HVWCTRL IP Controller

Video Wall SETUP





CAT 5/6 | POWER | RS-232 | RoHS Compliant | FC CE

Installation Manual

HVWCTRL - iPad & PC Software

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APP GUIDE FOR THE HVWCIP-SERIES DEVICES

1.1 ABOUT THIS DOCUMENT

This document explains how to configure the HVWCIP-Series devices to work with an iPad App and control PC software.

Software version: V7.0.0

Firmware version: V1.5/V5.10 (5.11)

The firmware and software versions listed in this document have been tested within the recommended settings the units can support and are fully supported by AG Neovo.

It is recommended that users read this entire document before attempting both setup and firmware updates and fully understand all the steps and procedures outlined in this document.

⚠ **WARNING** – Please make sure when using this guide for an exsiting setup all of the following items are available:

- HVWCIP-T and HVWCIP-R with 12V 1A power supplies
- HVWCTRL IP Controller
- CAT5/6 cables
- Wireless Gigabit Router with 802.11/a/b/g/n 2.4 GHz; 5 GHz
- Network switch
- RS-232 to bare wire for phoneix RS-232 out
- 3.5mm headphones jack to bare wire (external audio)
- 6 x Ethernet (RJ45 Patch Cable 6 to 3m (10ft) or within the setup CAT5/6 cable runs)
- Wireless Gigabit Router with 802.11/a/b/g/n 2.4 GHz; 5 GHz

1.2 GENERAL INSTRUCTIONS

1. Before begining the setup guide or firmware upgrade ensure that the HVWCIP-Series unit are powered by the supplied power supply 12V 1A or to proper POE specifications.
2. PC Requirements-Windows® XP/ Windows Vista®/ Windows® 7 (Windows® 8/ Windows® 10 are available)
3. Ensure Laptop or desktop is plugged in to AC power during the update process. It is not recommended to use battery power during the setup/upgrade. Do not unplug power from the unit at any time during the firmware update process as this could lead to malfunctions.

OVERVIEW

The following table describes the firmware version the devices has to be at to ensure a stable working enviroment and IOS compatiblity.

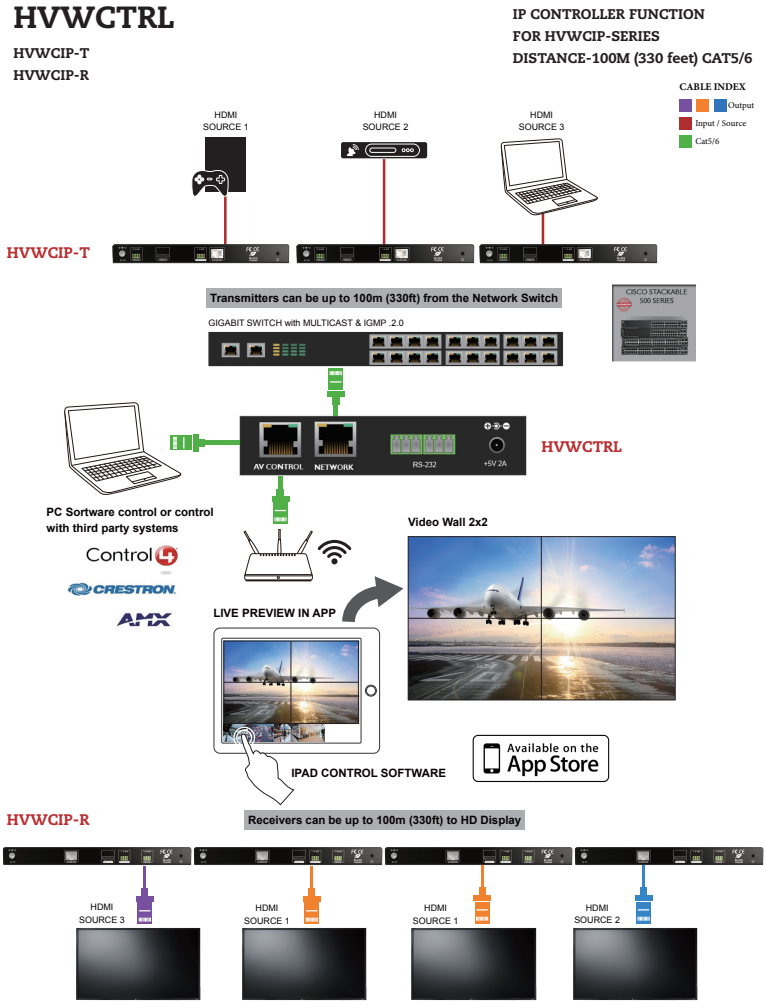
Products and Versions

Products	Versions
HVWCTRL- iPad & PC Software	V7.0.0
HVWCTRL	V1.5/ V5.1.0 (V5.1.1)
HVWCIP-T (Transmitter)	V2.83
HVWCIP-R (Receiver)	V2.82

BEFORE INSTALLATION

- Place the product in a level and stable location. If the product falls, it may cause damage or malfunction to components within the casing.
- Do not place the product in temperatures under 0˚C or over 50˚C. High humidity may also cause the unit to malfunction.
- Use the DC power adapter with correct specifications supplied with the unit. If improper power supply is used, this may result in malfunction of the unit and may cause fire.
- Do not twist or pull by force the ends of the UTP/HDMI cable. It will cause malfunction.

