PB9000 4K Over IP

AV Matrix/VideoWall/IP KVM

User Guide

WWW.AAVARA.COM

Rev 2.0.5

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Information in this document is subject to change without notice.

I.**PB9000 Hardware Installation**

1. Power on Layer 2/3 Manged/Smart Gigabit Switch and enable **IGMP Snooping v2** and **Jumbo Frame (8Kb at least)** function.
2. Be sure the IGMP and Jumbo Frame setting have been saved before reboot Ethernet switch.
3. Connect all Senders and Receivers to Gigabit Switch by Cat5e/6 cables, and connect to video source and TV/Display with HDMI cables.
4. [optional] Connect IR emitter cables & IR Receiver cables to Sender/Receiver's IR Emitter/Receiver Jack. IR emitter cable to IR emitter jack, IR receiver cable to IR receiver jack. And, point IR emitter head of IR emitter cable to device IR receiver window, IR receiver head of IR receiver cable to IR remote location and keep clear line of sight in between.
5. [optional] Connect RS232 cables between PC/controller to Senders, TV/Displays to Receivers.
6. [optional] Connect USB cables between PC/server to Senders, and plug USB Keyboard/Mouse or other USB devices to Receiver's USB port.
7. Plug-in DC power adapter to all Senders and Receivers. Units power on.
   If PoE switch or PoE injector connected, then no need to plug-in DC power adapter.
8. Power on all Video Sources and start playing video.

II.**Ethernet Switch Setting**

1. Please select Layer 2/3 managed switch to work with Aavara 4K Over IP.
2. Enable IGMPSnooping (Version 2), and all sender/receivers are in same VLAN group.
3. Enable JumobFrame (at least 8Kb) on all ethernet switches.
4. Enable IGMP Querier on major switch and disable Fast Leave on all switches, If multiple ethernet switches installed.
   If be sure network bandwidth between switches enough for video network, can use Fiber connection or set **802.3ad Port Trunking/Link Aggregation** to increase bandwidth between switches.
5. If Ethernet switch is also use for other service like PC network or Voice Over IP:
   - Set different VLAN groups to divide different network service.
   - For RJ45 ports or Fiber ports used for other services, set **IGMP Blocked** (HP switch) or **Multicast Forward Forbidden** (Cisco switch), to avoid video streaming data affect.
6. Be sure save above setting before reboot ethernet switch.

III.**Integrate with 3rd Party Controller**

PB9000 support following major 3rd party controllers integration:

- Control 4, AMX, Crestron, RTI, Elan g!, QSC, Neets and more.

Aavara provide controller driver allow 3rd part controller can control Aavara HDMI Over IP sender and receiver by IP command directly.

Please check Aavara representative or your distributor for 3rd party driver and user instruction.

IV. **User Scenario - Use IR Remote to Switch Video Channel**

Use IR remote control to control PB9000-RE receiver to switch video channel, so user can control video channel switching in front of TV/Display by easy IR remote control. PB9000-RE receiver is come with a 16 channel IR remote. User can just use PB9000 IR remote or use a 3rd party universal IR remote to learn both PB9000 IR remote IR code and video source IR remote code for controlling both devices by one remote.

1. To config Sender Video Channel Dip switch, at front bezel, to a Unique video channel configuration as following table. Recommend to start from video channel 1 then follow the sequence on every sender. Reboot sender for new video channel setting take effect.
2. [optional] Plug-in IR emitter cable to PB9000-SE sender IR Emitter jack and toward to video source device IR receiver window if need IR control from TV/Display side.
3. [Must] Plug-in IR receiver cable to PB9000-RE receiver IR receiver jack and toward to IR remote location with clear line of sight.
4. Use IR remote of PB9000-RE or use 3rd party universal remote control (preconfigured with PB9000-RE IR remote), toward IR receiver which connected to PB9000-RE IR.

Video Channel Matching Table

Receiver OSD Video Channel #	Sender Dip Switch Setting	Receiver OSD Video Channel #	Sender Dip Switch Setting
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

Notice:

Required Managed/Smart Gigabit Ethernet Switch which IGMP Snooping and Jumbo Frame/Packet function enabled.

Maximum 16 video channels / sender / video sources allow at this scenario, number of TV/Displays is almost unlimited.

IR remote control way is not compatible with Aavara AV Master Web Interface and 3rd party controller control, please don't mix use other control ways.

Once use Web interface Setup then Dip Switch setting will be ignore!

V.IP Setting, Web Configuration & Control

A. To Know IP address of Aavara HDMI Over IP Sender and Receiver

Aavara HDMI Over IP sender and receiver got factory default IP within 169.254.xxx.xxx C class range, and netmask 255.255.0.0, IP address of each HDMI Over IP unit can be found by following way:

Unit IP Show On Screen OSD:

1. To set up a sender connect to a receiver by Cat5e cables (can be with or without Ethernet switch in between).

2. receiver connect to a TV or Display with a HDMI cable.

3. Power on Sender, Receiver and TV/Display.

4. On right bottom of screen, it will show:
   - Local IP Receiver IP address
   - Remote IP Sender IP address

5. Then, please connect the sender to a PC/Notebook RJ45 port with a Cat5e cable. And, power on.

6. To set PC/Notebook RJ45 port IP configuration as follow:
   - IP address: 169.254.0.100 (or any IP within 169.254.xxx.xxx range)
   - Netmask: 255.255.0.0

Or

Finding unit and IP in Bonjour Browser

Software Required:

1. **Apple Bonjour SDK** free download from Appple SDK web site, if you are using MS windows OS PC/NB. Apple MacPro or MacBook which don't need it, had built-in OS X.
   - can download from Apple developer web site
2. **Bonjour Browser** for easy find out all senders and receivers on network.
   - Just google and download from Internet

1. To set PC/Notebook RJ45 port IP configuration as follow:
   - IP address: 169.254.0.100 (or any IP within 169.254.xxx.xxx range)
   - Netmask: 255.255.0.0
2. Setup all Cat5e cable connection between PC/Notebook, sender, receiver and Ethernet switch, then power on.
3. [optional] Install Apple Bonjour SDK on your MS Windows PC/Notebook.
4. Launch Bonjour Browser and check HTTP service section. All Aavara HDMI Over IP sender and receiver can be found at following domain name:

   - Sender Aavara-gateway0000.local 0000 represent video channel number
   - Receiver Aavara-clientAAAAAAAAAAAA AAAAAAAAAAAA represent MAC address of receiver

B. Launch AV Master Control Web page

http://[unit ip]/cfg.html Unit configuration web page (needed only when you want to change unit IP)

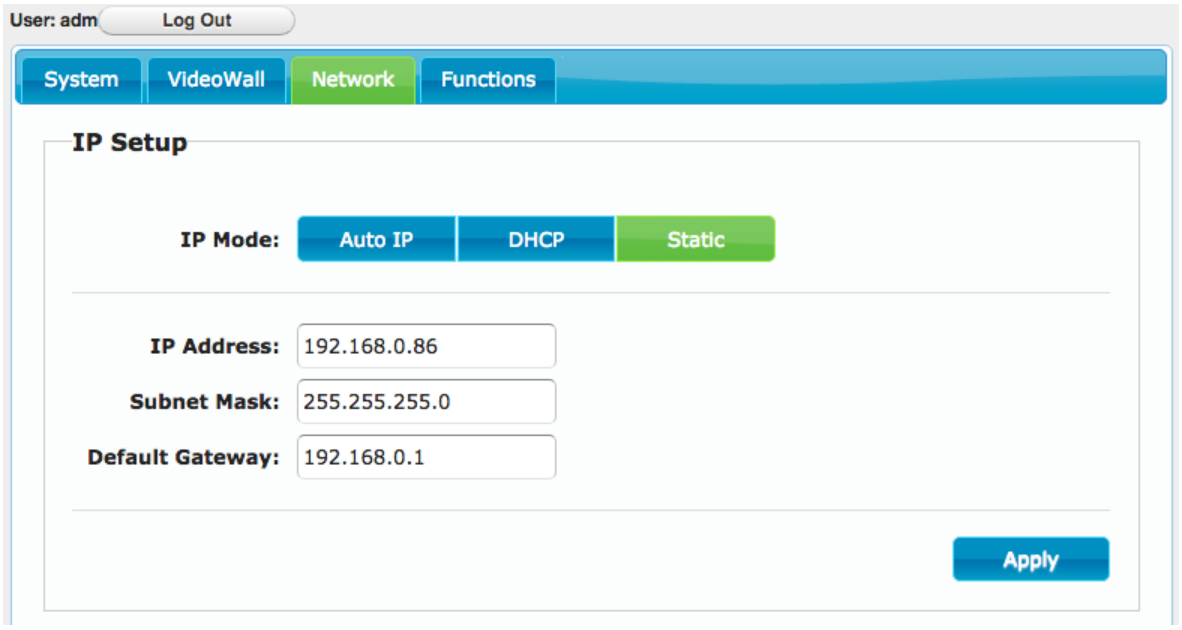
http://[unit ip]/index.html Aavara AV Master /Control web page

