FX-EX37

4K HDMI+USB KVM Extender over IP / Fiber

Dear Customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

ABLE OF CONTENTS

Feature

- 4k UHD HDMI over IP extension
- USB 2.0 over IP extension
- RS232 bi-directional extension and RS232 control
- 4 bits Switch for 16 stream channel selection
- Support Dolby True HD, DTS-HD Master Audio
- Support two way wide Band IR extension(38khz-56khz)
- Transmit over single Cat5e/6 cable up to 120m
- Transmitter over Fiber Optical cable up to 60km(Single Mode)
- Networking environment under Giga Enthernet switch and Cat5e cable
- Point to Point extension,Unicast, Multicast and Video wall system(max 8x16)
- Output video rotation
- Output video video partial enlargement
- HDCP1.4 compliant

NOTICE

Our company reserve the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

SPECIFICATIONS

Performance	
Protocol	TCP, UDP, RTSP, RTP, DHCP, IGMP, Multicast, IPV4
Support Video format	4K@30HZ, 1080P/1080i/720P/576P/576i/480P/480i
Support Audio format	Stereo 192Kbps
HDCP	Compliant
IR Frequency	38 -56 KHZ
RS232 Baud rate	Default 115200bps, total 8 kinds optional
IP setting &Group ID setting	
Default IP	Automatic allocation
Group ID	Group 00 ~ group 16
Request for Switch/Router	Support IGMP, support DHCP
Connectors on Transmitter	
Input	1xHDMI Female port, 1xUSB B type
Output	1x RJ45 output, 1x Fiber output
RS232	Phoenix RS232 port
IR	1x IR TX port; 1x IR RX port Support 38K-56KHz
Connectors on Receiver	
Input	1xRJ45 input, 1x Fiber input
Output	1x HDMI Female port, 2x USB A type

RS232	Phoenix RS232 port
IR	1x IR TX port; 1x IR RX port Support 38K-56KHz
Environmental & Power Requirements	
Operating temperature	-5 to +65℃(+23 to +149℉)
Operating Humidity Range	5 to 90%RH (No Condensation)
Power supply	DC 5V
Power consumption	Max 3 watt
Physical	
Dimension	TX: 160x103.2x30mm ; RX: 160x103.2x30mm
Net Weight	TX: 472.8G ; RX:472.3G

Note1: Specifications are subject to change without notice. Mass and dimensions are approximate.

Note2: when transmit over Fiber. 4kx2k require 3.125g module.

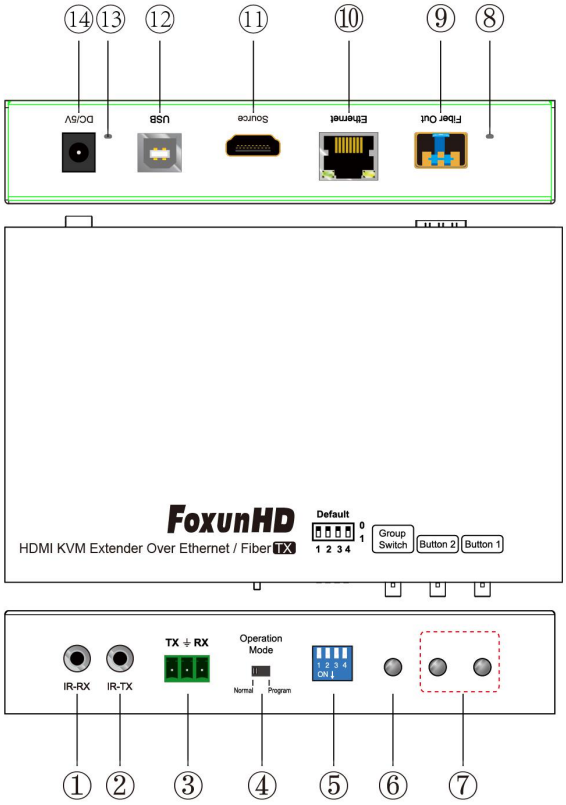
PACKING CONTENTS

1) Main Unit. HDMI Extender（ transmitter & receiver）
2) Power adapter DC5V 2A x2PCS
3) 2xIR TX cable, 2xIR RX cable
4) 2xPhoenix plugs for RS232 cable termination
5) 4xscrews
6) Rear bracket x2
7) Operating Instruction

Notes: Please confirm if the product and the accessories and all in duded, if not please contact with the dealers.

PANEL DESCRIPTION

EX37-TX



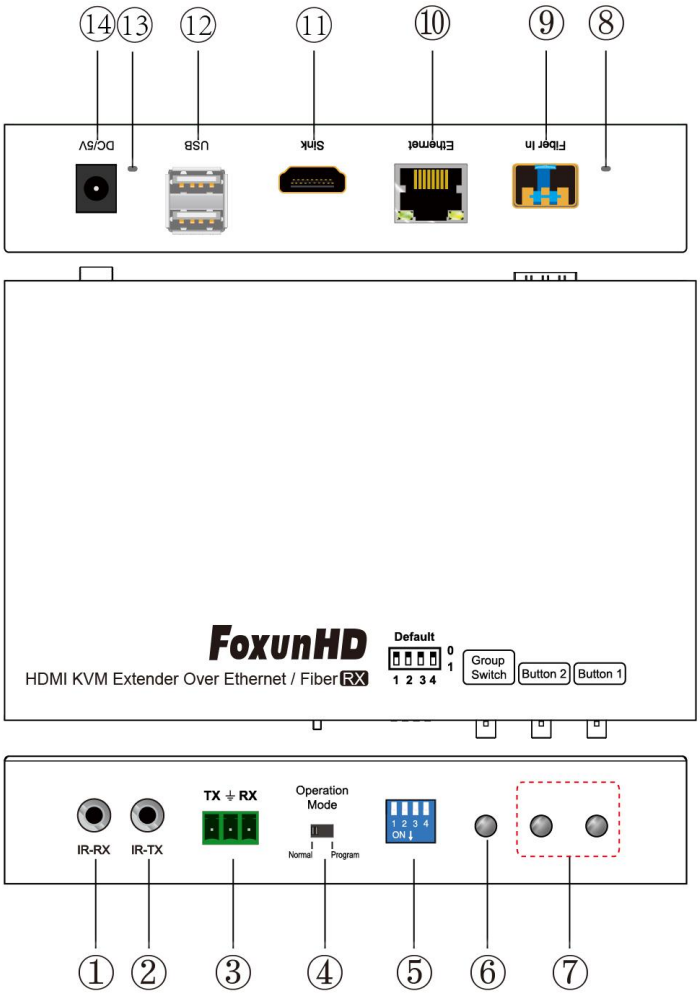
1) IR-RX port
2) IR-TX port
3) RS232 port
4) Normal: For serial over IP;
Program: For serial control or getting the debug information
5) 4 bit Dip switch
6) Group Switch③
7) Button 1&2 ④
8) Indicator of status ②
9） Fiber out
10） Ethernet port
11） HDMI input
12）USB
13）Power input indicator①
14）Power input port

1 A. Green LED: Link LED, when the connection has established over Cat5e/6 cable or Fiber cable, the Green LED will illuminate.
B. Yellow LED: When the yellow LED is blinking, it indicates the connection has been established over Cat5e/6 cable.
2 When the green LED illuminates, it indicates the connection has been established between transmitter and receiver over fiber cable.
3 After select the DIP switch, press "Group Switch" button for 1 second.

4 Please refer to 5.3.

4 bits DIP Switch:
Use 4bits DIP switch to select 16 groups ID (such as 0001, 0010, 0101 etc,)

EX37-RX



1) IR-RX port
2) IR-TX port
3) RS232 port
4) Normal: For serial over IP;
Program: For serial control or getting the debug information
5) 4 bit Dip switch
6) Group Switch③
7) Button 1&2 ④
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4 bits DIP Switch:
Use 4bits DIP switch to select 16 group ID (such as 0001, 0010, 0101 etc,)

5.3 Descriptions Buttons

(Host:Transmitter;client: Receiver)

Button state for Unicast Mode:HDMI Extender:

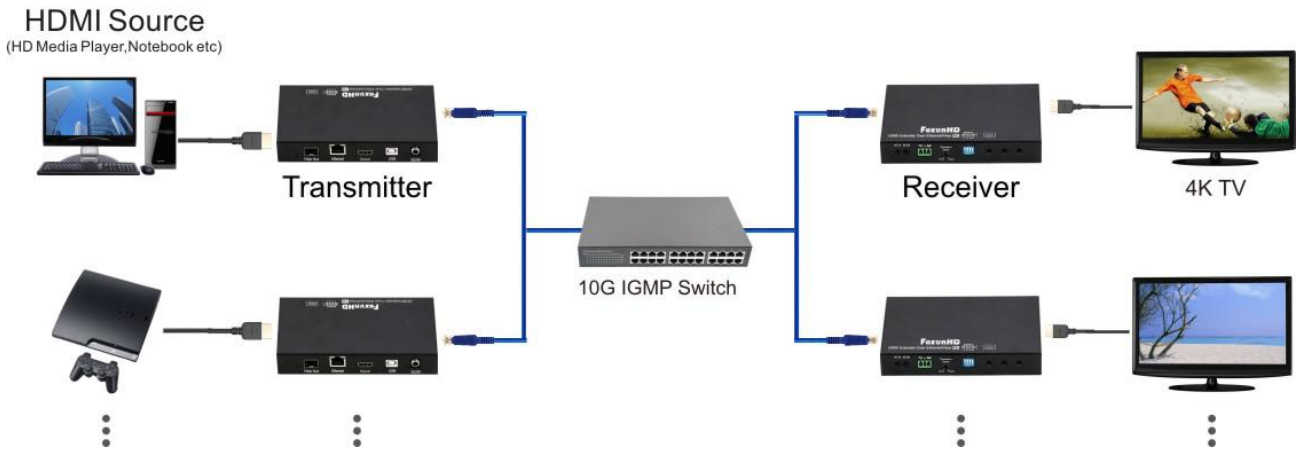
Default Mode will be highlighted in Green