Please follow the connection diagram as below:



NETWORK BANDWIDTH CALCULATOR

The following notes and math equations below allow the installer to properly calculate and establish the right network enviroment for streaming live video across the network and iPad.

Control Device : iPad Air/ Air2/Mini

iOS Version: Compatible with iOS 7 and above.

Wireless device: Should have Wi-Fi frequency band (2.4GHz and 5GHz)

Equation for calculating the video bandwidth allowed

Tband=1.3*i*(6+VW)*0.5 aka True bandwidth

Pband=Wifi bandwith/3 (Unit: M) aka Project bandwidth

Project proposal should be Tband<Pband.

Parameters:

Constant 1.3:1.3 is the network packets consumption coefficient.

Variable i: the number of the iPad which connected to the same network of the IP controller (HVWCTRL) and has the APP running.

Constant 6: this number is the max number of Transmitter show on the HVWCTRL- iPad & PC Software task bar App.

Variable VW: the numbers of the video wall configuration show on the HVWCTRL- iPad & PC software.

Constant 0.5: this numbers is the Transmitter preview stream bandwith to the HVWCTRL software.

Variable Wifi bandwith/3: this digit is the wireless router protocol (Example 802.11G=54mbps @ 2.4Ghz) or Access Point's rated bandwith, on any project site the device would only use 1/3 of the bandwidth

Unit M: the network transfer unit.

Calculating Transmitter Bandwidth

Each Transmitter sender streams an average of 30-50Mbps of data, therefore a system of:

10 Transmitter each streaming @ 50Mpbs

50 Receiver link to the 10 Transmitter with each Transmitter streaming to 10 Groups of 5 Receiver

The Transmitter bandwidth within this sytem would be 0.02Gbps.

HVWCIP-Series iPad Application

Control your video anywhere, anytime



Download on the App Store

VIDEO WALL SETUP

Before Starting iPad Control Software

Follow the steps below from page 7 to page 14 using HVWCTRL- iPad & PC Software to set up alias names, matrix, videowall and scenes before attempting to use the “Visual M25” iPad App application (if this is already completed proceed to page 15).

By performing the following tasks within the PC console; the information is easily uploaded to the HVWCTRL and then transferred to the iPad App or PC App.

What is the HVWCTRL ?

This device aka IP Controller (HVWCTRL) offers API commands to third party applications for matrix, videowall configuration and RS-232 control to peripheral devices.

The user can use two methods when setting up a videowall -Create and Configure video wall.

Method 1 requires simple telnet commands as noted in the HVWCTRL API commands user guide.

Method 2 via PC configurator. This guide mainly explains method 2.

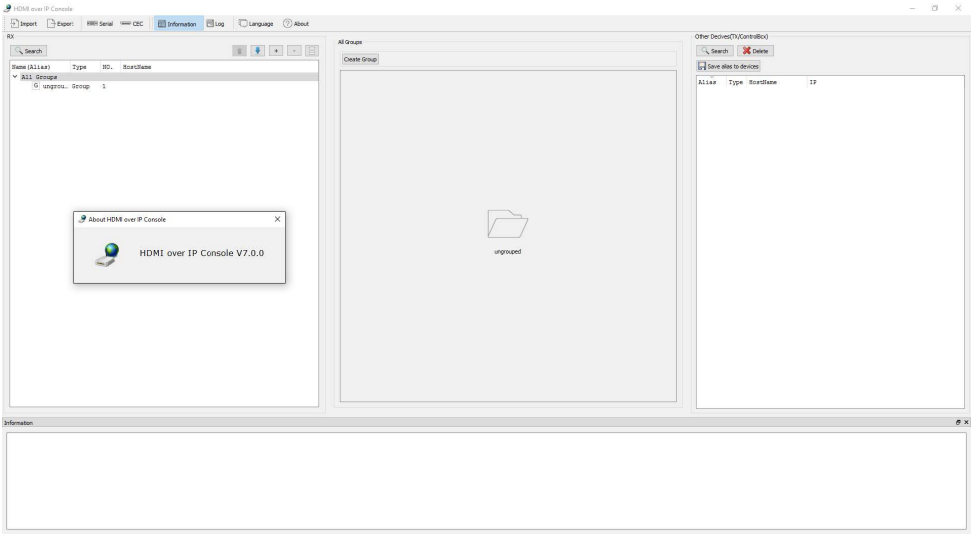
(1) API commands

(2) PC configurator (HDMI over IP Console) to create and configure video wall, and then upload its configuration to IP Controller.