C. Change IP address of Sender and Receiver

Aavara HDMI Over IP sender and receiver got factory default IP within 169.254.xxx.xxx C class range, and netmask 255.255.0.0. Recommend to set static IP to each box. IP address of each HDMI Over IP unit can be changed by following way:

1. Launch Web browser with following URL, the Unit Web page will show:

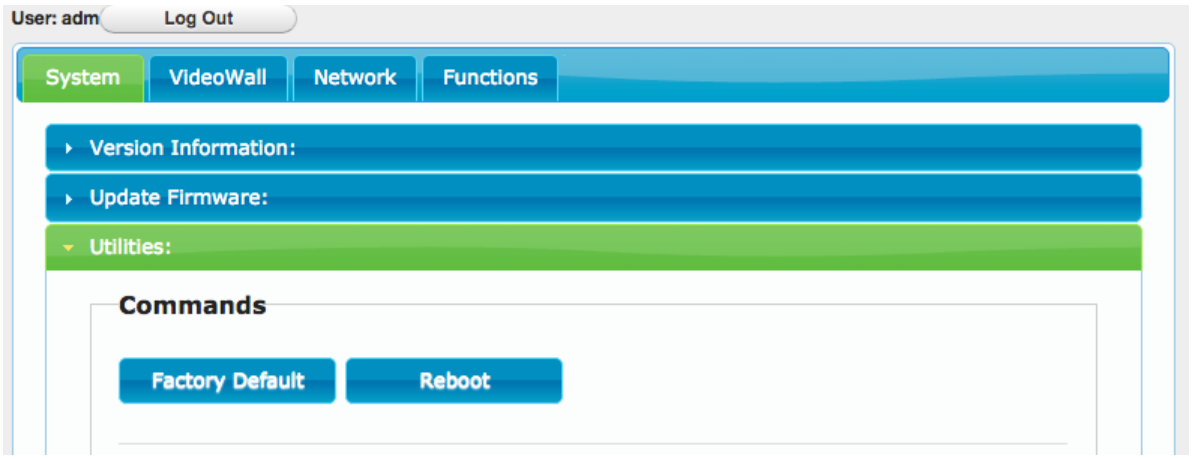
   http://[unit ip]/cfg.html



3. Change IP Mode to Static
   - IP Address: Please assign a IP with correct format. (Ensure unites' IP are at C or D class range).
   - Subnet Mask: 255.255.0.0 or base on proper ethernet network planning.
   - Default Gateway: Only if need, please refer gateway setting on Router.

4. Click Apply Button to save new setting, but unit need to reboot to get new setting effect.

5. Click System Tab → Utilities → Click Reboot button, reboot.



VI. **Aavara AV Master Web Interface**

Aavara AV Master Web interface, built-in in every Aavara HDMI Over IP unit, is a one web page setup and control entire HDMI Over IP AV Matrix and Video Wall. It will only need to configure and operate Aavara AV Master Web Interface on One unit then that unit will become master control unit of entire system, usually recommend to use first sender, then all rest of units just take order.

To Connect Aavara AV Master Web Interface via PC/Tablet connect to same ethernet Switch/Wifi AP with following IP setting:

- IP address: any no conflict IP within same C or D class IP range with all senders and receivers.
- Netmask: 255.255.0.0 or value base network configuration that allow all unites can see each other.

Factory default IP range is 169.254.xxx.xxx netmask 255.255.0.0

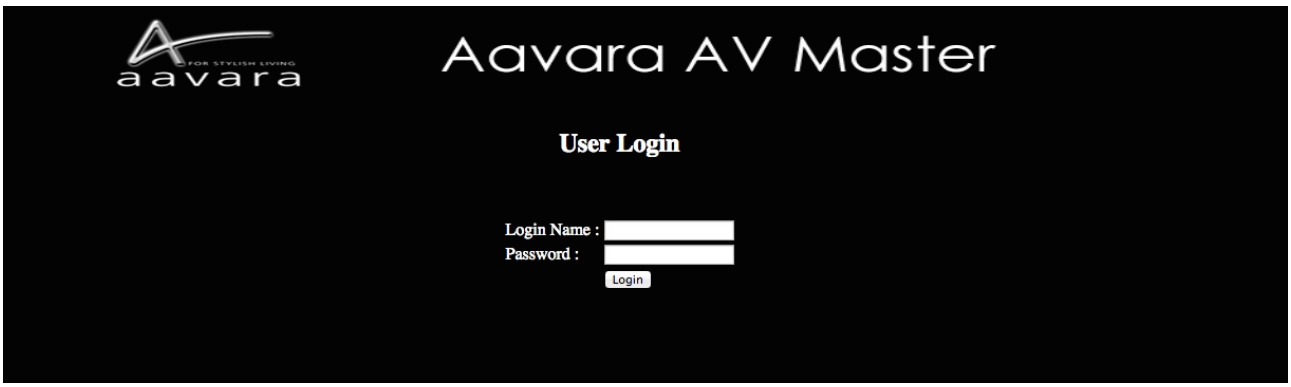
- Web browser: recommend Google Chrome, Firefox, Safari

Launch Web browser with following URL (domain name of sender at channel 0, default sender setting):

http://aavara-gateway0000.local

A. **User Login**

Every time launch web browser and Aavara AV Master Web page will ask user to login.



System Default Login name and Password (Can be revised or delete later on at User Management Tab) with Administrator authorization.

