AV over IP with Video Wall and Multi-Viewer Processing

User Manual

VER:1.1

Thank you for purchasing this product

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

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

This product is a matrix-based AV over IP solution for distribution of multiple HD contents to multiple HD display devices over a standard 1G network switcher with instant switching, video wall and multi-viewer functionality that makes it's the best solution for commercial AV installations. It offers configurable high quality, low-bandwidth H.264 compression video supporting up to 1920x1080@60fps. Instead of using expensive traditional HDMI matrix switching, you can easily and flexibly to manage all your HDMI sources and display devices using Web GUI, mobile application or third-party control system.

2. Features

- ✧ HDMI 1.4b, HDCP 1.4 compliant
- ✧ Video resolution up to 1080P60Hz(4:4:4)
- ✧ Standard H.264 Encoding/Decoding, H.264 IP Camera supported
- ✧ HDMI, audio and RS-232 over IP
- ✧ Unicast, Multicast, Matrix, Video Wall and Multi-viewer (up to 5 windows)
- ✧ Supports 1G standard IP switcher/router/hub
- ✧ Web-based GUI controller (built-in encoder box)
- ✧ Standard POE supported (PD device)
- ✧ Compact design for an easy and flexible installation to rack

3. Package Contents

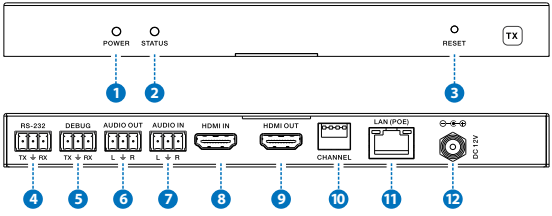
- ✧ 1x Video Over IP Encoder
- ✧ 1x Video Over IP Decoder
- ✧ 2x 12V/1A Power Adaptor
- ✧ 1 x User Manual

4. Specifications

Technical	
HDMI Compliance	HDMI 1.4b
HDCP Compliance	HDCP 1.4
Video Bandwidth	4.95 Gbps
Video Resolutions	640x480p@60Hz ~ 1920x1080p@60Hz
Output Video Type	H.264/MPEG-4 AVC
Encoding Data Rate	Up to 30Mbps, configurable
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2
Color Depth	8-bit
HDMI Audio Formats	LPCM 2CH, 48KHz
L/R Audio Formats	Analog Stereo 2CH
ESD Protection	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)
Connections	
Encoder	Inputs: 1x HDMI Type A [19-pin female] 1x L/R Audio In [3.81mm Phoenix connector] 1x RS-232 [3.81mm Phoenix connector] Outputs: 1x LAN [RJ45 connector] 1x HDMI Type A [19-pin female] 1x L/R Audio Out [3.81mm Phoenix connector] 1x Debug [3.81mm Phoenix connector]
Decoder	Inputs: 1x LAN [RJ45 connector] Outputs: 1x HDMI Type A [19-pin female] 1x L/R Audio Out [3.81mm Phoenix connector] 1x RS-232 [3.81mm Phoenix connector] 1x Debug [3.81mm Phoenix connector]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	200mm [W] x 103mm [D] x 20mm [H]
Weight	Encoder: 530g Decoder: 526g
Power Supply	Input: AC100 - 240V 50/60Hz Output: DC 12V/1A (US/EU standards, CE/FCC/UL certified)
Power Consumption	Encoder: 5.7W (Max) Decoder: 5.6W (Max)
Operation Temperature	32 - 104°F / 0 - 40°C
Storage temperature	-4 - 140°F / -20 - 60°C
Relative Humidity	20 - 90% RH (no condensation)