Recommended Software Versions:

- PC configurator: V7.0.0

- IP Controller: API V1.5 or higher, gbcmdV5.1.1 or higher, HVWCTRL_WebV5.1.0 or higher



CREATE AND CONFIGURE VIDEOWALL

The following example creates and configure a group “Group1”, a 2x2 video wall “Zone1Scene2” within this group, and two layouts under the 2x2 video wall.

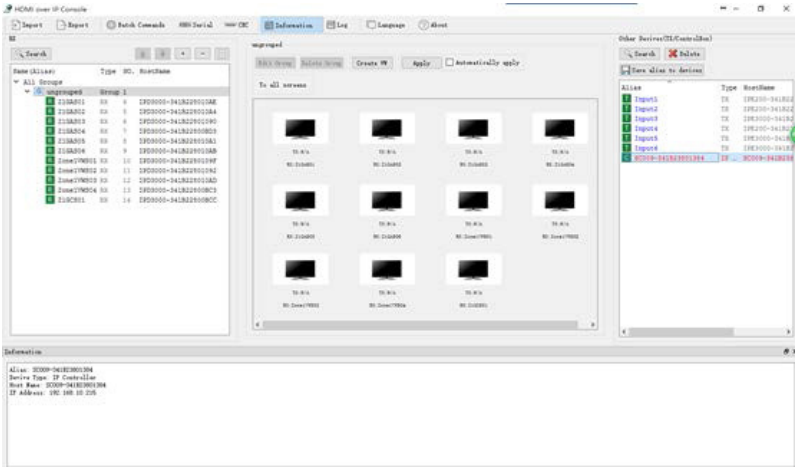
The details of the two layouts are shown in the table below.

	NAME	CONTENT
Layout A	Matrix	Four Single Screens
Layout B	2x2	A 2x2 Combination Screen

Step 1.

Launch PC configurator and click Search to search the connected devices Transmitter, Receiver and IP controller on the desired network.

Please note if the devices is displayed with the factory given names, proceed to provide alias names for easy identification. The following caption shows devices with aliases.

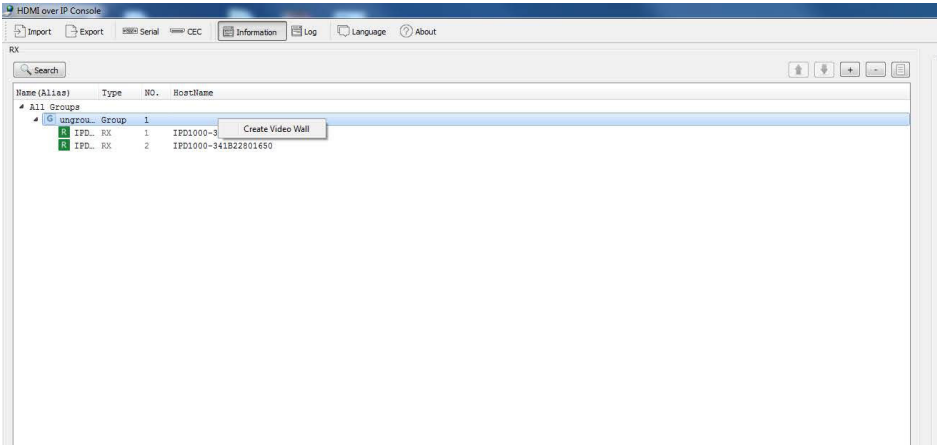


CREATE AND CONFIGURE VIDEOWALL

Step 2.

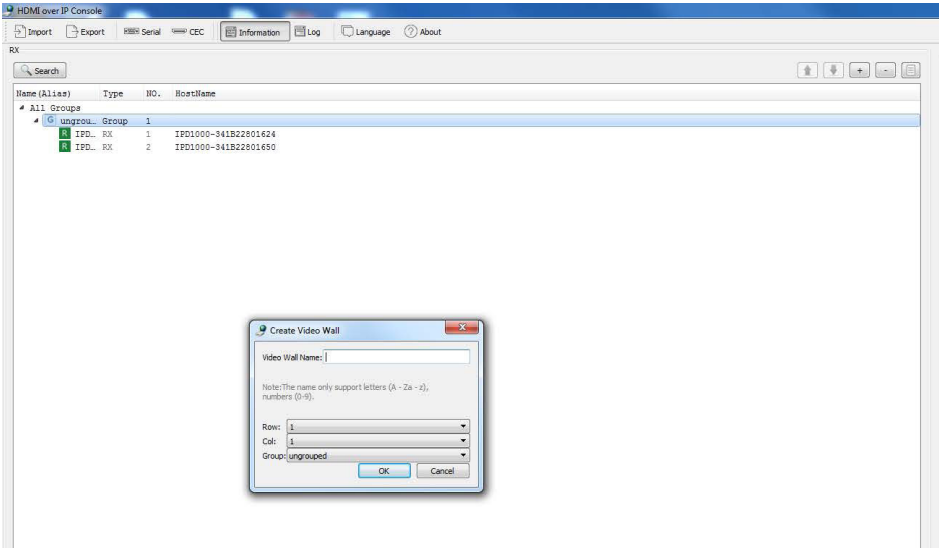
Create a group. To create a group please right click on “ungroup” a create videowall box appears, please click on the tab.