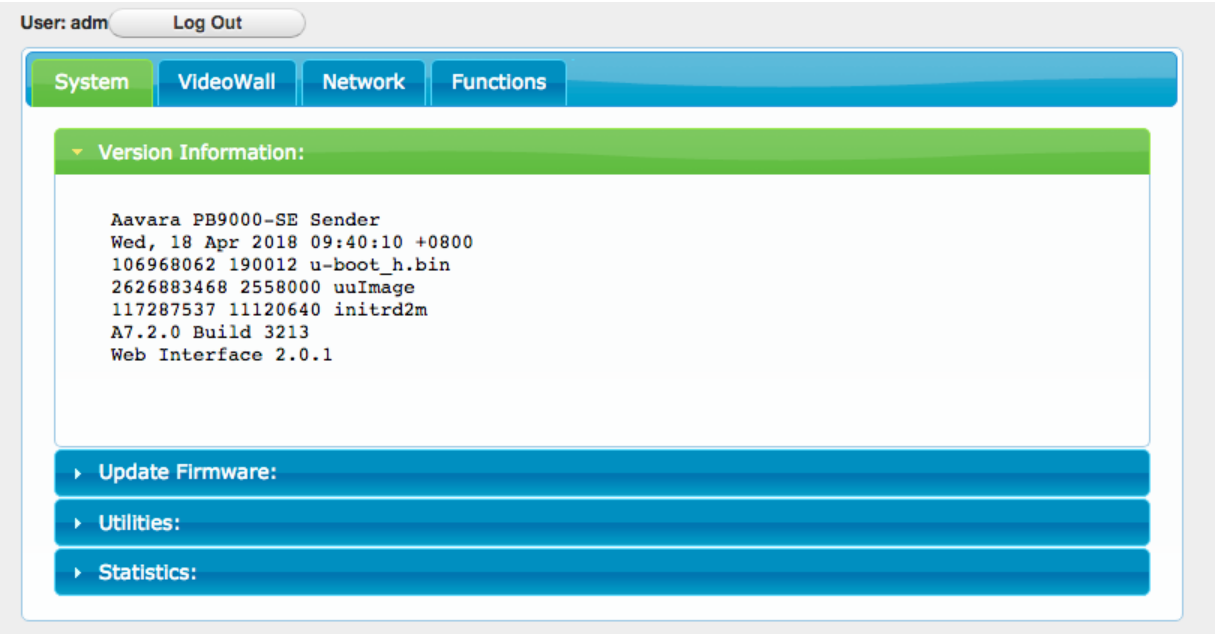
Login name: adm
Password: adm

After Login, on right top corner will show Login User info and Logout button.

User with **Administrator** authorization will see both AV Matrix/VideoWall/Control Operation and All Setup functions.

User with **Operator** authorization will see AV Matrix/VideoWall Operation functions only.

Only User with **Administrator** Authorization allow to access unit configuration cfg.html



Access other units' web page other than master control unit, will redirect web page/URL to master control unit's web page.

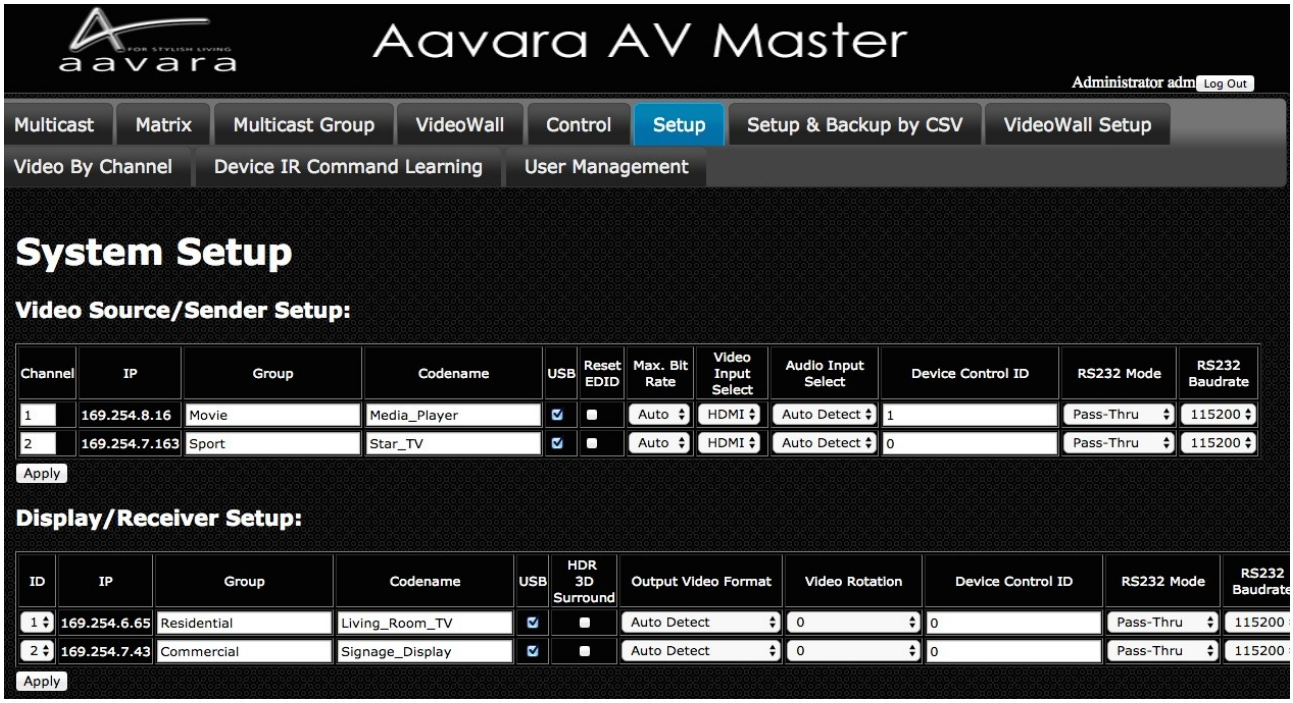
Once User Session expired, AV Master Web Interface will ask user to login again.

B. Setup within AV Master Web Interface

Click on Setup Tab on first time installation and configuration change later on, wait few seconds, AV Master will scan and list all Senders and Receivers. Please configure all parameters for Senders and Receivers, detail at table below, according installation & operation requirement. All settings will storage in this Sender or Receiver only and later on operation shall connect to this Sender/Receiver's web page only.

If any USB or RS232 setting changed, the unit will need to reboot to get new setting effect.

For Device Control Command code setup, need to do by CSV file uploading way as next section show.



Video Source/Sender:

Field	Description
Channel	Range 1 ~ 9999, Auto assign or manual change, Each sender must have Unique Channel Number assign. No two or more Senders got same channel number.
IP	IP Address (Auto assign, or go Unit cfg.html for static IP assign)
Group	Sender's Group name for further management requirement.
Codename	Sender's Codename / Video Source name for further operation required.
USB	Enable (checked) / Disable (unchecked) USB pass-thru
Reset EDID	Reset Sender EDID table to factory default
Max. bit rate	Set Maximum Bit rate on video streaming for bandwidth control Video quality will drop if choose smaller max. bit rate
Video Input Select	Select HDMI or VGA Input for video streaming
Audio Input Select	Select Audio Source from HDMI or Analog Audio Input
Device Control ID	Match Device ID in Device Control CSV File (control by CEC(HDMI)/IR/RS232)
RS232 Mode	IP Command Rs232 command issue by IP command Pass-Thru RS232 command pass-thru between sender and receiver rs232 ports
RS232 Baudrate	Assign RS232 Baudrate , range 115,200 ~ 300 bps

Display/Receiver:

Field	Description
ID	Auto or Manual Assign, Each Receiver must have Unique ID Number assign. No two or more Receivers got same ID number.
IP	IP Address (Auto assign, or go Unit cfg.html for static IP assign)
Group	Receiver's Group name for further management requirement.
Codename	Receiver's Codename / Display name for further operation required.
USB	Enable (checked) / Disable (uncheck) USB pass-thru
HDR/3D/Surround	Enable (checked) / Disable (uncheck) EDID Copy to support HDR, 3D and Surround Sound output (LPCM/Dolby/DTS)
Video Format	- AutoDetect Auto Detect TV/Display's EDID and output recommend video format. - Same as Video Input at Sender side (Pass-Thru) - Fixed HDMI format 2160p30Hz ~ 576p50Hz, 480p60Hz. Fixed DVI format 1920x1200@60Hz, 1440x900@60Hz and more.
Video Rotate	Video Rotate 0, 90, 90 stretch, 180, 270 degree, vertical/horizontal mirror
Device Control ID	Match Device ID in Device Control CSV File (control by CEC(HDMI)/IR/RS232)
RS232 Mode	IP Command Rs232 command issue by IP command Pass-Thru RS232 command pass-thru between sender and receiver rs232 ports
RS232 Baudrate	Assign RS232 Baudrate , range 115,200 ~ 300 bps

Notice!

