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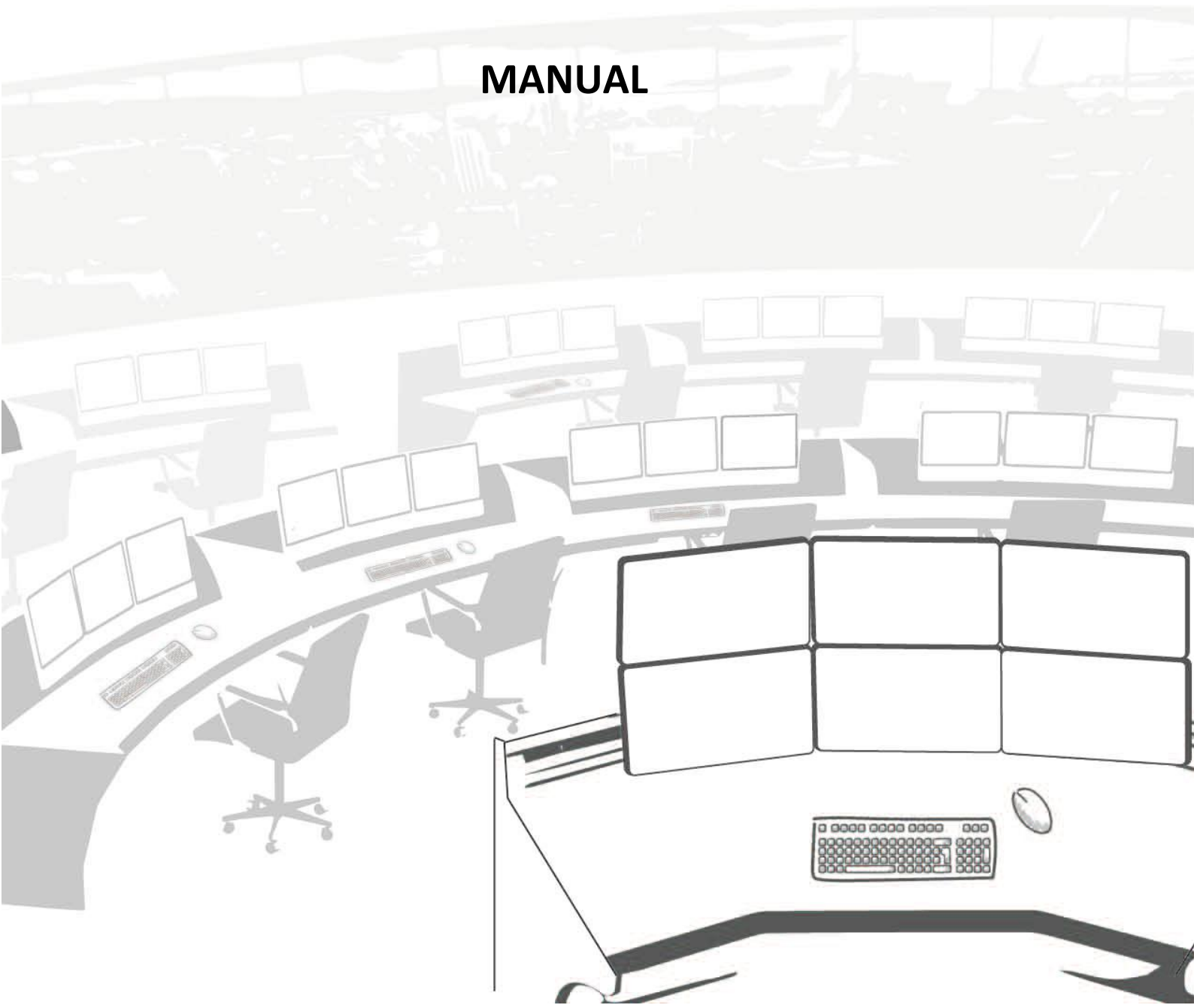
AVCIT DS3.0 IP Based KVM System

MANUAL



Content

1. About AVCIT IP Based KVM System

IP Based & KVM Video Collaboration System presented by AVCIT, provides all-in-one Command Center Solutions, adds great value on your mission critical system design & upgrade, whatever you need:

- KVM matrix switch
- LCD/LED wall controller
- Visualized presentation control
- RS232/IR/UDP controller
- HDMI matrix switch

It is simply transceiver node DSIII + GB switch, cabling simply by twisted pair only, with discrete and flexible configuration, for various size of your mission critical installation.

It's with build-in video wall controller feature for LCD/LED, For both 1080p display or non-regular LED cabinet, It will replace all your standalone rack mounted & traditional KVM/Video wall solution, such as AV/KVM matrix switcher, HDMI/DVI extender/receiver/scaler, video wall processor, control processor and etc, AVCIT node is your ALL-IN-ONE control solution.

Console operator can get full controls of the multiple PC by one keyboard and mouse, Console operator can push/project source to any display or video wall seamlessly, by hot key:

Double-click Ctrl to pull or take-over or monitor the server/PC, Double-click Shift to push current PC to any display of other console user, or push it to selected video wall,Which is highlighting by red box, and moved by arrow key.

1.1. Hardware Requirements and Setting

1.1.1. Requirements of GB Ethernet Switch

- Gigabit switch with POE feature, or non-POE switch + POE Injector, switching capacity and forwarding performance are no less than the recommend model.
- In order to get your best user experience, We strongly recommend LAN Switch model HUAWEI S5720S-28P-SI-AC, S5700-48TP-PWR-SI, S5720-56C-PWR-HI, or others with switching capacity ≥ 598Gbps, forwarding performance ≥ 222Mpps, especially when you are going to deploy its nice performance of LED video wall controller feature.
- Max 3-4pcs S5720/5700 to stack, for project that need more than 192 node, please use Core Switch, i.e. HUAWEI S6720/S7703 Series, i.e. S6720S-26Q-EI-24S-AC or S6720-32C-SI-AC

1.1.2. Cabling and others

- Please use at least CAT6e or higher quality STP cable
- Each KVM node is assigned with a unique IP(see the rear label) , these default IPs are not allowed to changed(with a tool) after you can operate our system well
- To get best experience, iPad Pro with latest iOS firmware is your priority

1.2. KVM Node(DSIII)

It is both the input node and output node(also known as Codec, or transceiver)

DSIII node is the unique KVM codec of H.264/265 video streaming, together with Ethernet switch, DSIII can be configured to be either a virtual KVM matrix, a video wall matrix, a central controller or a system with all of them involved. Interface of KVM Node is with following model:

- DSIII-HH: 2K HDMI KVM Transceiver Node
- DSIII-DD: 2K DVI KVM Transceiver Node
- DSIII-VD: 2K VGA KVM Transceiver Node
- DSIII-IN-4K: 4K KVM Input Node
- DSIII-OUT-4K: 4K KVM Output Node
- DSIII-OUT-4Ka: basic version of DSIII-OUT-4K

There are 2 USB port on DSIII-DD node, it is default an KVM output node, while any DSIII-DD node can be configured to KVM input node after a KVM adapter plugged in.

DSII is Non-KVM node, it is the unique codec of H.264/H.265 video streaming, together with Ethernet switch, DSII node can be configured to be either a virtual video matrix, a video wall matrix, a LED wall processor, a central controller over IP, or a system with all of them involved. It surely will add great value on your design of mission critical system, with following model:

- DSII-HH: 2K Transeiver Node, with HDMI IN + HDMI OUT
- DSII-DD: 2K Transeiver Node, DVI-D IN + DVI-I OUT
- DSII-VD: 2K Transeiver Node, DVI-I IN+ DVI-I OUT
- DSII-IN-4K: 4K Input Node
- DSII-OUT-4K: 4K Output Node

2K DSII Transceiver Node can be configured either to be encoder for any source, which will have realtime preview on iOS+Win10 control tablet, or to be decoder for each display of LCD/DLP/LED wall, so that a virtual LCD/LED wall controller is configured, too, operator can control the wall by inuitively drag/drop.

Both DSIII and DSII node have HDMI/DVI input and output port,bi-directional RS232/IR/IO port, its central controller feature can not work without data center(also known as IP Based central controller E-CP4C)

In a word, DSIII is for control room KVM solutions, with mouse Cross Display Switching
Seamless pull/push, While DSII is mostly for system which require more about interactive control features, Real-time Preview on iOS+Win10, zoom in/out,overlap by mouse & finger dragging.

DSIII-HH

DSII-HH

1.3. Central Controller E-CP4C(Optional)

For KVM system which requires RS232/485/IO/IR controls on iOS/Window tablet, E-CP4C is your option, please see manual of AVCIT IP Based Video Collaboration System.

2. Video Wall Partition

If you are able to push/project KVM source to standalone display, please skip this part.
If you are able to push/project KVM source to certain area/partition of a video wall, then please go on reading this part.

Following software will help you to run partition software on control tablet, whatever iOS or windows tablet

or simply a laptop/desktop, please refer to page 13 of “Manual of AVCIT IP Based System”, see “Import .tp data pack to APP(iOS and PC)”.

2.1. Introduction to Partition Software

2.1.1. Programming Software

- “TouchPanel 3.x.y” UI design tool for both iOS and PC, GUI interface, Produce UI data pack(3.x.y is version number)

2.1.2. UI Data Pack

- ”project name.tp” or “client name.tp”, “DS demo.tp”, Project UI Data pack, produced by Touchpanel 3.x.y, with extension name .tp, for both iOS and Window OS

2.1.3. User Interface/APP

- ”DSworks x.y” Control UI Software on control PC, it only works with both Touchpanel UI data pack and USB Sentinel Key
- “I-CTL” Control UI Software on iOS, free to download at Apple APP Store, does not work without Touchpanel data pack(Latest version on Jan 2018 is i-CTL 3.2)

2.1.4. Introduction to touchpanel 3.x.y

Touchpanel 3.x.y is GUI tool software, so you can find the name of each tool icon when your mouse over on it, here is a brief introduction of icons, which is most frequently used in the UI designing of control tablet.

- Select:

icon cursor “select” is very important when you can not open the properties of such area.

- Slider:

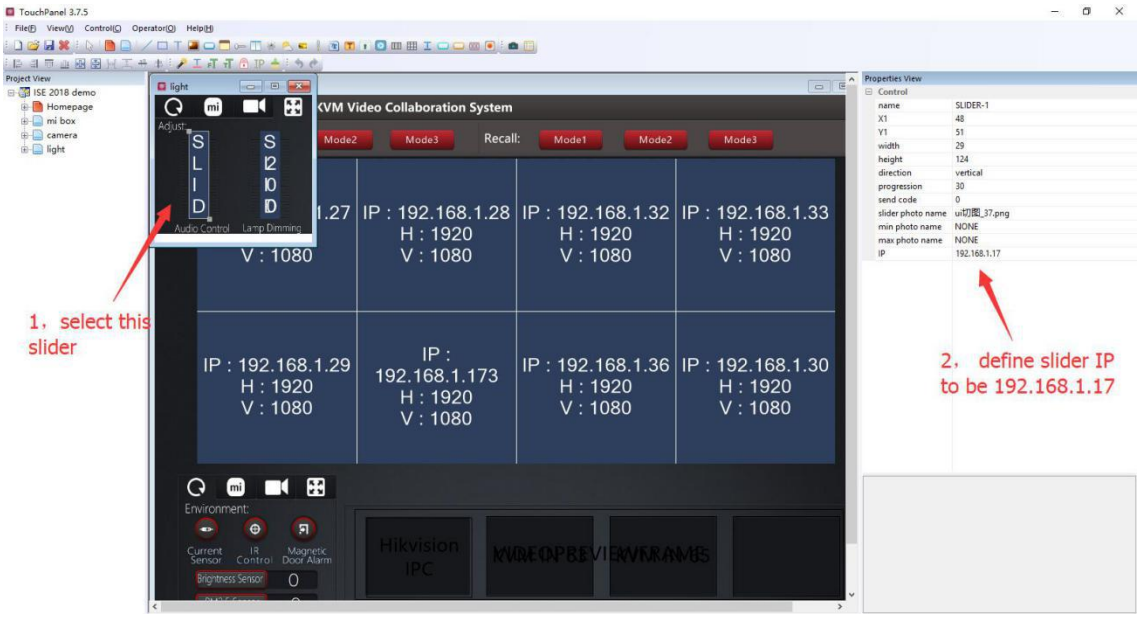
control volume/dimming, i.e. define the slider as IP 192.168.1.17

Volume Control

if you drag any video source over the slider, the audio will be separated/de-embedded to node with IP 192.168.1.17. you can connect this node to amplifier and speaker, and try the build-in volume controller feature.

