

# GeoBox

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## G413 [Galign] PC tool User Guide

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### Applicable model

Galign is designed for the G413 model.

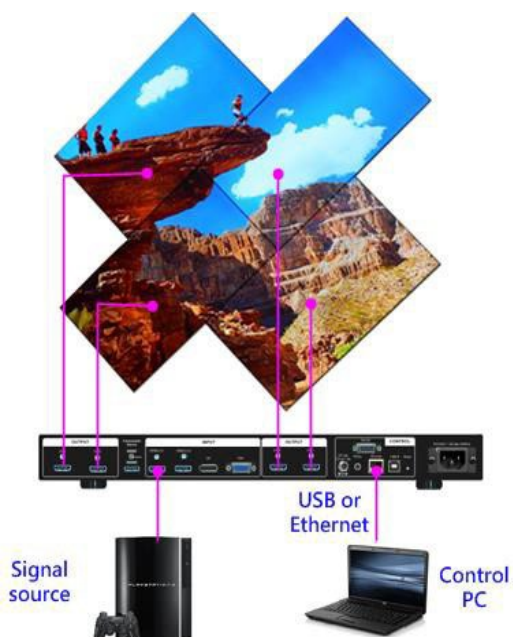
### Related Tutorial video

Please check the YouTube video to learn how to determine the coordinates for each LCD. The video is for G403, but the major process is the same. <https://youtu.be/iQDZkFbzfGs>

### PC tool download and decompress

1. Please download G413 [Galign] PC tool from the website at [Support]→ [PC Tool]
2. This PC tool is a .exe file and may be blocked by an Anti-virus tool. Please remove this barrier.

