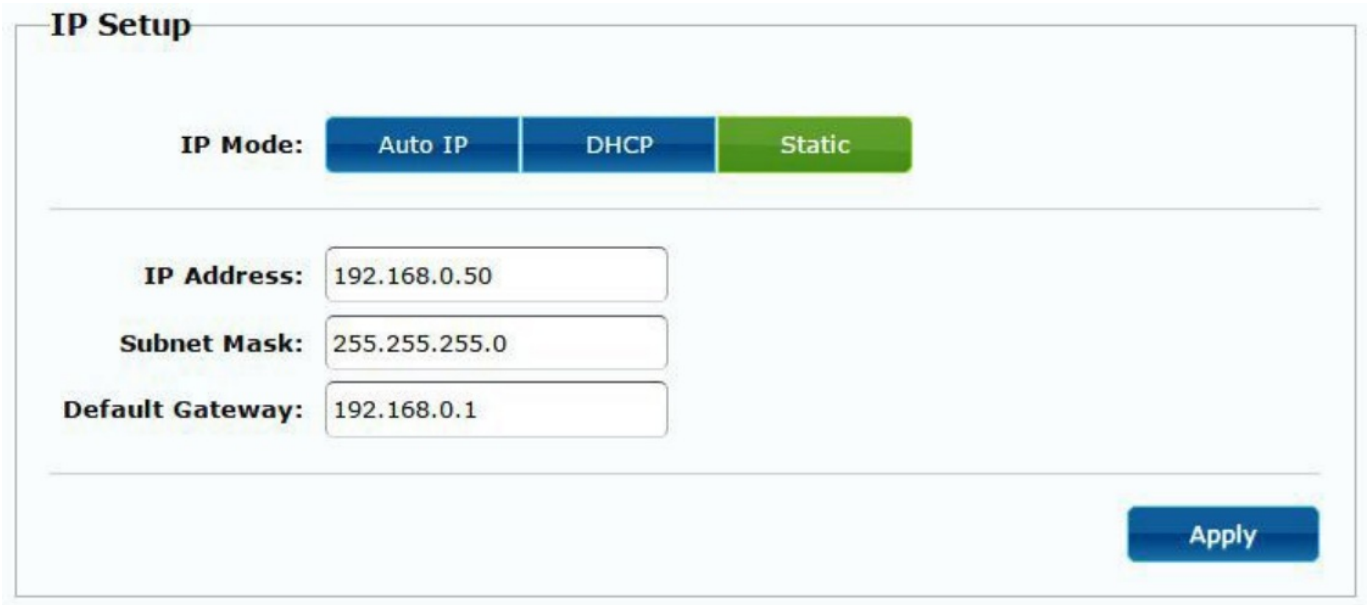
Receiver

- Connect the RX HDMI output to display. The RX will display the IP address information in the lower right corner of the monitor. ‘Local IP’ is the RX IP address.



7.2.2. Static IP Address Configuration

When static IP addresses are required, the IP settings for each device need to be set manually. After the default “Auto IP” address is discovered, as explained above, it will be possible to open the configuration web page by typing the device IP address in a web browser. Ensure that your PC is in the same network domain as your VEO products.
The IP settings can be changed using the embedded web page:



After changing the default Ethernet settings, please remember to press the “Apply” button.

7.2.3. DHCP (Dynamic Host Configuration Protocol)

If you are using switch or LAN where DHCP server is enabled, changing the IP manually is not necessary because the DHCP server will automatically assign a unique IP address to each device.

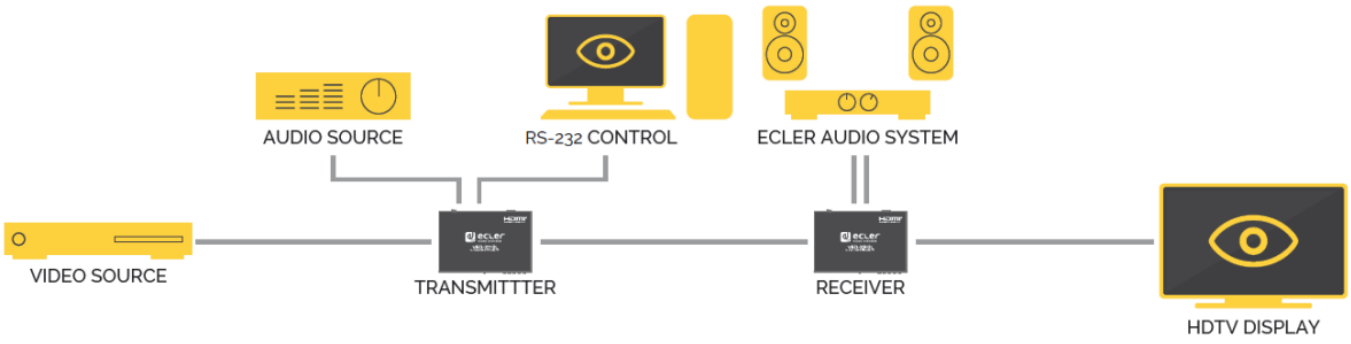
Note: Once a factory reset is performed, the IP address settings will return to “Auto IP”.
The IP address range will be restored to “169.254.x.y”.

7.2.4. Network Requirements

Use of gigabit switches with jumbo frame and IGMP support is required and will create the most appropriate scenario for both independent IP video networks, and cases where IP video systems share data network. The typical data rate generated by the Transmitters is about 300Mbps, for this reason the use of dedicated networks or VLAN is much recommended. Ensure that the switch backplane data rate performances exceed the ones required by your VEO system.

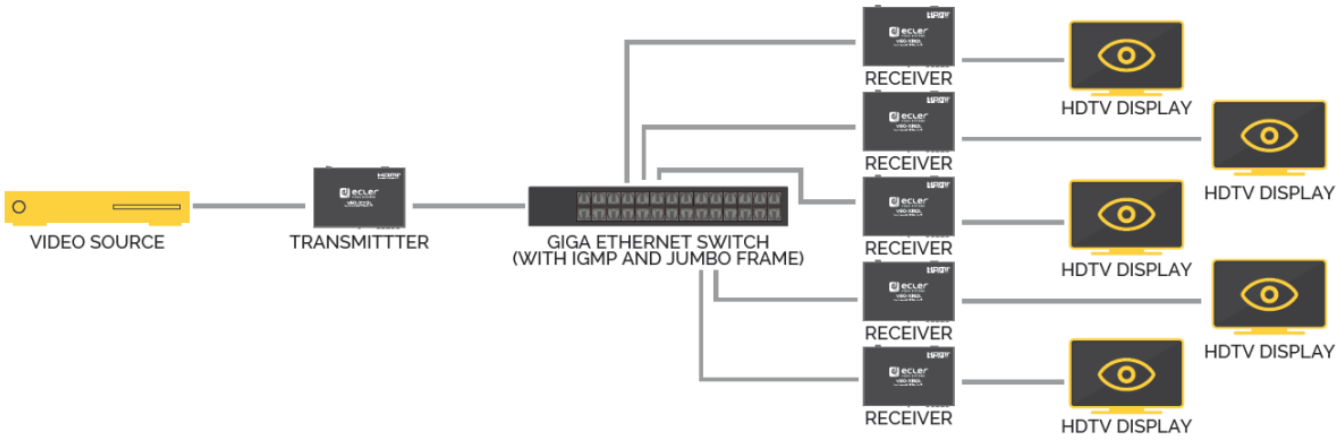
SYSTEM TOPOLOGY AND CONFIGURATION

8.1. Point-to-Point Connection (Default)



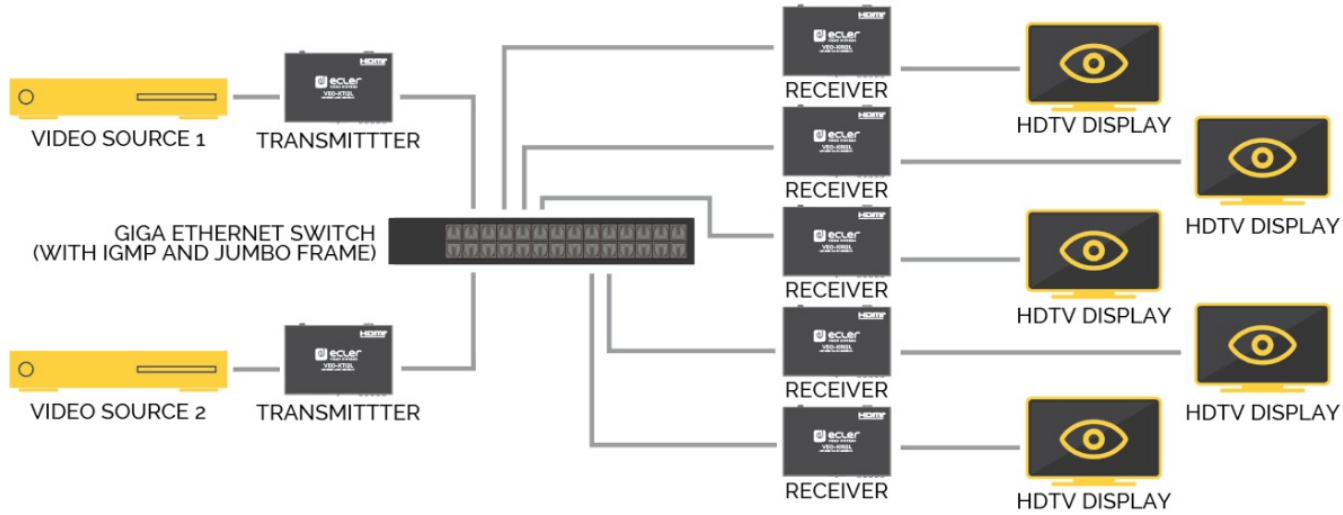
When VEO-XTI2L and VEO-XRI2L are connected as a simple extension in a point-topoint topology, no configuration is needed. The devices have a default “Auto IP” setting (169.254.x.x) and each Transmitter will send a unicast video stream to the corresponding Receiver by selecting the same Group ID.

8.2. Point-to-Multipoint Connection and Operation



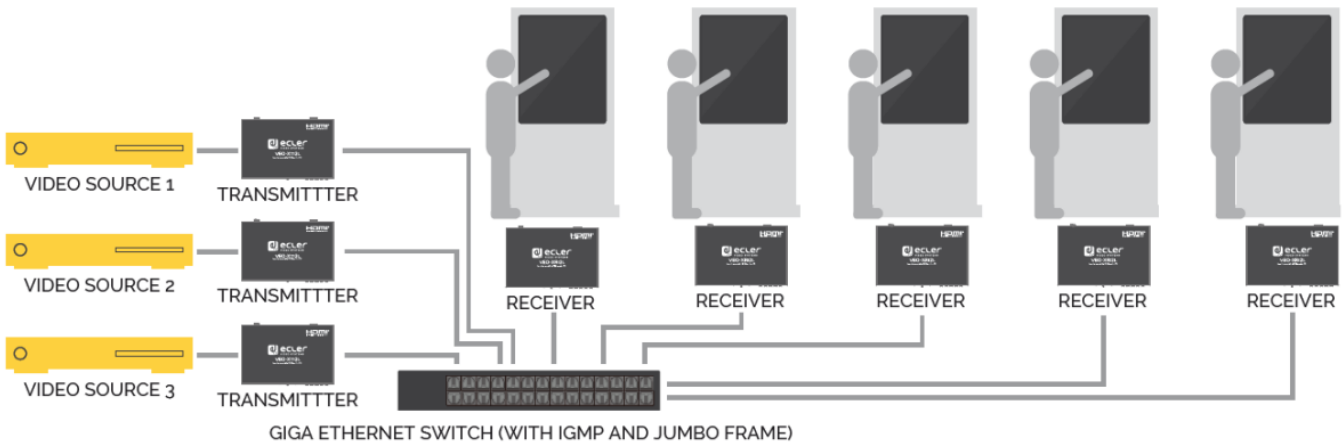
When VEO-XTI2L and VEO-XRI2L are connected as a distribution system in a point-tomultipoint configuration, both Transmitters and Receivers need to be configured as multicast operation (please check chapter 8 and 9 of this manual). Each Receiver needs
to be set to the same ID group of the Transmitter.