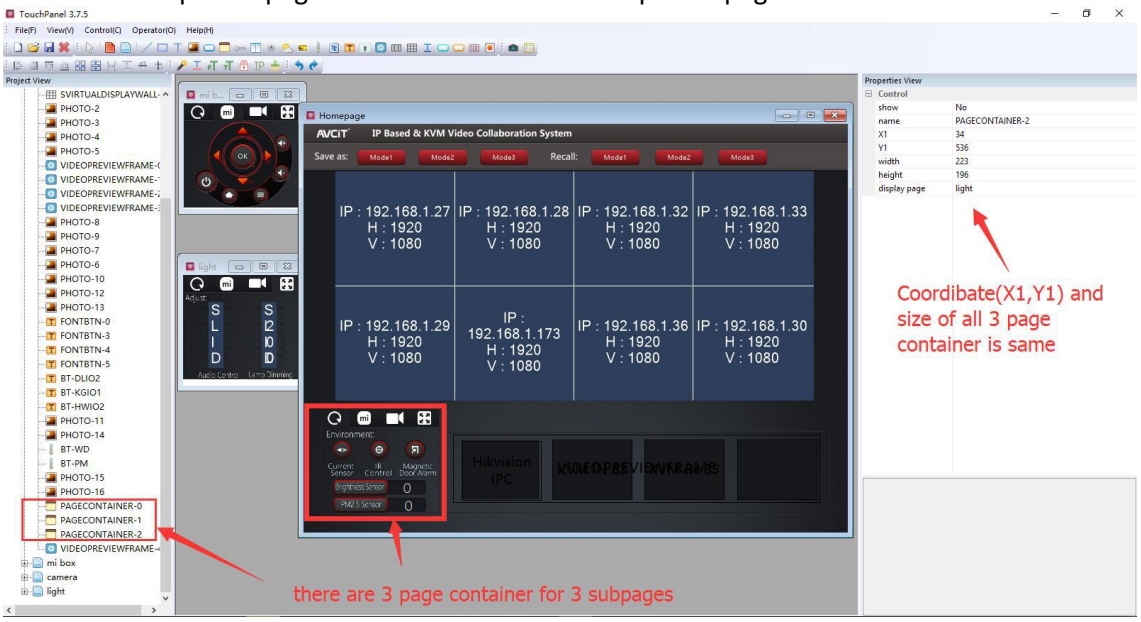
Dimming Control

you need to order E-CP4C or E-CP4C PRO controller, use DMX512 or I/O,RS232 PORT to control lamp and LED.



- Pagecontainer and subpage:

to create multiple subpage and switch between multiple subpage



- Picker and slider photo:

not usually used

- Web-camera:

for IP camera preview, we usually do it by “Video Display Frame” frame

- Sensor:

For environment detection,display and re-action

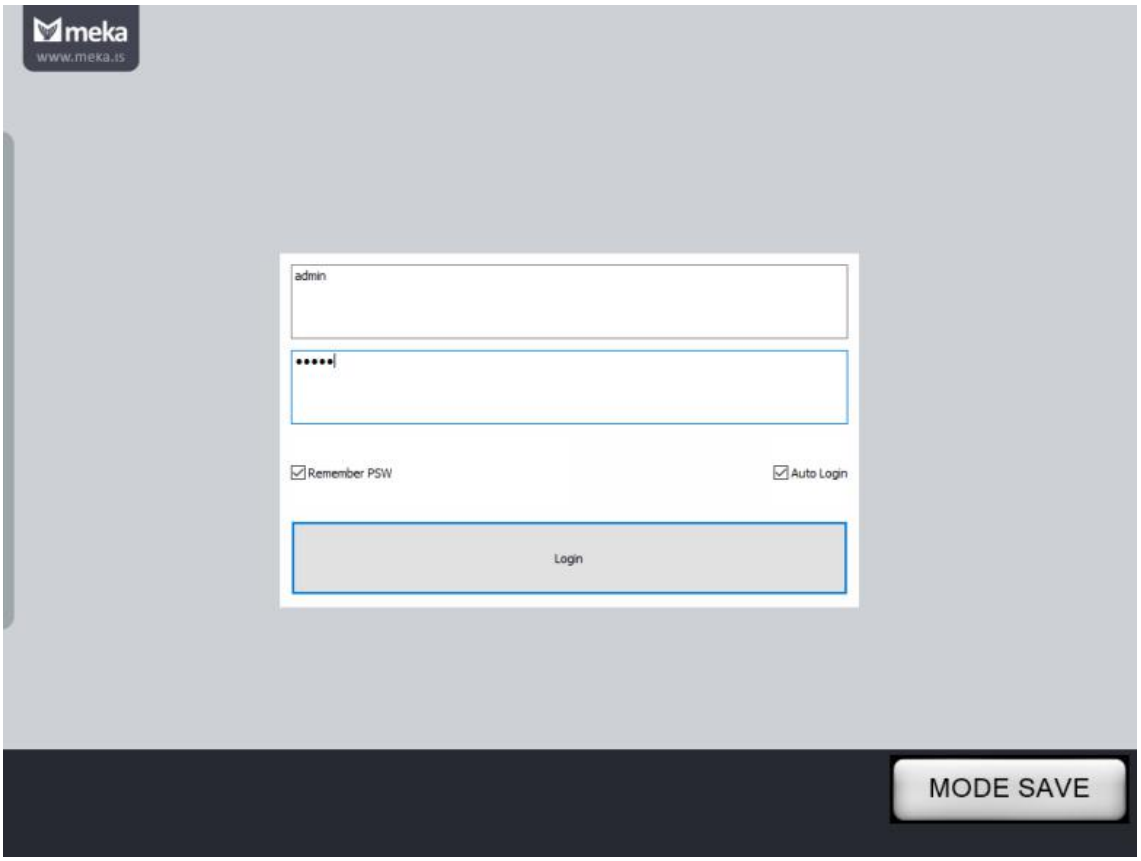
these are useful when your system have sensors(of course you need AVCIT E-CP4C controller) such as temperature, brightness, air pollution, humidity, alarming system and so on.

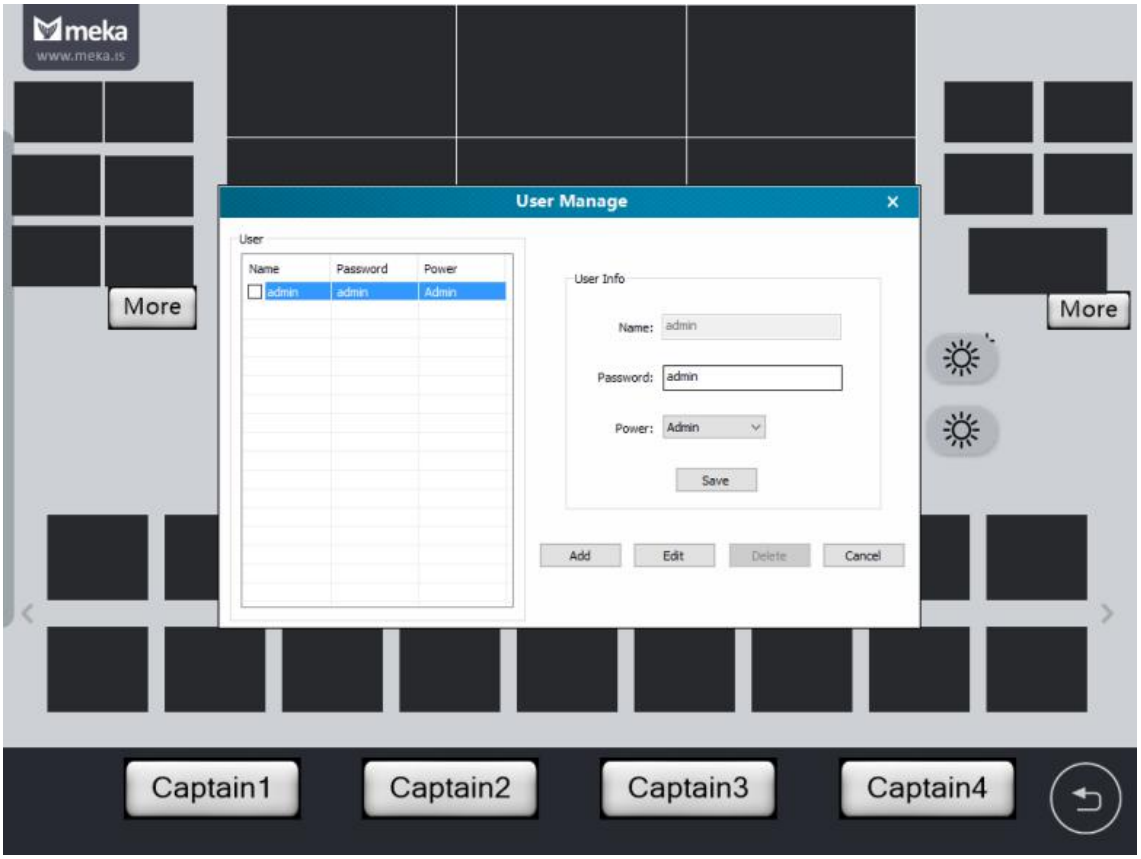
The status of these devices will be display here. Some reaction can be preset to be activated once something happened. Such as alarming is detected, or the value of temperature reach or exceed

- log in:

create password and different user with different permission

Function of “login” of i-CTL and DSworks is slightly different, following is UI of login in DSworks
Once you add “login” icon, you need to enter password, default admin ID and password is admin, you can or right click(or long press blank area, at i-CTL) , select “user manage” to change password, and create new user ID.





- Video Display Frame:

for single video sources from AVCIT node or from IP camera, you need to write the correct IP and RTSP streaming
RTSP format of video sources from AVCIT DSII/DSIII node:
rtsp://192.168.1.41:2554/352;rtsp://192.168.1.41:554/1080

RTSP format of video sources from IP camera, depending on the IPC producer, here is some popular brand:
Hikvision IP camera:
rtsp://admin:password@192.168.1.41/h264/ch1/sub/av_stream;rtsp://admin:password@192.168.1.41/h264/ch1/main/av_stream
Samsung IP camera
rtsp://admin:password@192.168.0.41:554/profile2/media.smp;rtsp://admin:password@192.168.0.41:554/profile3/media.smp
TP-LINK IP camera
rtsp://admin:password@192.168.0.41:554/id=0;rtsp://admin:password@192.168.0.41:554/id=1

- Video Preview:

difference from “Video Display Frame” is automatically IP detection, no need to write RTSP streaming, you can choose the row and column. It is easy to set up the video view if you have less than 10 video source. While we better use”Scroll Video Preview” if there are more than 10 video preview

- Scroll Video Preview:

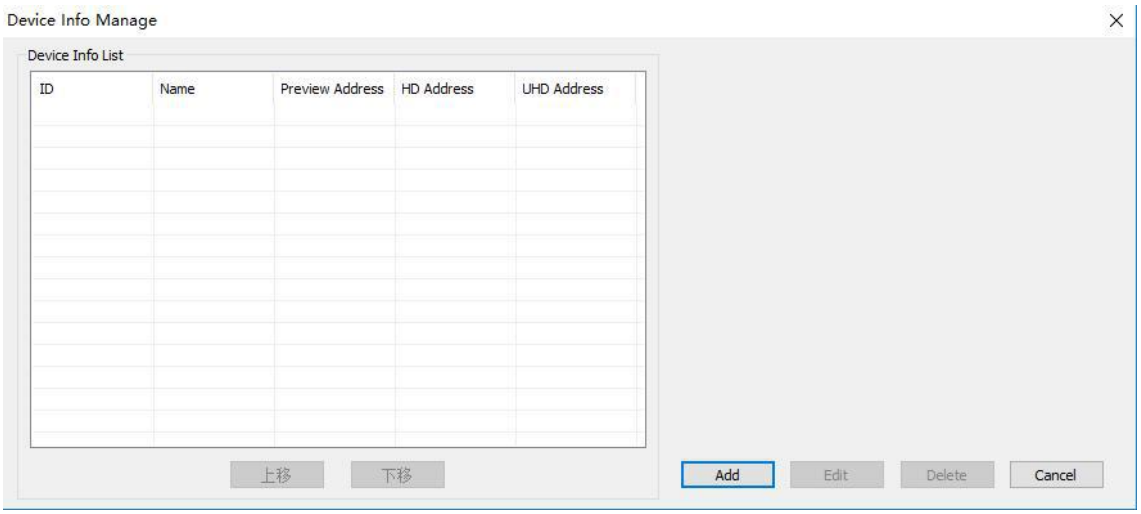
As you know the video decoding capacity of iPad and any computer is not unlimited, we already test that iPad Pro(12.9” 64 GB version) can decoding max 15 video, while computer with intel i5 can decoding 15-16 video.