Name: **Group 1**



Step 3.

In **Group 1** create a 2x2 video wall **Zone1Scene2** with two rows and two columns.

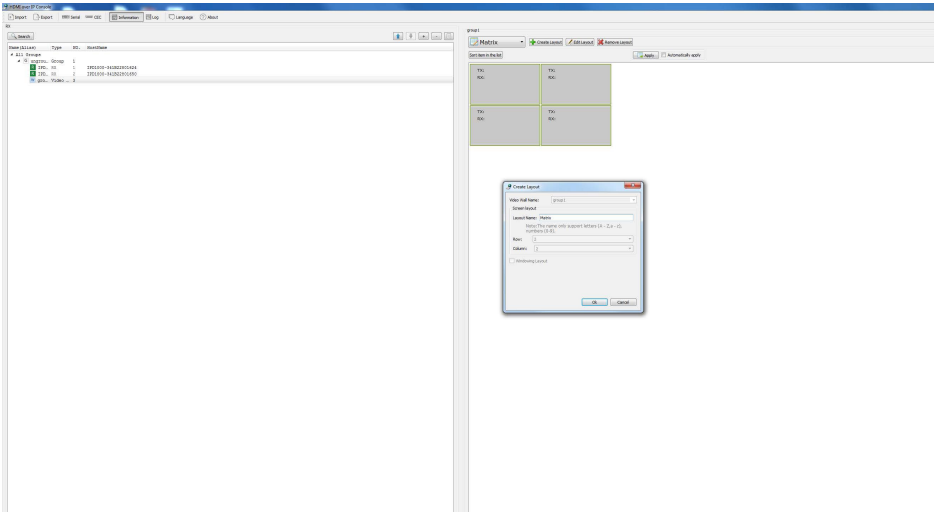


CREATE AND CONFIGURE VIDEOWALL

Step 4.

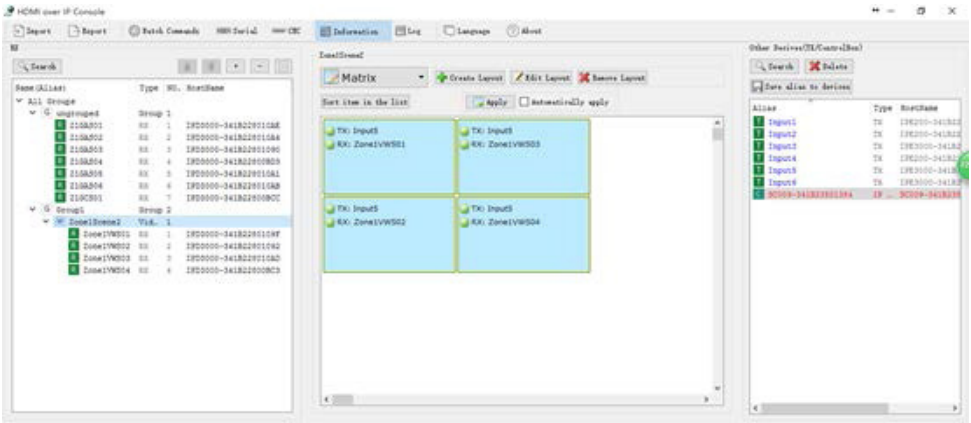
In the middle section, click on Create layout button, a window will appear to create “Layout Name”.

(1) Please type Matrix.



(2) To link/enable video and audio in the matrix , please Drag and Drop the Receiver devices from the left in Group1 to the middle section on the assigned screens. Perform this task again with the Transmitter devices on the right to stream the source to the screens.

NOTES: Apply button must be clicked for the above actions to be activated.

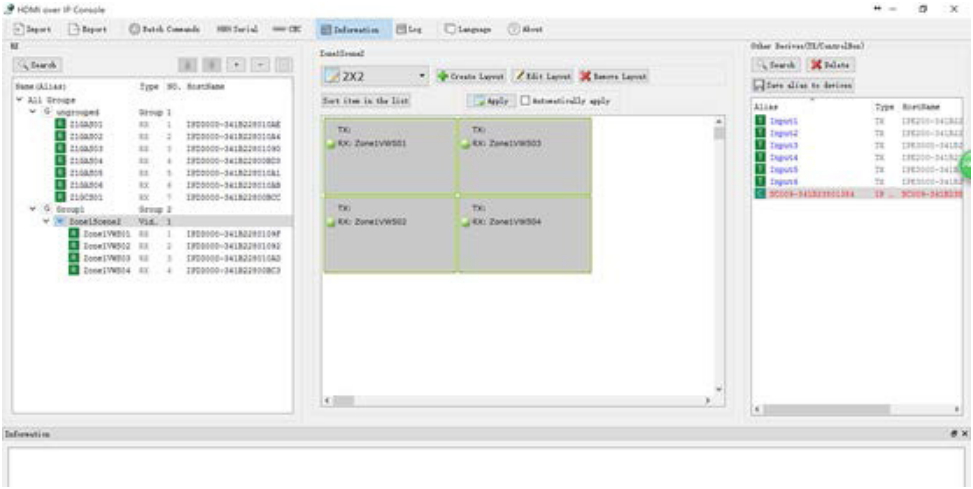


CREATE AND CONFIGURE VIDEOWALL

Step 5.