7.3. Multipoint-to-Multipoint Connection and Operation



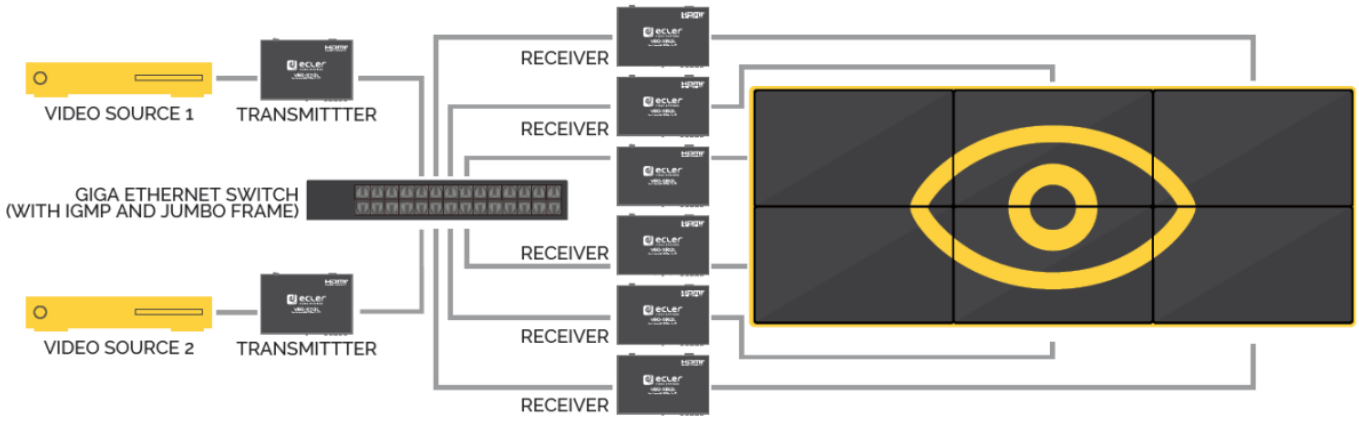
When VEO-XTI2L and VEO-XRI2L are connected as over-IP matrix system in a multipoint-to-multipoint configuration, both Transmitters and Receivers need to be configured as multicast devices. Each Receiver can decode the stream related to the desired Transmitter ID group.

7.4. Billboard & Kiosk, PC to HDMI and USB Interactive Monitor



When the control of interactive video content using touch display, or KVM (Keyboard, Mouse, Video) extensions are required, USB signal needs to be extended along with Video signal. Please refer to chapter 9 of this manual for further instructions.

7.5. Videowall



When VEO-XTI2L and VEO-XRI2L are used as a videowall composer, the Transmitters and Receivers need to be configured as multicast devices. Each Receiver must be set to the same Transmitter ID Group, following the instructions available in chapter 8 and 9 of this manual.

The number of VEO Transmitters can't exceed 253 units. In a class B Network, the total number of VEO devices (Transmitters and Receivers) can't exceed 65K units.

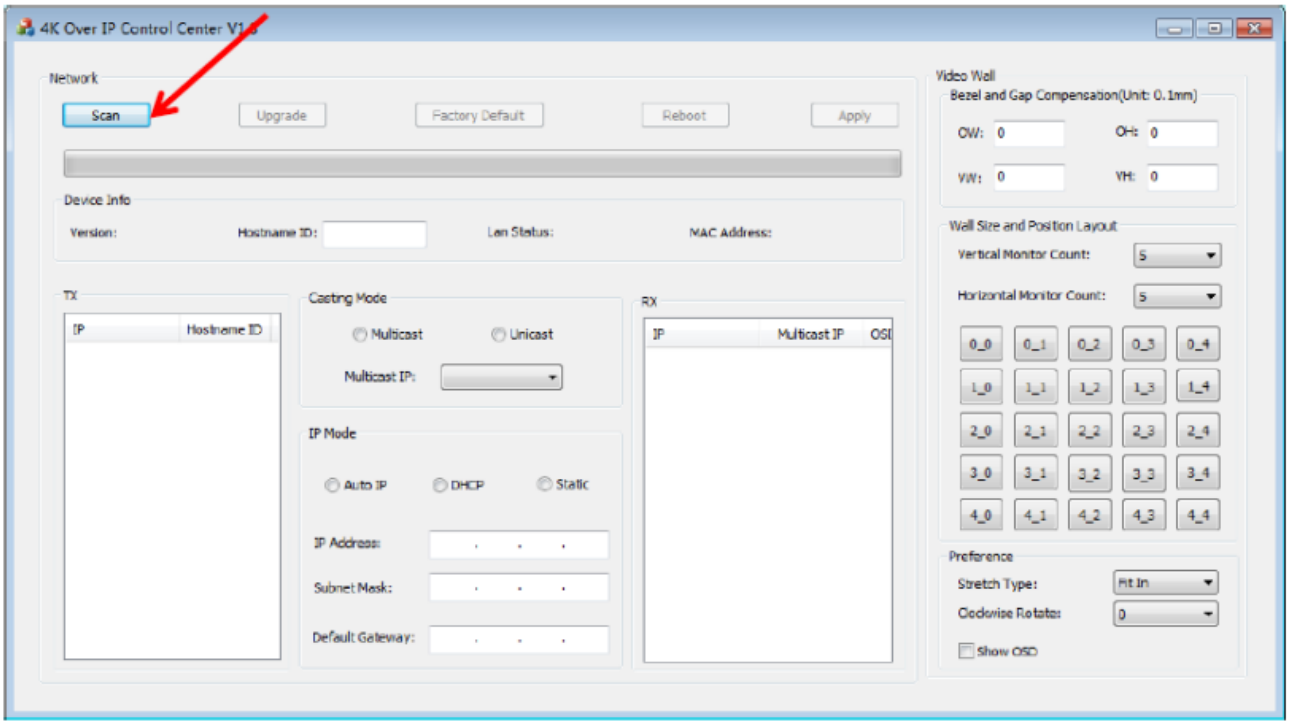
Please avoid connecting or disconnecting HDMI cables while the VEO devices are powered on!

PC UTILITY SOFTWARE

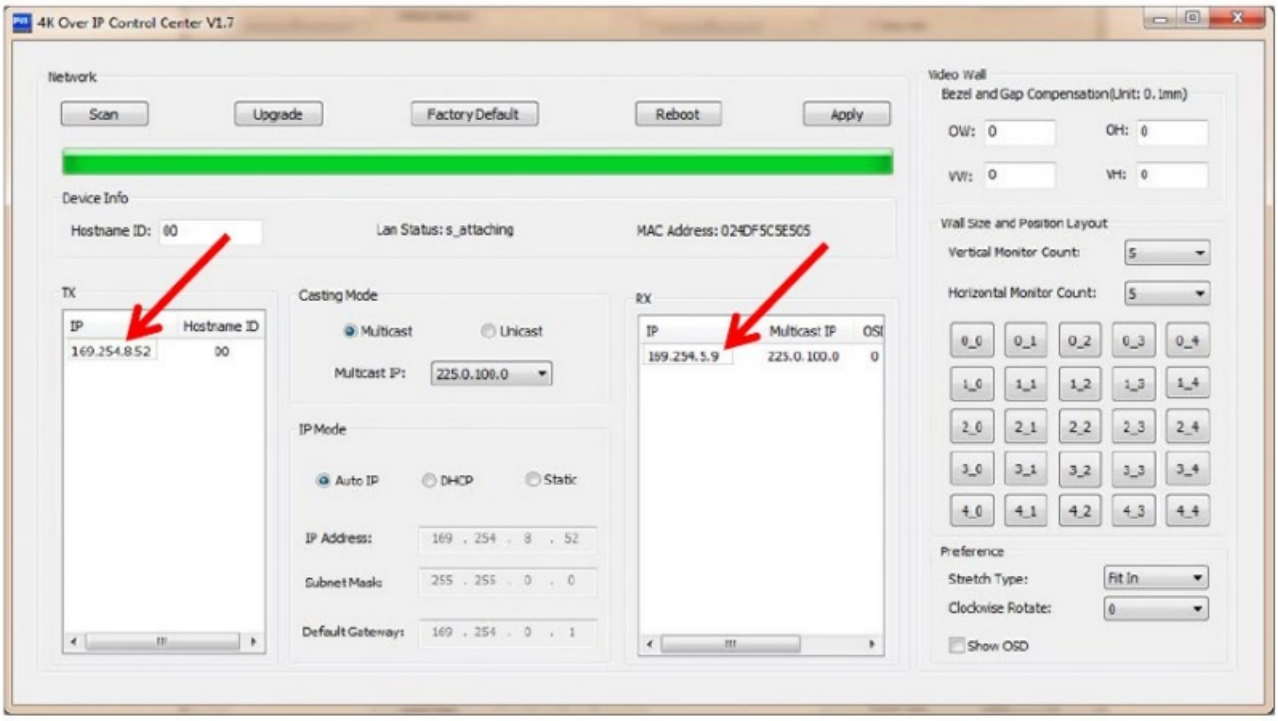
When the PC Utility software is installed, ensure that the PC and the VEO devices are in the same network domain. To check the devices IP please refer to chapter 6.2.

Double-click on the icon to open software:

The Device Scan Page will appear:



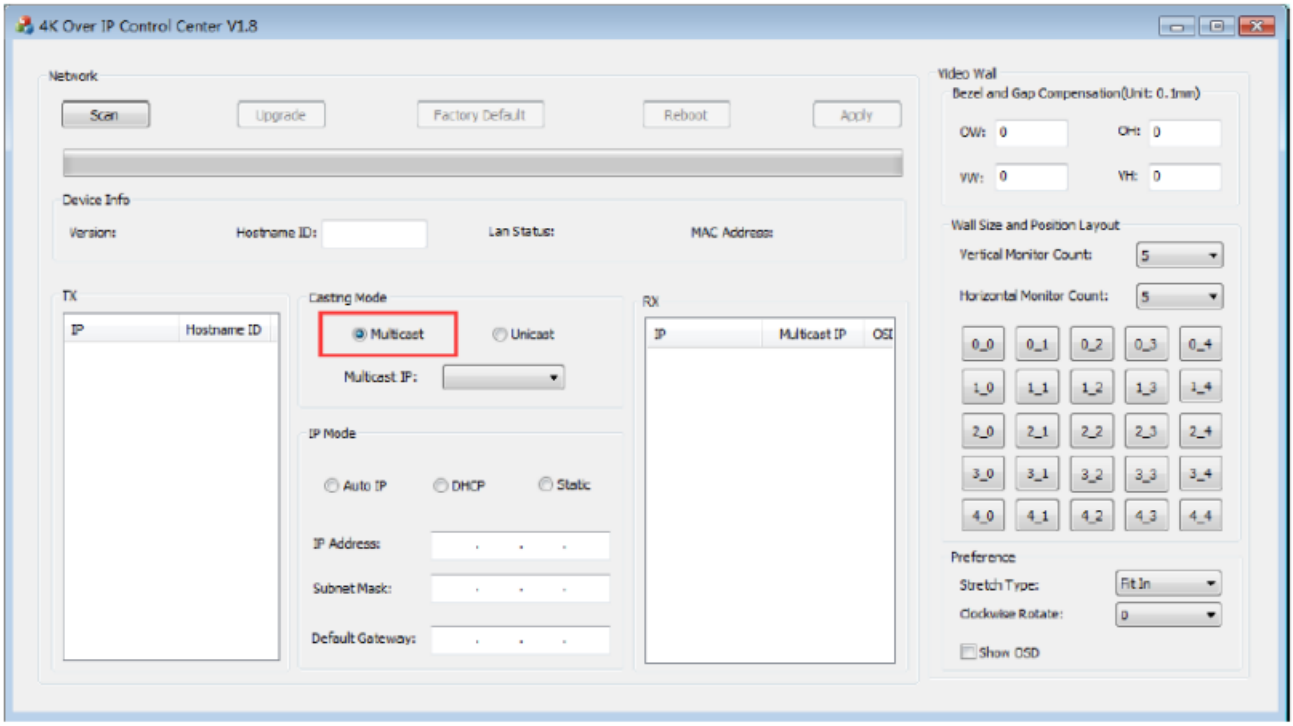
Press the “Start Scan” button to search for active devices on the network and select a TX or a RX device to make changes to IP address, Host name ID, Casting Mode, Multicast IP, IP Mode.
As factory default, both Transmitters and Receivers are configured in “Unicast” mode and “Auto IP”.
This page also allows performing a Device Reboot or a Factory Reset from remote of the selected device.