This means you can preview max 14 video on iPad, Supposing there are only 1 video on “Synchronous

Display Wall” so Scroll Video Preview is born for mass of video source.

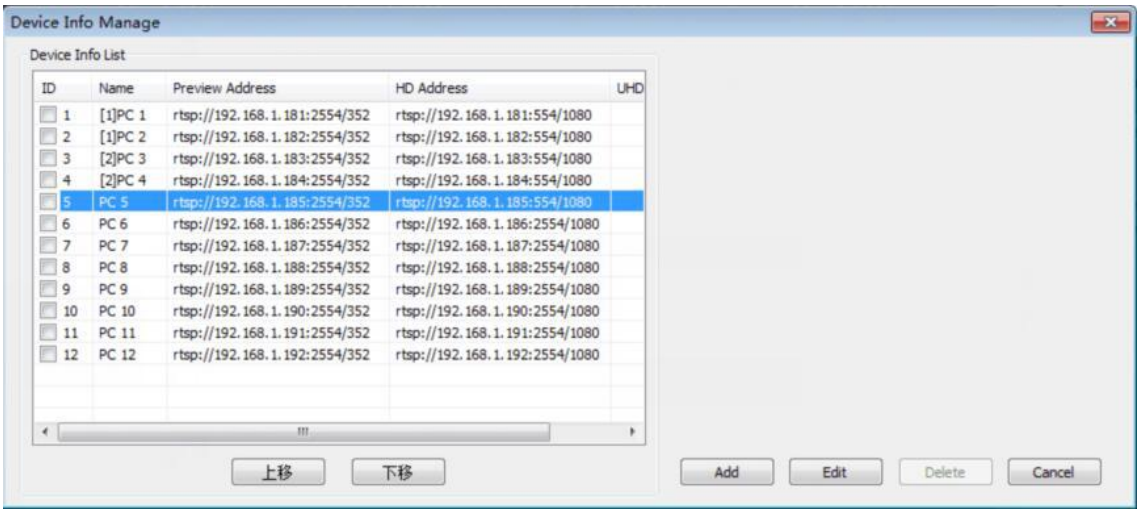
Create “Scroll Video Preview” frame

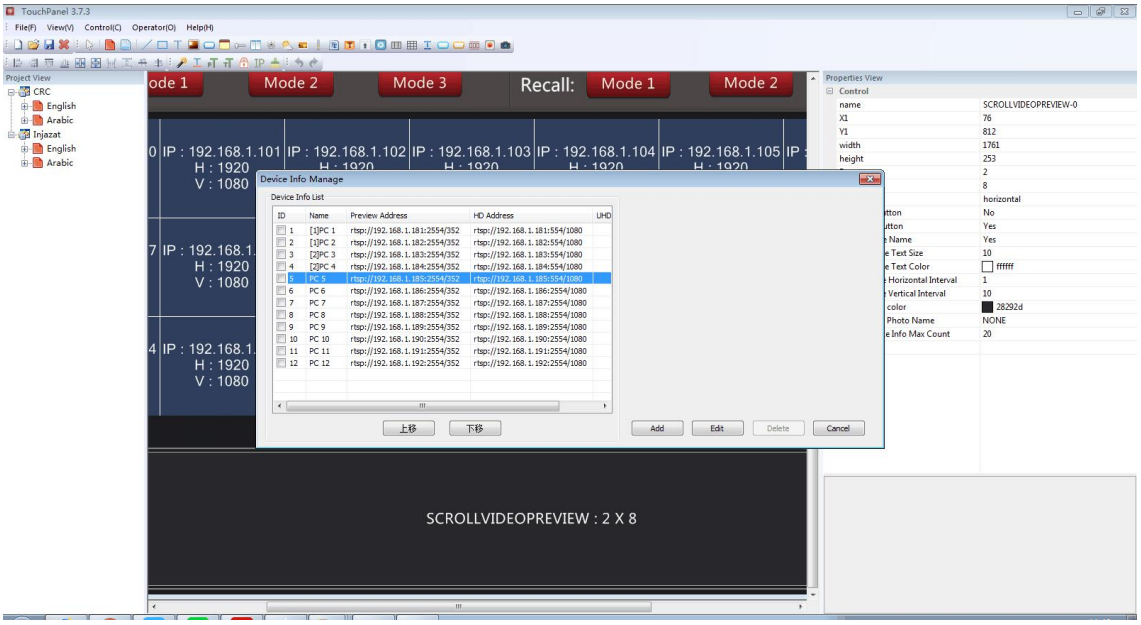
Please create “Scroll Video Preview” frame by drag, choose “select” icon, then double-click “Scroll Video Preview” frame, “Device info Manage” pops up, then “ADD”, to write the correct IP and RTSP streaming, according to the format of video sources from AVCIT DSII/DSIII node and 3rd party IP camera.



Create grouping for “Scroll Video Preview” frame:

simply add [1] before “name”, following PC 1,2,3,4 is group 1, they will scroll together

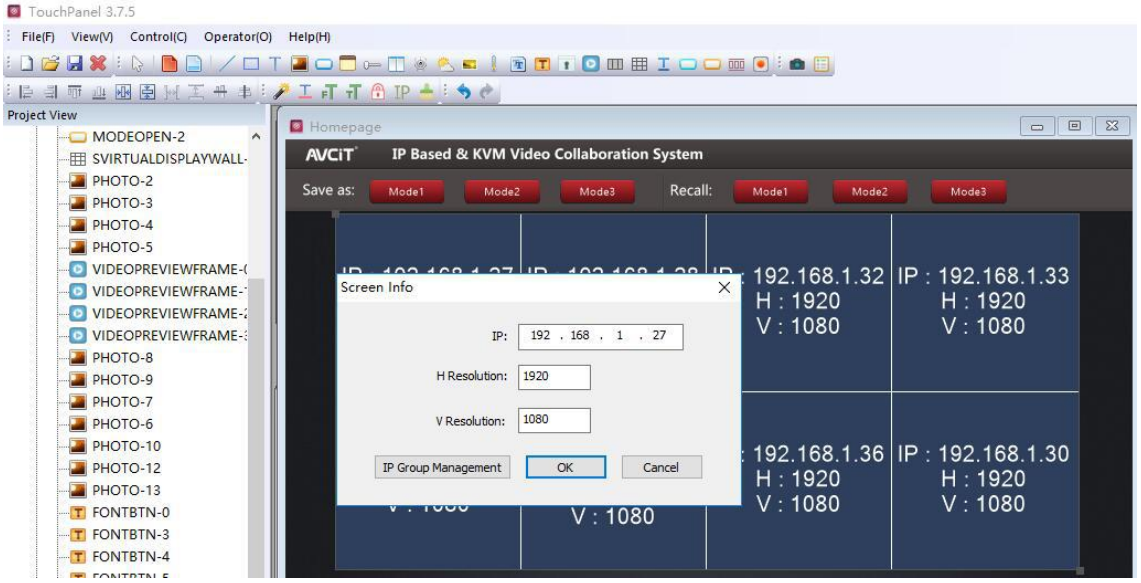




- Synchronous Display Wall

Some time we say “Sync Display Wall”, or “mirror of Video Wall”, setting for LCD/DLP FHD display is easy, just write row and column and the IP of node at “screen info”.

If you are plan the control for LED wall, ,whatever it is leyard, unilumin or liantronic, or brand like siliconcore, please correct H V resolution 1920x1080 to be your irregular pixel of each LED sending card.



Important notice: please remember to order DSII-HH-OUT(instead of DSII-HH), this is a special version for wall control(or wall processor, wall splicing), especially for LED wall

- Recording:

this for project that AVCIT’s IP based playback system was involved, but this system is not open to oversea in this stage

- E8platform and RVS platform:

This icon is available from touchpanel version 3.7.5, both are interface to integrate surveillance system or AI system(face identification), such as Hikvision DS-B20 system and YITU AI system,

This is mission critical for police and military, because they have a comprehensive surveillance and AI system, with thousand of cameras located all around the city. Several installation is already deployed in China.
AVCIT IP based system can quickly locate and decode realtime streaming from Hikvisoon DS-B20 system, and push it to video wall.

- Mode Save/open:

Scenario save and recall, all video wall layout can be saved and recall

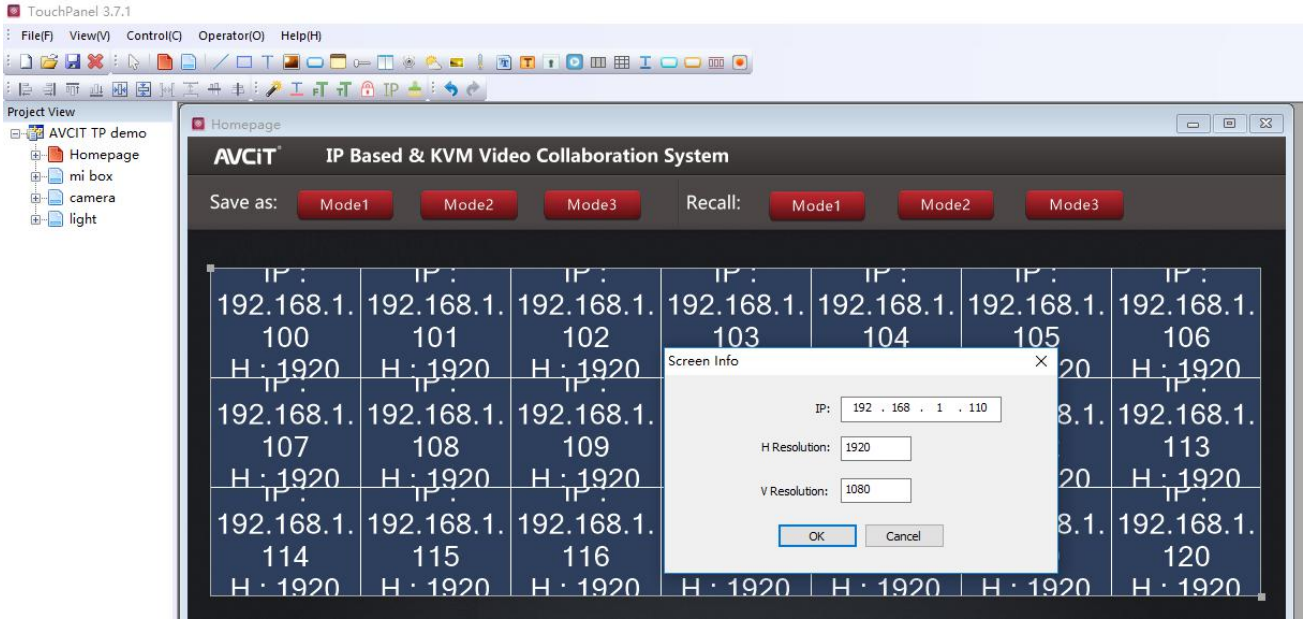
2.2. Settings before Video Wall Partition

DSworks or i-CTL installed/running on control tablet, i.e. iOS/Window, is exactly same to that of IP Based Video Collaboration System. Here for KVM system, the DSworks or i-CTL on control tablet is only for set the video wall layout/partition and save as scenario/mode, while you can also set several scenario, to recall them anytime.