CONNECT AND OPERATE

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

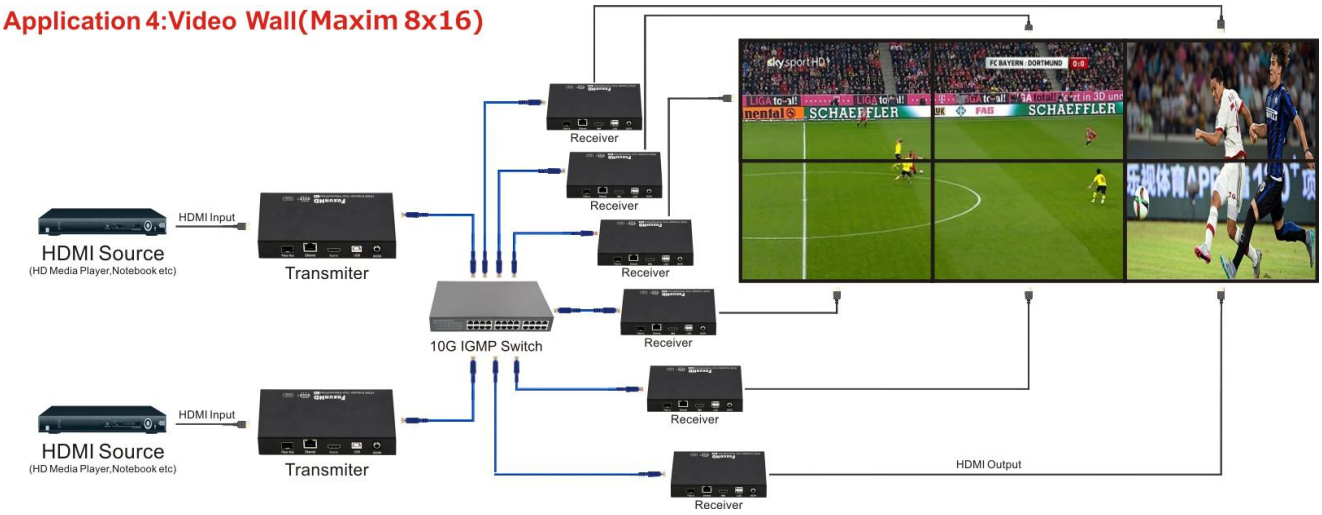
Application 1:One to One

Application 2:Many to Many



Application 3:KVM

Application 4:Video Wall(Maxim 8x16)



6.2 IP Configuration

The 4k HDMI &USB over IP Extender can configure via LAN in the same subnet.

1. Assign a LAN IP address to the computer in the same subnet. The IP address default of the Transmitter and receiver is B class Networking:

169.254.xxx.xxx.

Figure 1.Internet Protocol(TCP/IP)Properties

2. Connect the TX and RX with the Ethernet switch,Then connect the PC with the Ethernet switch.

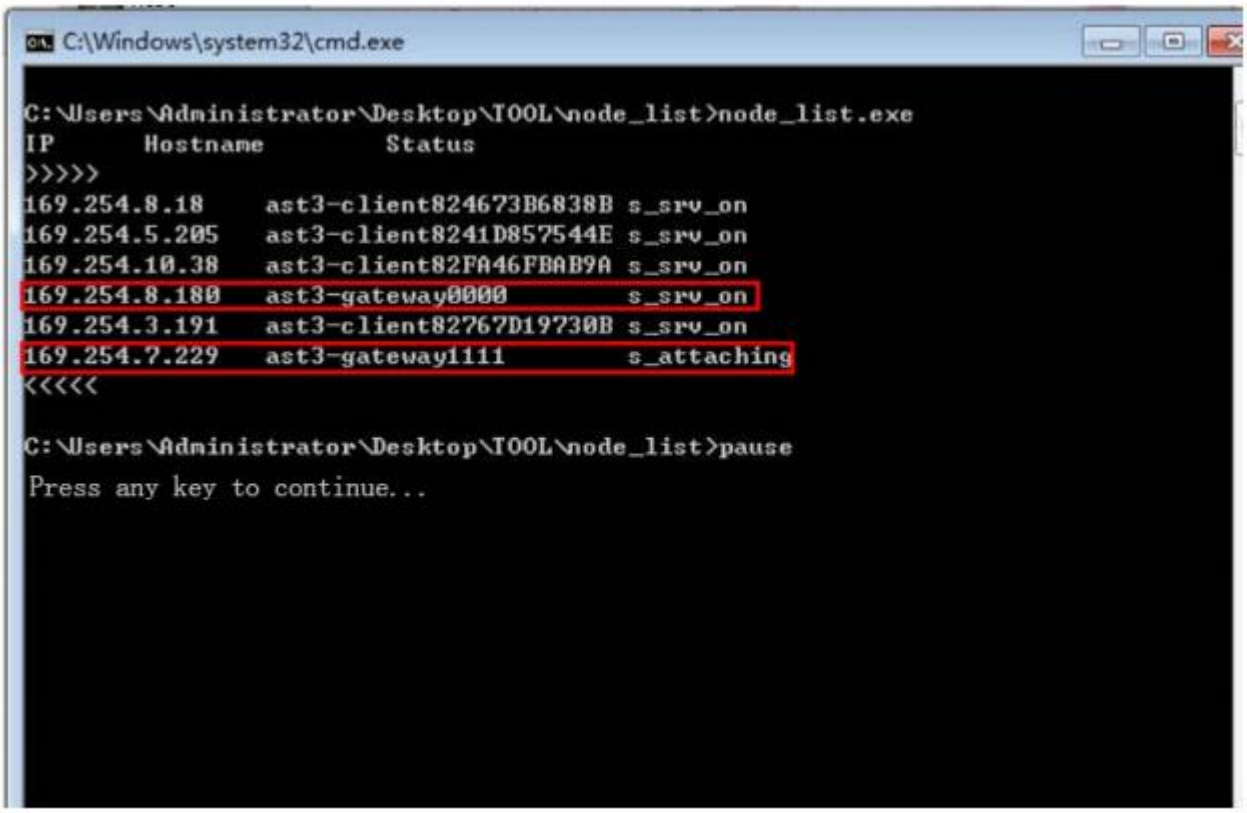
Because this unit support DHCP,Different unit with different IP address of the factory reset,so the forst thing we need know the IP address of each unit.

There is two way to get the IP address

1) Via “Node List”

Open the “Node List”in the “Tool”file,press twice the “Node_list.bat” to enter the dialog box

Then we can see all the IP address of both the TX and RX show as bellow black dialog box.



Remark:If the IP address with “client”,it”s the IP address of the RX

If the IP address with”Gateway”,It’s the IP address the TX

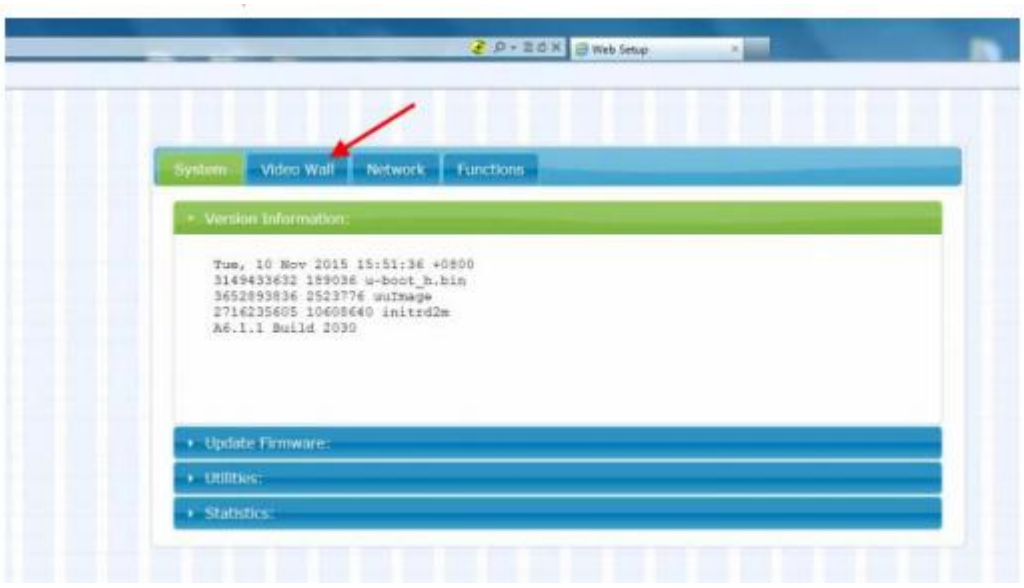
2) The second way.

Connect all devices with proper cables except video source,please refer to

3) After activation,the device information including the transmitter and receiver IP address will be show in the lower right corner.Remember the transmitter and receiver IP address on monitor screen and then plug HDMI video source cable into transmitter.

3.The administrator can input transmitter or receiver IP address into address bar of web browser(recommend the Google Chrome) to the Extender Web UI

If link success,administrator will see the Web UI as shown in Figure 4.



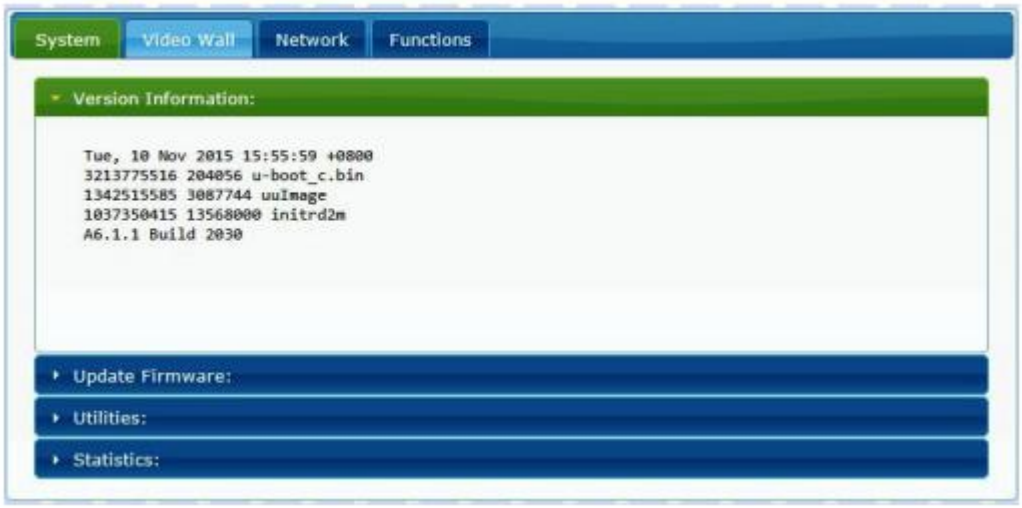
7. WEB user interface configuration

7.1 System

The relevant information of the connected extender and setting

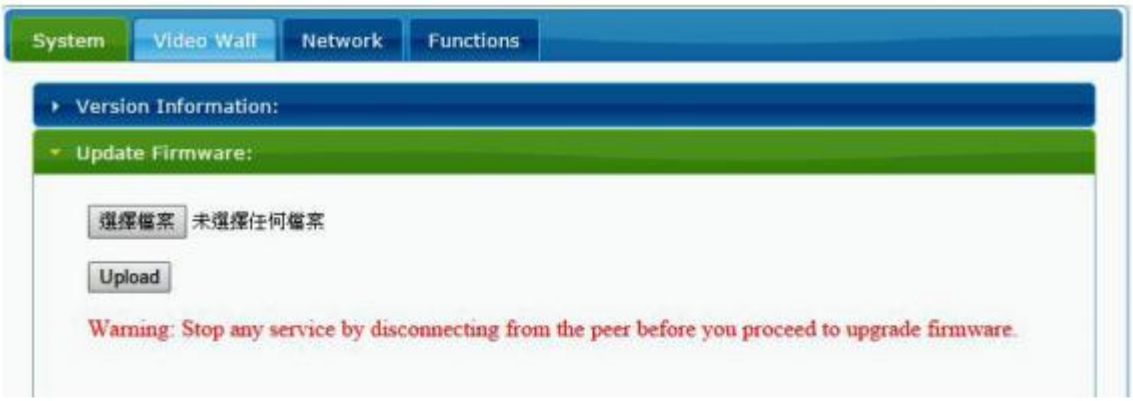
7.1.1[Version Information]