1. Please wait for few sec. AV Master will search all senders and receivers on network.
2. Each Sender must be assign a unique video channel (CH) number, NO two senders got same number.
3. Group name and Codename can use English, French, Latin, German, Chinese and Japanese fonts, but it won't able to show on OSD. Use underscores instead of spaces for the Group name and Codename fields.
4. If USB & RS232 setting changed, the unit will auto reboot to get new settings effect.
5. If any of HDMI device connect to Sender or Receiver not support 3D or Multichannel audio, recommend to keep 3D Video & Surround option off to speed up video channel switching and maximum EDID compatibility.

C. Setup & Backup by CSV files

Setup by CSV Files

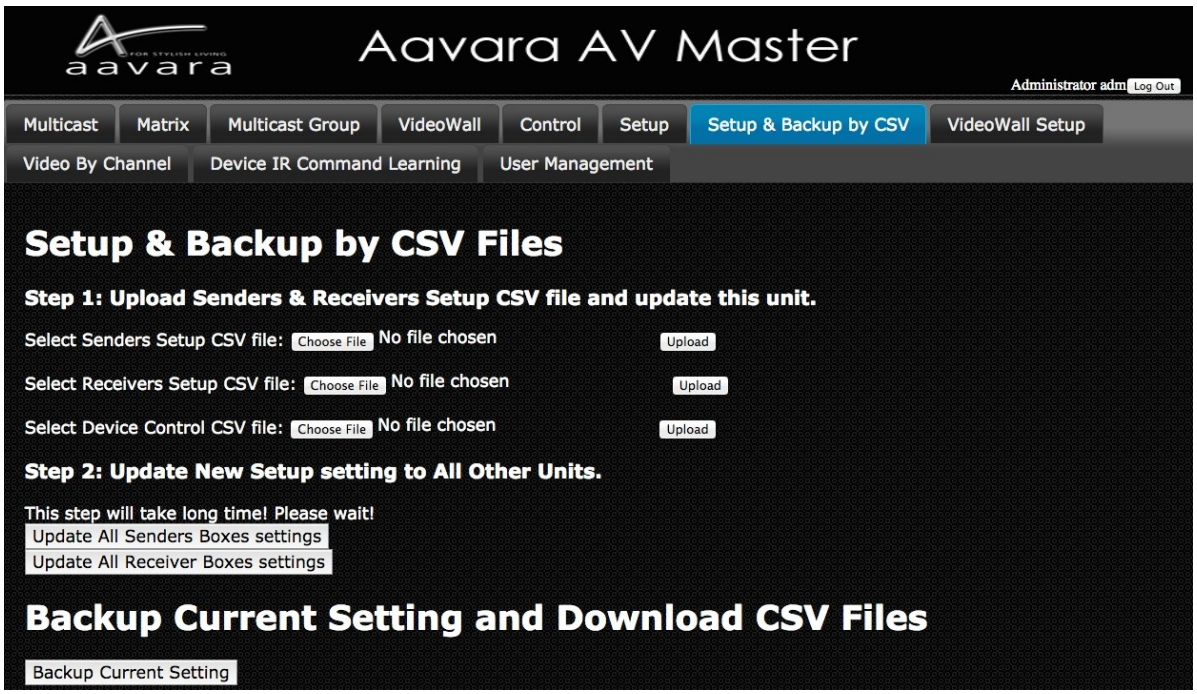
1. Please set static IP on every each unites, at each units' cfg.html, refer IP setting section for more detail.
2. Login user with Administrator authorization.
3. Refer following CSV files detail to plan and edit in Spreadsheet application. Then, save at CSV file format (divide field by a comma.)
4. Upload CSV files one by one.
5. Press button Updating all other unites. This step will take long time to update if large scale matrix/VideoWall installed, please be patient.
6. Reboot all unites after CSV files uploaded and all units updated.

Backup by CSV Files

1. Click Backup Current Setting Button. AV Master will collect all setting and convert into CSV files. Web Page will show Sender/Receiver/Control Download CSV file URLs.
2. Click the URL to download current CSV files.

Replace AV Master Master Control Unit

1. Get a new unit of sender or receiver.
2. Change IP setting to be same as the old Master Control Unit, refer IP setting section for more detail.
3. Upload Sender/Receiver/Device Control CSV Files
4. The unit is ready to replace the old Master Control Unit.



Sender CSV File Format & Parameter Description

Don’t change field sequence. First row field name can be changed. Use comma to divide field when saving CSV file.

Field / Parameter	Description	Parameter Value
IP	Sender IP	ie. 169.254.8.105 192.168.1.25
Channel	Assign unique channel number, don’t duplicate.	1 ~ 9999
Group	Sender Group name	English, German, French, Latin, Chinese, Japanese, _
Codename	Sender Codename	English, German, French, Latin, Chinese, Japanese, _
Enable/Disable USB Pass-Thru	USB Pass-Thru between Sender and Receiver	y/n only (Lower letters only) y : disable USB Pass-thru n : enable USB Pass-thru
Max. Bit Rate	Max. bit rate of video streaming from Sender	Parameter value options: auto : auto, max. 850Mbps 200M : max.200Mbps 150M : max.150Mbps 100M : max.100Mbps 50M : max. 50Mbps 10M : max. 10Mbps 5M : max. 5Mbps
Video Input Select	Select video input on sender for video streaming	Parameter value options: 0 : VGA 1 : DVI 2 : HDMI
Audio Input Select	Select audio input on sender for audio streaming	Parameter value options: hdmi : HDMI audio analog : analog audio auto : auto select (analog first)
Device Control ID	To match Device ID in Device Control CSV File	Number must be match match Device ID in Device Control CSV File
RS232 mode	IP Command Pass-Thru between sender and Receiver	Parameter value options: y : IP Command n : Pass-Thru
RS232 baudrate	RS232 baudrate setting	Parameter value options: 115200/57600/38400/28800/19200/14400/9600/4800/2400/1200/600/300

Receiver CSV File Format & Parameter Description

Don't change field sequence. First row field name can be changed. Use comma to divide field when saving CSV file.

Field / Parameter	Description	Parameter Value
IP	Receiver IP	ie. 169.254.8.105 192.168.1.25
ID	Receiver ID, No duplicate	Number only, start form 1
Group	Receiver Group name	English, German, French, Latin, Chinese, Japanese, _
Codename	Receiver Codename	English, German, French, Latin, Chinese, Japanese, _
Video channel	Video channel	Number only, start from 1
Audio channel	Audio channel	Number only, start from 1
Video channel	USB channel	Number only, start from 1
RS232 channel	RS232 channel (RS232 mode must be set Pass-Thru)	Number only, start from 1
IR channel	IR channel	Number only, start from 1
Output Video Format	Assign Receiver HDMI output video format	Parameter value options: auto_detect : Auto detect TV/Display EDID pass-thru : same as HDMI input at sender 0 : same as HDMI input at sender (pass-thru) 2160p30 : 2160p30Hz 2160p25 : 2160p25Hz 2160p24_VIC_103 : 2160p24Hz VIC 103 2160p24_VIC_98 : 2160p24Hz VIC 98 2160p24_VIC_93 : 2160p24Hz VIC 93 1080p60 : 1080p60Hz 1080p50 : 1080p50Hz 1080p24_VIC_72 : 1080p24Hz VIC 72 1080p24_VIC_32 : 1080p24Hz VIC 32 1080i60 : 1080i60Hz 1080i50 : 1080i50Hz 720p60 : 720p60Hz 576p50 : 576p50Hz 480p60 : 480p60Hz 1920x1200 : 1920x1200@60Hz 1920x1080 : 1920x1080@60Hz 1680x1050 : 1680x1050@60Hz 1440x900 : 1440x900@60Hz 1400x1050 : 1440x1050@60Hz 1366x768 : 1366x768@60Hz 800x600 : 800x600@60Hz
Enable/Disable USB Pass-Thru	USB Pass-Thru between Sender and Receiver	y/n only (Lower letters only) y : disable USB Pass-thru n : enable USB Pass-thru
Device Control ID	To match Device ID in Device Control CSV File	Number must be match match Device ID in Device Control CSV File
RS232 mode	IP Command Pass-Thru between sender and Receiver	Parameter value options: y : IP Command n : Pass-Thru
RS232 baudrate	RS232 baudrate setting	Parameter value options: 115200/57600/38400/28800/19200/14400/9600/4800/2400/1200/600/300