2.2.1. IP Setting for Video Wall Matrix

Please open ”project name.tp” by “TouchPanel 3.x.y”, each physical display connect to a node, please record The IP of each AVCIT node after video wall installation(**or contact AVCIT support to simply change the IP by “FBS system assistant”, so that the IP can be continuous and regular, and easy to remember**), then set IP here by double click a physical display.
Take this 7x3 video wall as example, you should set all 21 IP, make sure them in correct order, as follows
192.168.1.100, 192.168.1.101, ...192.168.1.106
192.168.1.107, 192.168.1.108, ...192.168.1.113
192.168.1.114, 192.168.1.115, ...192.168.1.120

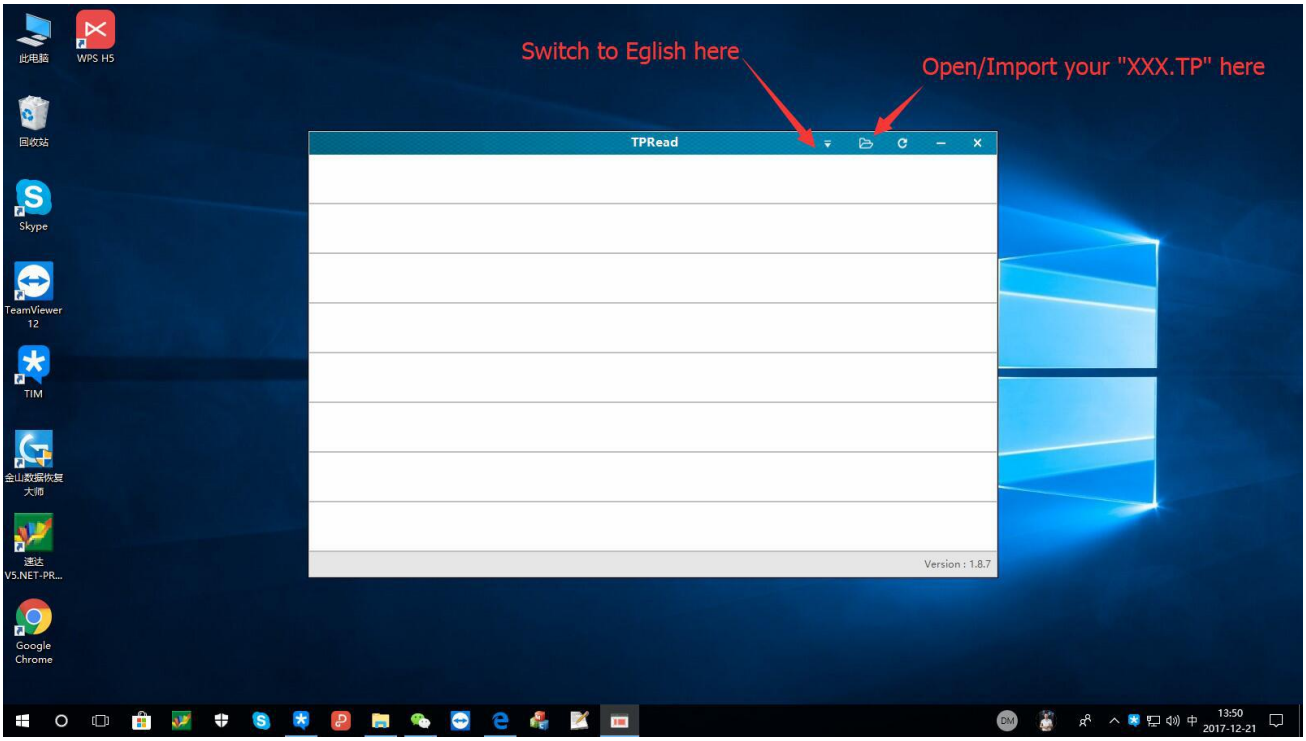
Please note you need to change the resolution if your video wall is not 1080p, i.e. a LED wall with several or dozens of LED sending card, which are all irregular resolution.



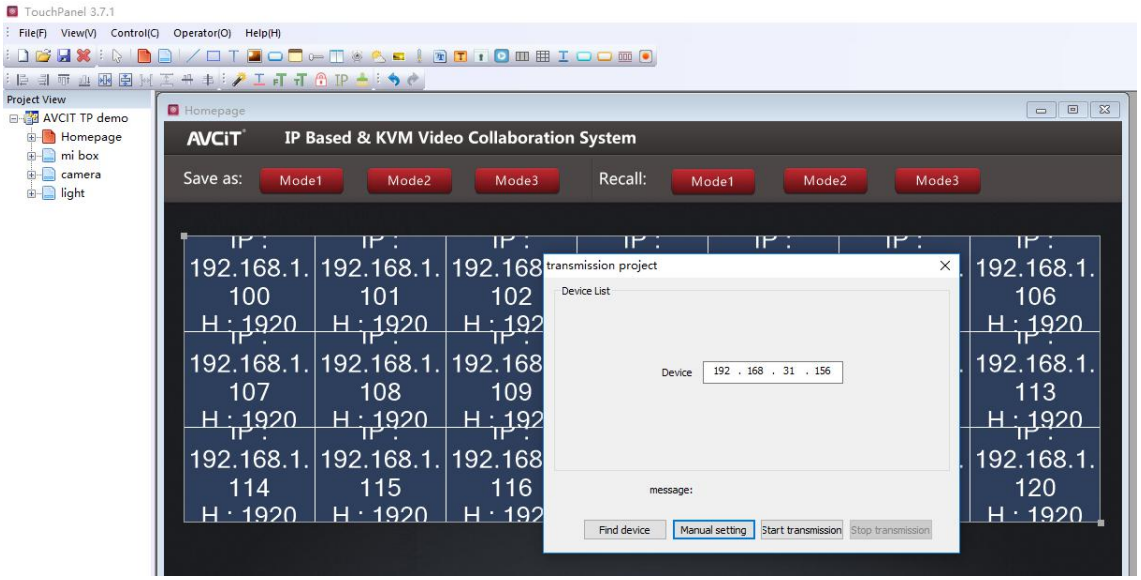
2.2.2. Import UI data pack to DSworks and i-CTL

- Import UI data pack to DSworks

Since DSworks is portable software, simply open “DSworks” with your Sentinel Key plugged into “control PC” then Import UI data pack, which is usually named as“client.tp”, or “DS demo.tp”
And remember to switch the UI language here:

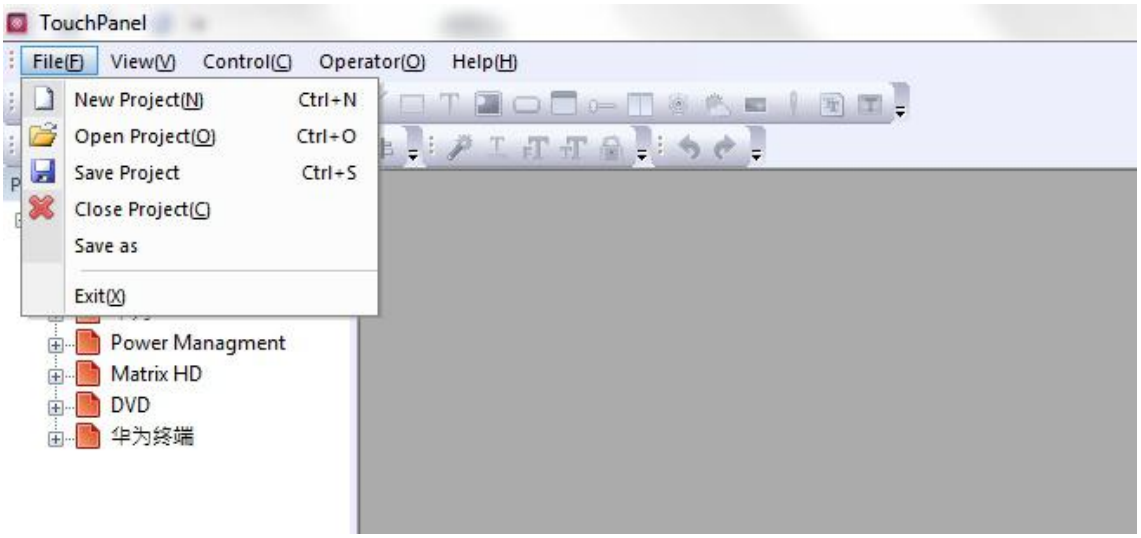


- Import UI data pack to i-CTL

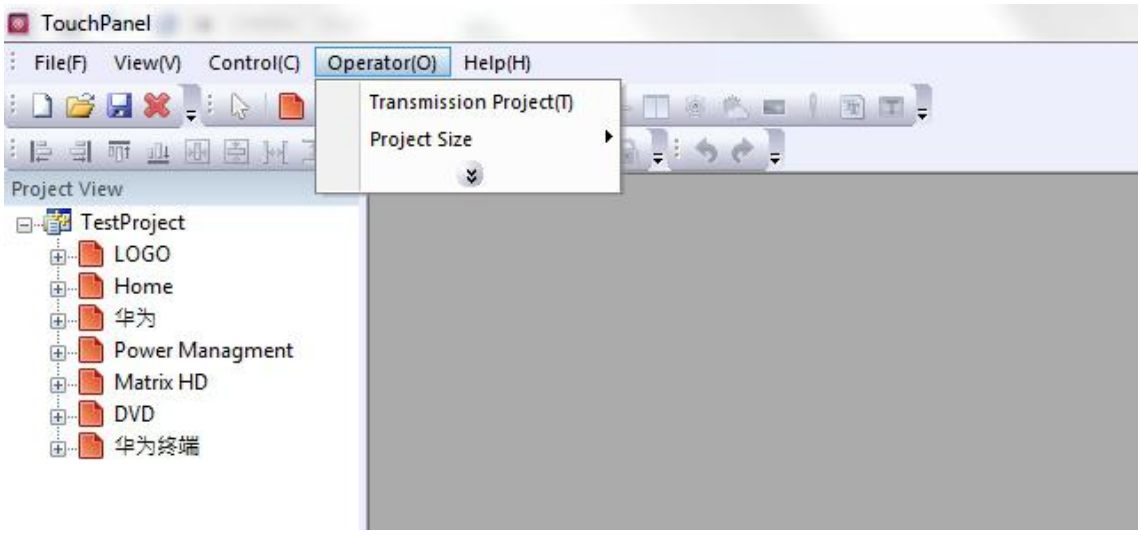


Following are 8 steps to import data pack to iOS devices:

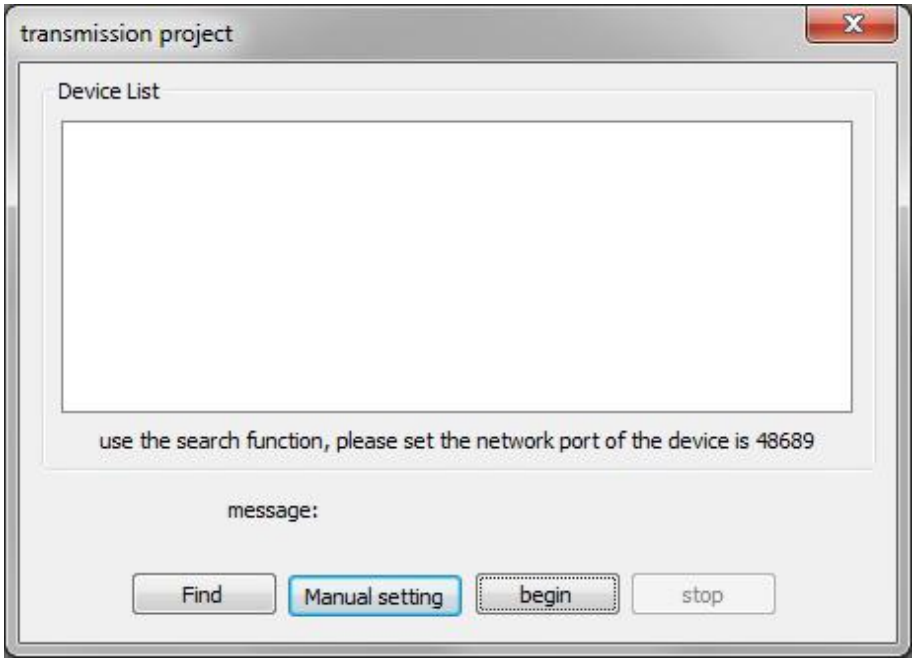
① Install i-CTL from iOS APP stores, Select Transfer in the upper left corner.
② Download ‘’TouchPanel 3.x.y’’ and un-zip the file contents, click ‘’TouchPanel.exe’’ (portable software, no installation required), Select “File/Open Project” to import UI data pack