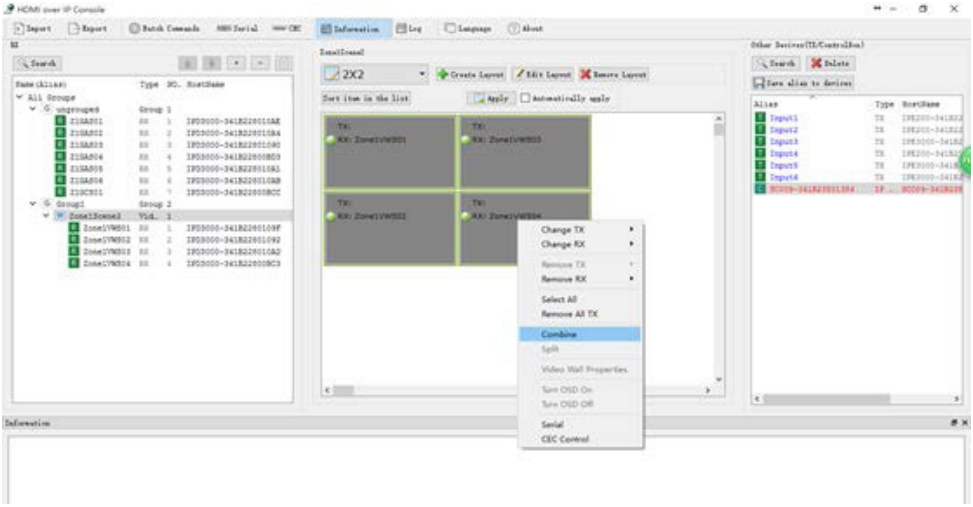
Create layout B which contains 2x2 combination screen.

(1) In video wall **Zone1Scene2**, create a layout **2x2**.



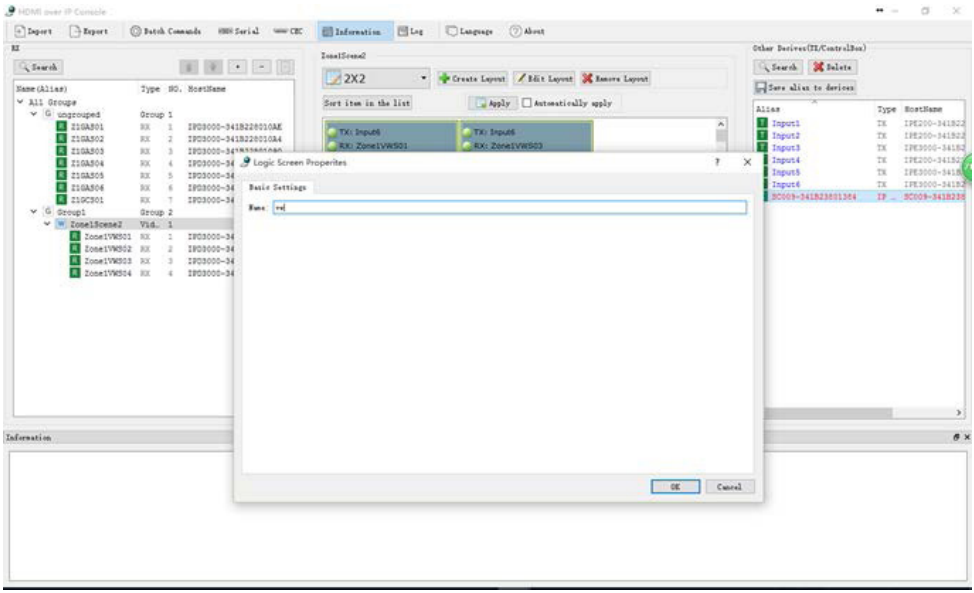
(2) Select the four screens by right clicking on the screen on the upper left corner and moving the cursor while holding the right mouse until all four screens are highlighted.

In the displayed context menu, choose **Combine**.