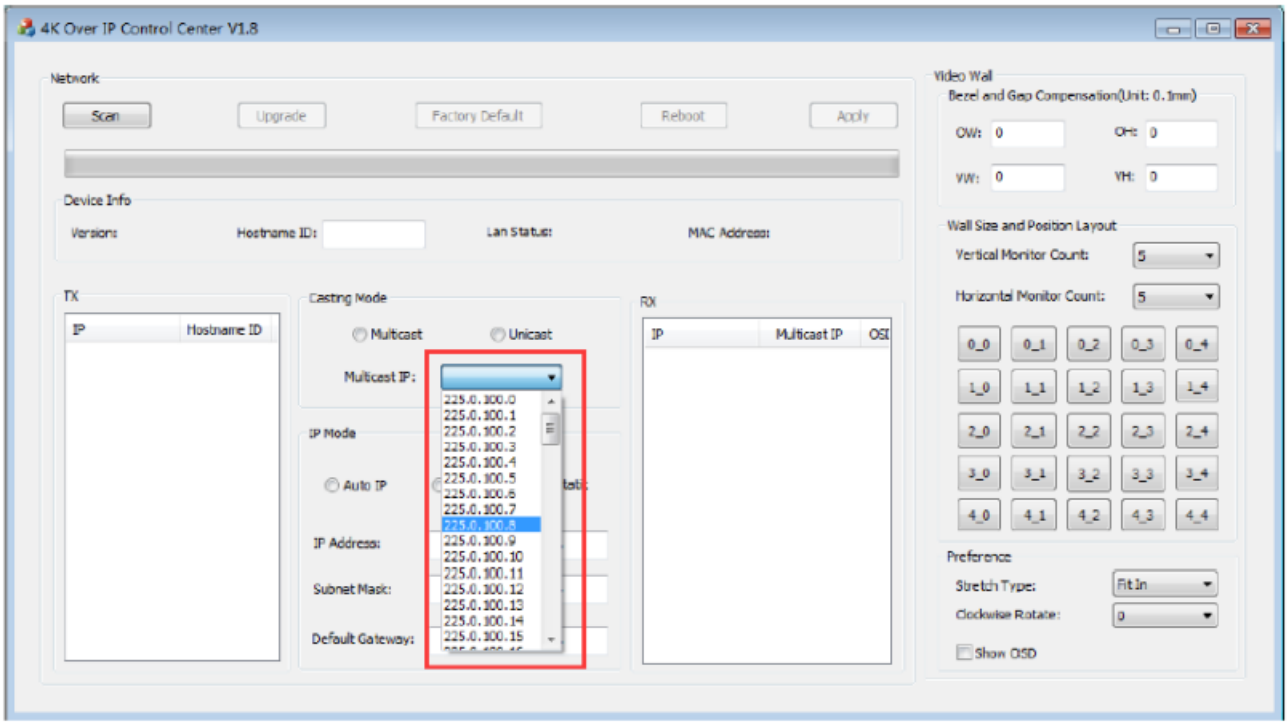
Remember to press “Apply” after making any changes.

9.1. Mutlicast

In multipoint-to-multipoint, matrix, and videowall configuration, Transmitters and Receivers must be set to multicast mode. Change the casting mode from Unicast to Multicast as shown below and press Apply to confirm new settings.



The ID Group of each device can be selected using software. Each ID Group corresponds to a multicast IP address as shown below.

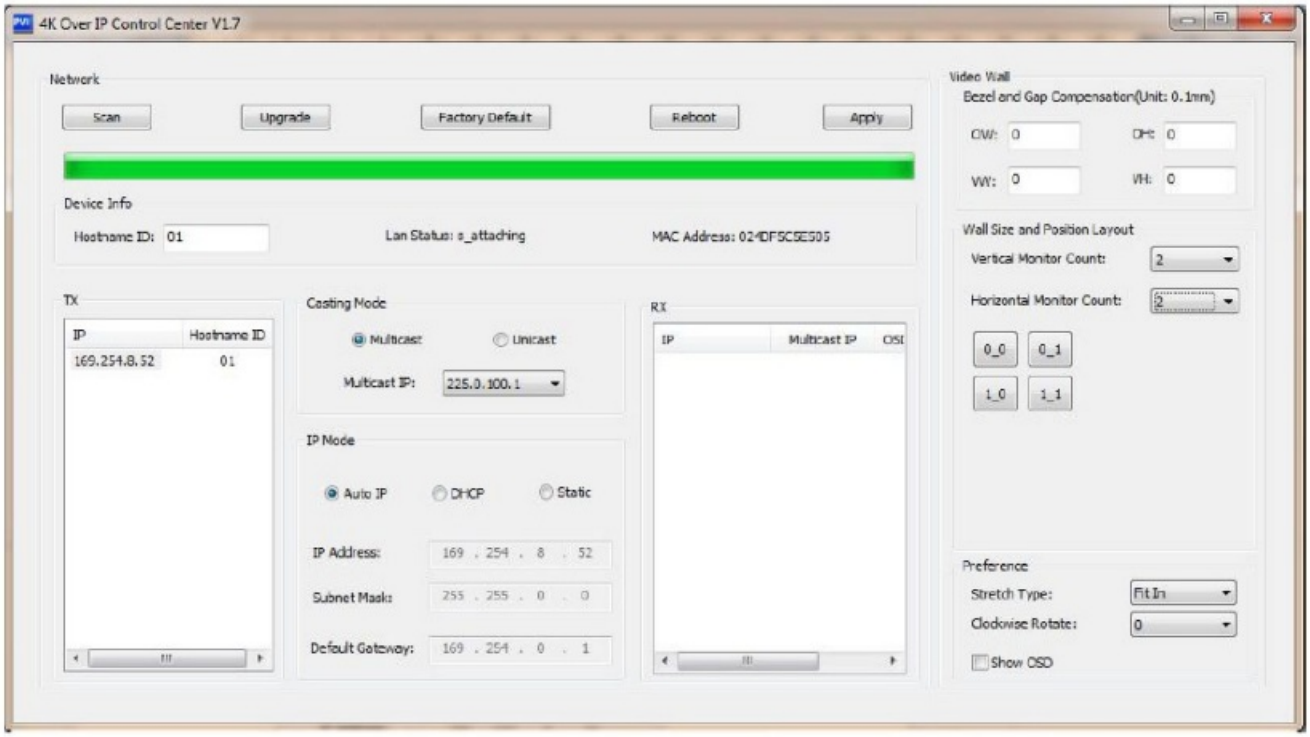


9.2. Videowall

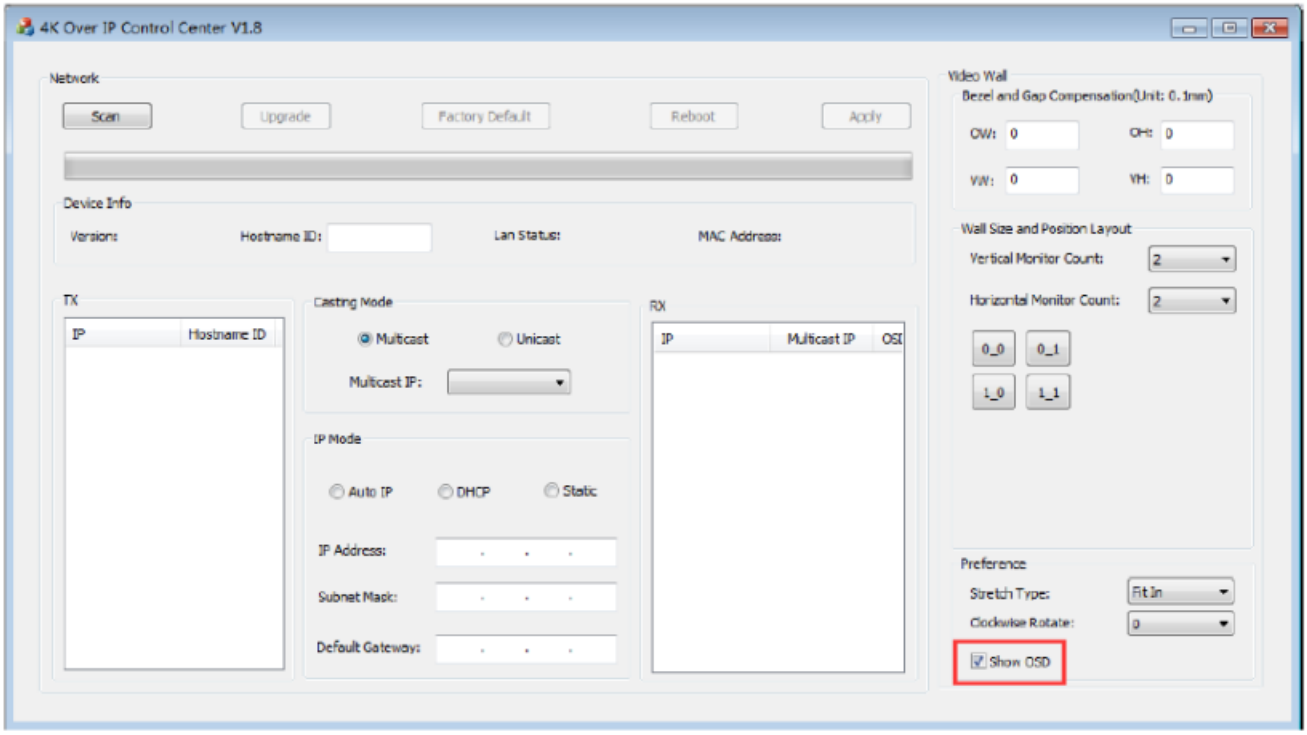
In order to create a videowall composition, Transmitters and Receivers must be configured with the same multicast IP (ID Group).

Change the “Vertical Monitor Count” and “Horizontal Monitor Count” according to the desired Videowall size.

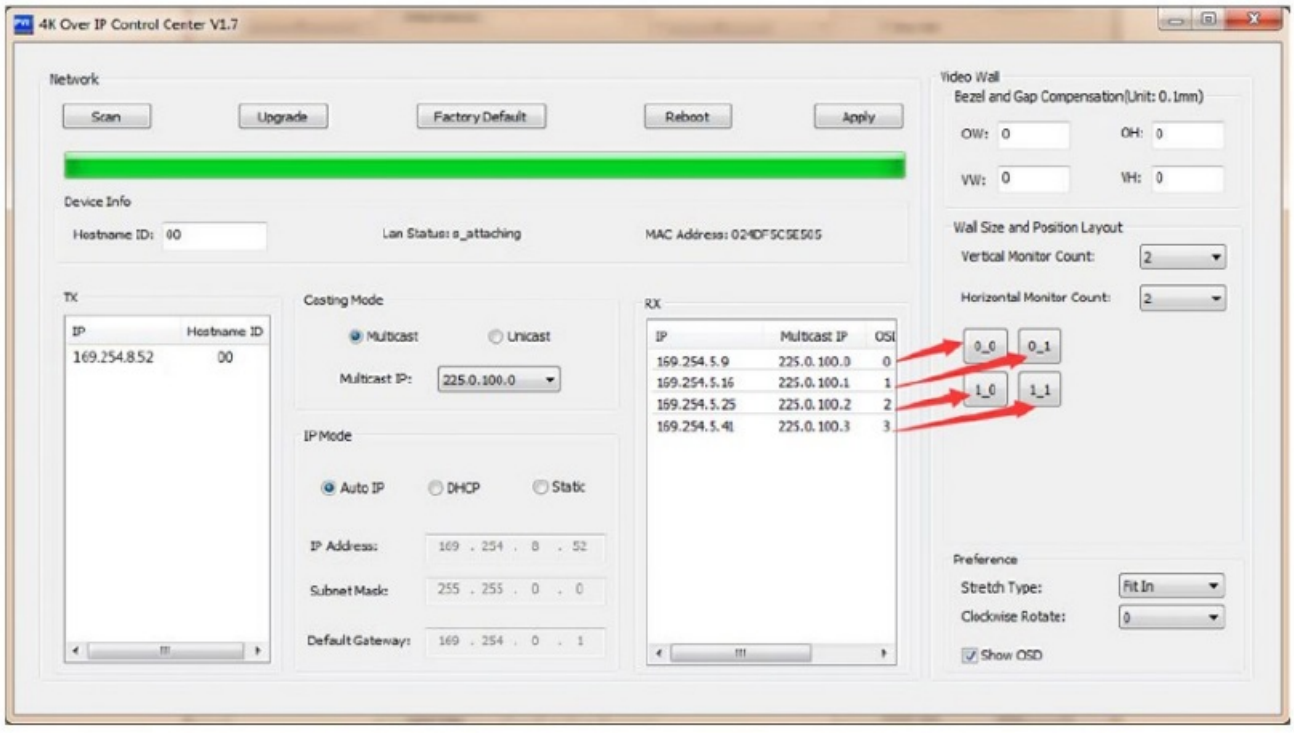
Example: If a 2×2 videowall is required, both the first two “Wall size and Position Layout” fields will be “2” as reported in the figure below:



When activating the “Show OSD” function, an OSD number will be assigned and displayed on each screen. This is a useful feature to identify each Receiver and monitor.