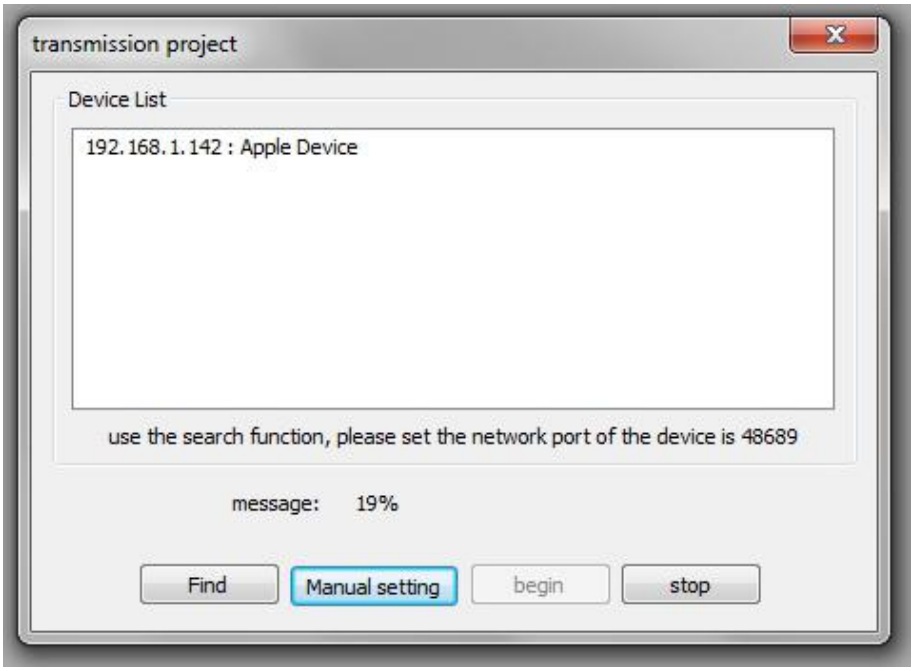
③ Select Operator/Transmission Project(T)



④ Select “Manual setting”, Enter the IP address and click “Find” button



⑤ Then you will see device list “192.168.1.142: Apple Device”, Select the device Click “Begin”, You will see a progress bar:



⑥ See”message: transmission project complete” when transmission to the iOS device is successful
⑦ Choose project name “Project name” to enter UI pages
⑧ Long press blank area of i-CTL UI, until you see the menu, choose top row,”web setting”, input password “avcit” to enter
⑨ Change the IP to be that of your E-CP4C central controller if you use a E-CP4C, IP of E-CP4C central controller is default 192.168.1.234
⑩ Set all port 8888 to be 48689, and use default ID
⑪ That’s all

2.2.3. Setting of DSworks and i-CTL

AVCIT IP Based system allow multiple control tablet to control at the same time.

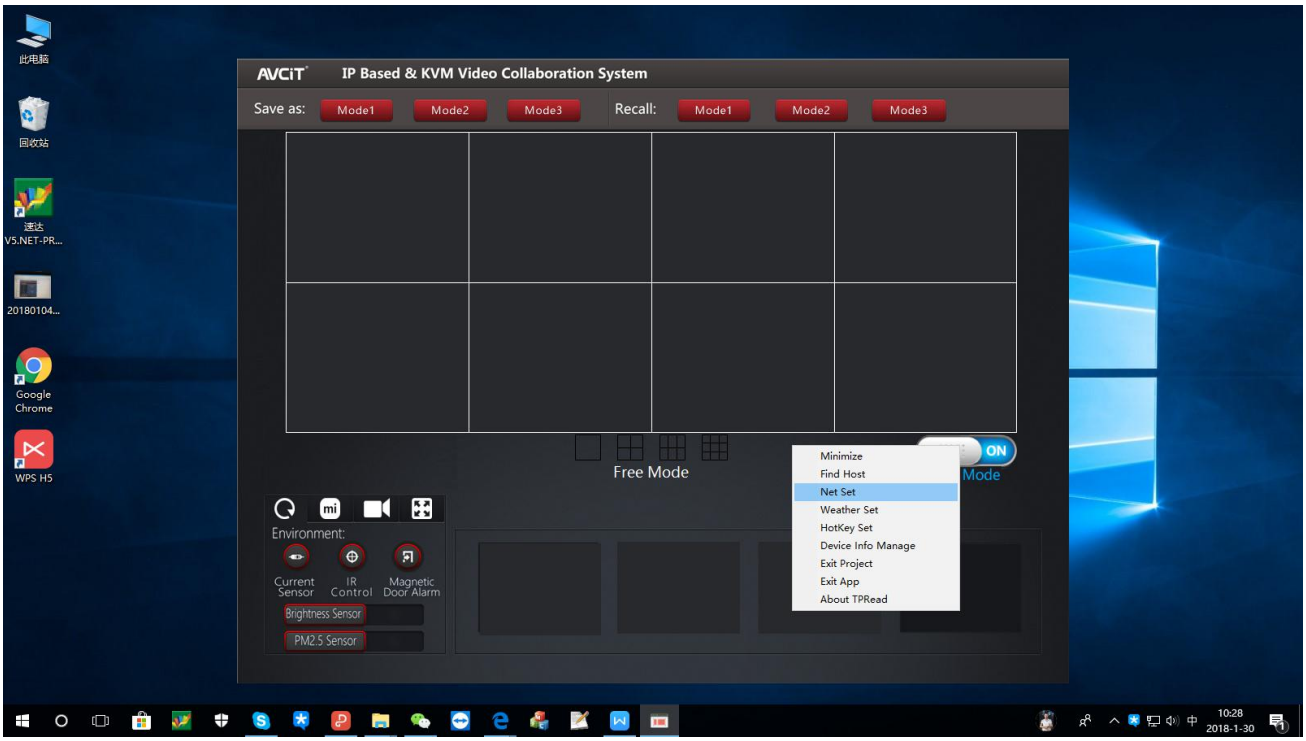
For i-CTL, Please install i-CTL from iOS APP stores if you are going to use iPad as control tablet. if you do not need any RS232/RS485/UDP/IR control and I/O Setting can be automatically done after you import “project data pack”.

For DSworks, please finish the setting as follows:

① Check the cabling according to system scheme, make sure the “control PC” either support 5Ghz wifi, or CAT cable wired to GB switch.
② Fix the IP of “control PC” to be, i.e. 192.168.1.201, in the same network segment, and not conflict with the IP of all DSII/DSIII node
⑤ Right click your mouse(when mouse over any blank area) , select “Net Setting”, to change the “IP” of control PC 192.168.1.201
⑥ Do not change “Host IP”, which works only when you have AVCIT central controller E-CP4C, to send UDP/RS232/RS485/IR etc over the IP based system, and no use for the IP Based KVM
⑦ Check whether you can preview all video source, and see them at 2x2 video wall
⑧ Turn on free mode to zoom in/out freely, select multiple layout, i,e, 2x4,3x3 mode, drag and drop video

on the fixed layout by mouse

⑨ Drag any video on the right bottom- volume bar to separate/de-embed audio,and turn it up/down



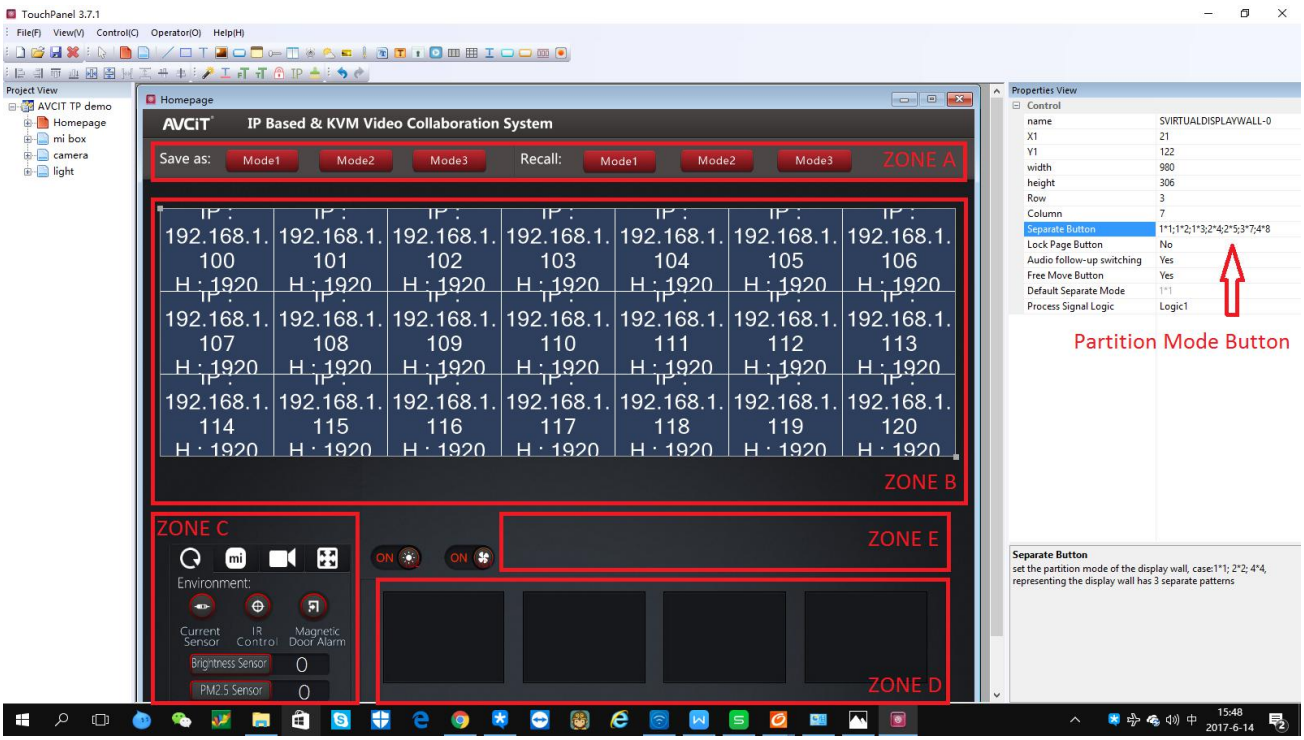
2.2.4. Overview of UI

Zone A: Buttons to Save and recall mode/partition
Zone B: Mirror of Video Wall, hereafter short for VWS Mirror
Zone C: Optional UI for RS232/485/IR control
Zone D: Video Source Preview real time
Zone E: Partition Mode button, including a “Free Mode” button, You can freely re-size a window on VWS Mirror once free mode is ON, the following “Partition X”window is produced when free mode on.

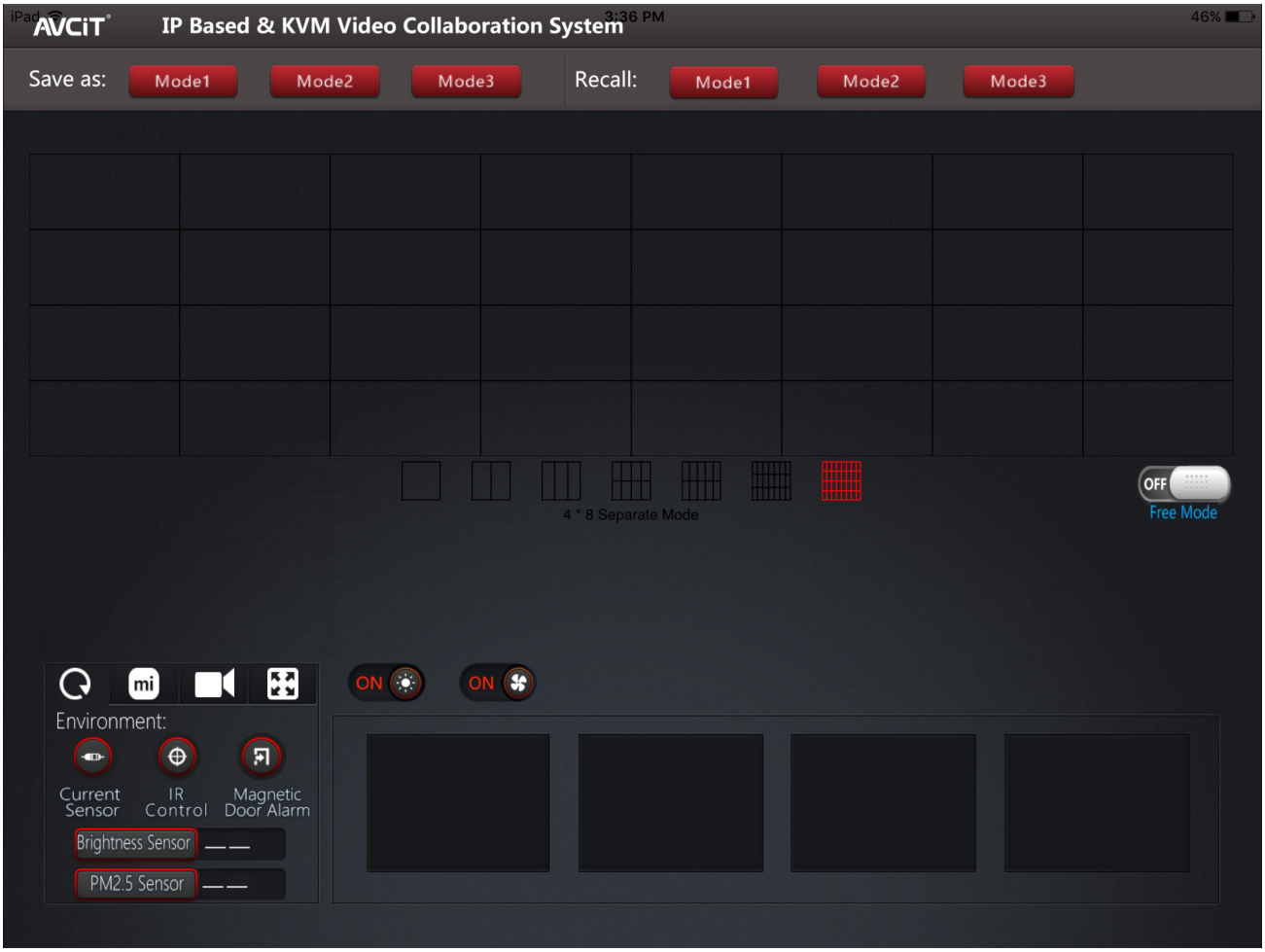
Following are interfaces on “Touchpanel 3.x.y” and iPad Pro “i-CTL” based on same ”project name.tp”.