Indicating the firmware version and relevant information of the devices

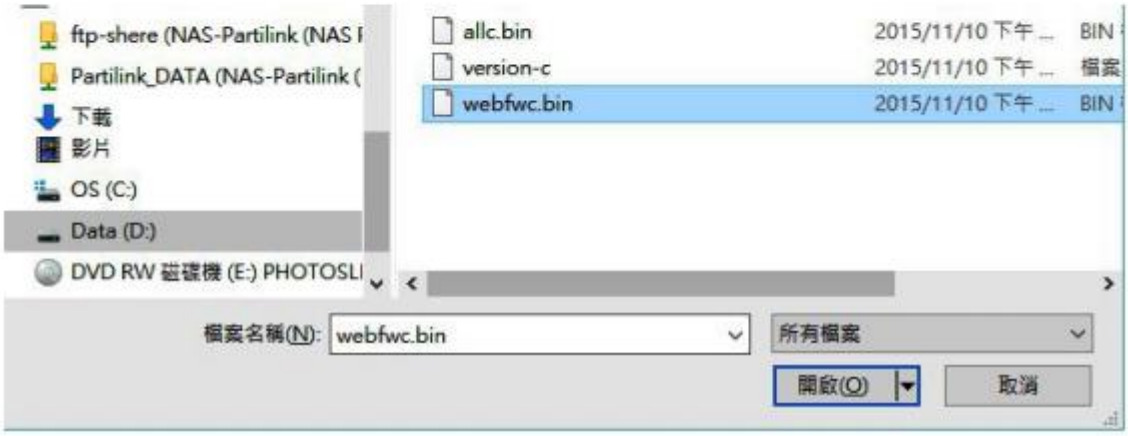


7.1.2 [Update Firmware]

To update the firmware of the connected extender,please click on the [select file] to select the firmware and click on[Upload] to upload the firmware and update accordingly.



- Transmitter Firmware Update: please select [webfw.bin] to update
- Receiver Firmware Update: please select [webfwc.bin] to update

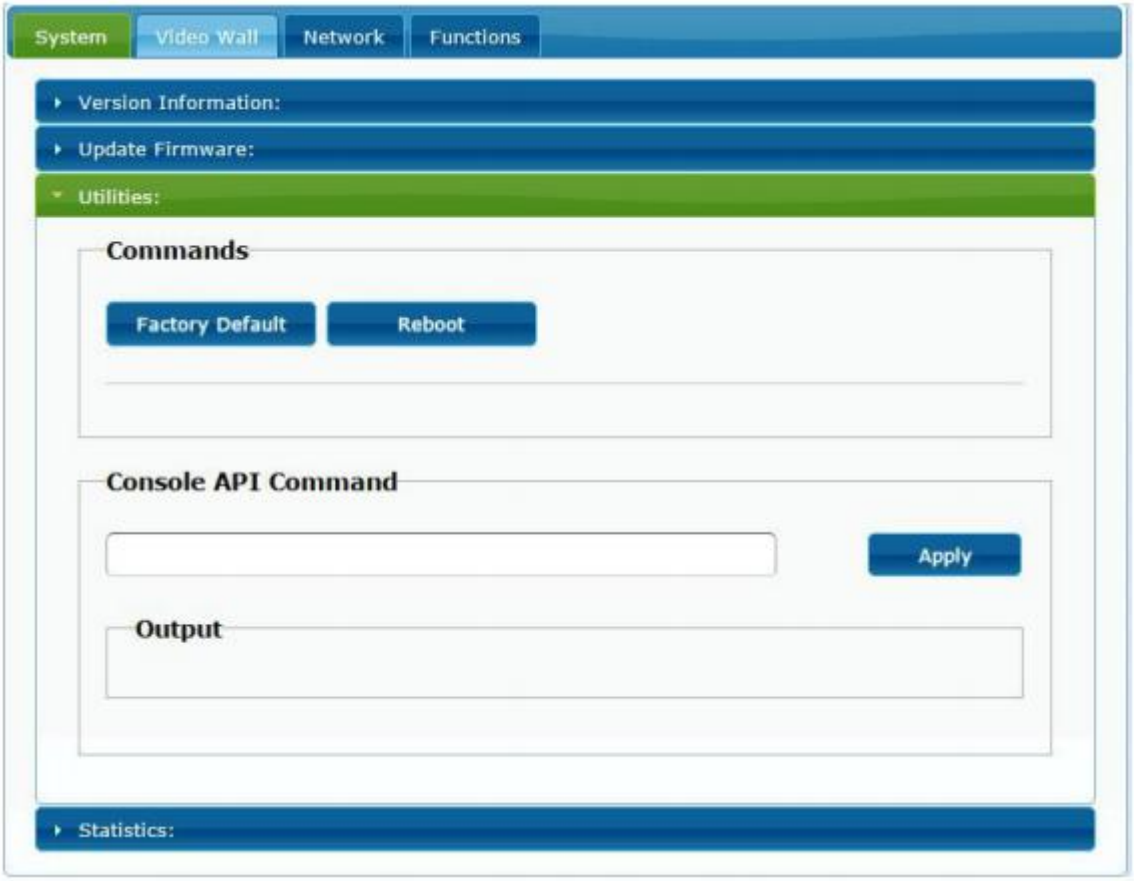


It takes time to update the firmware.during the process of update, the web user interface sows the status as below diagram.the extender system will reboot automatically after updating firmware.if it doesn't reboot automatically,please reboot to apply the new firmware manually.

7.1.3[Utilities]

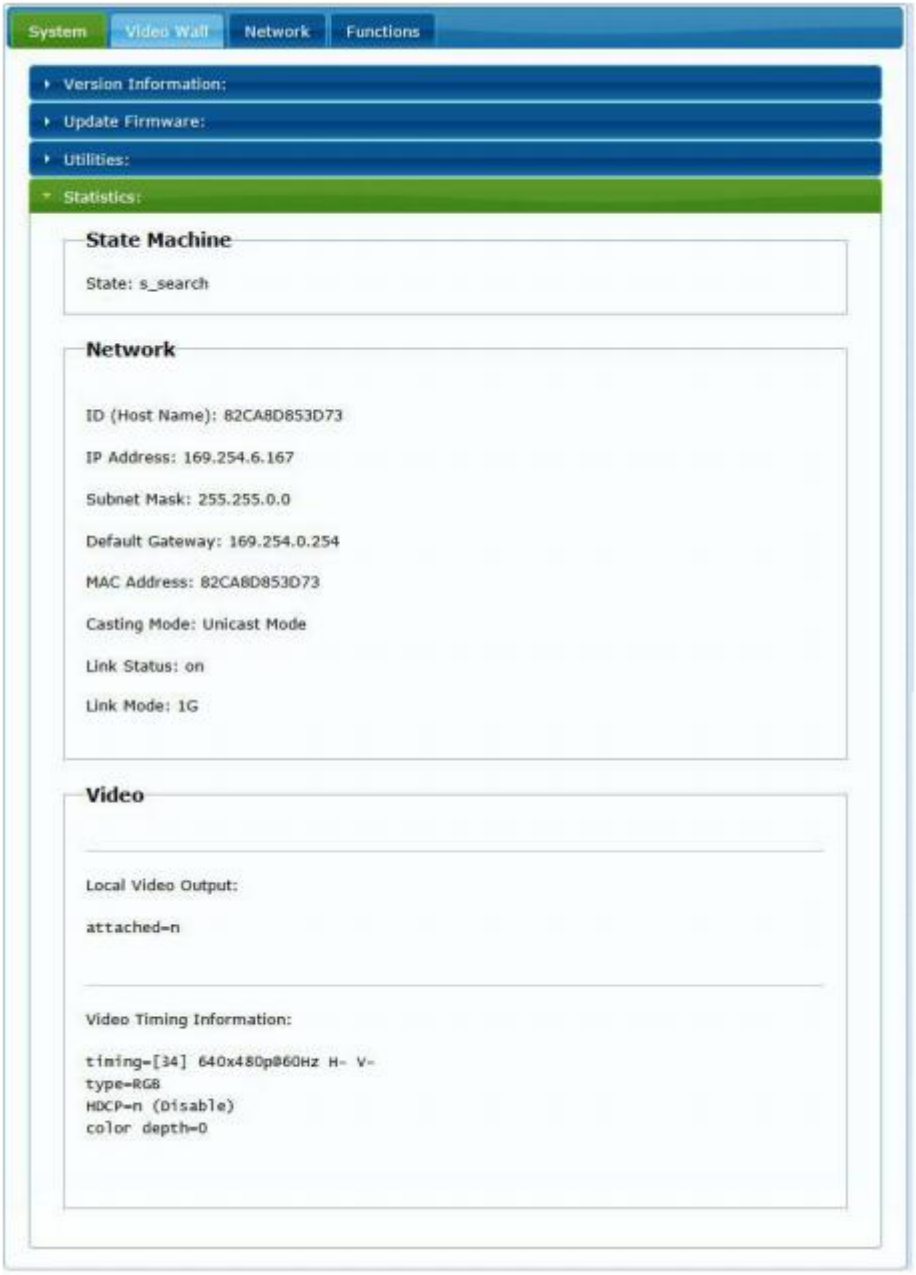
There are some functions

- **Factory Default:**Click on to return to the factory default when necessary
- **Reboot:**click on to reboot the extender systerm
- **Console API Command:**Input Linux command for advanced setting