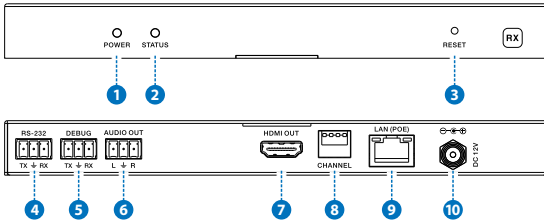
5. Operation Controls and Functions

5.1 Encoder Panel



Items	Name	Description
1	POWER	System power status LED
2	STATUS	System working status LED One second period flickering means product working normally. Always on means system worked abnormally, this time you need to reset product by pressing reset button on the front panel or plugging power supply on the rear panel (you need plug CAT cable if product is using POE for power supply).
3	RESET	System reset button. Short pressing (<5 seconds) will reset product. Long pressing (over 5 seconds) will let product enter firmware upgrade mode.
4	RS-232	Connect third-party control system to control this product utilizing our API commands or control other devices be connected to our products (including encoders and decoders) via RS-232 port (this is called RS-232 pass-through).
5	DEBUG	System debug port
6	AUDIO OUT	Analog stereo audio output
7	AUDIO IN	Analog stereo audio input
8	HDMI IN	HDMI input port, connect to HDMI source device
9	HDMI OUT	HDMI loop out (default video only no audio, you can enable audio from Web GUI or API)
10	CHANNEL	Reserved use
11	LAN(POE)	Connects with Hub or router for sending data to decoder.
12	DC 12V	Connects with 12V/1A power adapter supplied in the package or doesn't need this if an IP switcher/router/hub with POE feature be connected.

5.2 Decoder Panel



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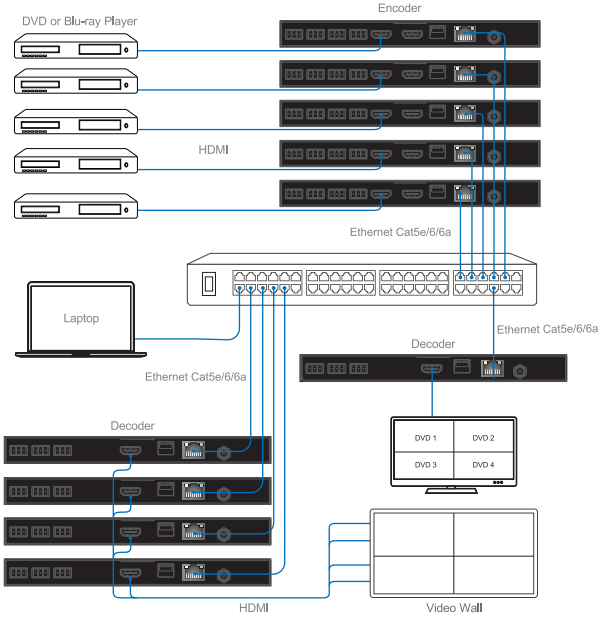
5	DEBUG	System debug port
6	AUDIO OUT	Analog stereo audio output
7	HDMI OUT	HDMI output port, connect to HDMI display device
8	CHANNEL	Reserved use
9	LAN(POE)	Connects with Hub or router for receiving data to encoder.
10	DC 12V	Connects with 12V/1A power adapter supplied in the package or doesn't need this if an IP switcher/router/hub with POE feature be connected.

6. Connection Diagram



7. Installation & Setup

7.1 Basic Instructions

The encoders and decoders can form a complex AV over IP system that supports Web-based GUI controlling and management. Due to Web-based GUI is built-in encoder box, so first thing you should choose one of encoder boxes as the controller of the whole system (you can choose any one of encoders in your system but it would be better if you know where it and what's source be connects to this encoder). Then you can login this encoder Web Page to configure all encoders and decoders in your system. Of course this encoder box still has normal encoder box all functionality besides controller.

There are the basic steps that must be taken to configure the system for first use. See below for full information on completing each step.

(1) Choose an encoder box as "Controller", you can connect it to your laptop through CAT5e/6 cable directly or through a network switcher likes below:

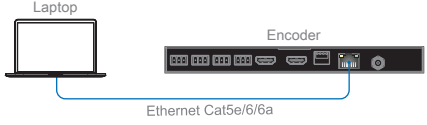


Figure 1: Laptop connects to Controller directly

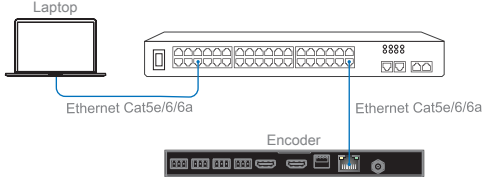
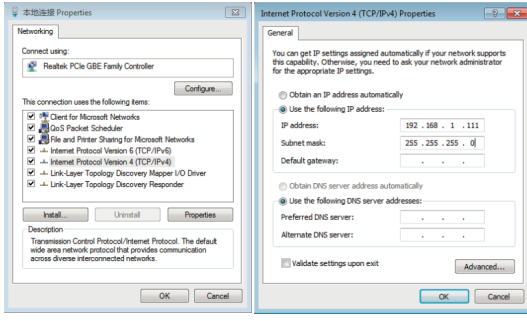


Figure 2: Laptop and Controller both connect to switcher

Note: If your connection likes above Figure 2 through a switcher, please only connect one encoder (also call "Controller") to switcher at first configuration. Because:
All encoders have the same default IP address: 192.168.1.28.
All decoders have the same default IP address: 192.168.1.38.

You should change Controller IP address firstly, and then change the rest all encoders and decoders IP address one by one.

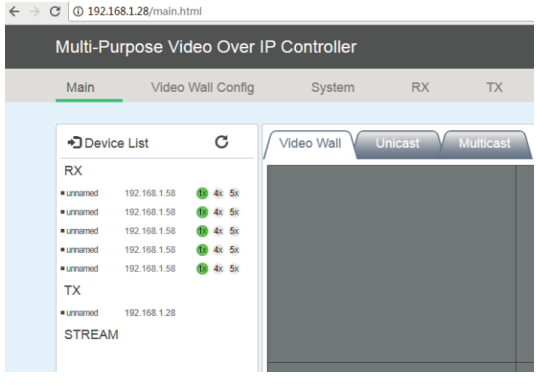
(2) Set your laptop IP setting to the same domain with Controller so that you can login Controller's Web page, for instance set laptop IP address to 192.168.1.111



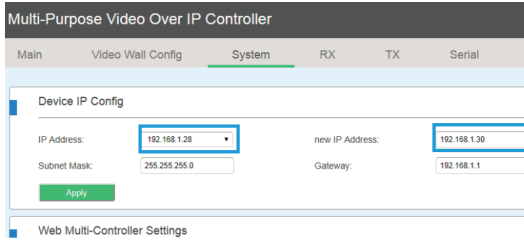
(3) Login Controller Web page at your laptop (192.168.1.28) using Google Chrome browser.
Note: Current product firmware only supports Google Chrome browser.
Default don't need password to login.
You can see below Web page, please click searching devices icon(the right of Device List) to search all encoders and decoders in the network.

Device List

You can get all devices list as below.

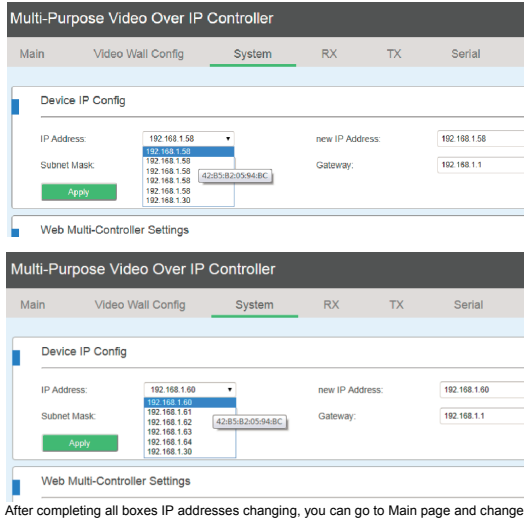


Please go to System page to set Controller IP address to 192.168.1.30 firstly (for instance)



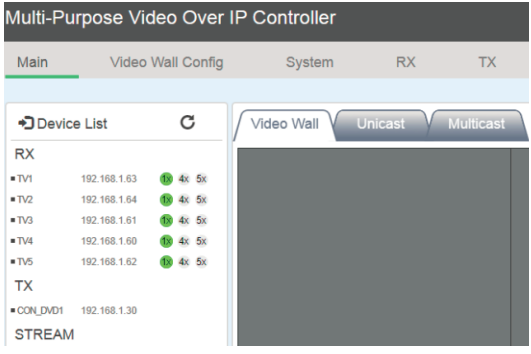
Then you can also change the rest all encoders and decoders IP address.