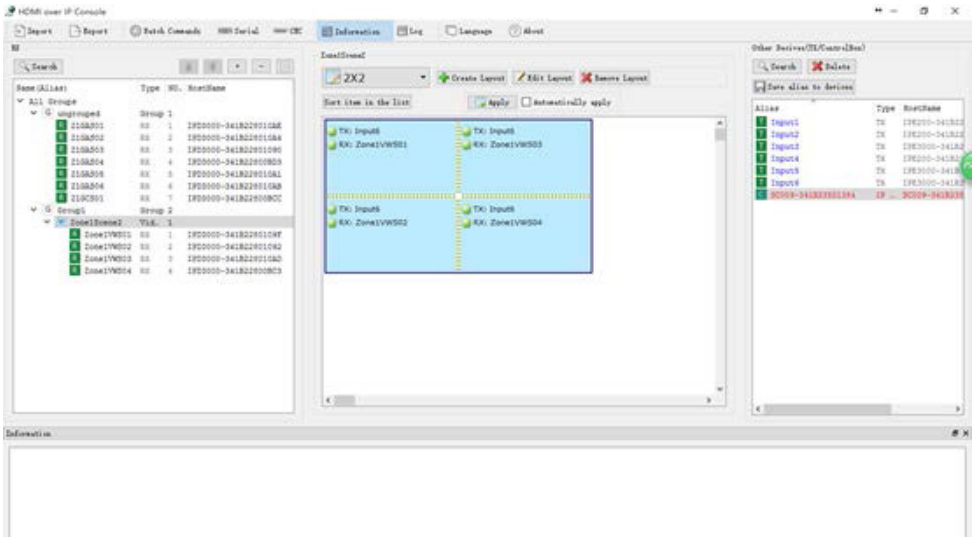


CREATE AND CONFIGURE VIDEOWALL

(3) In the **Video Wall Properties** dialog box, set the combination screen name to **vw** and click **OK**.



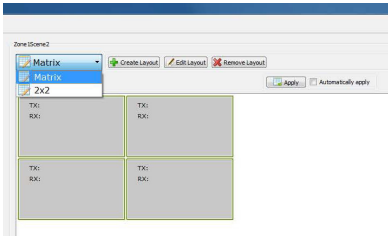
(4) The yellow checkered lines combining the 4 screens indicates a videowall has been created, as shown in the caption below.



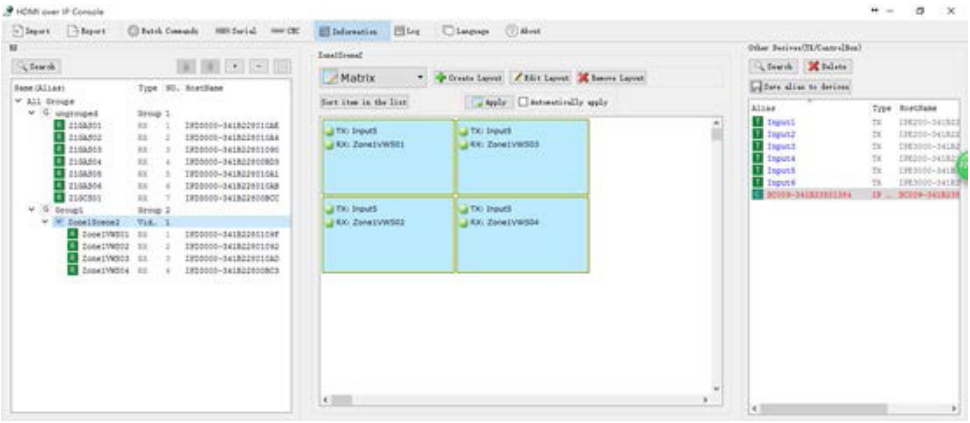
CREATE AND CONFIGURE VIDEOWALL

Please Note:

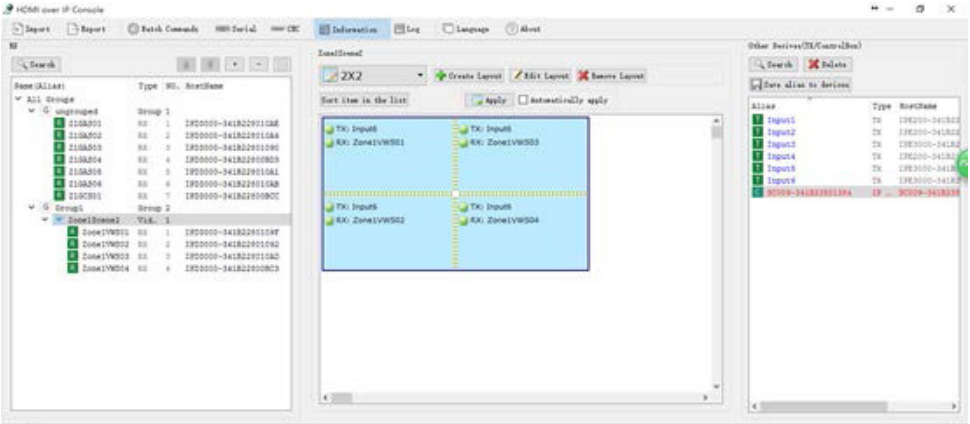
When the video wall and its layouts are completed as the above examples, different layouts can be viewed by clicking on the drop down arrow.