7.1.4 [Statistics]

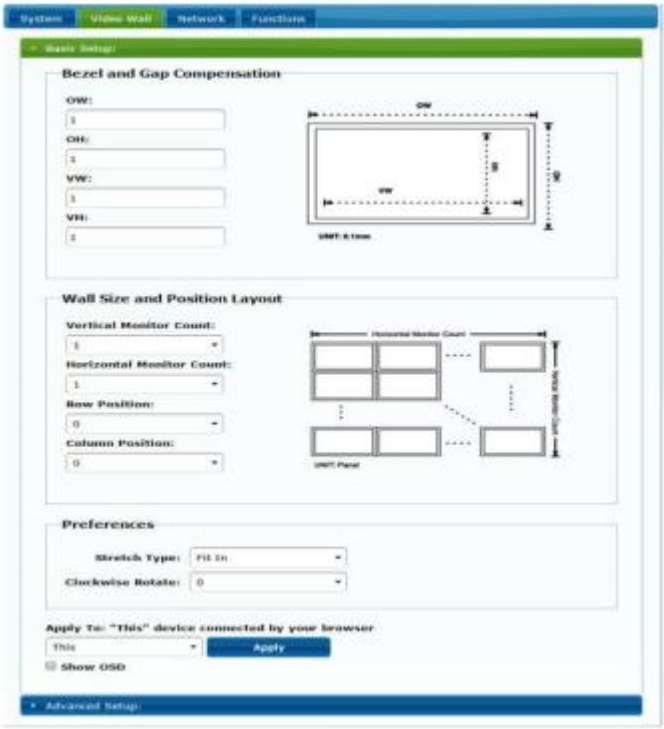
Indicating the extender linking and working status



7.2 Video wall

To set up the video wall application

7.2.1[Basic setup]



Bezel and gap Compensation:

Dimension of the screen(inside and outside width and height)

OW:outside width OH:outside height

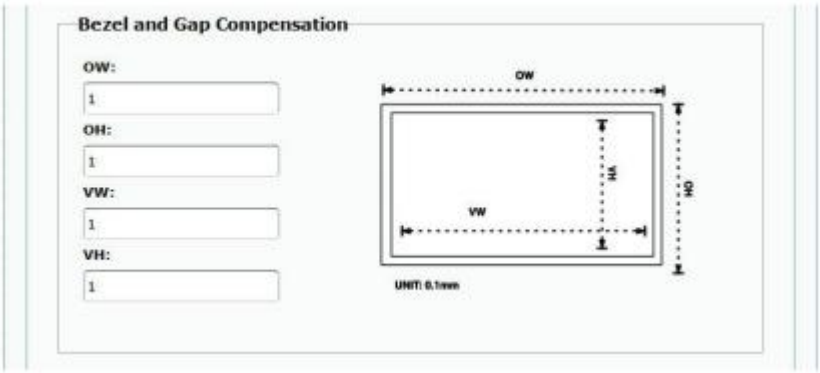
VW:viewable width VH:viewable height

Please NOTE:

1) The viewable width must be less than the outside width,and the viewable height must be less than the outside height.

2) If administrator doesn't need this,just set all values to 0.

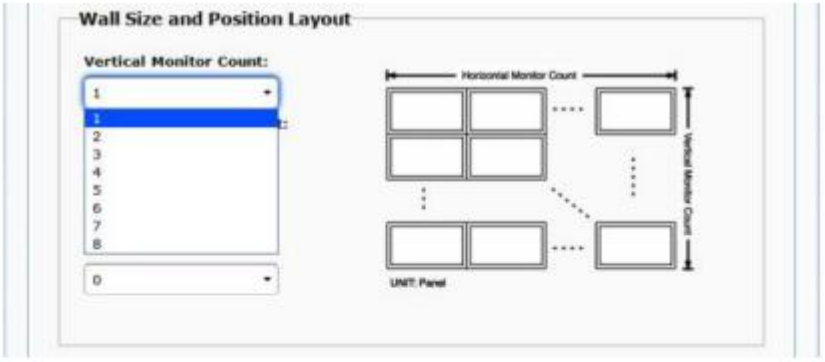
3) The unit is 0.1mm and the value MUST be integer.

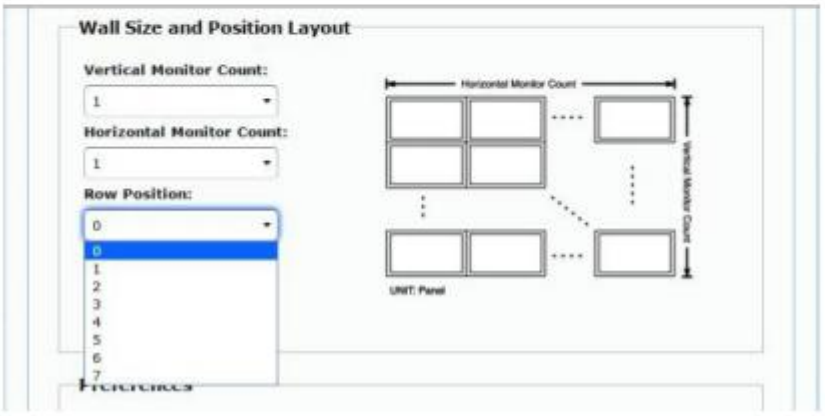


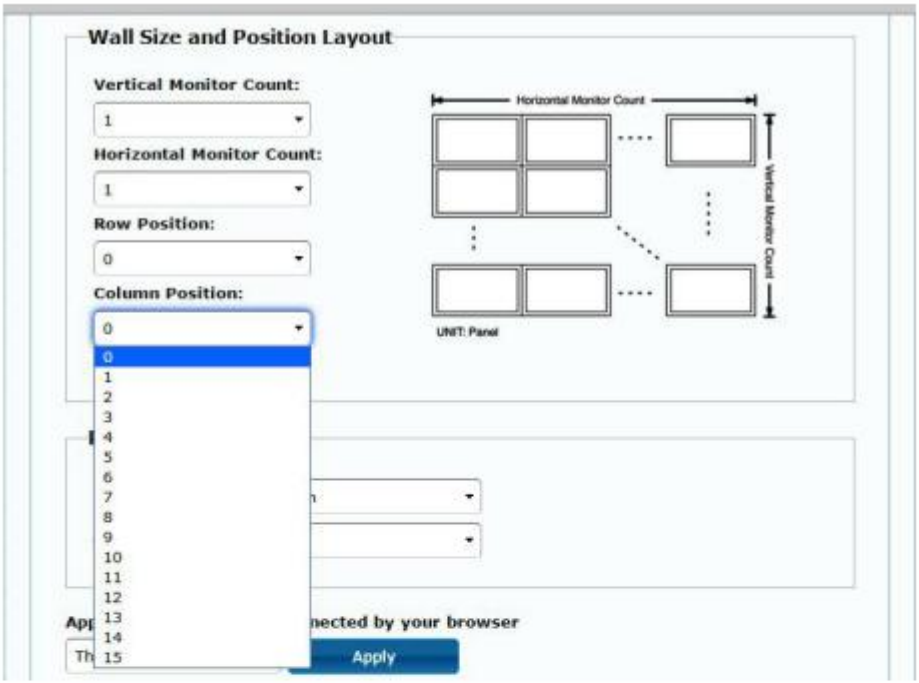
Wall Size and and Position Layout:

Select number of Vertical and/or horizontal monitors,row position and column position.Vertical monitor

1-8,horizontal monitor number 1~16







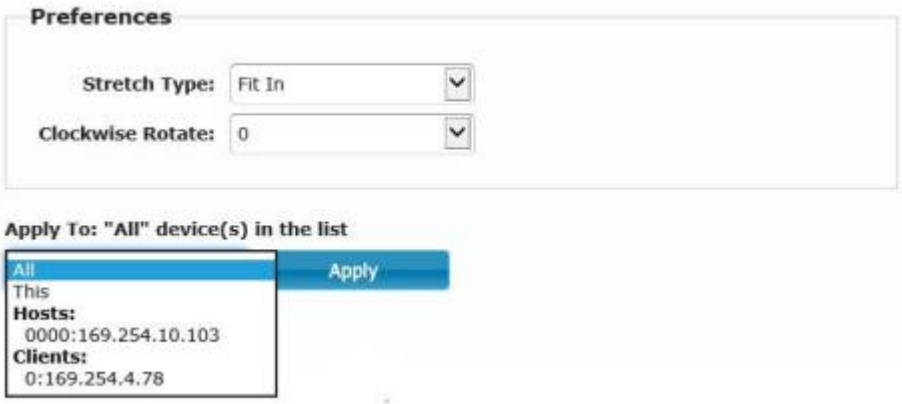
- **Preferences:** Select the video fit in the screen or stretch out and the rotate angle

- Apply to:

1) All :Configure all transmitter and receiver in the same group IP.

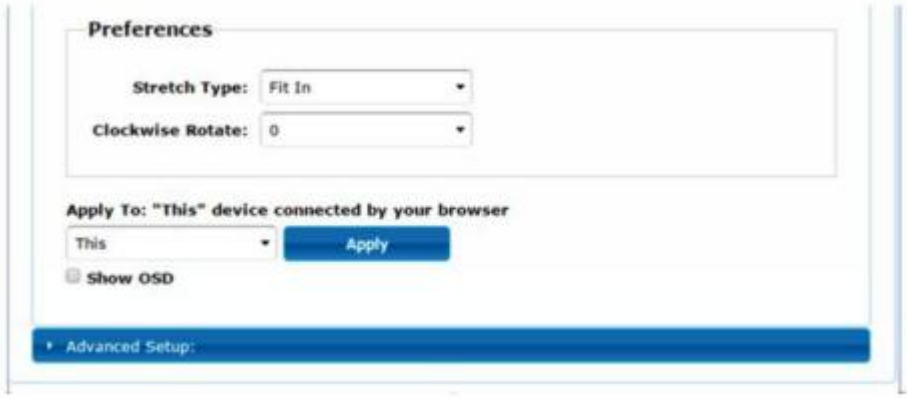
2) This(Local):the IP you input into address bar of web browser.