Video Rotate/Stretch	Video Rotate, Mirror & whether need to stretch when rotate at 90^0/$270^{0.}$	Parameter value options: 0 : Not Rotate 1 : Horizontal Mirror 2 : Vertical Mirror 3 : 180^0 Rotate 4 : 90^0 Rotate, Vertical Mirror, No Stretch 5 : 90^0 Rotate, No Stretch 6 : 270^0 Rotate 7 : 90^0 Rotate, Vertical Mirror, Stretch 8 : 90^0 Rotate, Stretch 9 : 270^0 Rotate, Stretch
vw_row	Total row of VideoWall	Number only, start from 1
vw_column	Total column of VideoWall	Number only, start from 1
vw_pos_row	This Display/Receiver's row position in VideoWall	Number only, start from 1
vw_pos_column	This Display/Receiver's column position in VideoWall	Number only, start from 1
vw_OW	Display outter dim. width unit: mm	Number only, start from 1
vw_OH	Display outter dim. height unit: mm	Number only, start from 1
vw_VW	Display viewable area dim. width unit: mm	Number only, start from 1
vw_VH	Display viewable area dim. height unit: mm	Number only, start from 1

Device Control CSV File Format & Parameter Description

Don’t change field sequence. First row field name can be changed. Use comma to divide field when saving CSV file.

Field / Parameter	Description	Parameter Value
Device Control ID	Device Control ID for match with Device Control ID in Sender/Receiver CSV file or Setup Tab in AV Master.	Number Only, start from 1
Codename	Device Codename	English, German, French, Latin, Chinese, Japanese, _
command_type	Way to Control the Device	Parameter value options: cec : HDMI CEC ir : IR rs232_hex : RS232 command in HEX code rs232_ascii : RS232 command in Ascii code
power_on_name	Power On Command Codename	English, German, French, Latin, Chinese, Japanese, _
power_on_cmd	Power On Command	Base on the way to control, and input control command code.
power_off_name	Power Off Command Codename	English, German, French, Latin, Chinese, Japanese, _
power_off_cmd	Power Off Command	Base on the way to control, and input control command code.
cmd1_name	Command 1 codename	English, German, French, Latin, Chinese, Japanese, _
cmd1_cmd	Command 1 command code	Base on the way to control, and input control command code.
cmd2_name	Command 2 codename	English, German, French, Latin, Chinese, Japanese, _
cmd2_cmd	Command 2 command code	Base on the way to control, and input control command code.
cmd3_name	Command 3 codename	English, German, French, Latin, Chinese, Japanese, _
cmd3_cmd	Command 3 command code	Base on the way to control, and input control command code.
cmd4_name	Command 4 codename	English, German, French, Latin, Chinese, Japanese, _
cmd4_cmd	Command 4 command code	Base on the way to control, and input control command code.
cmd5_name	Command 5 codename	English, German, French, Latin, Chinese, Japanese, _
cmd5_cmd	Command 5 command code	Base on the way to control, and input control command code.
cmd6_name	Command 6 codename	English, German, French, Latin, Chinese, Japanese, _
cmd6_cmd	Command 6 command code	Base on the way to control, and input control command code.
cmd7_name	Command 7 codename	English, German, French, Latin, Chinese, Japanese, _
cmd7_cmd	Command 7 command code	Base on the way to control, and input control

		command code.
cmd8_name	Command 8 codename	English, German, French, Latin, Chinese, Japanese, _
cmd8_cmd	Command 8 command code	Base on the way to control, and input control command code.
cmd9_name	Command 9 codename	English, German, French, Latin, Chinese, Japanese, _
cmd9_cmd	Command 9 command code	Base on the way to control, and input control command code.
cmd10_name	Command 10 codename	English, German, French, Latin, Chinese, Japanese, _
cmd10_cmd	Command 10 command code	Base on the way to control, and input control command code.

RS232 HEX code format:

HEX code format can be any one of below:

- FF010204
- FF 01 02 04
- 0xFF 0x01 0x02 0x04
- 0XFF 0X01 0X02 0X04

IR HEX code format:
Please refer Device IR Leaning section for more detail.

CEC Preset Commands and Commands in CEC Frame format

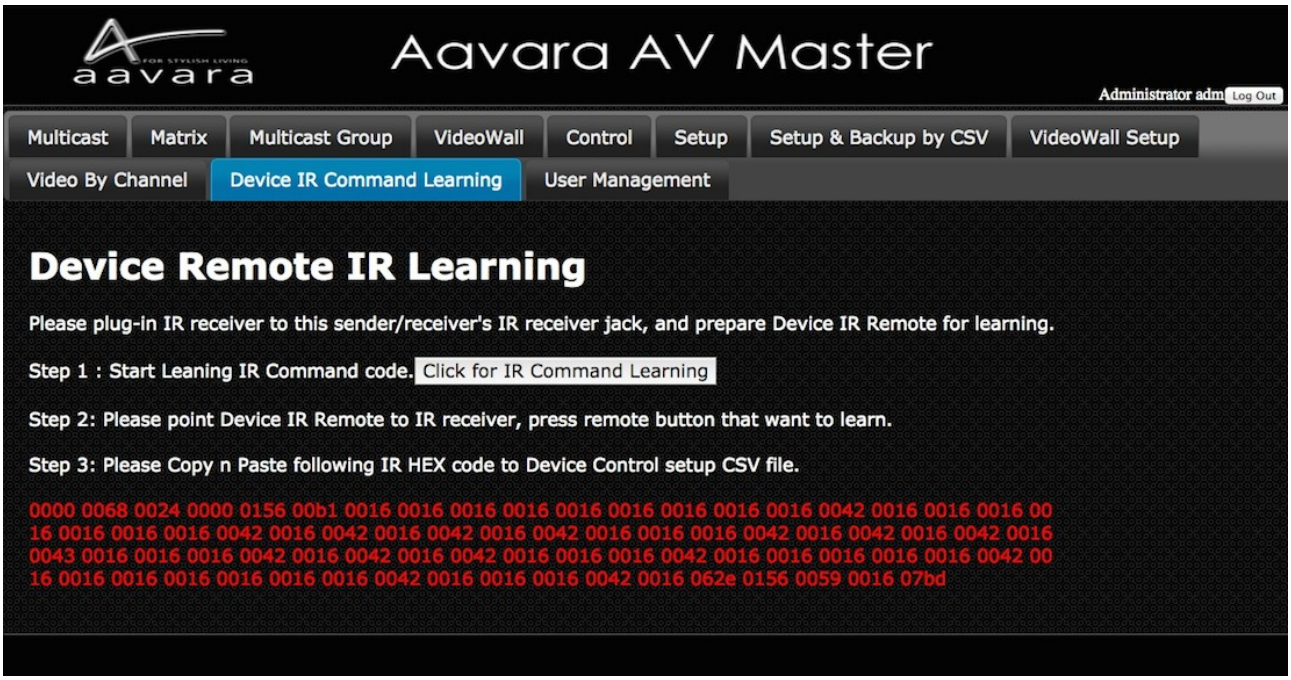
Preset CEC Command List:

Video Source		TV/Display	
Command	Description	Command	Description
wake_up	Video Source Device Wake UP	power_on_tv	Display Power On
standby	Video Source Device Standby	power_off_tv	Display Power Off
up	Up		
down	Down		
left	Left		
right	Right		
select_button	Select		
exit	Exit		
root_menu	Root Menu		
play	Play		
stop	Stop		
pause	Pause		
mute	Mute		
volume_up	Volume Up		
volume_down	Volume Down		

If the command wanted is not in above preset list, you can use CEC Frame in command code field.
CEC Frame format ie. 0F:86:10:00 or FF:36
For CEC Frame detail, please check CEC O Matic web site, http://www.cec-o-matic.com.