Layout name: Matrix
Content: Four single screens
Location: videowall Zone1Scene2



Layout name: 2x2
Content: 2x2 combination screen vw (configurable)
Location: video wall Zone1Scene2



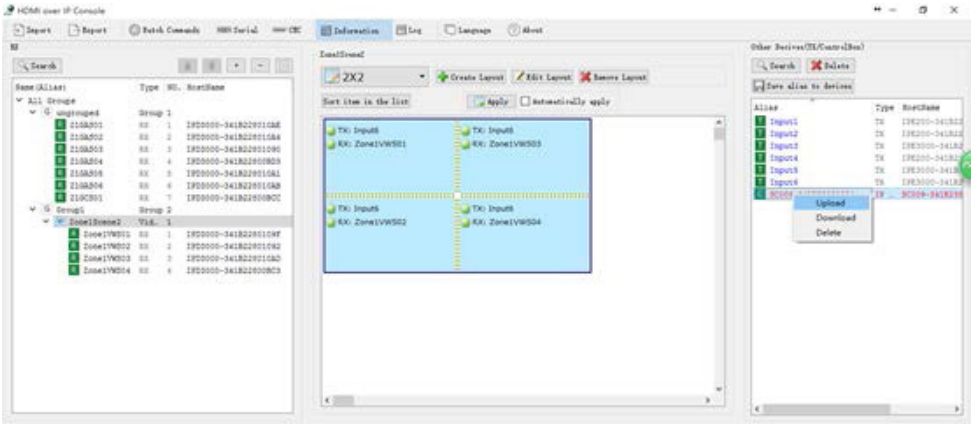
CREATE AND CONFIGURE VIDEOWALL

Step 6.

Proceed to upload all the configurations made to the IP controller.

Right click on HVWCTRL (IP controller) in Other Devices area and choose Upload.

When 100% is displayed, the upload is successful.



All steps for creating a videowall and matrix layouts are now successfully completed.

In the above examples, a video wall **Zone1Scene2** contains the following two layouts.

1. Matrix which contains no combination screen

2. 2X2 which contains a combination screen vw and is recognized as **Zone1Scene2-2X2_**vw in IP controller.

Within the IP controller WEB GUI, the user can input **API commands** to switch between sources on the video wall.

- To switch between sources for a video wall layout, use **vw change vwname txname**.

- To switch between sources for a single screen in a layout, use **vw change rxname txname**.

Example, to switch to source **input1** for the 2X2 videowall screen use **vw change Zone1Scene2-2X2_**vw Input1.

NOTES:

Naming Convention-Layout and video wall names can only contain numbers 0 to 9, lowercase letters a to z and uppercase letters A to Z.

- To switch between sources for a videowall and a single screen in a layout, use **vw change**.

- To switch between sources for a single screen outside a layout, use **matrix set**.

IPAD APP SETUP

HVWCTRL iPad App Quick Start

This guide demonstartes the seamless switching control appication for the HVWCIP-Series devices on PC or iPad for small or medium applications where a 3rd Party controller and programmer is not in the budget.

A. HVWCTRL software on iPad

1.1 Key Features

Some of the key features of the HVWCTRL are: The ability to Drag and Drop sources directly to the connected displays, live preview on iPad App of the connected sources, seamless Matrix and Video wall switching, and upload scenes from PC software to HVWCTRL for easy setup and configuration.

1.2 Downloading HVWCTRL- iPad & PC Software

** Search VisualM25 in Apple store and download it.*

1.3 Operating HVWCTRL- iPad & PC Software

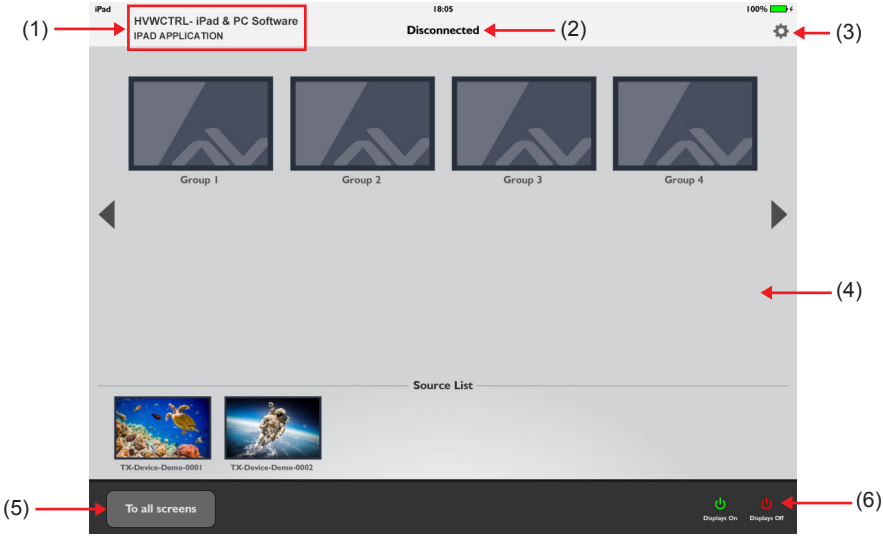
i. Launching HVWCTRL- iPad & PC Software

HVWCTRL- iPad & PC Software automatically connects to HVWCTRL using the default IP address 169.254.1.1 on its first startup. When connection succeeds, HVWCTRL- iPad & PC Software downloads configuration information from HVWCTRL such as logo icon, group information (includes group name and group sequence), device information (includes device name, groups and device sequence in a group) and video wall information (includes video wall name, layouts, groups and video wall sequence in a group). For iPad to receive /view live video feed from the connected Encoders, must be on the same IP range.

ii. Introduction to HVWCTRL- iPad & PC Software Interface

IPAD APP SETUP

1. Main Screen



When HVWCTRL- iPad & PC Software has established network connection to the HVWCTRL- iPad & PC App controller, the main screen above is displayed.