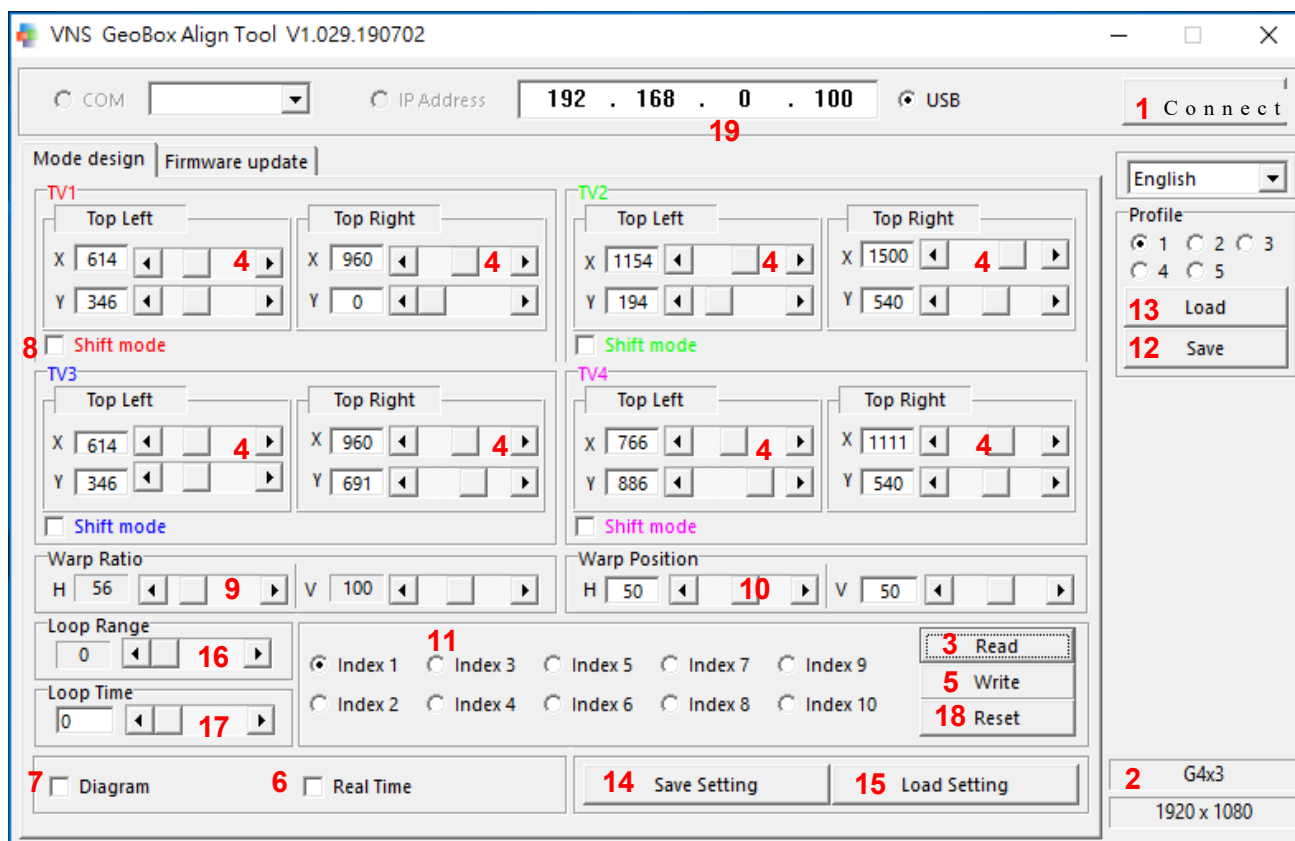
### System Connection



1. Please connect USB type B cable or Ethernet cable/WiFi Router between PC and G413.
2. After click [Connect] button, user shall see Model # and [1920x1080] resolution at Bottom Right corner in Galign window.
3. To input coordinates in each TV (output) directly or select Preset Mode from OSD for further editing.
4. User can use Galign without connecting with G413. After key-in all required settings, user can save it in PC and upload to G413 after connection.

Suppose there is no PC for Galign PC tool operation. In that case, the user can still use the remote controller to execute coordinate key-in, position fine-tune, aspect ratio and position adjustment...etc.

### **[Galign] PC tool operation procedures**



The item # corresponds with the RED # in the Galign operation window.

**(1) [Connect]:**

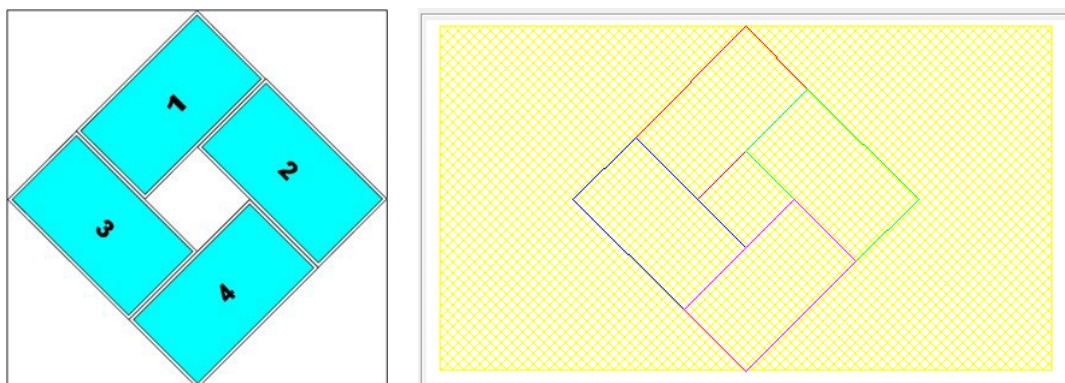
- After selecting the type of connection, click [Connect] to connect Galign with G413. The default connection type is [USB].
- After opening [Galign], all the parameters will be reset to a default value. Users can load the previous setting by [Load Setting] (15) from a PC or [Read] (3) function from the 6video wall or Preset Mode.

**(2) The user will see model # and output resolution after connection. The default output resolution is 1080p.**

**(3) [Read]:**

- Functions: a. Read back parameters from the video wall setting. b. Read back parameters from Preset Mode, which the remote control can select. c. Read back parameters from display Mode (11).
- After the user selects Preset Mode from OSD through the remote controller, when the user clicks [Read], Galign will read back the parameters of Preset Mode and save them to Index #1 (default Index # is 1). If the user selects another Index # and implements the [Read] command, it may not read back Preset Mode parameters.
- After Reading back parameters, the user can select another Index # and use the [Write] (5) command to save to another Index #. Users can do further editing for Preset Mode and create customized display mode.