Interfaces on “Touchpanel 3.x.y”: here we preset 7 “Partition Mode button”, 1x1; 1x2; 1x3; 2x4; 2x5; 3x7, 4x8, you can add more mode or remove any mode that you do not need; it is a virtual video wall even you have only 1 LCD display.

These buttons are not directly visible under VWS Mirror, while you can find it at following interface on iPad Pro “i-CTL”

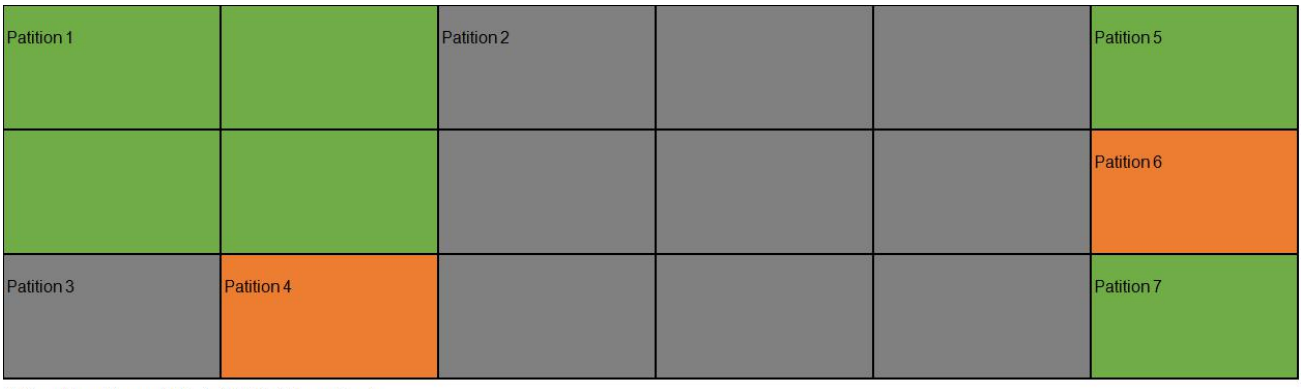


Interfaces on iPad Pro “i-CTL” based on same ”project name.tp”



2.2.5. How to Partition Video Wall

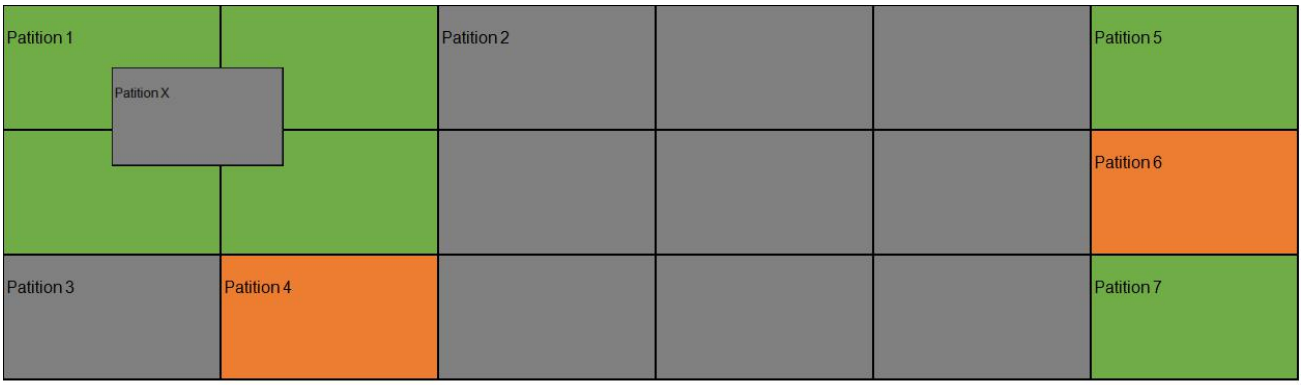
Take this 3x7 video wall for example:
On iPad Pro, please select “3*7 mode”, from ZONE D, Simply drag any video source to 7 different area of a VWS mirror, i.e. following Partition 1-7, one by one.



7x3 or other video wall, Mode 7x3, Partition option 4

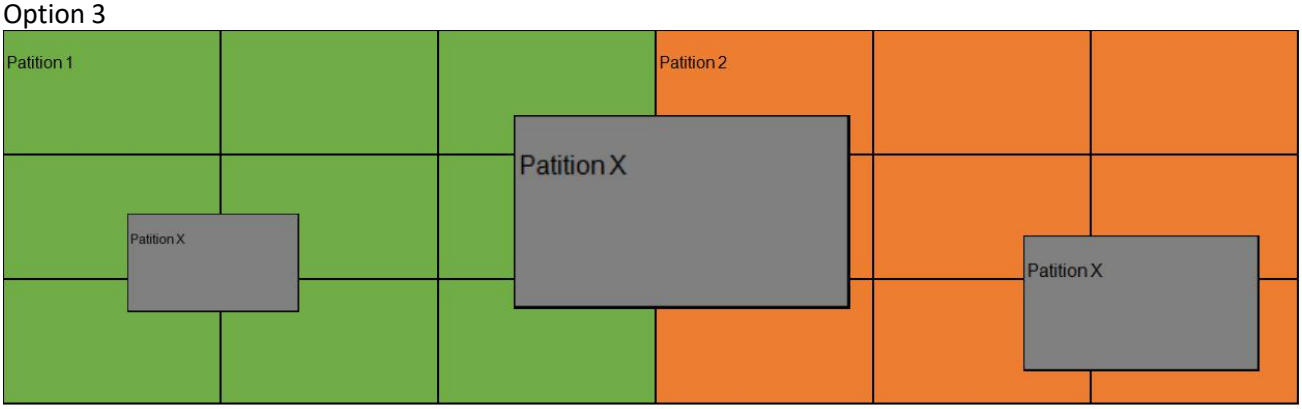
Now there are 7 partition windows on both iPad and video wall.

If you select “Free Mode”, then drag one more video source to “Partition 1”, and zoom in/out by mouse/finger, so that you can have “Partition X” as following, Or even more Options for you.



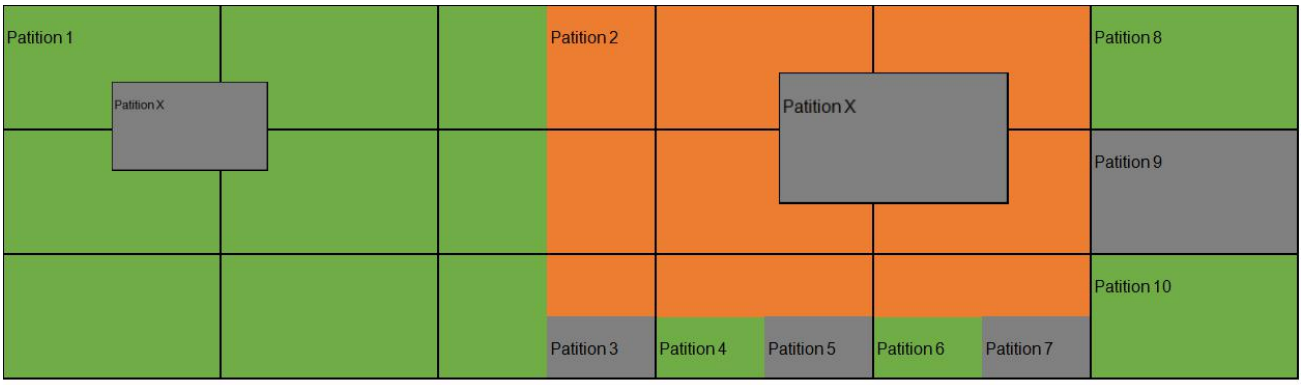
7x3 or other video wall, Mode 7x3, Partition option 4

Option 3



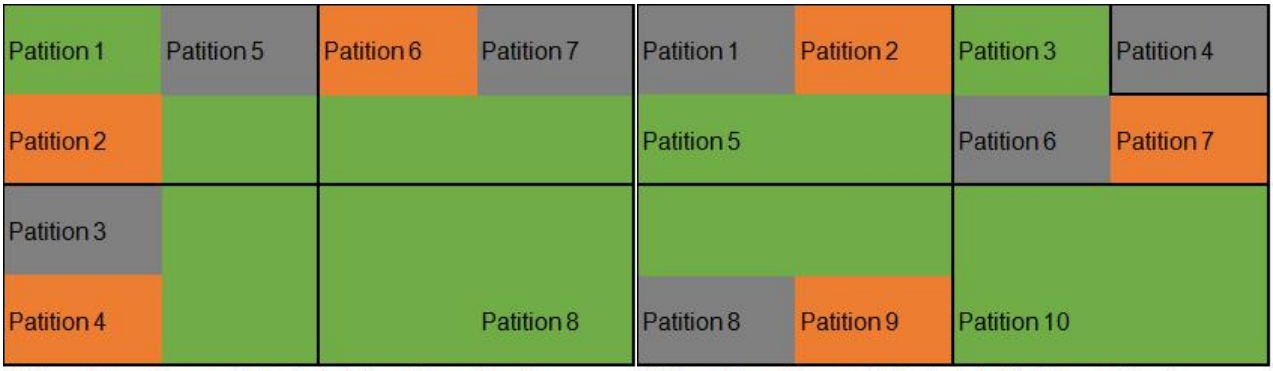
7x3 or other video wall, Mode 7x3, Partition option 3

Option 2



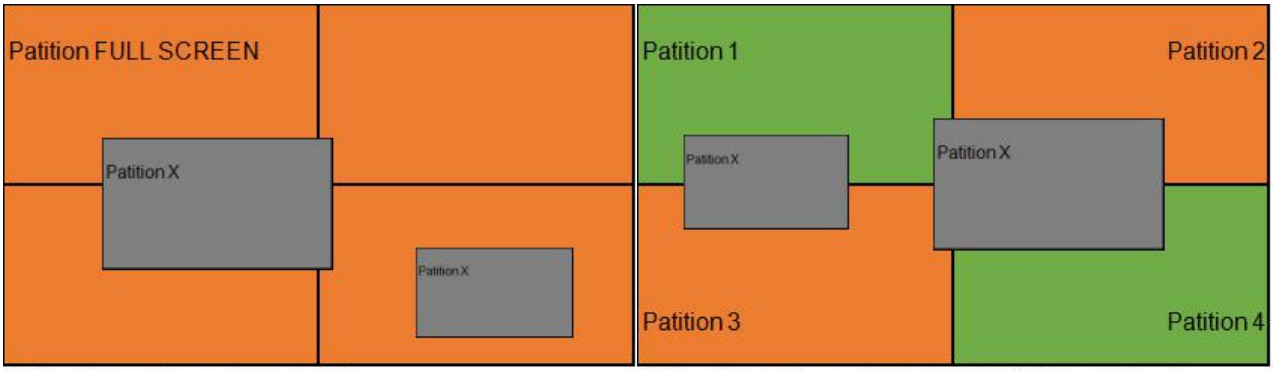
7x3 or other video wall, Mode 7x3, Partition option 2