(1) Logo icon: indicates the image of this app name HVWCTRL- iPad & PC Software, which is uploaded to HVWCTRL- iPad & PC software IP configuration web from your local computer and then is downloaded from HVWCTRL- iPad & PC software IP to HVWCTRL- iPad & PC Software.

(2) Connected and Disconnected: indicates the connection status between HVWCTRL- iPad & PC Software and HVWCTRL- iPad & PC software IP.

(3) System Settings button: used to configure the system settings.

(4) Slider: go to previous or next screen.

(5) To all screen: dragging and dropping a source from source list over this button means the switching of this source to the screens in all groups, including single screens and video walls.

(6) Display On: Power on the displays in all groups (must be compatible with CEC commands).

Display Off: Place all displays in standby state (must be compatible with CEC commands).

IPAD APP SETUP

2. Introduction to Video Wall



On the main screen, select a group icon to access this group.

If this group is configured for a video wall, the following app interface will show as the above caption.

(7) Group1: indicates the user is in/selected the current group.

(8) VWall2: indicates the video wall name.

(9) Screen layout list: indicate all videowall layouts created, Press a layout to seamlessly switch between each other.

(10) Display area: Drag and drop a video source from the source list to this area to switch between video sources and enjoy live preview as well.

(11) Preset settings:

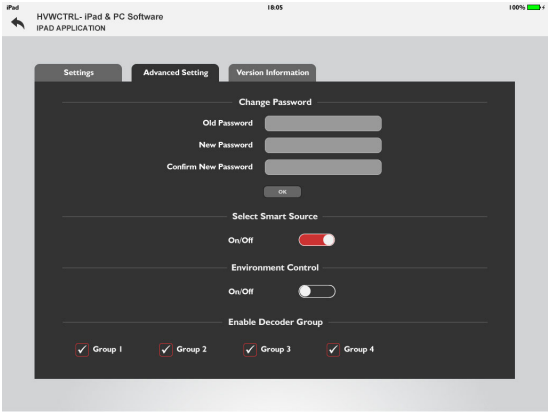
Save: The current link or configuration made between Receiver and Transmitter in a group as a preset option.

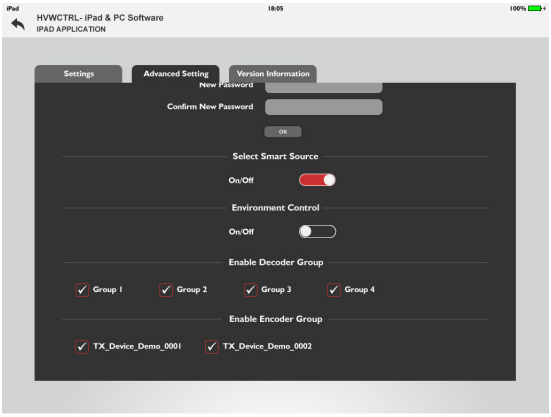
Preset-1, Preset-2 and Preset-3: recall the corresponding relationship between Receiver and Transmitter in a group.

(12) Back button: To navigate to the main screen.

ADVANCE SETTING TABS







ADVANCE SETTING TABS



Introduction to System settings Screen

In system settings screen the user can:

- Change HVWCTRL- iPad & PC Software IP address.
- Change advanced setting password (the default is admin).
- Show and hide Receiver groups and Transmitter.
- Enable and disable smart source selection function. When switching between video wall layouts, the video source from the last layout will be used in the current layout.
- Enable and disable environment control function. By default, it's disabled.
- View software version.

SIMPLE API COMMANDS

No.	COMMANDS	DESCRIPTION
1	Matrix set Transmitter1 / Receiver2/ Receiver3	Switch between sources for single screens.
2	Vw change Receiver/Transmitter	Switch between sources for single screens. **NOTES:** For a display in a combination screen, matrix set will not change its video wall status while vw change will set it to exit the current video wall status and to full-screen display of Transmitter.
3	Vw change vw-name Transmitter	Switch between sources for a videowall layout.
4	Scene active scenename	Switch between video wall layouts.
5	Config set device CEC standby hostname1 hostname2...	Set displays connected to hostname1 and hostname2 to enter standby mode. The displays must support CEC.
6	Config set device CEC onetouchplay hostname1 hostname2...	Power on displays connected to hostname1 and hostname2. The displays must support CEC.