- If the user saves the setting into the display Index (11), the user can select the display Index and click [Read] to read back the setting. The video wall will stay the same until the [Write] command is executed.
- (4) The location for Key-in or editing the coordinates of the Top Left and Top Right corner for TV1-TV4. The coordinates can be captured from Preset Mode, video wall pictures, or project plan files. If user checks [Diagram] (7), the user will see the adjusting result in the Diagram but not in the Video wall before executing the [Write] (5) command. Users can also CHECK [Real Time] (6) to see the result in real-time on the video wall.
- (5) [Write]
  - After finishing all settings in Galign, the PC still controls the image. The user must use the [Write] command to upload all the parameters into G413.
  - Users must disable the [Real Time] function before executing the [Write] command.
  - Users can save up to 10 different display Indexes. Please select [Index #], then click [Write] to save Galign parameters. The settings can be saved into any display Index # and duplicated.
  - It only saves the image settings shown in Galign but not includes input ports, color, PIP setting, or EDID...which will be saved in Profile Index.
  - If the user wants to show specific Mode settings, please select Index #, click [Read] to read the parameters, then click the [Write] button to upload the settings to the video wall and see the final result. Users can direct the remote controller Mode hotkey (#1~#4) to show the setting.
- (6) [Real Time]:
  - When the user executes editing preset mode or creates a new custom display mode, please check [Read Time] so that the user can see the image change while changing parameters.
  - [Real Time] mode shall be disabled when the user wants to key in coordinate data or [Write] the result to GeoBox.
- (7) [Diagram]:
  - If the user checks [Diagram], a diagram will be shown near the Galign window.
  - This diagram will update in real time while the user changes the coordinate values in coordinates. The [Warp Ratio] and [Warp Position] changes will not be shown in the diagram.
  - Below the left diagram is the presets mode selected by OSD, and the correct diagram is shown in Galign. Please note that the color in each LCD corresponds to the output channel (TV1-TV4) in the Galign window.



(8) [Shift Mode]:

- After checking [Shift Mode], the user can change [Top Left] X&Y value to shift the image position in H&V directions for each TV without changing the image size and angle. Each channel is independent.
- While executing the [shift] function, X&Y values must also be in the range of 0-1920 for the X direction and 0- 1080 for the Y direction.

(9) [Warp Ratio]:

- [Warp Ratio] will apply to all channels simultaneously to enlarge or shrink the complete video wall image in the H&V direction from 25% to 200%.
- All Preset Mode will show the entire source content. If the video wall in not have a 16:9 aspect ratio, [Warp Ratio] has been applied to Preset Mode to show the entire image in the video wall.
- Users can change [Warp Ratio] to the cropping area or the aspect ratio.
- The result will not be shown in [Diagram].

(10) [Warp Position]:

- When the video wall has applied [Warp Ratio], the user can shift the complete video wall image position by [Warp Position].
- The percentage follows the adjusting range for [Warp Position] in [Warp Ratio]. If the user didn't adjust [Warp Ratio] (value is 100), then no [Warp Position] adjustment is allowed.

(11) [Index #]:

- Index # is the location to save parameters created in Galign. It doesn't include other settings not inside Galign, such as input selection, PIP, or EDID setting.
- User saves up to 10 Indexes and executes seamless looping playback to show the special effects for the video wall.
- [Write] command is to save Galign settings into display Mode.
- When the user clicks Index #, then clicks [Write], it will erase the original setting and replace it with new parameters in each TV. If the user clicks [Read], then clicks [Write], it will upload the settings in that Index # to the video wall, and the user will see the final result.

(12) Profile [Save]:

- After selecting Profile index # (1-5), the user can save the final settings to G413 together with other settings from the remote controller, such as input source, PIP/POP, video wall settings, color, EDID...
- Please select one Index #, then click [Save] to save the setting. The result is the same as Profile Save executing from the remote controller.
- All channels will be saved at the same time. Maximum 5 Profile Indexes can be saved and recalled.

(13) Profile [Load]:

- Users can load back Profile settings and execute further editing.

(14) [Save Setting] in PC:

- Users can save Galign settings on PC as a backup or copy them to other G413 through [Save Setting].

(15) [Load Setting] from PC:

- Users can load Galign settings from the [Save Setting] command and execute further editing.

(16) [Loop Range]:

- [Loop Range] is to select display Index # for looping playback.
- It will start with Index #1. If the user selects [5], the system will execute looping playback for Index #1 to #5.
- The display Modes for looping playback shall be continuous. The user needs to arrange the sequence of the display Modes in advance.

(17) : [Loop Time]:

- [Loop Time] is to set the time interval from one display Mode to the next display Mode in looping playback. If the user wants to display a specific display Mode with double time, they can save the same setting in the following display Mode and put it into Loop Range.

(18) [Reset]:

- [Reset] is to reset the selected display Mode to the default value and let GeoBox show the source image on each LCD. [Reset] only resets the selected Index, and the data in other Indexes will not be reset.
- Users can select one display Mode without saving data and click the [Reset] button to reset the complete video wall to default status.
- Users can also use the [Reset] hotkey on the bottom of the remote controller for system reset. This reset function will erase the data in all Indexes. Here is the process:
  - Reset All: [Reset]→ click [Right direction key]→ Enter.
  - Reset [Video wall setting]: Reset→ click [Left direction key]→ Enter.