Note: During changing encoders and decoders IP address, you can see their MAC address on the Web page (as below picture). Decoder will also display own IP address and firmware version information on the corresponding display. So you would easily identify which decoder you're changing. But for encoder, you have to identify each box according to its MAC address (label on the housing) or you can add one encoder into system every time so that you can know which encoder you're changing.

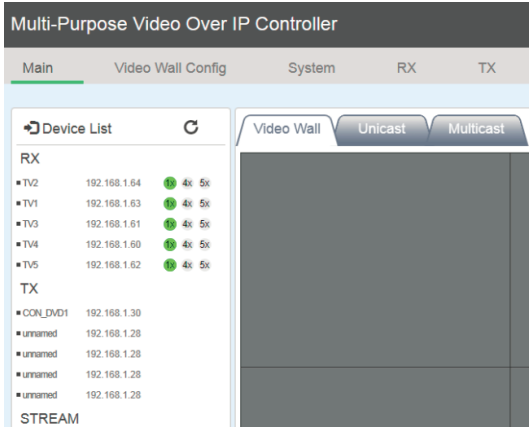


After completing all boxes IP addresses changing, you can go to Main page and change

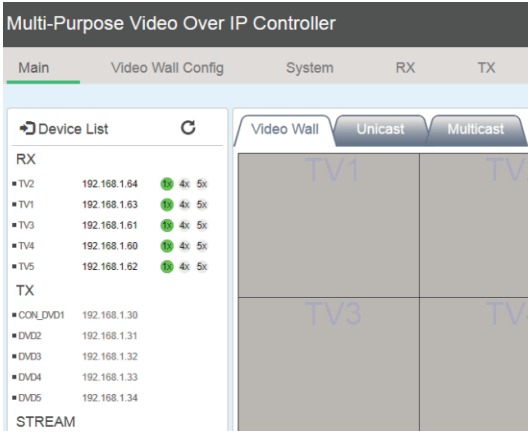
each box name like below (the Controller name be changed to “CON_DVD1”)



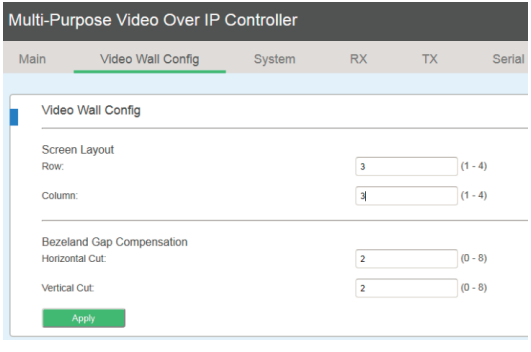
(4) Now you can put other encoders into system, and click “searching devices” icon:



Please change every one’s IP address and name like above steps:

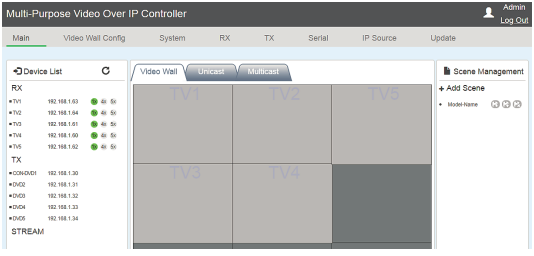


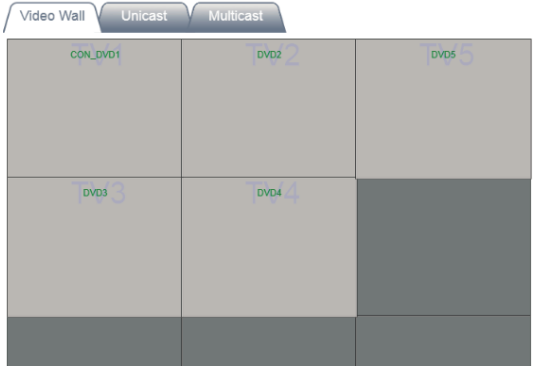
(5) Please set video wall parameters according to your system setup. For instance set to 3x3.