Drag and drop the selected Receiver onto the corresponding Videowall position as shown below:



Click “Apply” to confirm.

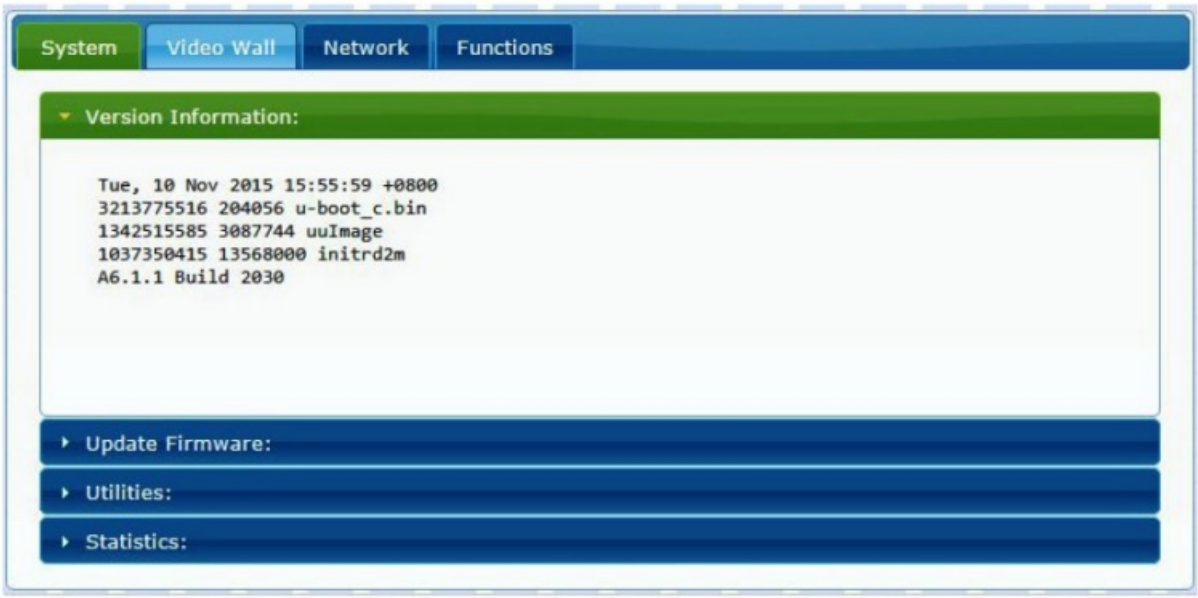
WEB BROWSER INTERFACE CONFIGURATION

VEO devices can also be configured using their own integrated web interface. To access just type device IP address in a web browser (Google Chrome is recommended).
Please refer to chapter 6.2 for discovering device IP address and ensure your PC network card is configured in the same network domain as the VEO devices.
The webpage will show 4 different configuration tabs: System, Video Wall, Network and Functions.

10.1. System

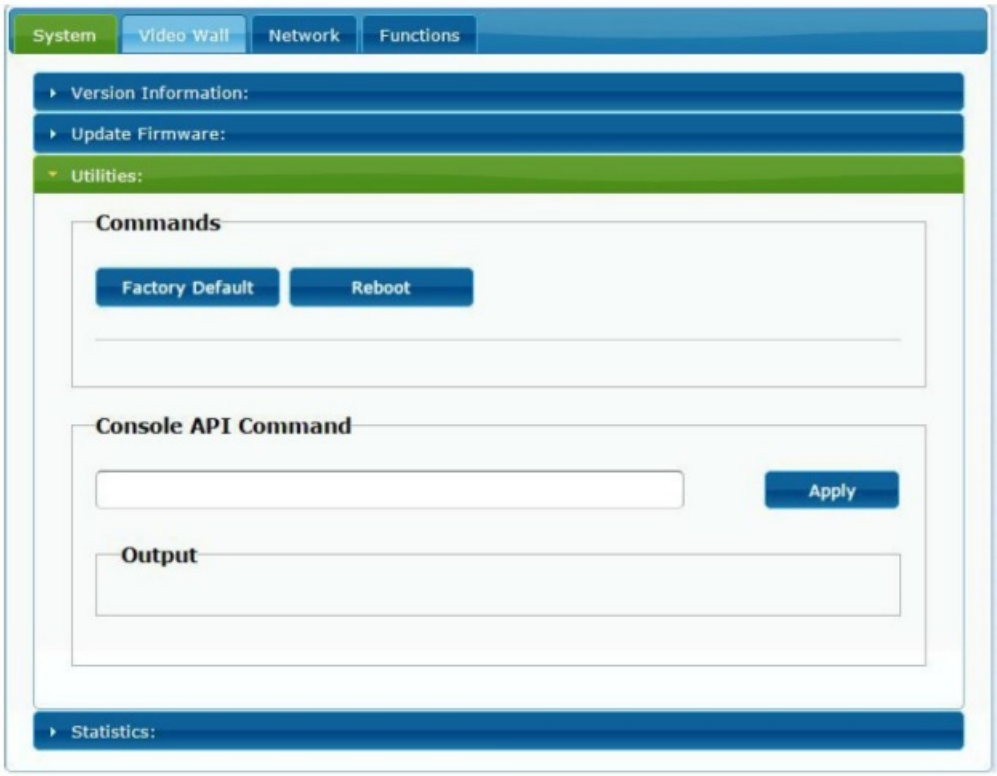
10.1.1. Version Information and Update

The “System” tab includes “Version Information” that shows firmware version and other information related to the product. Please contact our Ecler technical support in case of a firmware update.



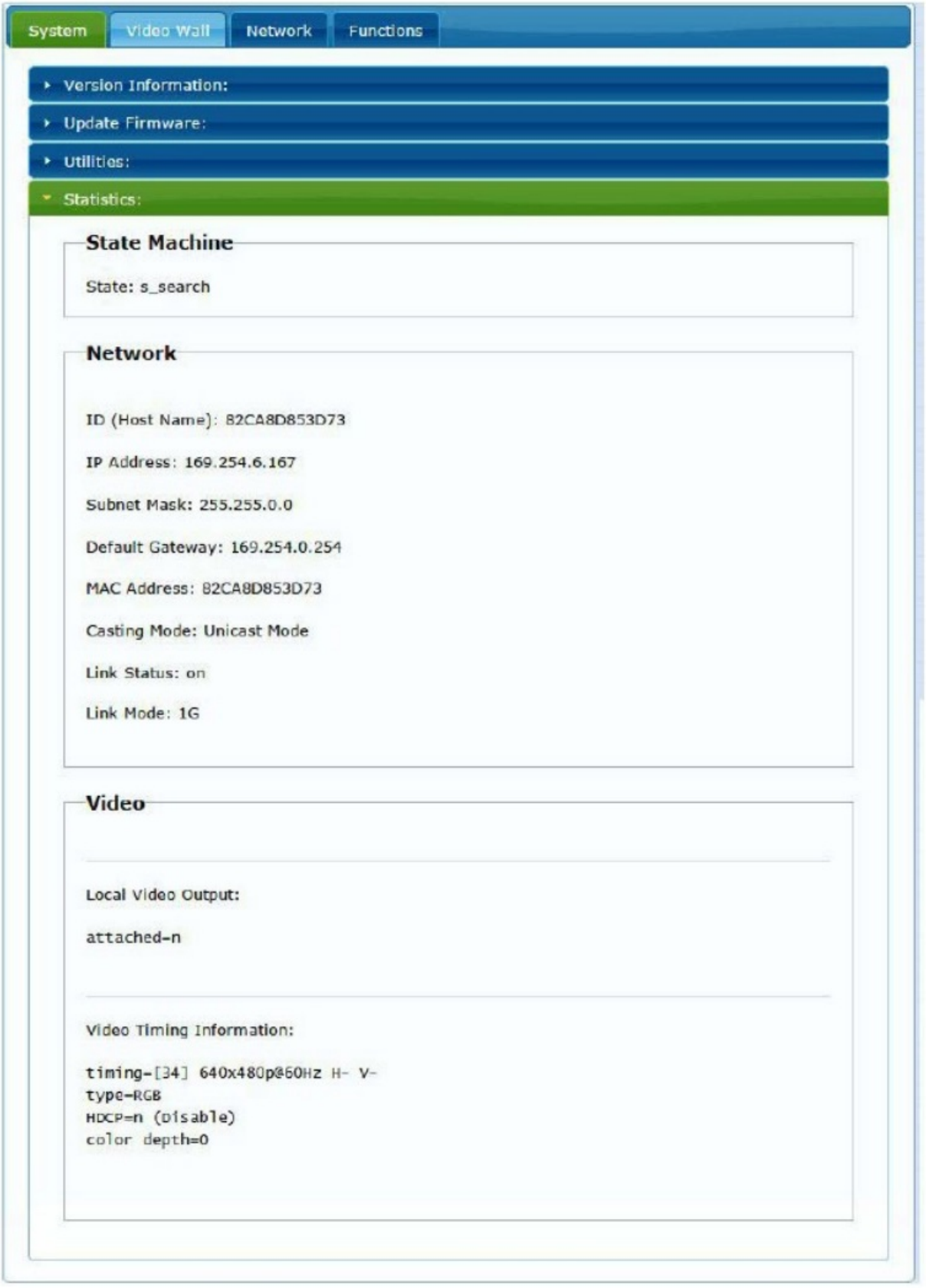
10.1.2. Utilities

The Utilities tab allows to restore device to Factory Default settings and Reboot the it from remote. It is also possible to test API Commands through the command line API console.