(19) IP address setting:

- Users can execute IP address settings from the remote controller OSD menu, Web Gui or Galign.
- If multiple units are used simultaneously and set up by Ethernet, the user can set different IP addresses for each unit so that the user can use one PC to control all units simultaneously.

(20) [Firmware update]:

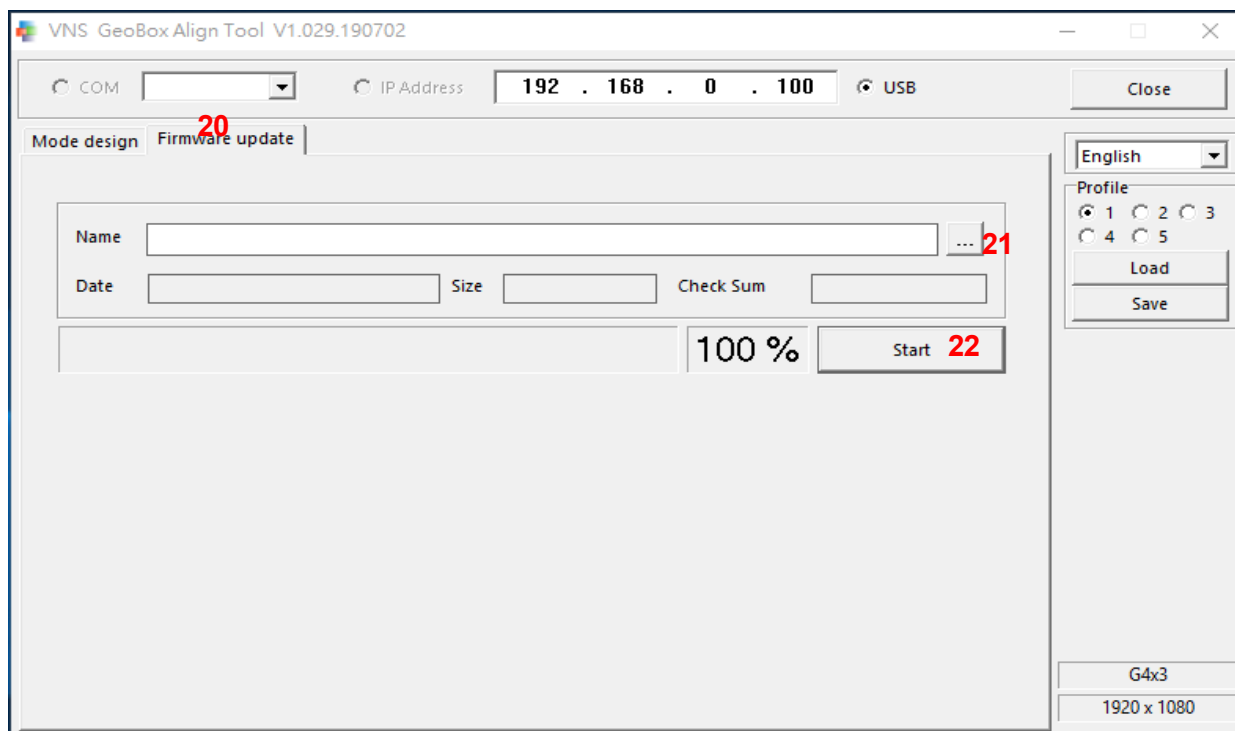
- Users can update both Firmware and MCU Code through this function.
- No update sequence between Firmware and MCU code.
- The system will recognize the type of software and install it on the system automatically.

(21) Browser the file for code update

- If the file is compressed, please decompress it to a .bin file for execution.

(22) [Start]: After pressing the [Star] key, the system will start to update the code. It may stop for some time at some stage. It is normal. Please wait to see the [OK] message and reboot the system to check the result.

PS. After finishing the code update, please insert a small pin into the RESET hole of the back panel for 5 seconds to reset the system. It will remove all previous settings into default values, including those in display Modes and Profile Indexes. If the user doesn't like to remove old settings, this process can be neglected, and if the user finds abnormal conditions, the user can reset through the OSD menu, and it will keep the settings saved in Profile Indexes but will clean display Mode settings (Index #1-Index #10)



**Example for looping playback settings:**



Please check YouTube Video at: <https://youtu.be/4Gc0KcuX27g?t=21>

LCD Installation: 4 LCDs can be installed in any direction.