And even more Options for other video wall



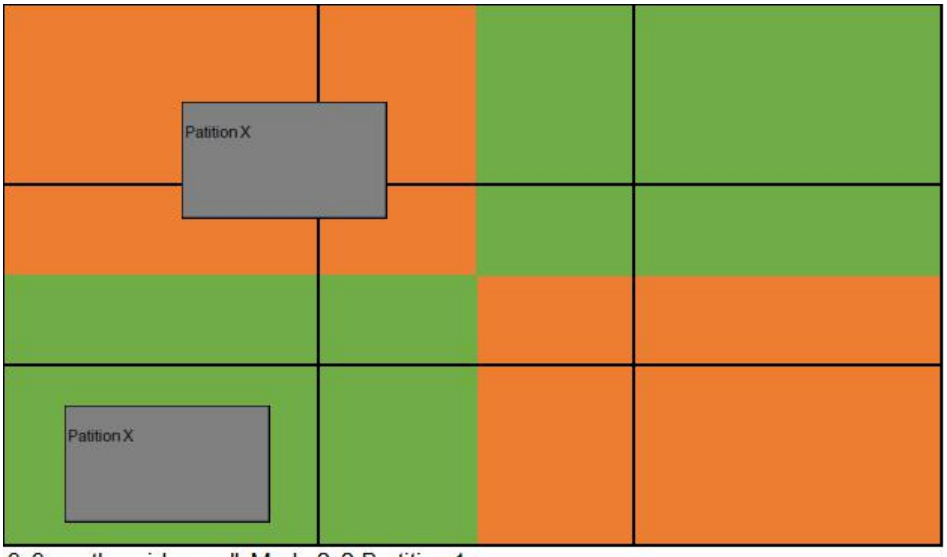
2x2 or other video wall, Mode 4x4,Partition option 1

2x2 or other video wall, Mode 4x4, Partition option 2



2x2 or other video wall, Mode 1x1

2x2 or other video wall, Mode 2x2, Partition option 4



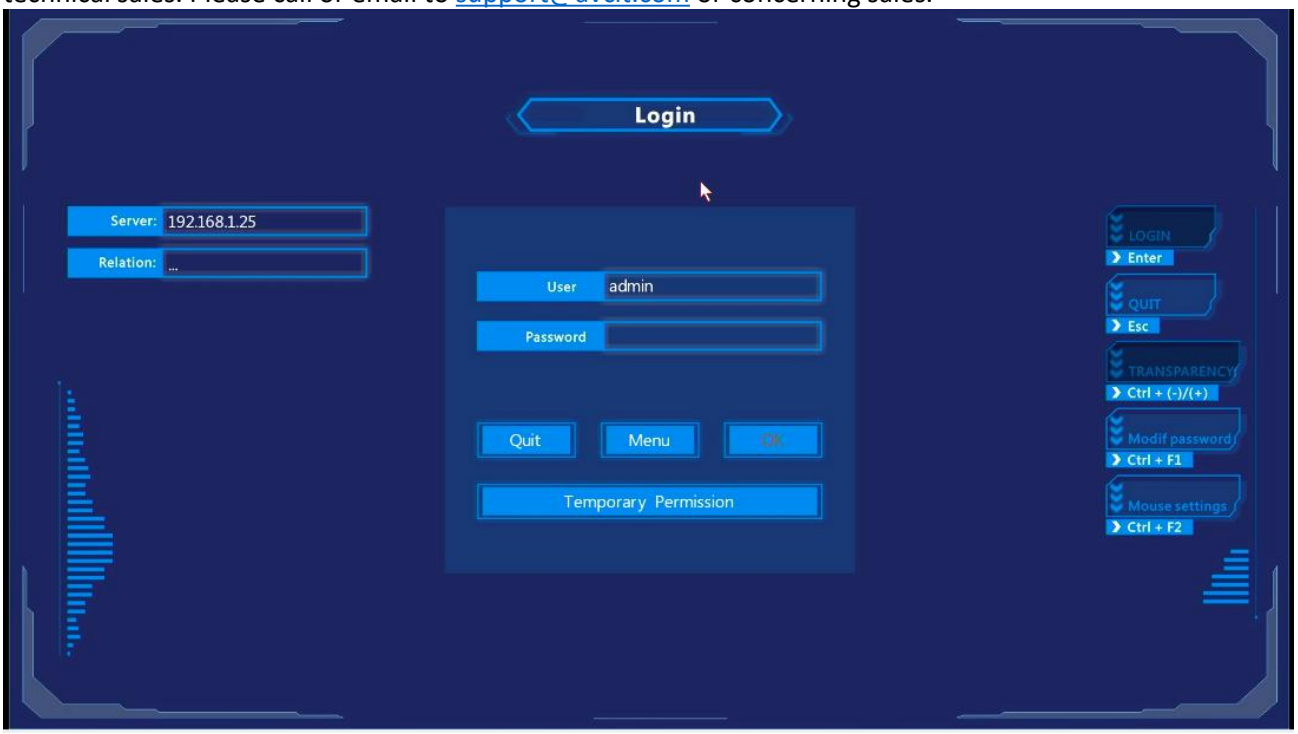
3x3 or other video wall, Mode 2x2,Partition 1

3. KVM Matrix Configuration

3.1. Log in/out

After you finish all cable connection, and video wall partition, Double-click “Ctrl”, to login OSD, user ID/password is admin/admin.

Sometimes, you may fail to login, this is mostly caused by no KVM “KVM priority level” setting done by your technical sales. Please call or email to support@avcit.com or concerning sales.



Move arrow key or mouse to enter ”Menu”, you can see following “Configuration-manager” windows Press Ctrl + F1 to change password.

3.2. Mouse/Display Matrix Configuration

3.2.1. Display Matrix Configuration

This is for video wall Configuration.
Take this 3x7 video wall for example, here is the IP of each AVCIT node which connect to 3x7 video wall.

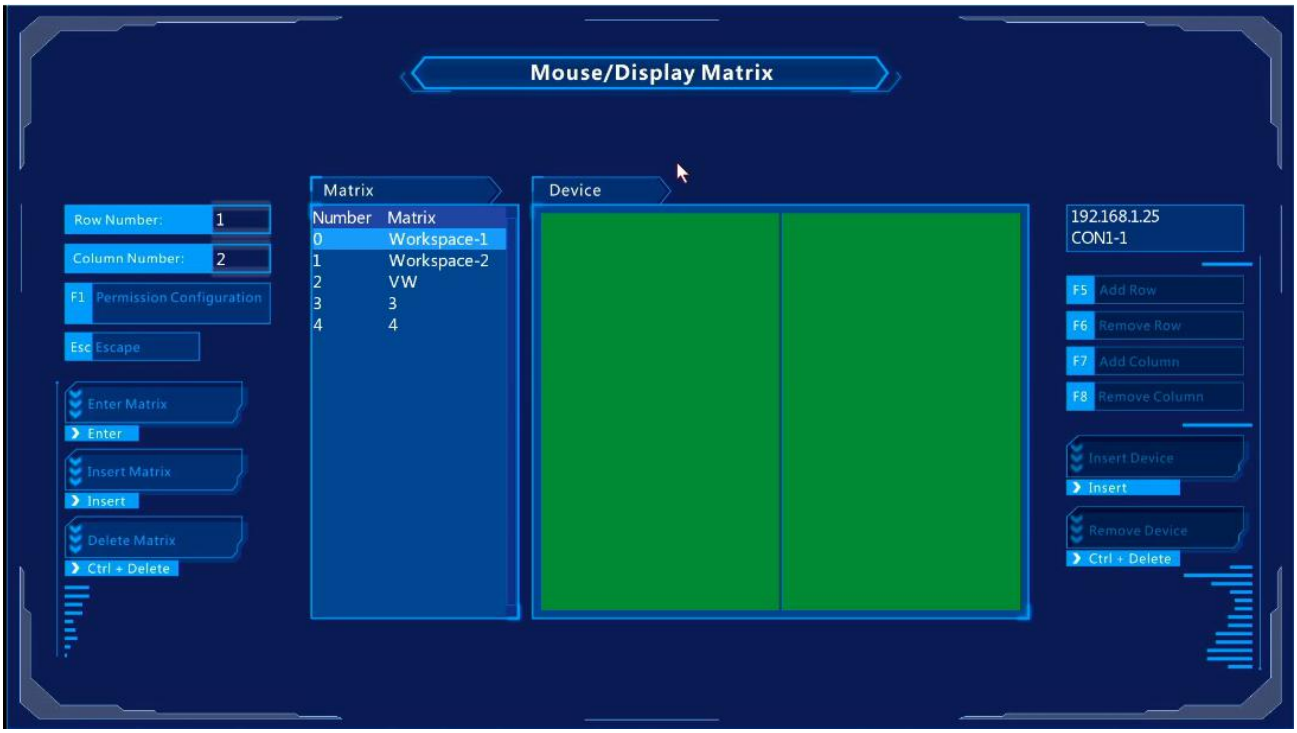
IP : 192.168.1.100 H : 1920 V : 1080	IP : 192.168.1.101 H : 1920 V : 1080	IP : 192.168.1.102 H : 1920 V : 1080	IP : 192.168.1.103 H : 1920 V : 1080	IP : 192.168.1.104 H : 1920 V : 1080	IP : 192.168.1.105 H : 1920 V : 1080	IP : 192.168.1.106 H : 1920 V : 1080
IP : 192.168.1.107 H : 1920 V : 1080	IP : 192.168.1.108 H : 1920 V : 1080	IP : 192.168.1.109 H : 1920 V : 1080	IP : 192.168.1.110 H : 1920 V : 1080	IP : 192.168.1.111 H : 1920 V : 1080	IP : 192.168.1.112 H : 1920 V : 1080	IP : 192.168.1.113 H : 1920 V : 1080
IP : 192.168.1.114 H : 1920 V : 1080	IP : 192.168.1.115 H : 1920 V : 1080	IP : 192.168.1.116 H : 1920 V : 1080	IP : 192.168.1.117 H : 1920 V : 1080	IP : 192.168.1.118 H : 1920 V : 1080	IP : 192.168.1.119 H : 1920 V : 1080	IP : 192.168.1.120 H : 1920 V : 1080

- At “Configuration-manager” windows, Press F2 to enter”Mouse/Display Matrix“
- Press “Insert” to add display matrix, named as “admin”
- “Enter” admin, then use following function key to create 3x7 Video Wall

F1 Add row
F2 Remove row
F3 Add Column
F4 Remove Column

- Move arrow key to left and top display(of total 21), press “Insert” to choose the node with IP 192.168.1.100 from device list, and “enter” to set the IP of this display.
- Set all 21 IP Like this, and make sure them in correct order, as follows

192.168.1.100, 192.168.1.101, ...192.168.1.106
192.168.1.107, 192.168.1.108, ...192.168.1.113
192.168.1.114, 192.168.1.115, ...192.168.1.120



3.2.2. Mouse Matrix Configuration

This is for operator workstation(console table), to have Cross Display Switching features, so that the operator can move mouse seamlessly across another monitor, Whatever for single-row displays, or multi-row monitors.

There are no limitation on the no. of monitors on operator workstation, to go Cross Display Switching features, it is scalable here at AVCIT, just add KVM output node for new monitor.

Take a 2 row 6 monitor, 2x3 operator workstation for example:

- At “Configuration-manager” windows, Press F2 to enter”Mouse/Display Matrix“
- Press “Insert” to add display matrix, named as “KVM3”
- “Enter” admin, then use following function key to create 2X3 Mouse Matrix

F1 Permission Configuration
F5 Add row
F6 Remove row
F7 Add Column
F8 Remove Column

- Move arrow key to left and top display(of total 21), press “Insert” to choose the KVM node with IP 192.168.1.147 from device list, and “enter” to set the IP of this display.
- Make sure 6 IP are in correct order as follows

192.168.1.147, 192.168.1.148, 192.168.1.149
192.168.1.150, 192.168.1.151, 192.168.1.152

- Then “Esc” for several times to quit.