10.1.3. Statistics

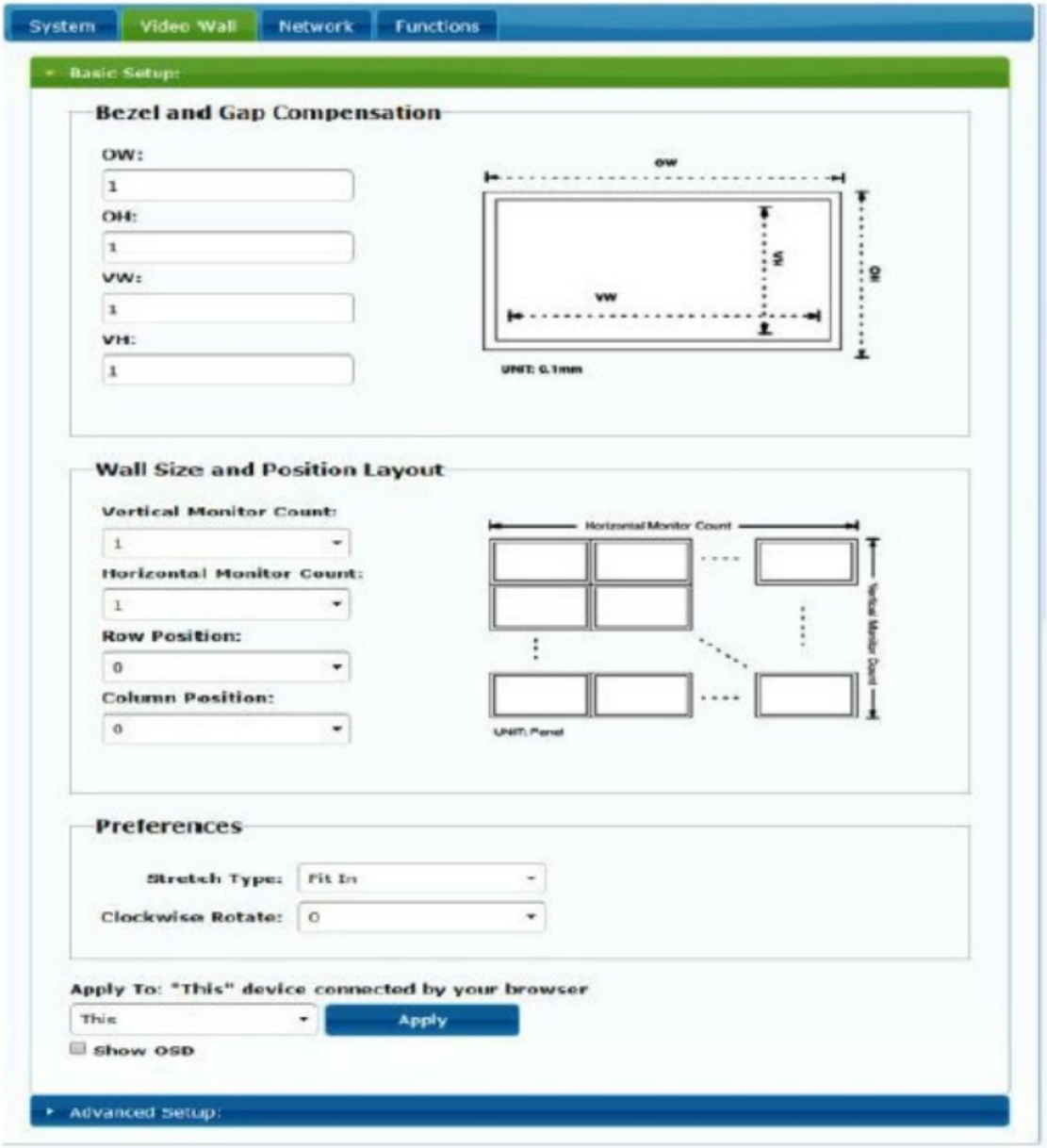
Additional information like state of the unit, network settings, and information about video resolution and timing are shown in this tab.



10.2. Videowall

10.2.1. Basic Setup

The Videowall configuration includes Basic and Advanced setup. Under Basic setup, the main settings for videowall composition are available. Through this page it is possible to assign the video wall size (TX and RX must be set with the same size), screen position, bezel and gap compensation and screen rotation or stretching. Remember to select “This” device at the bottom of the page to control the current device. It is possible to control several devices from the same page by selecting the corresponding OSD/IP address as shown below.

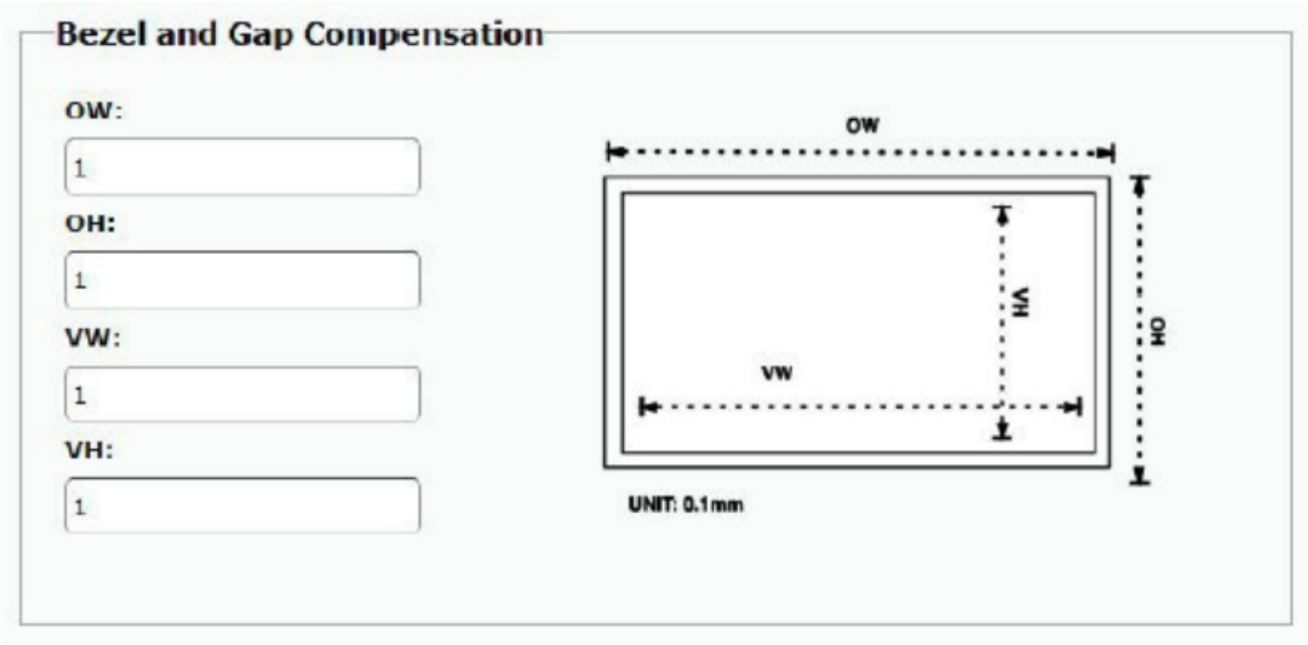


10.2.2. Bezel and Gap Compensation:
Dimensions of the screen (inside and outside width and height)

- **OW:** outside width
- **OH:** outside height
- **VW:** viewable width
- **VH:** viewable height

Please NOTE:

1. The viewable width must be lower than the outside width, and the viewable height must be lower than the outside height.
2. If the installer doesn't need these adjustments, just set all values to 1.
3. The unit is 0.1mm and the value must be integer.



10.2.3. Wall Size and Position Layout

Select the number of vertical and/or horizontal monitors, row position and column position. Horizontal and vertical monitor number must be set between 1 and 8.

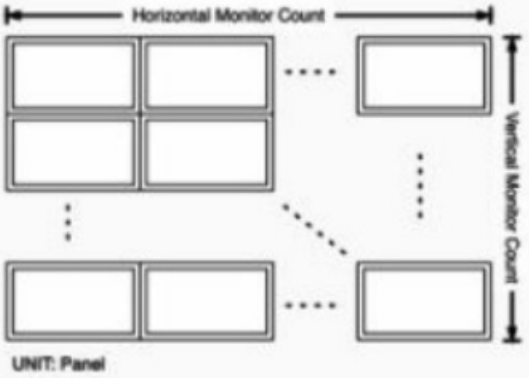
Wall Size and Position Layout

Vertical Monitor Count:

1

1
2
3
4
5
6
7
8

0



Wall Size and Position Layout

Vertical Monitor Count:

1

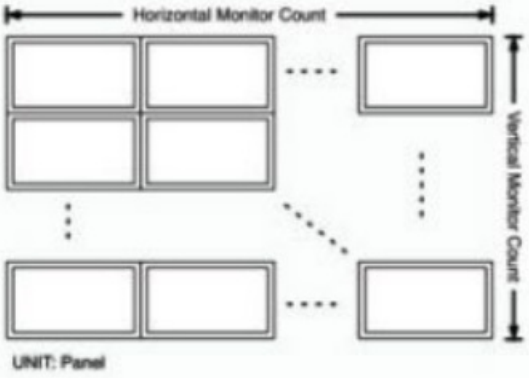
Horizontal Monitor Count:

1

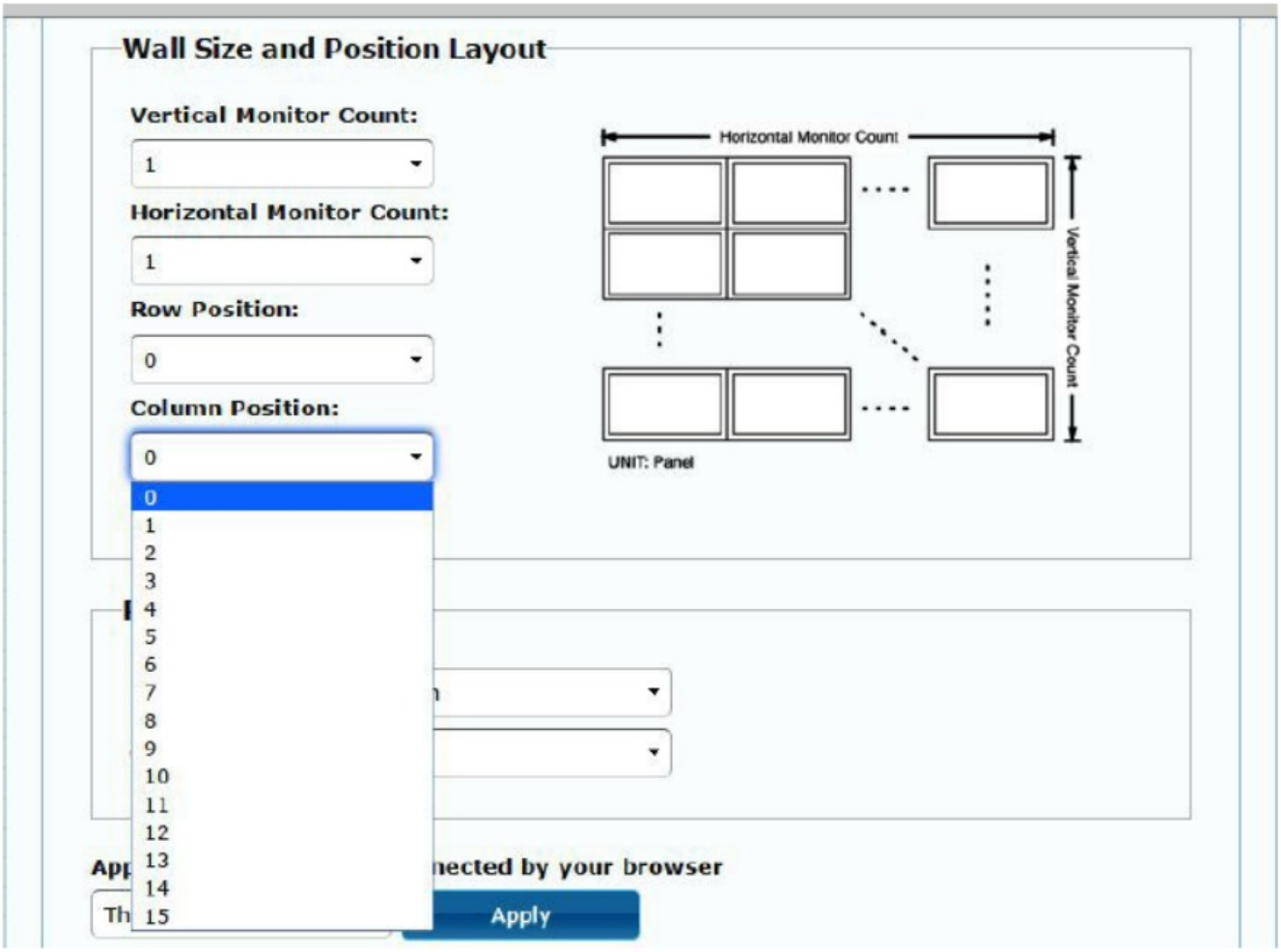
Row Position:

0

0
1
2
3
4
5
6
7

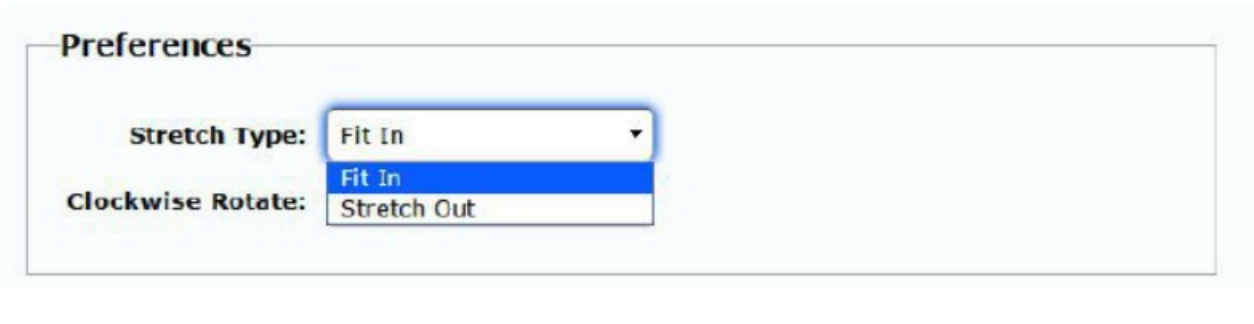


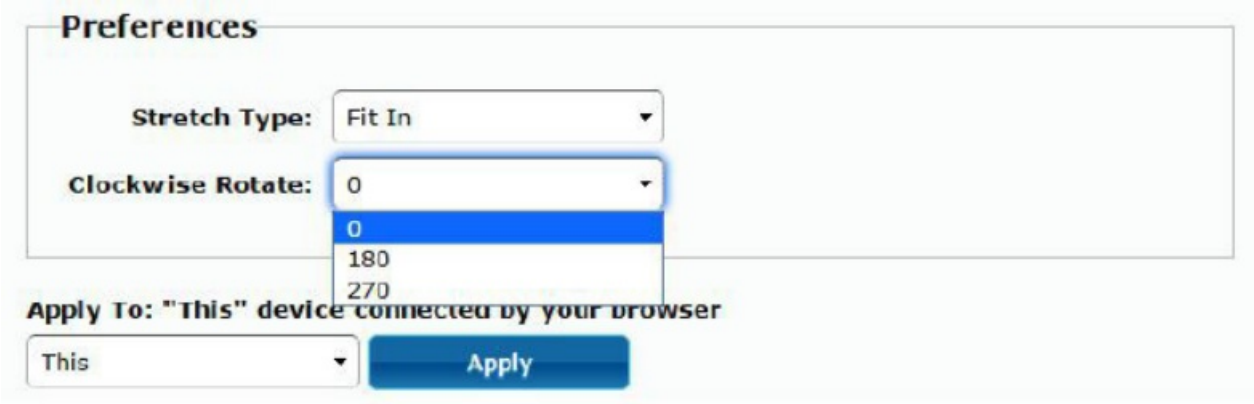
Preferences



10.2.4. Preferences

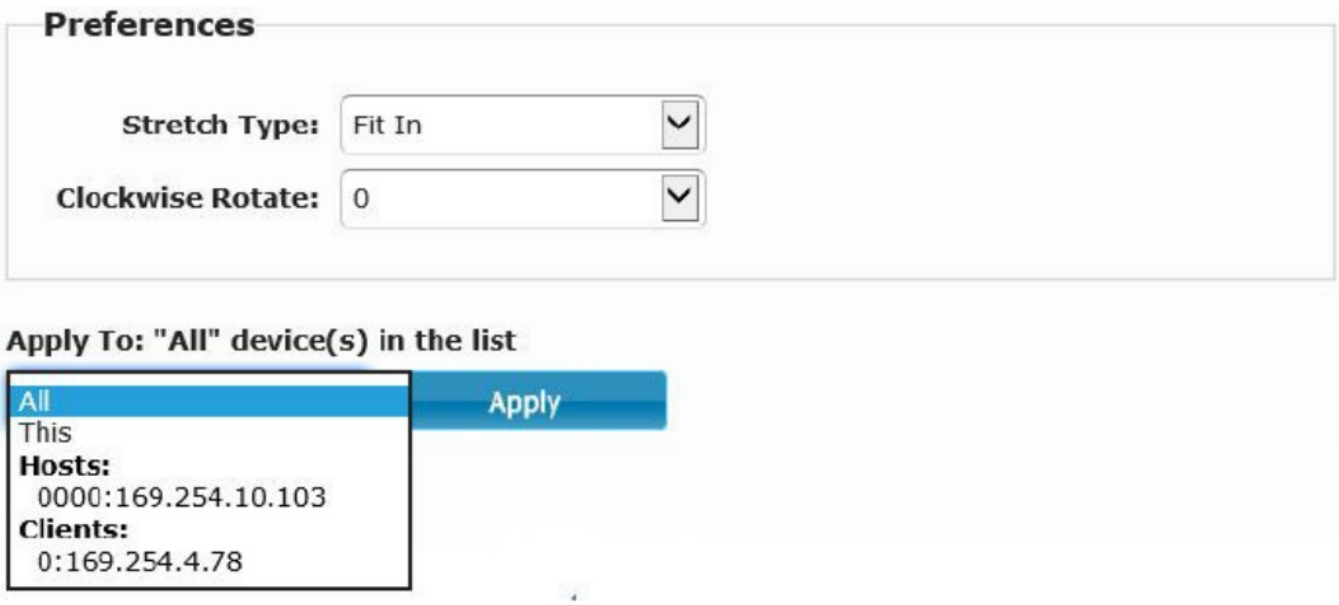
Select stretching video and rotation options. The image can fit in the screen, be stretched or be rotated at an angle of 180 or 270 degrees.





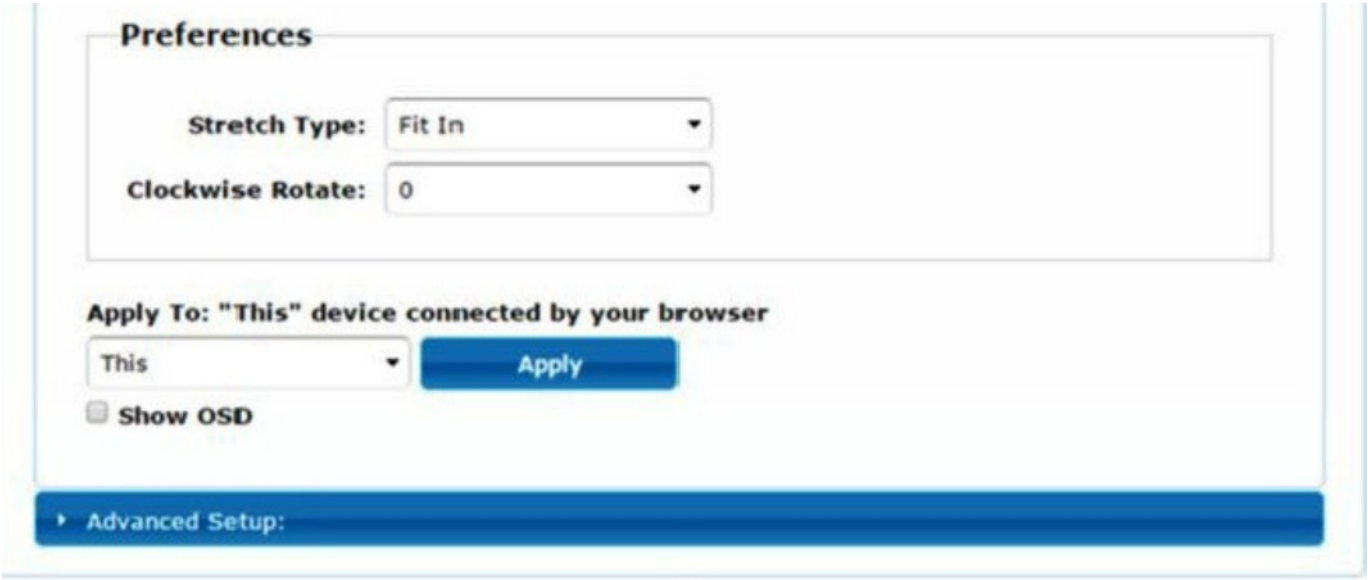
10.2.5. Apply To

- All: Configure all Transmitters and Receivers in the same Group ID.
- This (Local): Configure the current device (IP address indicated in the web browser).
- Hosts or Clients: select the Transmitter or Receiver you want to configure from the web page in use.



- Show OSD:

  Check this box to show the specific Receiver OSD number on the connected display



10.2.6. Advanced Setup

This session allows some additional fine adjustments. Before entering “Advanced Setup”, please complete the “Basic Setup” in order to define and confirm videowall layout and size.

Step 1: Choose Control Target

Show OSD

Step 2: Control Options

Reset to Basic Setup:

Reset

Stretch Type:

Fit to

Apply

Clockwise Rotate:

0

Apply

Screen Layout (Row x Column):

1 X 1

Apply

Row Position:

0

Apply

Column Position:

0

Apply

Horizontal Shift:

Left Right 0

Apply

Vertical Shift:

Up Down 0

Apply

Horizontal Scale Up (N pixels/column_count):

0

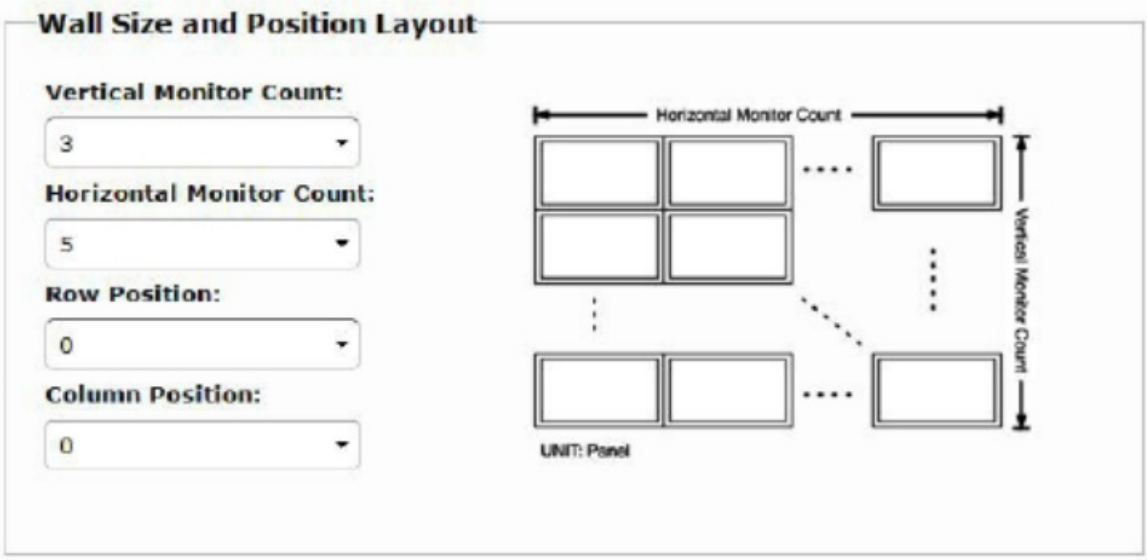
Apply

Vertical Scale Up (N pixels/row_count):

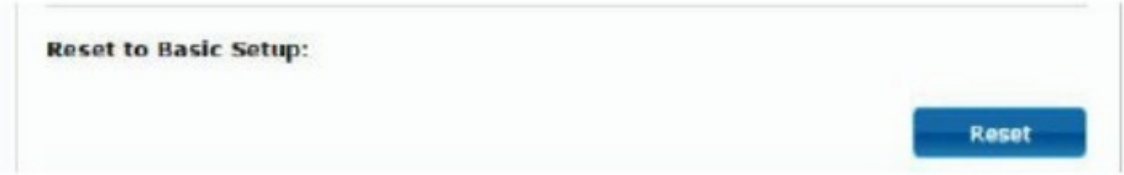
0

Apply

If a 3×5 videowall is required, once the basic setup is applied, the first session of advanced setup will look like show below. It's possible to act on a group of displays by selecting the target devices.

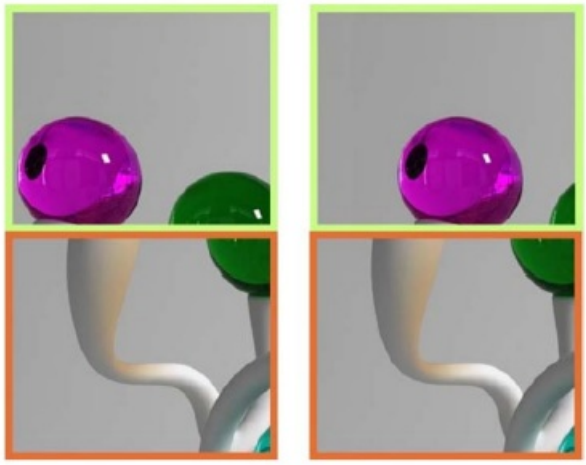


In case of wrong adjustments, the Reset button will restore all the advanced parameters to default.