3) Hosts or Clients:select which transmitter or receiver you want to configure

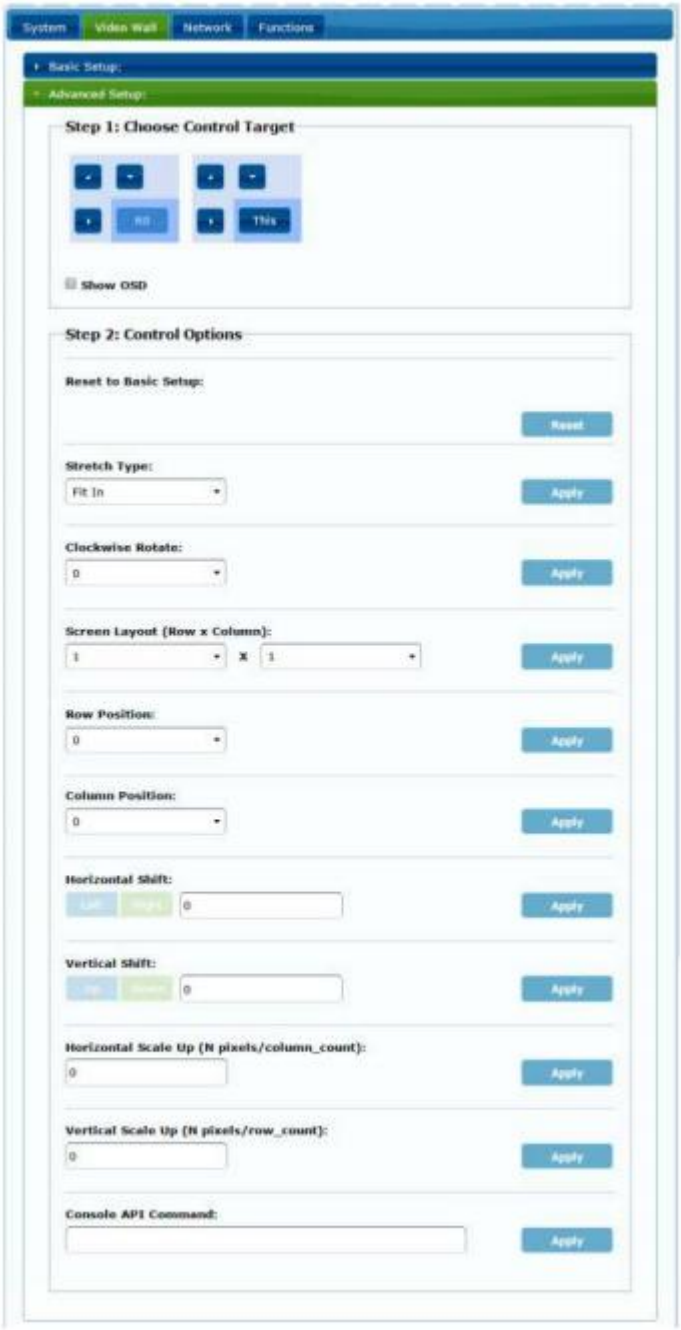


- Show OSD

Check this box to output each receiver's specific number to the connected monitor

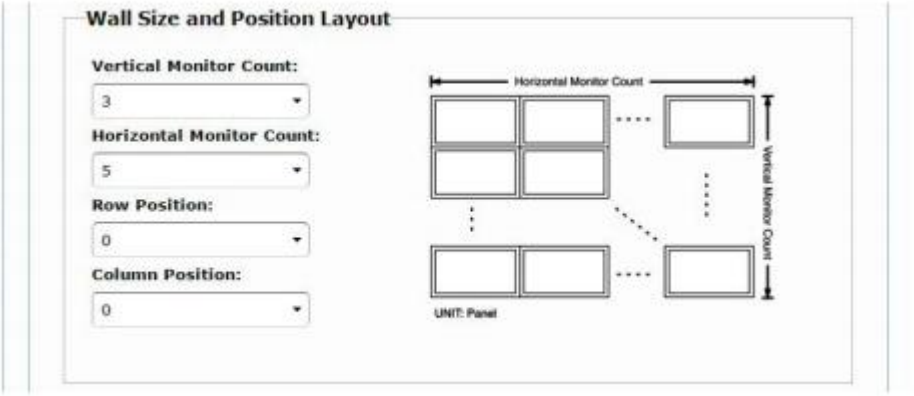


7.2.2[Advance setup]



Before enter “advanced setup”， Please complete the “Basic Setup”as follows:

Step1:In “Basic Setup”,select Vertical and Horizontal Monitor Count.For example example Vertical monitor Count=3,Horizontal Monitor Count=5



Sept2:In"Advanced Setup",choose the target of the video wall to control

If user make incorrect operations,press "Reset"in reset to basic setup function

Setup the video output to "Fit in "or "Stretch out"mode the screen

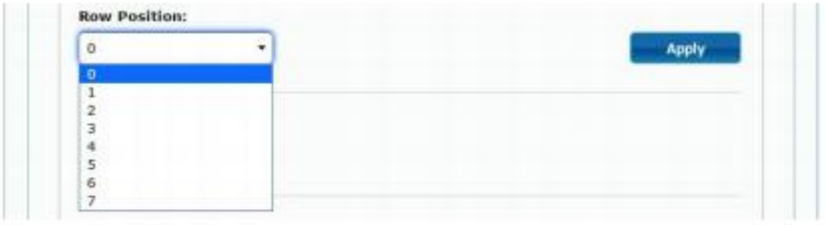
Setup the rotation angle of the video output

Setup the number of vertical and horizontal monitor based on the video wall layout.Vertical number 1-8 and

horizontal number 1-16.

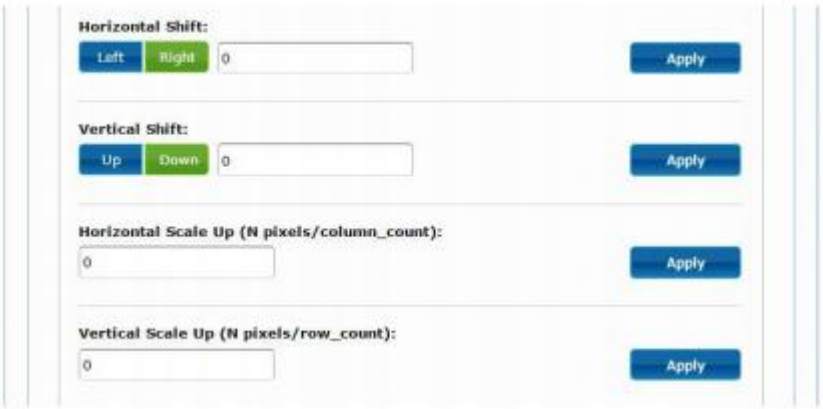
Setup the row position of monitor,number from the total number of vertical monitor.

Setup the column position of monitor,number from 0 to total number of vertical monitor.



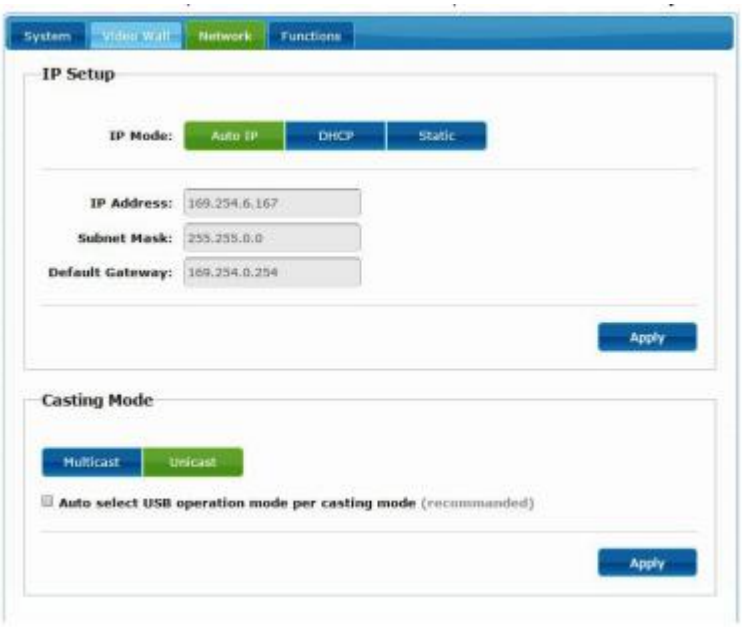
Setup the video position shift and video enlarge.

- **Horzontal shift:**Setup the video horizontal shift,left or right
- **Vertical Shift:s**etup the video vertical shift,up or Down
- **Horzontal Scale Up:**setup the video horizontal scale up
- **Vertical Shift Scale Up:**Setup the video vertical shift scale up.



- Consol API Command: Input Linux command to do advance setup.

7.3 Network:update the network setup of the extender system



7.3.1[IP Setup]

- Auto IP:use automatically extender assign IP system for example:169.254.xxx.xxx.

- DHCP:use the DHCP of the external device such as the IP sharer to assign IP.

- Static:use the static IP to assign manually.