D. **Device IR Command Learning**

Aavara AV Master Web control can learn Device IR command code, so it can copy n paste into Device Control CSV file.



Step 1: Ensure IR Receiver cable had plug into AV Master Master Control unit's IR Receiver jack. And, have Device IR remote on hand ready for IR code learning.
Step 2: Please point Device IR remote to IR receiver, and press remote button which want to learn IR code from.
Then, IR HEX code (PRONTO format) will show below in red.
Step 3: Copy n Paste IR HEX code (in red) to the cell of Device Control CSV file for further upload and operation.

E. Multicast

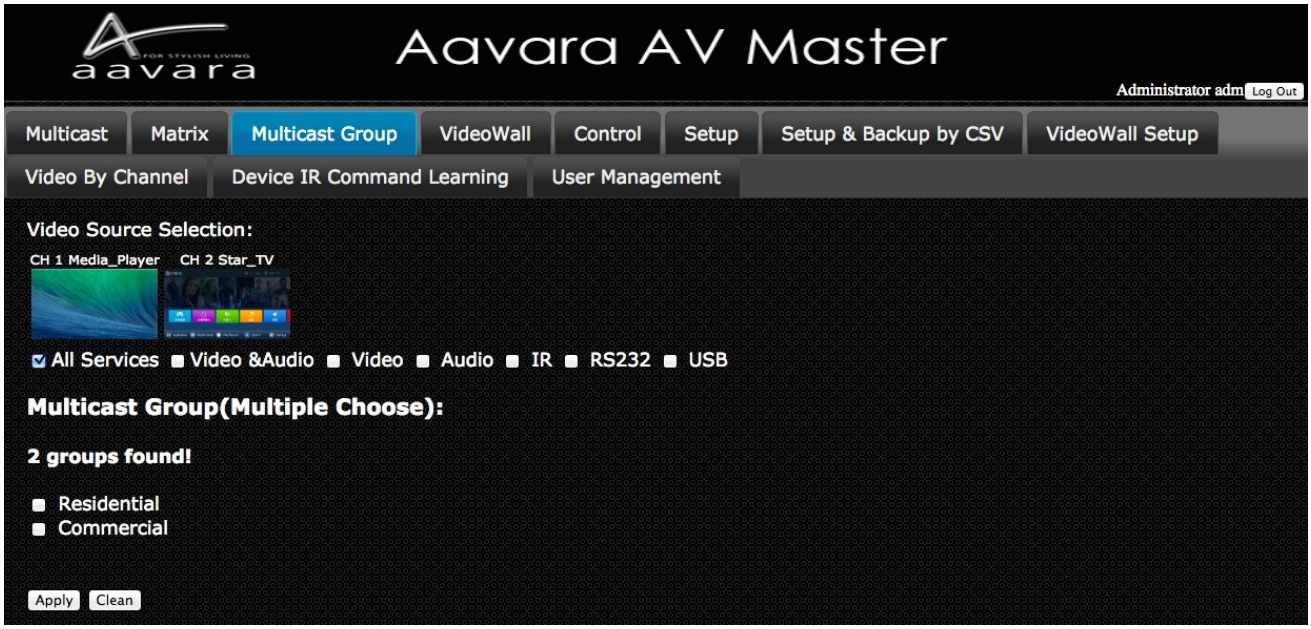
1. Select a video source/sender.
2. Select Service want to switch (Audio, Video, IR, RS232, USB. Multiple choices).
3. Select Display/Receiver want to switch (Multiple choices).
4. Click Apply Button

F. Matrix

- Select Service want to switch (Audio, Video, IR, RS232, or USB).
  Once Select Service want to switch, Matrix will refresh to show current routing status.
- Click Switch Button on the cell match the row of Receiver want to switch and the column of target Sender.

G. Multicast Group

1. Select a video source/sender.
2. Select Service want to switch (Audio, Video, IR, RS232, USB. Multiple choices).
3. Select Receiver Group want to switch (Multiple choices).
4.



H. Click Apply ButtonVideoWall Setup

Step 1 VideoWall Layout / Bezel & Gap Compensation

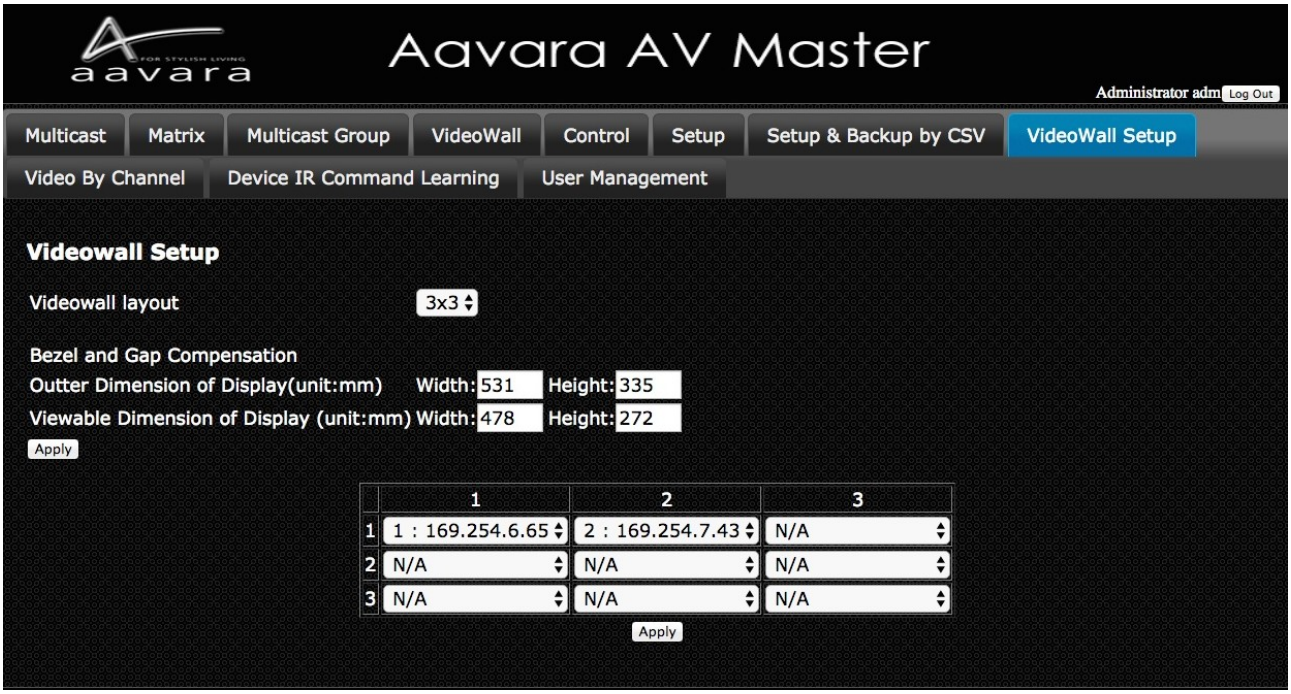
1. Select VideoWall layout from 2x2, 3x3, 3x4, 4x4, ..., 9x9.
2. Input Outer and Viewable area dimension of display for Bezel & Gap compensation. Unit: mm.

Step 2 Display Position at VideoWall Matching

Once Click on Apply Button of VideoWall layout configuration, a table will show up as VideoWall layout, select right receiver in every cell of table which matched row and column display actual position. For position on VideoWall has no display, select N/A.

After all displays/receivers in video wall being located, Click Apply button.

ViewWall Tab will change base on VideoWall layout input and ready to operate.