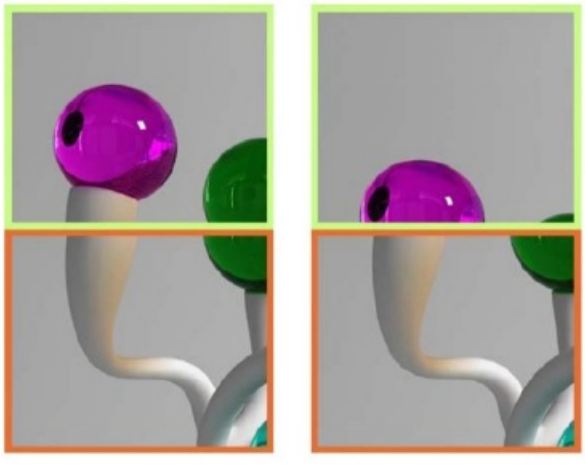


Video shifting and scaling can be adjusted using the following parameters:

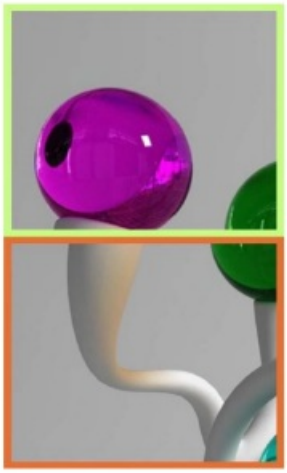
Horizontal Shift: Adjust the video horizontal shift, Left or Right



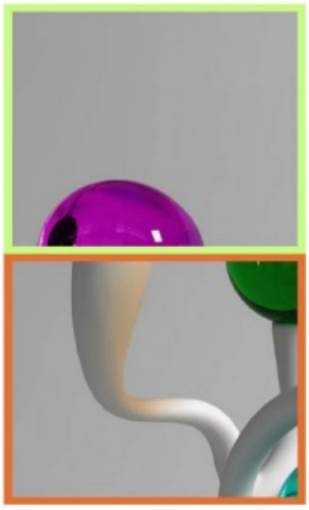
Vertical Shift: Adjust the video vertical shift, Up or Down



Horizontal Scale Up: Adjust the video horizontal scale up

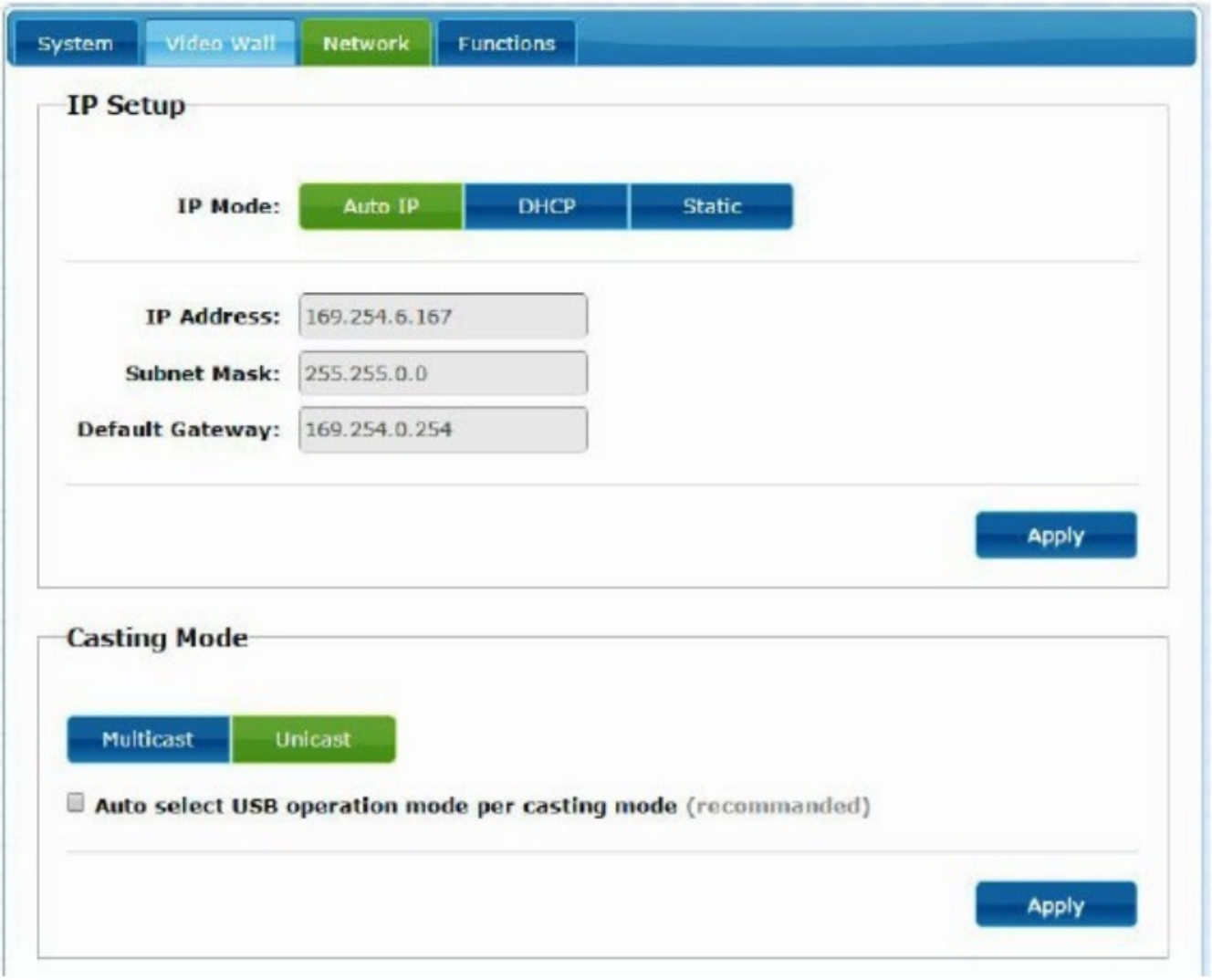


Vertical Shift Scale Up: Adjust the video vertical scale up.



10.3. Network

The Network page allows for adjusting network settings and casting mode for each device.



10.3.1. Auto IP (Factory default)

Auto IP provides automatic IP address assignment when more devices are connected to the same network. The default IP subnet is 169.254.x.y. The last two numbers are pseudo randomly generated.

10.3.2. DHCP (Dynamic Host Configuration Protocol)

If you are using switch or LAN where DHCP server is enabled, it is not necessary to set a manual IP address, because the DHCP server will automatically assign a unique IP address to each device.

Use instructions from Chapter 6.2 to find the IP address assigned to each device.

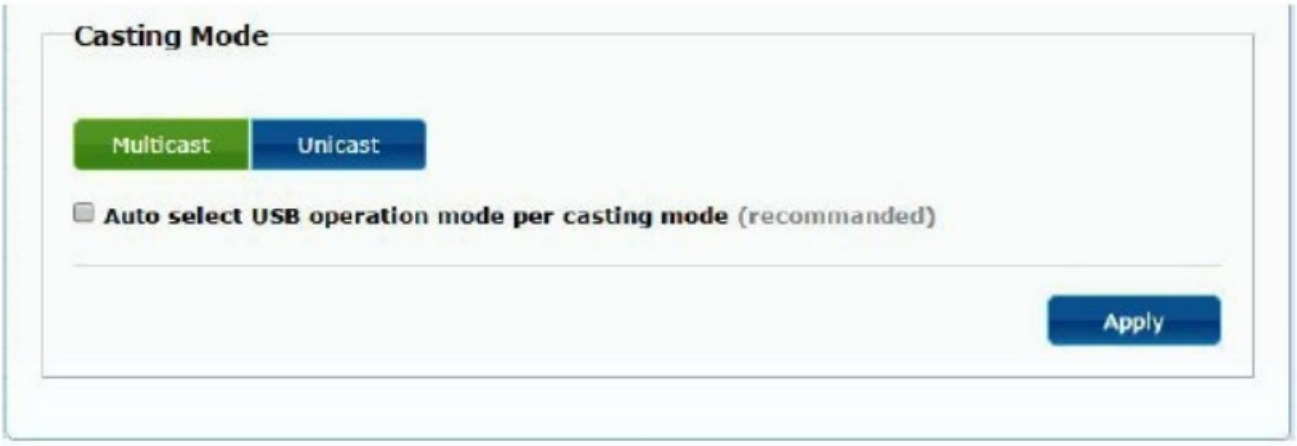
10.3.3. Static IP Address Configuration

When static IP addresses are required, the IP address of each device needs to be set manually.

10.3.4. Casting Mode

Select the broadcast mode according to the extender application:

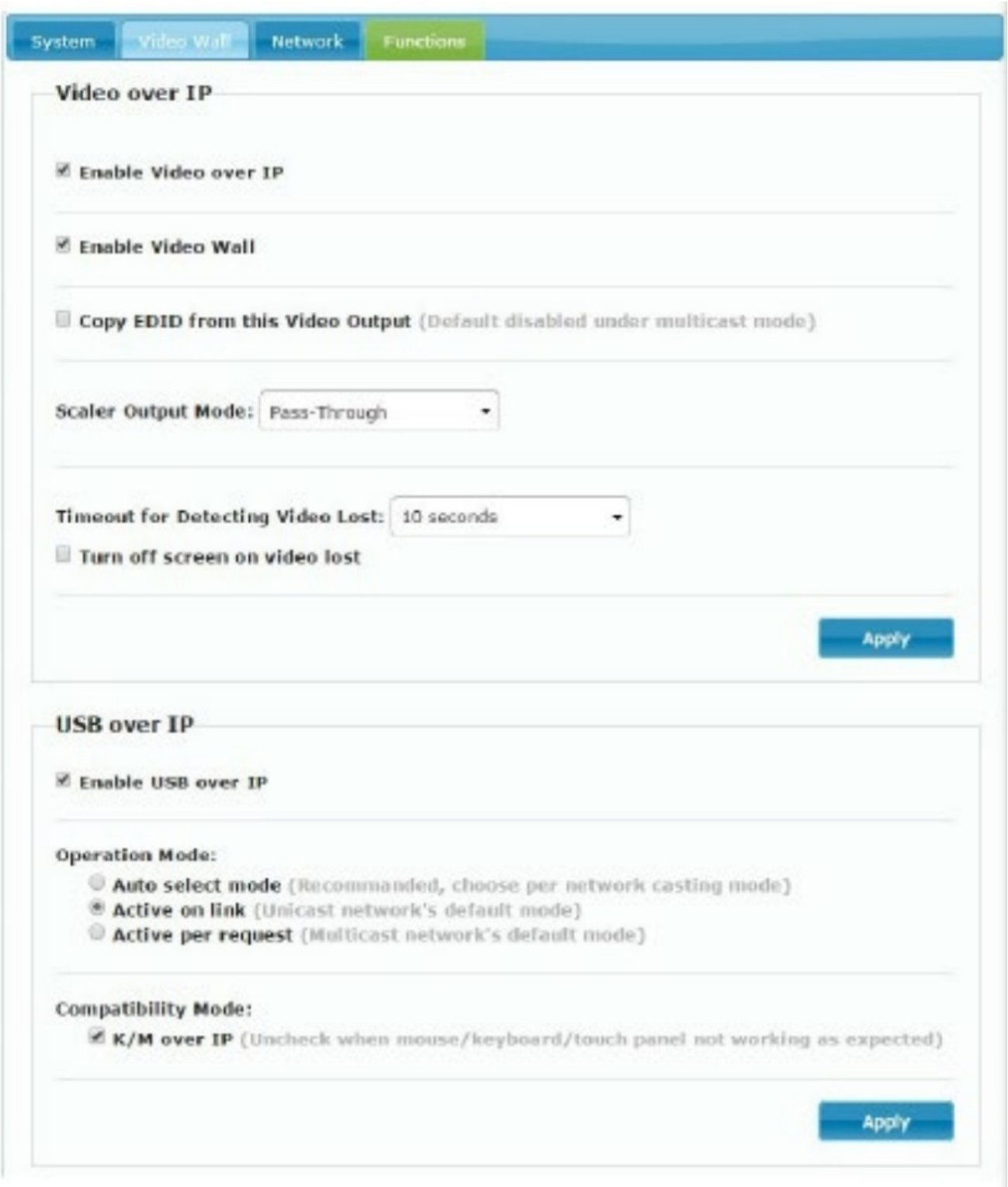
- Multicast: point-to-multipoint, multipoint-to-multipoint broadcast or videowall configuration
- Unicast: point-to-point extension



The “Auto select USB operation mode per casting mode” allows changing the USB pass-through behaviour according to the selected casting mode. More details are available in the next chapter.