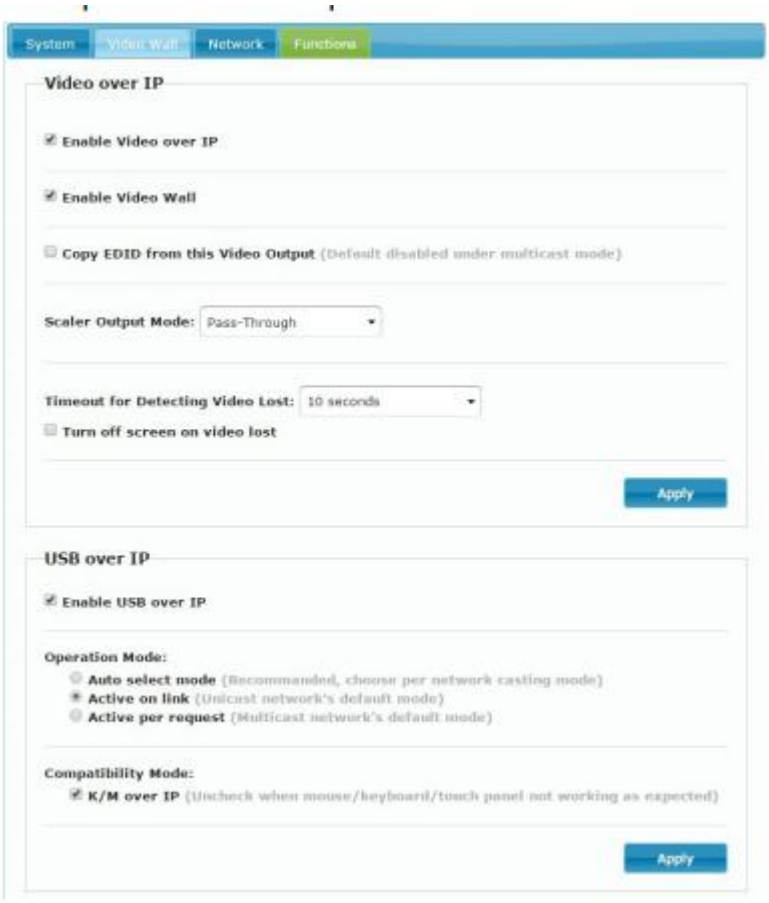
7.3.2[Casting Mode]

Select the broadcast mode of the extender application

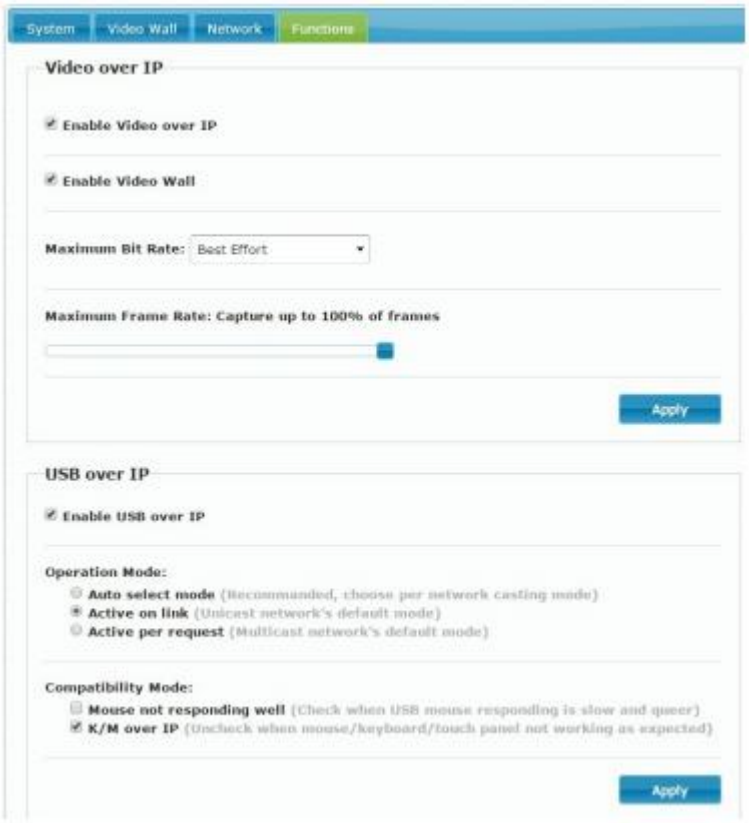
- Multicast:point to multiple point or multiple point to multiple points broadcast
- Unicast:point to point broadcast

7.4 Functions:

Setup the video output and USB extension mode for transmitter



Setup the video output and USB extension mode for receiver



7.4.1[Video over IP]:Setup the video output mode

- Enable video over IP:check to enable video extension over IP
- Enable Video Wall:check to enable the video extension for building up video wall
- Enable EDID Copy:this function is limited to copy one of the receivers
- Scaler output mode:select the required scalar output mode or select “customize”and input 8 Hex values for more video output resolution and refresh rate selection.

1) 80000004: HD 720p@ 60

2) 81000061:WXGA 1366x768@60

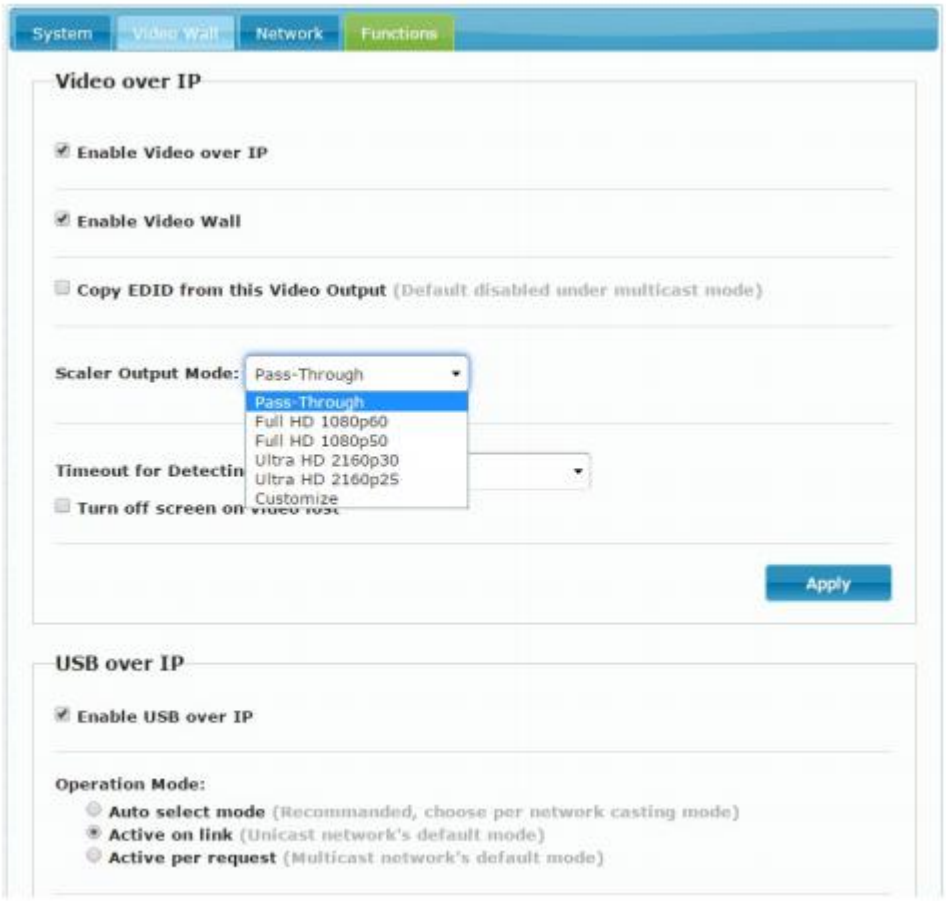
3) 81000040:WXGA+1440x900@60

4) 81000051:WUXGA+1920x1200@60

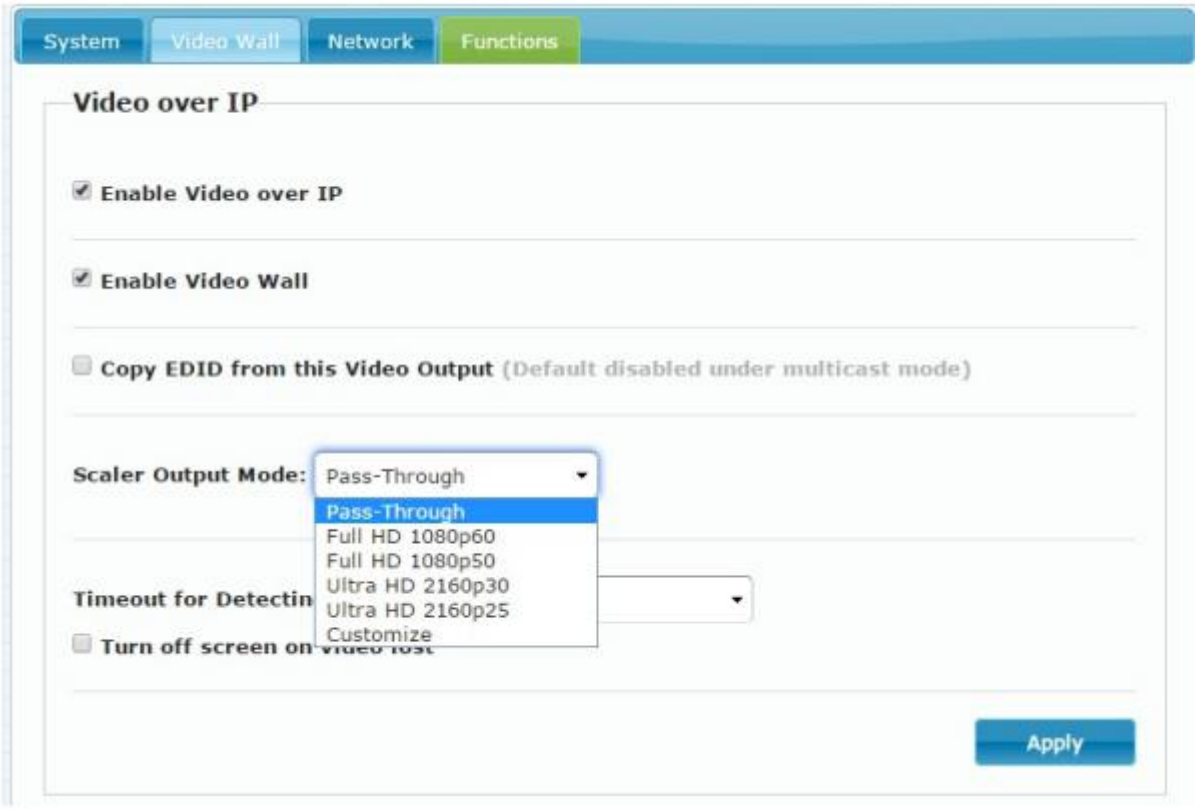
5) 8100003C:SXGA+1400x1050@60

- **Timeout for Detecting Video Lost:**setup the time of stop the video storage when detecting video lost transmit