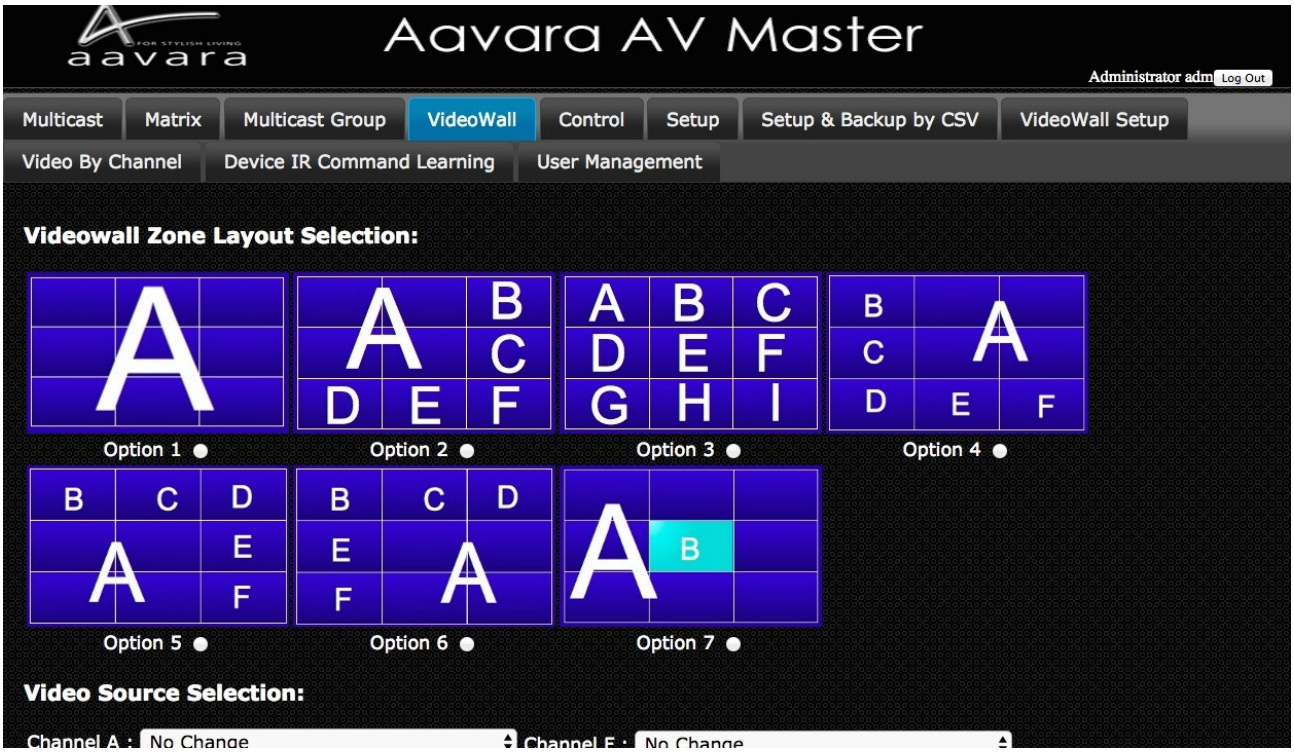
I. VideoWall

Once ViewWall Setup completed in VW Setup Tab, VideoWall Tab will show right VideoWall layout selection.

1. Select one of VideoWall Zone Layout selection.
2. Select Video channel.

   A, B, C, D,... alphabet show in VideoWall layout selection are represent video channel want show at that zone of VideoWall, you can select few major channels like A, B, …, then for rest just use **No Change**.
3. Click Apply button

VideoWall will show layout and video channel you selected.



J. Control

Aavara AV Master Web can control external devices like TV/Display/Projector & Video Source Device by CEC(via HDMI connection), RS232 and IR. Please edit and upload Device Control CSV file and set Device Control ID to each sender and receiver, AV Master will bring in all control command buttons of that device.

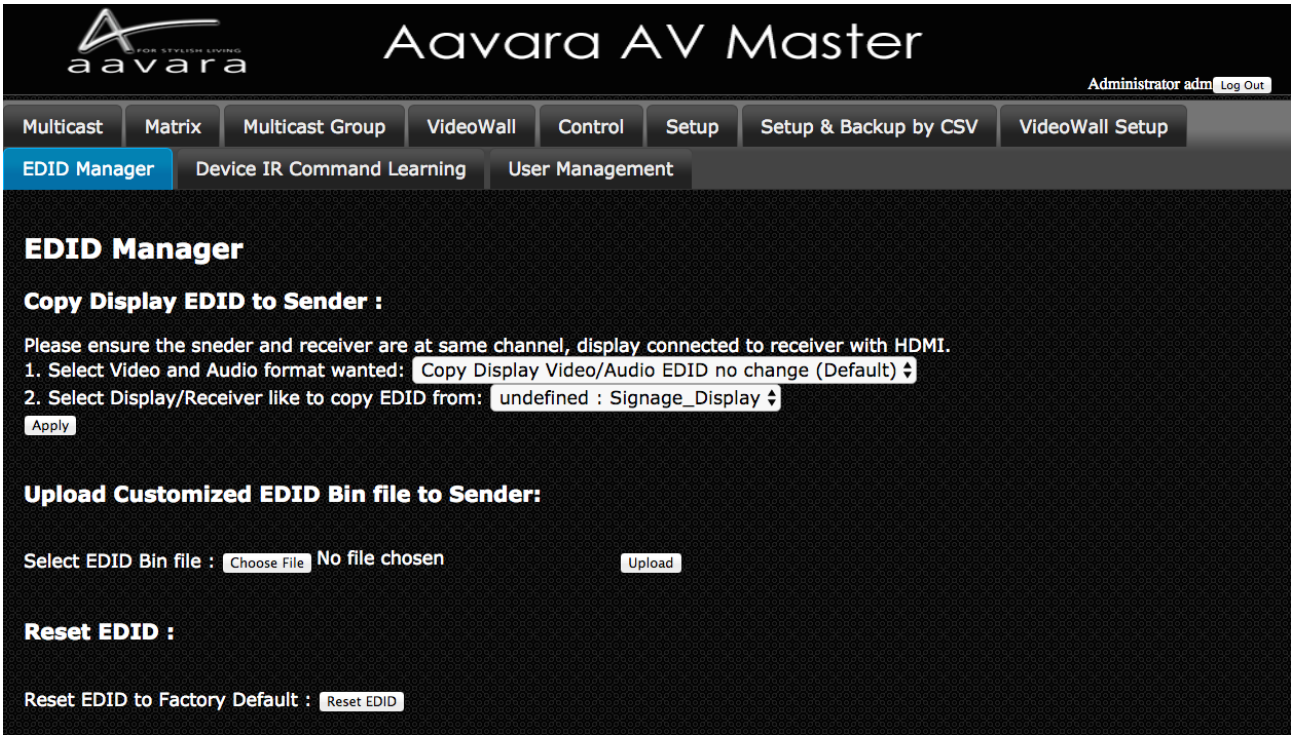
Click on the button of control action wanted, control command will send out to target external device immediately.

K. EDID Manager (Only Available on Sender)

Copy Display EDID to Sender

Ensure that target display/receiver got HDMI connection between display and receiver, network connection between sender and receiver, and sender/receiver at same video channel, before Copy Display EDID to sender action.