10.4. Functions

The Functions page allows configuring Video output, USB extension mode and Serial over IP function, both for Transmitter and Receiver.



10.4.1. Setup video output mode for Receiver

- Enable Video over IP: Allows to enable video extension over IP
- Enable Video Wall: Allows to enable the videowall composition function
- Enable EDID Copy: This function allows copying output EDID and passing the information to the Transmitter. It is limited to unicast mode.
- Scaler Output Mode: Select the required scaled output mode. Select “customize” and digit 8 Hex values for more video output resolution and refresh rate selections.

For example:

1. 80000004: HD 720p60
2. 81000061: WXGA 1366×768@60
3. 81000040: WXGA+ 1440×900@60
4. 81000051: WUXGA 1920×1200@60
5. 8100003C: SXGA+ 1400×1050@60 …

Timeout for Detecting Video Lost: Set time for stopping the video on the output after detecting that the transmitter HDMI signal is lost.

10.4.2. Set Scalar Output Mode for Transmitter

On the Transmitter Function page, it is possible to select the Maximum bitrate for the generated stream.
It is possible to fix the stream bitrate to value from 10 to 200 Mbps with a Best Effort option that optimizes the bitrate according to the video input.

10.4.3. USB over IP

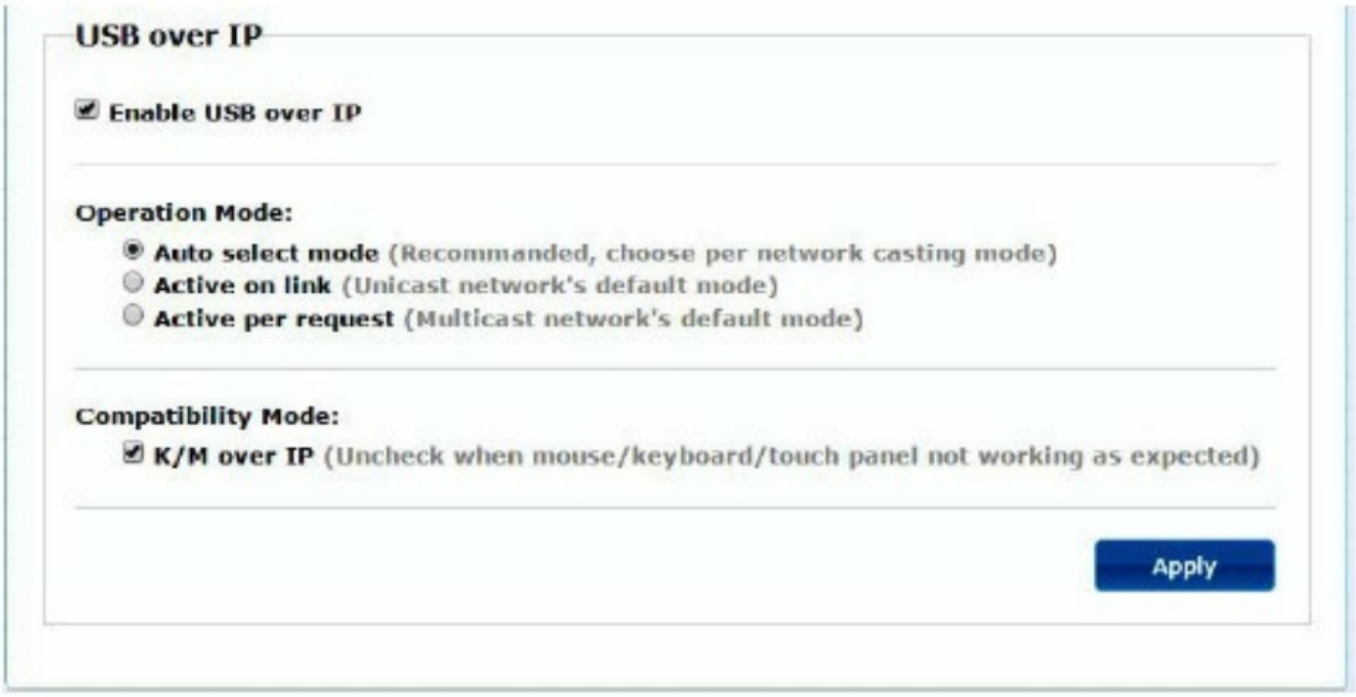
This section allows to select the USB extension options.

- Enable USB over IP: Check it to enable USB extension mode over IP
- Operation Mode:

  o Auto select mode: will automatically select “active on link” or “active per request” depending on the casting mode.

  o Active on link: USB pass-through from transmitter to receiver. Suggested for unicast scenarios.

  o Active per request: in case of multiple KVM endpoints controlling one PC, for example, the USB link will be activated on request. Suggested for multicast scenarios.
- Compatibility Mode: Check it to enable USB keyboard and mouse enhanced optimizations.

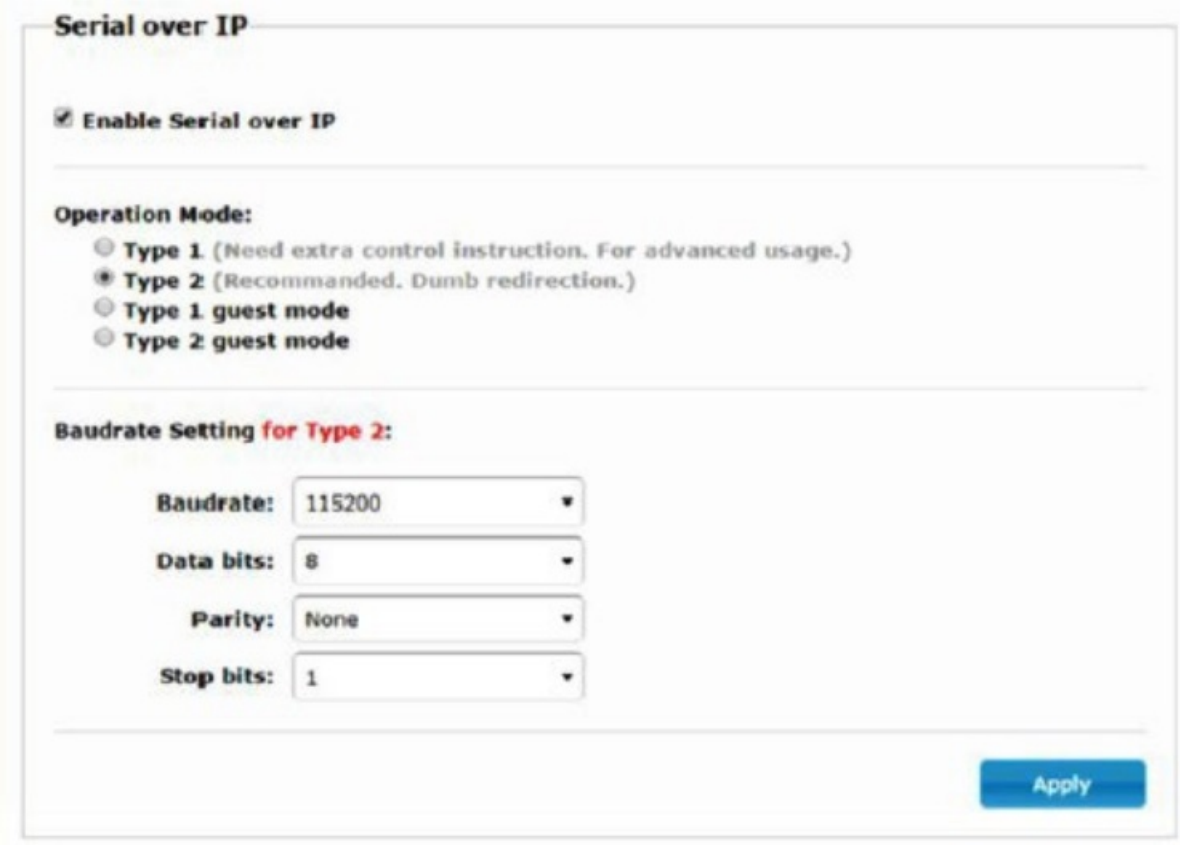


- Serial over IP

  o Type 2 option will allow extending a full-duplex RS-232 communication from Transmitter to Receiver when the RS-232 selector on the devices is set to Normal. Other options are reserved.

  Once type 2 option is selected, it will be possible to adjust the typical serial communication parameters like

baud rate, data bits, parity and stop bits.



For advanced options, please contact Ecler Technical Support.

FIBER OPTIC CONNECTION

When extension distances over the standard Ethernet limit of 100m are required, a Fiber Optic link can be used instead of the Cat5e/6 copper link. The Fiber Optic link allows reaching distances up to 2Km or 60Km, depending if multimode or single mode fiber is used. For this purpose VEO devices support standard 3.125 Gb SFP transceiver modules (not included).
Just insert the SFP transceiver module in the SFP receptacle to make VEO devices ready for fiber connection. Once the fiber cable is connected and the link is active, the related connection LED will blink, as indication of a proper operation.

FACTORY RESET

For these VEO devices, a Factory Reset can be performed using the PC Utility Software (chapter PC UTILITY SOFTWARE) or via Web page (chapter WEB BROWSER INTERFACE CONFIGURATION).
If the IP address is unknown, please set the Operation mode selector on Program; connect a RS-232 interface (115200, 8 N 1) and send the following command: / # lmparam g MY_IP followed by CR and LF chars.

TECHNICAL SPECIFICATIONS

Supported ResolutE948:F971ions	3840X2160@30HZ 3840X2160@60Hz (4:2:0) supported and converted to 3840X2160@30Hz, 1080P/1080i/720P/576P/576i/480P/480i
Video connectors	HDMI 1.4 with thread lock
HDCP	2.2 Compliant
Network requirements	IGMP and Jumbo Frames compliance
Network Streaming bitrate	Up to 300Mbps
Video Latency	Typical 1 to 3 frames depending on network conditions
Network connectors	RJ45 with LED indication and SFP receptacle
Default IP	Auto IP (169.254.x.y)
PoE power operating	802.3af
Transmission distance	Up to 120m. (via CATx) in point-to-point topology; Up to 100m when connected to standard Ethernet devices; Up to 60Km via single mode Fiber; Up to 2Km via multi mode Fiber;
Audio Formats	LPCM 2.0, Dolby True HD, DTS-HD Master audio
Sample Rate	up to 192 kHz
Bitrate	up to 24-bit
Analog Audio connectors	3.5mm stereo minijack
Digital Audio connectors	S/PDIF Toslink
IR supported bandwidth	38-56 KHz
USB ports	TX: USB 2.0 Keyboard/Mouse 1x USB type B RX: USB 2.0 Keyboard/Mouse 2x USB type A
RS-232 connector	3-pin Phoenix
Operating Temperature	0˚C – 50˚C /32˚F – 122˚F
Humidity	5 – 90% RH (no condensation)
Power Consumption	3W Maximum (TX and RX)
Power Supply	AC100~240V 50/60Hz Output: DC 5V/1A
Dimensions H x W x D	26mm x 170mm x 109mm (1.02” x 6.69” x 4.29”) (TX and RX)
Weight	470g (1.036 lbs)

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Documents / Resources

	ECLER VEO-XTI2L Low latency 4K over IP Video Extenders with KVM and Videowall [pdf] User Manual VEO-XTI2L Low latency 4K over IP Video Extenders with KVM and Videowall, VEO-XTI2L, Low latency 4K over IP Video Extenders with KVM and Videowall, Extenders with KVM and Videowall, KVM and Videowall