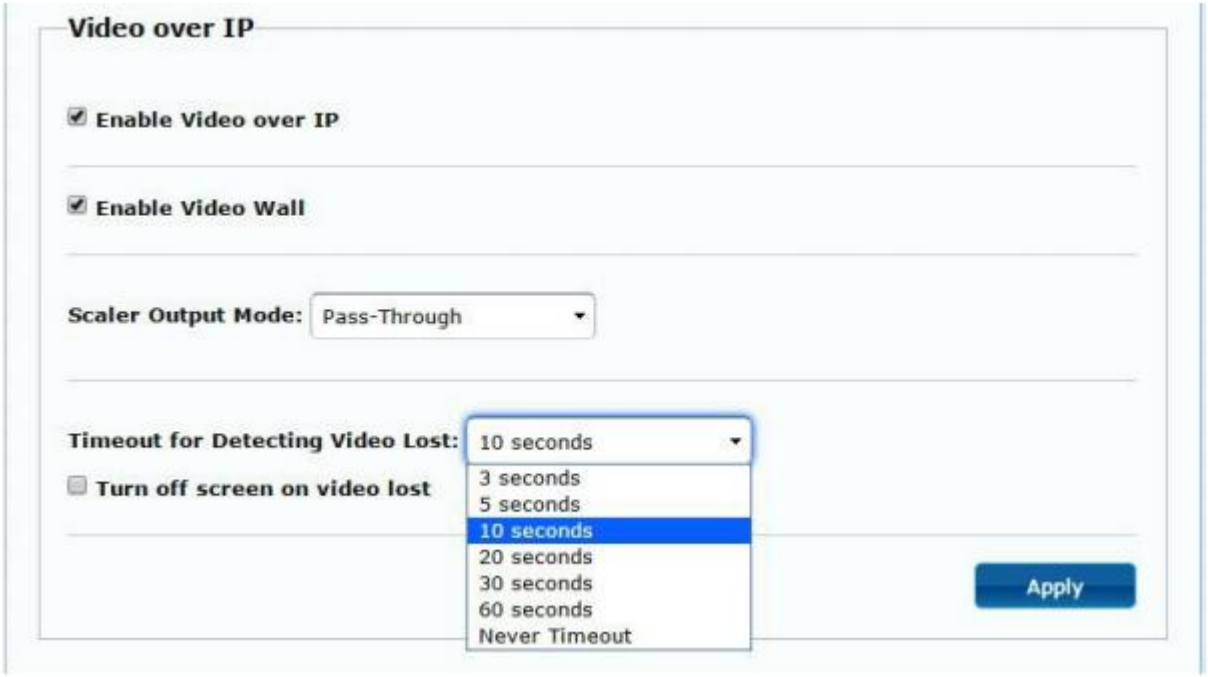
Customize Scalar output Mode for transmitter



- **Customize Scalar output Mode for receiver**

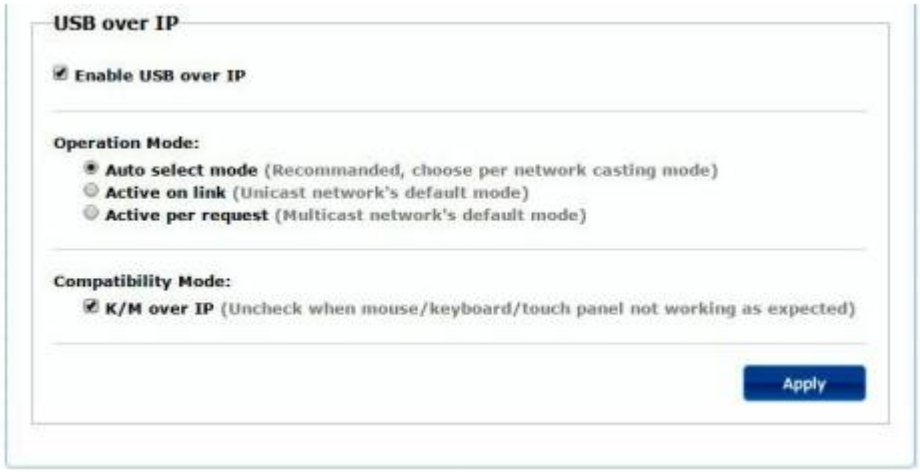


- Timeout for Detecting Video Lost



7.4.2[USB over IP]:Setup the USB extension mode

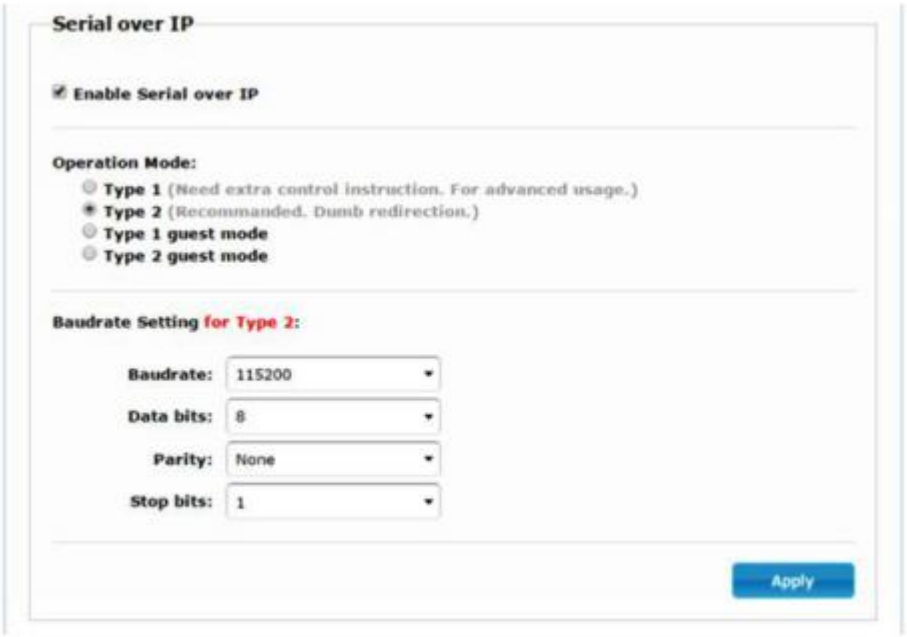
- **Enable USB over IP:**Check enable USB extension mode over IP
- **Operation Mode:**including"auto select mode", "active on line" and "active per request"modes for option
- **Compatibility Mode:**check to enable USB keyboard,USB mouse transmission mode.



7.4.3[serial over IP]:set up the serial extension mode

- Select Type 2 as operation mode
- Set up the baud rate for type 2.

Serial over IP



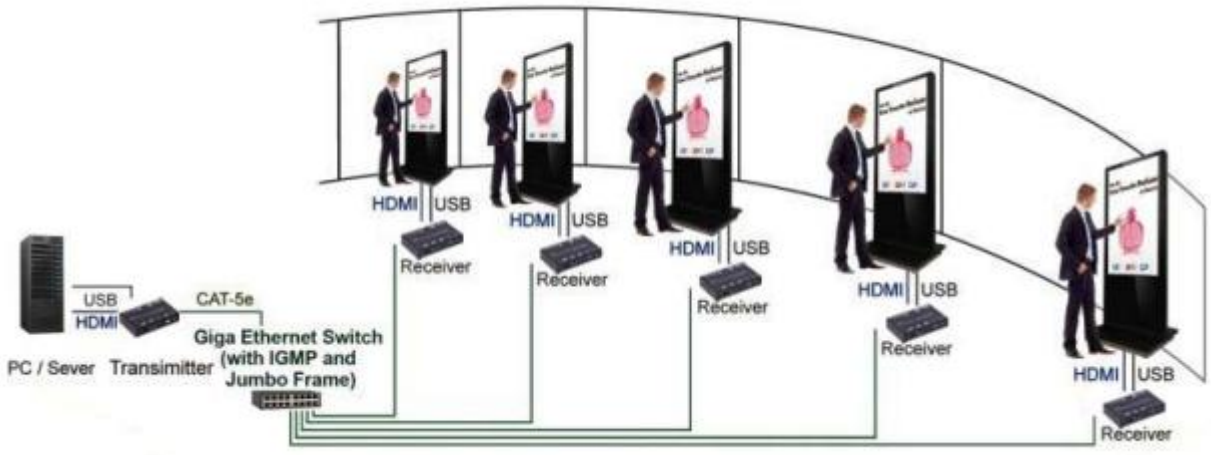
Broadcast mode setting

8. Broadcast configuration setting

There are some examples to show the setup for unicast, multicast, matrix and video wall.broadcast setting including unicast and multicast

8.1 Multicast:

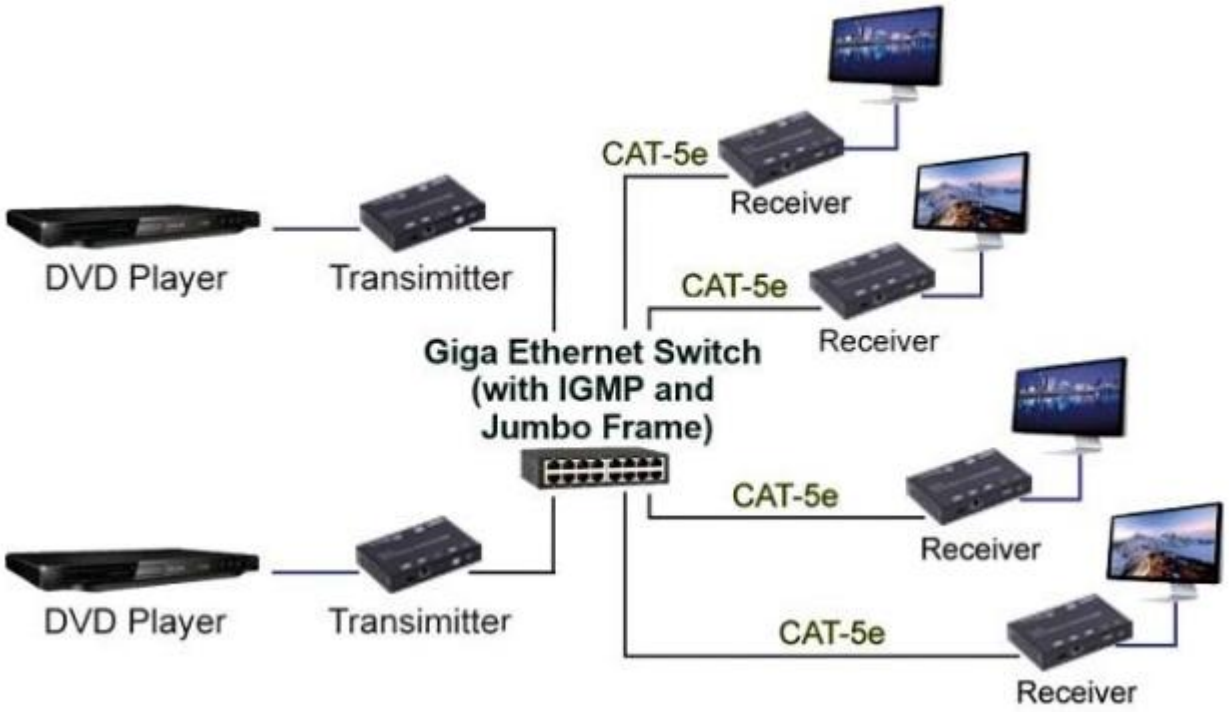
To enable the USB interactive devices controlled by tums,please check “Auto select USB operation mode per casting mode”



8.2 Unicast:

8.3 Matrix:

Install multiple transmitter and setting ID of these transmitters individually, edit the group of transmitters and receivers.the correspondent receivers will output the video from the transmitter belonged to the same group ID.