3.3. Permission and Operator Configuration

3.3.1. Add Operator

- Press “Insert” to add new operator AVCIT, Set ID and password, then AVCIT is in the “Operator list”
- Move arrow key to right, to set Permission level for each KVM Source and each each display
- Press “Enter” to show all device list, you can identify devices by IP address.
- Select the correct IP and press “Enter”, it is saved
- Make sure the operator have the planned permission level, please see following “Assign permission level”
- Press “Esc” times to escape

There are basically 4 Permission level for KVM source and display, while it has slightly difference among Video wall, operator workstation monitor and KVM source.

The configuration work is simply to set the permission of the nodes(Identified by IP), which connect to concerning video wall, operator workstation monitor and KVM source.

3.3.2. Permission Level for KVM Source(PC/Mac,NVR,Thin Terminal)

The firmware version is keep updated every 3 month, the feature may different, please check the version by FBS System Assistant:

KVM Source have 4 Permission level for a new created user:

- **PRIVATE:** No entry for current operator
- **VIEW ONLY:** for operator view only,use “SPACE” only if the operator have SHARE permission channel/source, otherwise Dialog box “No Permission” will pop up
- **SHARE:** for multiple operator access at the same time, use “Enter” only if the operator have SHARE permission channel/source, otherwise Dialog box “No Permission” will pop up; Operator can also use SPACE to get access to an SHARE channel, but with corresponding and lower level VIEW ONLY permission
- **EXCLUSIVE:** for single operator access only, use “Shift+Enter” only if the operator have EXCLUSIVE

permission on this channel/source, otherwise Dialog box “No Permission” will pop up. Operator can also use ENTER or SPACE to get access to an EXCLUSIVE channel, but with corresponding and lower level permission

Every KVM Source/channel should be granted with only ONE of 4 Permission level, EXCLUSIVE, SHARE, VIEW ONLY or PRIVATE, Please select/insert the IP of node(role of TX/Encoder), under the permission that the operator are going to have, you can not grant 2 permission to one KVM source/channel

3.3.3. Permission level for Video Wall

Supposing your version of DSII/DSIII firmware is under V3387:
For video wall displays, just select/insert any 1 node(in the created Display Matrix) under permission SHARE, then at OSD PUSH interface, any GET content can be push to any video wall partition which are currently displayed on walls.

You can also use F3 to add ID of this node to “Priority List”, and rename it if you like.

Well, in the latest version of DSII/DSIII firmware V3433: there are more options: once “Mouse/Display Matrix” is created(see clause 3.2.2.), i.e. an Display Matrix named “3x7” is created, “3x7”will be listed in “Priority list”, then the operator can push content to any video wall partitions, which is currently displayed on walls.

Then any GET content can be push to the corresponding LCD(connect to this node) or a video wall partition which covered the corresponding LCD, and currently with other sources displayed on walls.

If you want the ID of node to be displayed in “Physical devices”, Please select/insert the IP of node, under permission SHARE, if this operator are going to have the permission to push his content to the video wall by ENTER the selected ID of node.

3.3.4. Permission level for Workstation(console)Monitor

For the console node, simply select/insert IP of any 1 node(in the created Display Matrix) under permission SHARE, then at OSD PUSH interface, any GET content can be push to other console operator’s monitor.
If operator A have no rights to push his content to operator B, then just do not select/insert operator B’s IP of node
There are actually 1 Permission level for workstation/console monitor.

3.3.5. An example of Permission Configuration

In order to show it better, let’s gave an example:

- there are 2 console user, user A,B, each have 2 monitor; the DSIII node connecting to user A monitor is with IP A1,A2; the IP of DSIII node connecting to user B is B3,B4
- There are 2x2 LCD wall, IP of DSII node connecting to LCD is VW11,VM12,VW13,VW14
- There are 4 workstation(PC as KVM source), IP of DSIII node connecting to workstation is PC31, PC32, PC33, PC34

(To be continued, you can also ask how to configure it by this example)

4. Hot key for Operator

Once you finish the VWS partition and Mouse Matrix Configuration, you can push/project KVM source to certain area/partition by following hot key.

4.1. Introduction to the PULL/PUSH interface

Please note OSD interface you have maybe slightly different from here, it is due to continuous firmware updating; The hot key and main configuration will not change, here we introduce this hybrid language version for you.
Virtual devices Zone: on the left and center, it is actually a priority list, which is frequently used. you can add/remove by F3/F4, because there are possibly hundreds of node devices in a system.

Physical devices Zone: on the right and center, a list of devices which is either access via AVCIT node, or directly a RTSP source.

Hot key for permission level Push: on the Botton, for video collaboration, Temporary permission "SHARE" of source/PC X can be also pushed to user B from user A, so that user B can continue user A 's task, User A will cancel/withdraw the "SHARE" permission, and takeover source/PC X exclusively

4.2. Pull/Get

- Double-click “Ctrl”, to check the list of PC which operator have permission to access, then move arrow key, press “enter” to access the server/PC

Function Key

- F1 Re-Numbering a source/display in Priority list
- F2 Re-name source/display in Priority list
- F3 add current source into Priority list
- F4 Remove current source from Priority list
- F5 Refresh
- Esc Escape

4.3. Push/Project

- Double-click “Shift”, press “enter” then move arrow key to select partition windows, “enter”again to push current PC to any display of other console user, or push it to selected video wall, Which is highlighting by red box.

Function Key

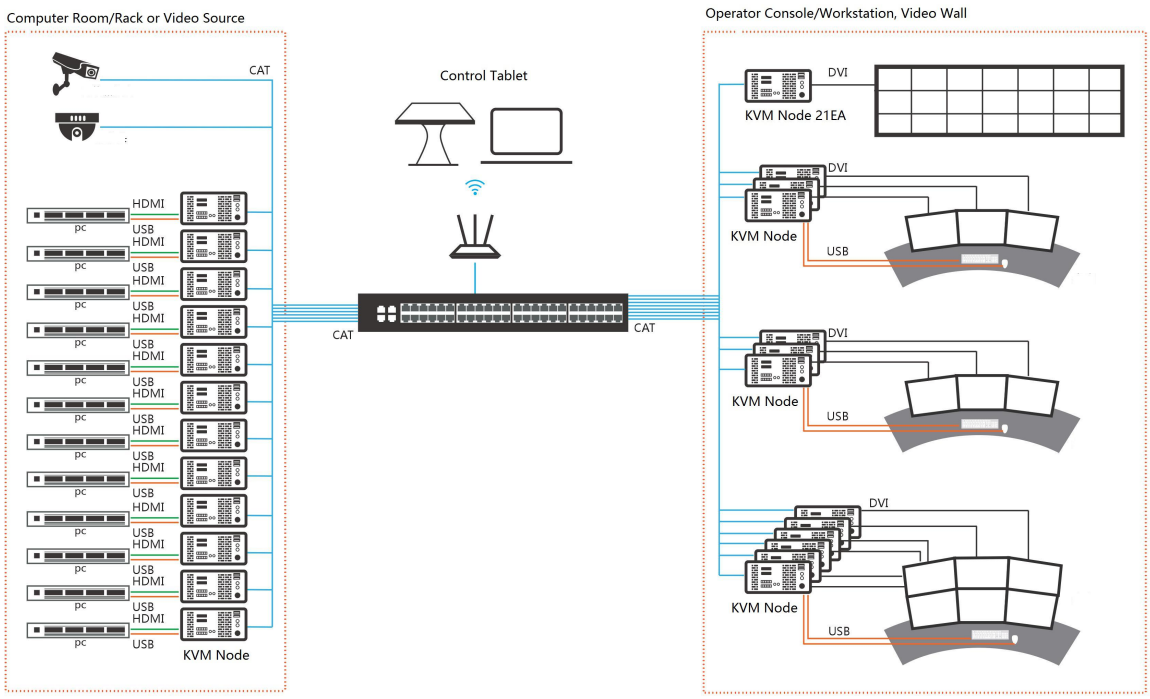
- F1 Re-Numbering a source/display in Priority list
- F2 Re-name source/display in Priority list
- F3 add current source into Priority list
- F4 Remove current source from Priority list
- F5 Refresh
- Esc Escape

4.4. Tips for Operator

Using CTRL, SHIFT, ENTER, ESC and 4 arrow key, is enough

STEP1: Login by Double-click CTRL, type username/password, then escape by ESC
STEP2: Move your mouse to Cross LCD one by one
STEP3: Double-click CTRL, then move arrow key to select the PC, that you are going to get acess, ENTER to get access
STEP4: Double-click SHIFT, then move arrow key to select the video wall, ENTER to select video wall partition(you will see red table on the wall), then ENTER to push current PC to the red box area

5. Typical KVM System Scheme



6. Tips of Testing AVCIT IP Based System

AVCIT recommend that Testing AVCIT IP based System should be in 3 Phases:

- Phase 1: to test LCD/LED video wall controller, AV matrix and visualized control feature by PC(or iOS, iPad Pro+wifi router), i.e. Preview of all video/content, interactive control by mouse drag/drop, overlapping, zooming in/out, change layout and save/recall scenario, IP camera access.

- Phase 2: Testing KVM interface, seamless pull/push by OSD menu if you ordered KVM version(DSIII), (or you can test phase 2 before phase 1)

- Phase 3: If you order E-CP4C central controller, you can test RS232/IR/IP control feature, by create buttons on PC/iPad, you need a Class C language programmer or Staff well-trained by AVCIT

7. Appendix-Benefits of AVCIT IP Based KVM Solution

- DSIII/DSII node will replace all these standalone AV/KVM matrix switcher, HDMI/DVI extender/receiver/scaler, video wall processor, control processor and etc, AVCIT node is your ALL-IN-ONE control solution, while traditional solution need all these standalone, check https://youtu.be/Xgmq5ynY2uE
- Build-in video wall controller feature for LCD/LED, support both 1080p or non-regular LED cabinet, while traditional solution need standalone video wall processor.
- IP Based configuration, Flexible and scalable for installation size from small to mission critical, While traditional solution have different enclosure for different size of installation, huge or small enclosures are fixed once you bought, yes, they can add more modular cards, but almost impossible to go uplink or

stacking.

- AVCIT node is POE powered, born to be plug-and-play, Maintenance work is more targeted, If any nodes need to be replaced, can do hot swapping with zero affecting the entire system, fast and efficient,what's more, you can even swap between TX and RX node, thank to the transceiver design; While traditional solution need to be better turn off power of entire enclosure even it is with hot swap feature.
- Low latency, glass-to-glass is 10ms, even the tracking of drag on control tablet can be sync to video wall, check this video https://youtu.be/DhmYDpCoz_c, while traditional video wall solution are mostly with much more latency.
- Seamless video pull/push to any display or video wall in 1-2 sec by OSD and hot key, while the traditional push/pull, so far as we know, with with clear black screen.
- Real-time video sources or content preview on control tablet,
  You do not have to put many buttons+text, just put small windows to preview the video content,
  it is direct, as it is real-time preview, while traditional video wall solution, as we know, is mostly with no preview, or not in real time.
- Each of Multiple-control tablet's operation will sync to other control tablet real time, all is done by AVCIT node, no server required, while some traditional video wall solution need server, as we know.
- There are no limitation on the no. of monitors on operator workstation, to go Cross Display Switching features, it is scalable here at AVCIT, just add KVM output node for new monitor, while traditional KVM solution, as we know, is mostly with limitation on it.
- Reading USB flash drive at operation workstation(console desk).
- With E-CP4C, there are optional central controller feature, so that you can control any remote devices via RS232/485/IR
- With E-CP4C, I/O port of DSII/DSIII node is able to integrate with alarming system, certain linkage reaction will be activated once alarm is detected
- With E-CP4C, status of node can be automatically scanned and displayed real-time on control tablet, so that you can check any loose cabling, or which node lose signal by any reason etc.
- GB switch is enough for current H.264 node, the coming H.265 is compatible with current configuration, which require even less exchange capacity , while other IP system need 10 GB switch which is quite expensive.
- AVCIT IP based system can integrate surveillance system or AI system(face identification), such as Hikvision DS-B20 system and YITU AI system, So that it ia able to quickly locate and decode realtime streaming from Hikvisoon DS-B20 system, and push it to video wall. This is mission critical for police and military, because they have a comprehensive surveillance and AI system, with thousand of cameras located all around the city. Several installation is already deployed in China.

END

Thank you for choosing AVCIT, in order to use our products properly, please read the product manual carefully before installation, if any question, please email to support@avcit.com, or contact concerning sales, thank you.