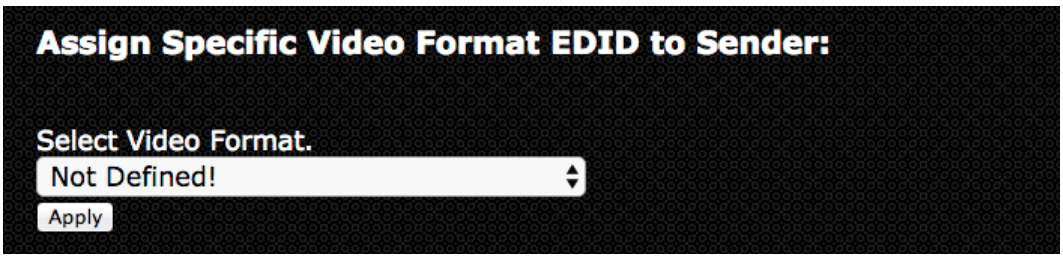
1. To improve EDID compatibility, add HDR and multi-channel audio support, options as follow:
   - Copy Display EDID w/o any change (Default)
   - Video no change, All Audio Formats
   - 2160p60 HDR w/ All Audio Formats
   - 2160p60 HDR Audio format no change
   - 2160p24 HDR w/ All Audio Formats
   - 2160p24 HDR Audio format no change
   - 1080p HDR w/ All Audio Formats
   - 1080p HDR Audio format no change
2. Select Display/Receiver like to copy EDID from
3. Click Apply button
4. Display EDID will be copy, send to sender at same channel with receiver, and save at sender. Sender will use this EDID to do EDID handshake with Video Source Device.



Assign Specific Resolution/Timing EDID to Sender

Select and assign Specific Resolution/Timing EDID to Sender for handshake with Video Source device for solving EDID compatible issue or allow video source output video/audio format as assigned.

1. Select Video Format
2. click Apply Button
3. Recommend to have HDMI unplug n plug-in between video source and sender for good EDID handshake.



Upload Customized EDID Bin file to SenderEdit customize EDID Bin with EDID editor(not included), then upload to sender. Sender will use customized EDID table to handshake with Video Source device for solving EDID compatible issue or allow video source output video/audio format as assigned.

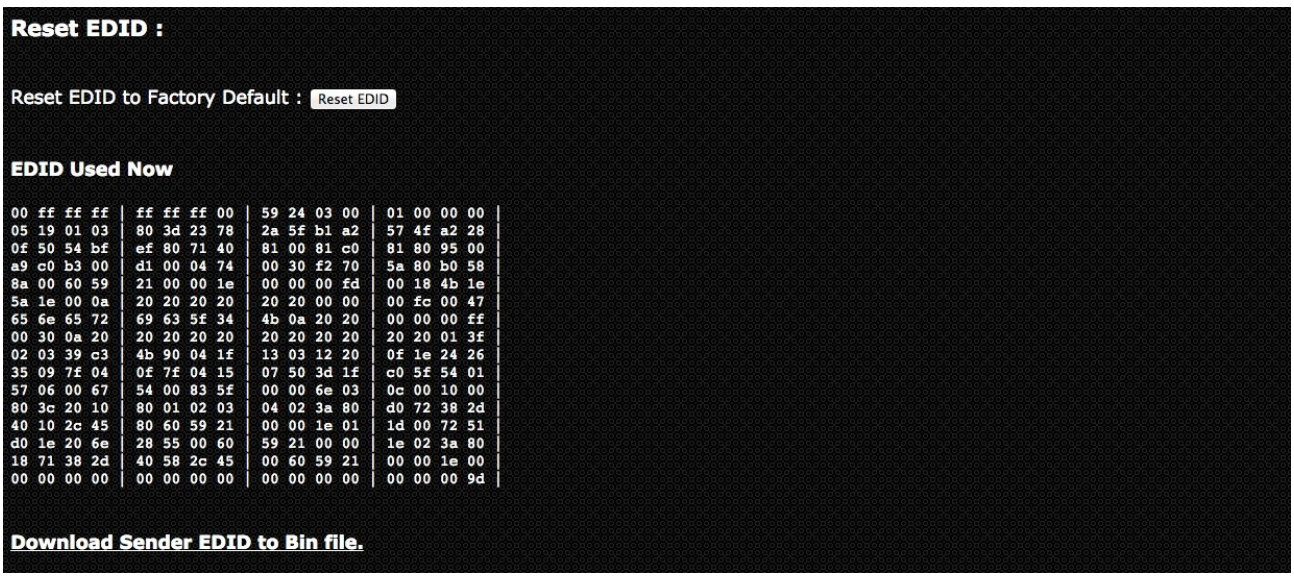
1. SIs and Installers can use any EDID edit software to customize EDID table and save as standard EDID BIN file.
2. Go **EDID MGR** tab.
3. select customized EDID bin file and Click Upload button.
4. **Once Customize EDID BIN file upload complete, please check the HEX code of EDID used whether it changed and same as customize EDID table.**

Reset EDID to default

Just click on Reset EDID to Default Button, then Sender EDID table with reset to default one.

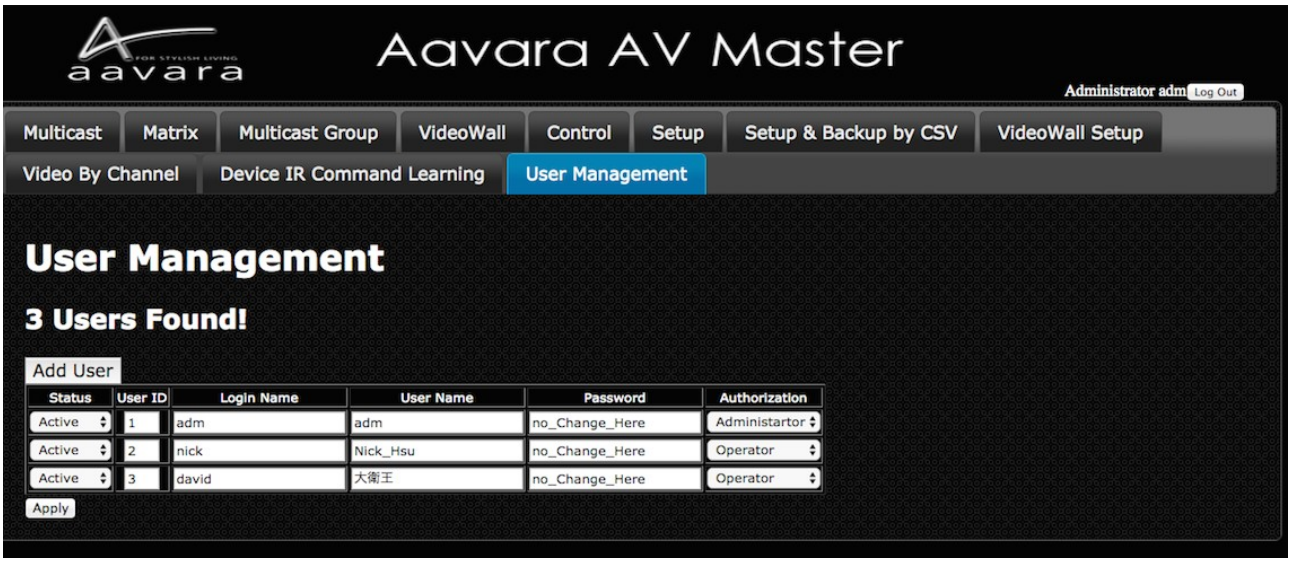
Download Current EDID

Just click on Reset EDID to Default Button, then Sender EDID table with reset to default one.



L. User Management

User Management Tab



Add User
Press Add User button to add more user info.

Field	Description
Status	3 User Status: 1. Active this user can login and use. 2. Suspend this user can't login and use, but user info will keep in system. 3. Delete Delete this user, and user info will erase.
User ID	Every User need to assign a ID, no duplicate.
Login Name	Use for login, English and number letters only.
User Name	Use for identify user. Can use English, German, French, Latin, Chinese, Japanese, _
Password	User Password, English & number only. Once real password input and updated, it will not show on web again. Every time User Management table refresh, it will show "no_Change_Here". As long as "no_Change_Here" not change, password will not change.
Authorization	Two User Authorization: - Administrator can access all operation and setup functions. - Operator can access all operation functions only.

Notice! If many senders and receivers installed, once click Apply button, user info updating will take some time, please wait for user info update completed.