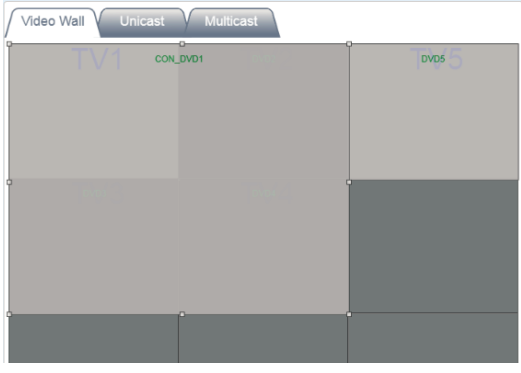
Go to Main page, you can see below 3x3 video wall layout, and you should drag each decoder (put your cursor on the RX's IP address position) to each window position firstly. Then you also can drag each encoder to the RX window you want.

Notes: You can set the Row and Column values of video wall to another values or keep them to the same values then click Apply will clear video wall configuration settings.

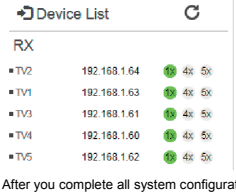




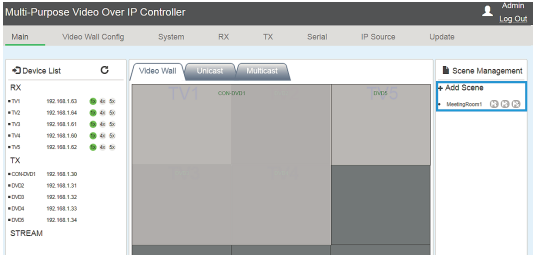
You can drag one video source cross to 4 RX windows (max up to 4x4 16 RX windows) to create a video wall like below.



You also can set multi-view mode by clicking 4x or 5x icon for each decoder box:

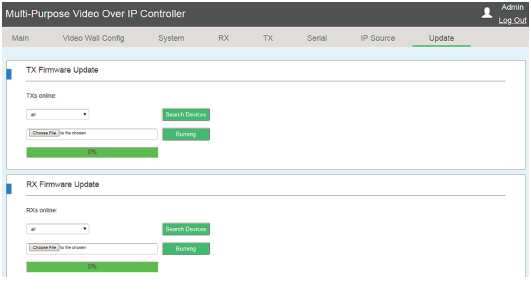


(6) After you complete all system configurations, current settings would be saved into current Controller box, it will be run automatically at next system power up. Of course you can also save current configurations to a scene and take a name you want by clicking “Add Scene” icon. You can recall different scenes to reload different system configurations according to your applications.



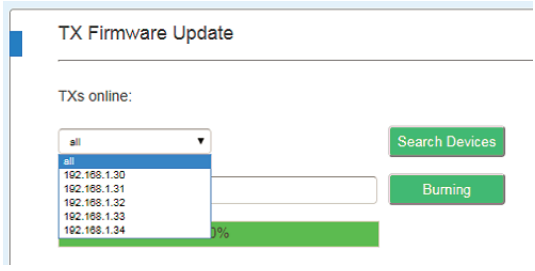
7.2 Firmware Update

Please click Update page of below Controller's Web to update TX and RX firmware.



You can update all encoders or decoders at the same time or only update one box you want.

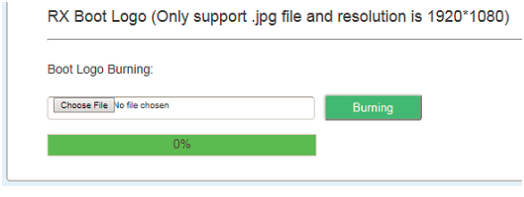
Notes: Please click Search Devices firstly, then choose firmware file. Click Burning after file transmission completed.



7.3 RX Boot Logo

RX Boot Logo picture can be changed and downloaded through Web Update page.
You can choose any one of pictures as RX boot and no signal standby logo picture.

Notes: Picture must be .jpg format file with 1920*1080 resolutions.



7.4 How to be controlled by Third-party controller

Please contact supplier to provide API documents.