8.4 Video wall:

A 3x5(row x column) video wall setting example here for reference.In multicast and matrix application mode, access the web user interface of correspondent receiver to setup.

8.4.1(Basic setup)

Please refer to “section 6.2.1 Basic setup” and follow the steps as below.

Step 1:set up the vertical monitor count to “3”

Step2:set up the horizontal monitor count to “5”

Step3:set up the row position of the monitor to “0”

Step4:set up the column of the monitor to 0

Step5:Apply the setting to extender system

Administrator can complete each extender position setting after follow 5 steps in above.and then follow the above steps to set the other extenders to the rest of row and column positions from 0x1,0x2,0x3 to 3x5

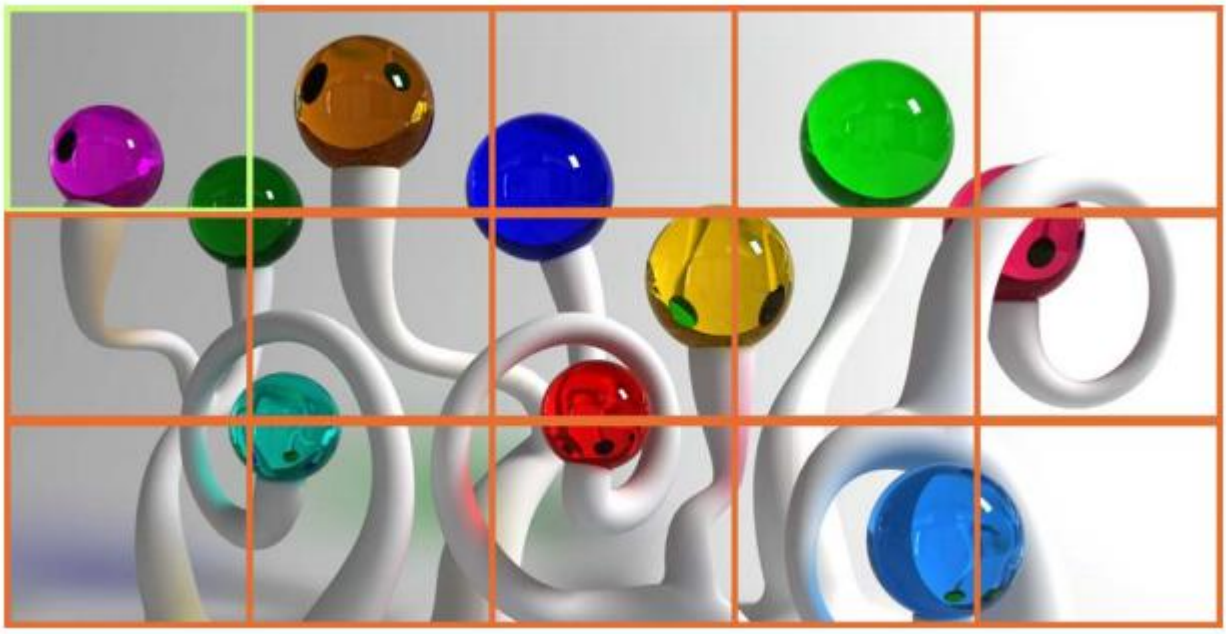
After the basic setup of the video wall,please access the advanced setup to proceed other detailed setting of the video output.

8.4.2 Advanced setup

Select the monitor you want to control.the one select will show “This” in green in video wall matrix layout. Take below diagram for example, the monitor we select to control here is the monitor in the upper left corner.

Example for the video wall control

Here's diagram of the actual video wall layout showing the selected monitor in the upper left corner with green outline.

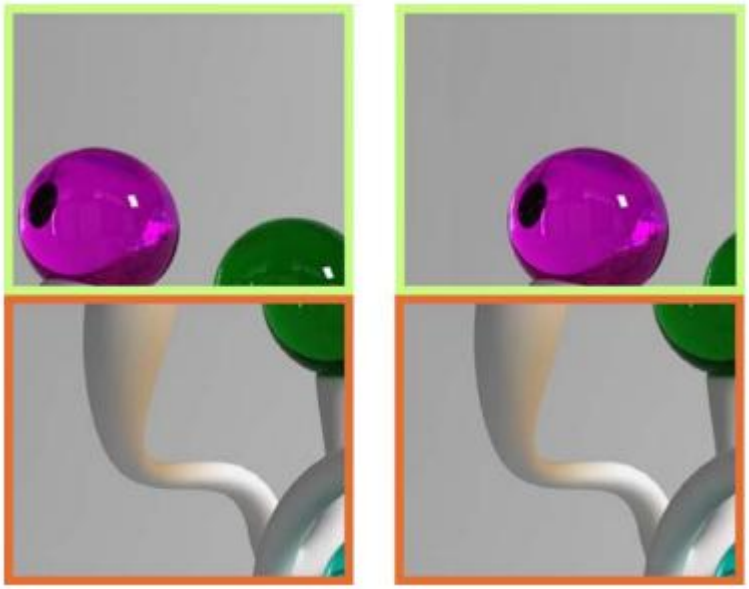


Returned to the previous setup of video wall quickly when incorrect operation was input

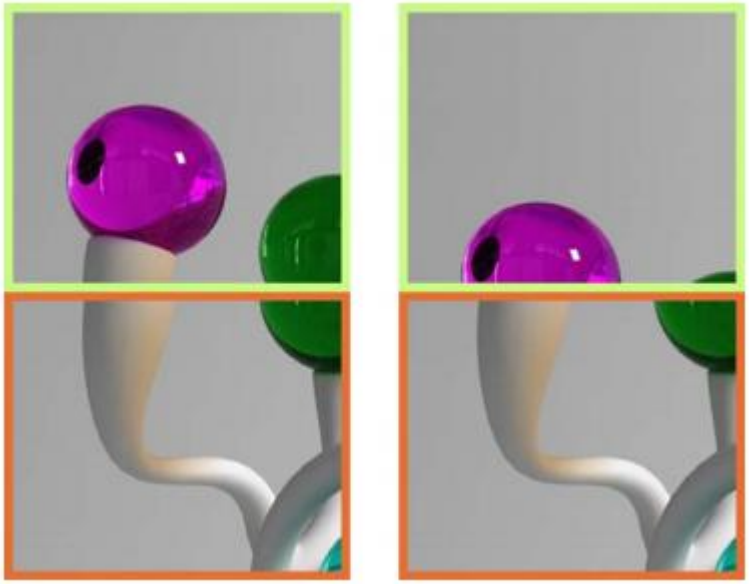
Reset

Adjust the horizontal position of the video output, "left/Right shift",the selected monitor to adjust is shown with

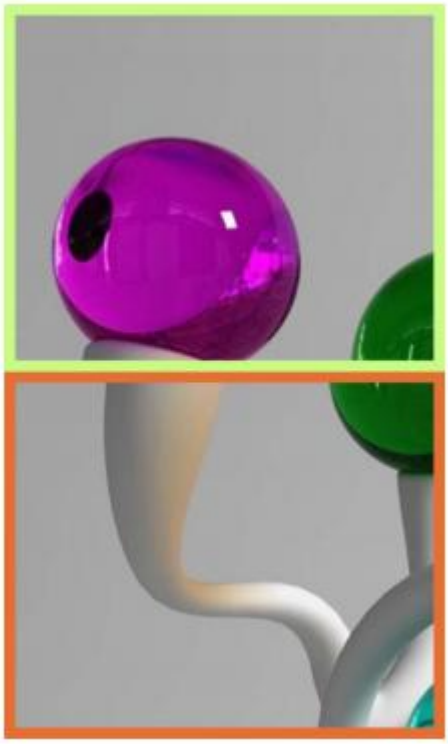
green outline.



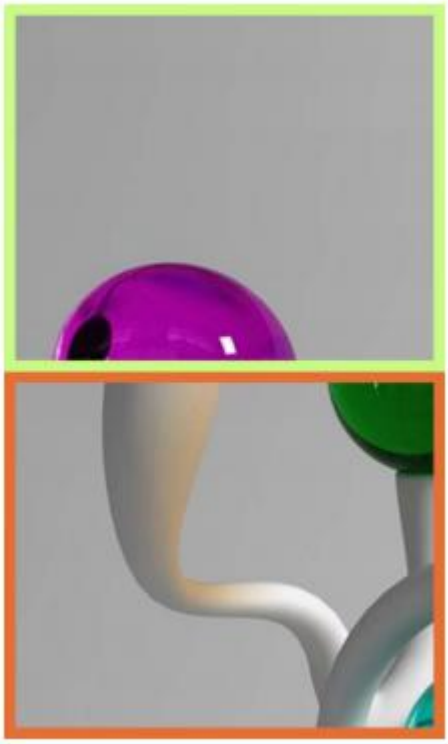
Adjust the vertical position of the video output,”Up/Down shift”,the selected monitor to adjust is shown with green outline.



Horizontal scale up:to scale up the video output horizontally as the monitor shown with green outline



Vertical Scale Up: to scale up the video output vertically as the monitor shown with green outline



Attention: 1) Insert/Extract cable gently.

2) Please don't insert into or pull out HDMI Cable when power on. please connect Cable

MAINTENANCE

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

PRODUCT SERVICE

1) **Damage requiring service:** The unit should be serviced by qualified service personnel if:

(a)The DC power supply cord or AC adaptor has been damaged;

(b)Objects or liquids have gotten into the unit;

(c)The unit has been exposed to rain;

(d)The unit does not operate normally or exhibits a marked change in performance;

(e)The unit has been dropped or the cabinet damaged.

2) **Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.

3) **Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.

4) **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor") will , for the length of the period indicated as below,

(Parts(2)Year ,Labor(90) Days) which starts with the date of original purchase ("Limited Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor.

During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers

product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

1) This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor,or failures which result from accidents,misuse,abuse,neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributable to acts of God.

2) THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE".THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.