Looping Range: 5 (5 Indexes), Looping Time: 1 second

Mode settings:

- Index 1: factory default settings, 4 independent images with the same content in different directions
- Index 2: put TV1 into 1/4 of the [All in One] image
- Index 3: to put TV1 & TV2 into 2/4 of the [All in One] image
- Index 4: to put TV1 & TV2 & TV3 into 3/4 of the [All in One] image

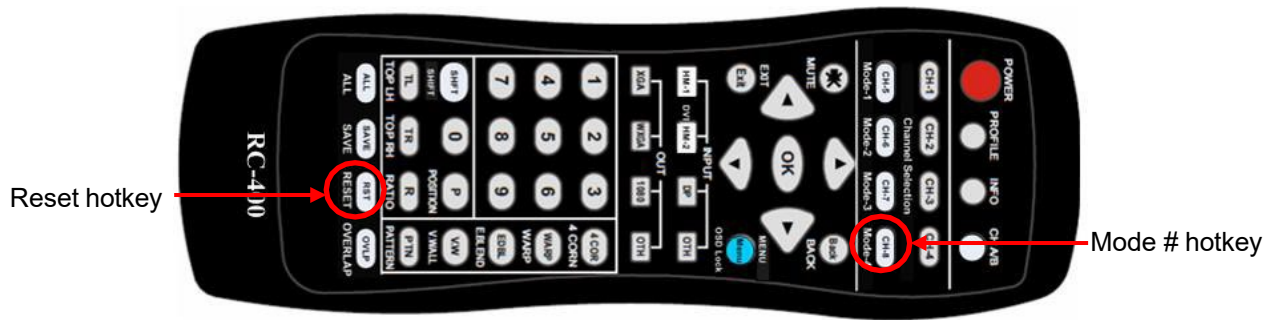
- Index 5: to combine TV1, TV2, TV3, and TV4 into one complete [All in One]

image Procedure to create Index 1-Index 5:

1. To set coordinates for TV-TV4 to become one complete image.
2. To save the same settings into Index 2- Index 5
  - Select Index 2 and click the [Write] command.
  - Select Index 3 and click the [Write] command.
  - Select Index 4 and click the [Write] command.
  - Select Index 5 and click the [Write] command.
3. To modify the settings for each Index
  - Select [Index 1] and click [Reset] to reset Index 1 to show the source image on all TV.
  - Modify Index 2 to keep the TV1 setting and reset all the rest to the default setting
  - Modify Index 3 to keep TV1 & TV2 settings and reset all the rest to the default setting
  - Modify Index 4 to keep TV1, TV2 and TV3 settings and reset TV4 to default setting
4. To set Looping playback
  - Set [Loop Range] =5 (looping from Index 1 to Index 5)
  - Set [Loop Time] =1 (for the 1-second interval)
5. Save to PC through [Save Setting] as a backup.
6. Save to Profile Index 1 & 5 (Profile 5 as a backup)
7. Power Off/On again to confirm the final settings.
8. If the user wants to show Index # 5 [All-in-One] image with double time, the user needs to have the same settings in Index # 5 and Index # 6. Please [Read] Index # 5 settings and select Index # 6 to save it through the [Write] command. After setting [Loop Range] = 6 (Looping time is the same without changing), the user will see double time in Index # 5 image.
9. The user can also highlight or pop-up specific regions of the image in different looping Indexes. It will show a more attractive video wall to audiences.

**Important notice:**

1. How to see the complete image for system operation  
The user may not see the OSD menu for system operation but can take actions as below.
  - Click any display Mode hotkey button without saved settings (such as Mode-4) on the remote controller. Users will see full GeoBox OSD or signal source image in each TV so that the user can execute further operations.
  - Select one display Mode that doesn't store any settings and click the [Read] (3) and [Reset] (18) buttons in Galign to reset the video wall.
  - Another way is to use the [Reset] key in the remote control:
    - Click [Reset]→ RH direction key→ [Reset All]
    - Click [Reset]→ LH direction key→ [Rest Video Wall]
    - This process will reset all settings in all display Indexes (#1~#10)



2. How to load Profile settings:  
Users can use the Remote control [Profile] + Number key to recall the profile setting in the RC-700 controller. Users can also recall Profile setting through Web Gui or the Galign PC tool.
3. Protect LCD from burn-in marks:
  - a、 To finish the video wall settings first.
  - b、 based on the same settings, the user can make slight changes in [Warp Ratio] or [Warp Position] with only a few pixels and save into a different Index #.
  - c、 Users can also change the coordinates with a few pixels change in H&V directions. Then save different settings into different Index.
  - d、 Looping playback with these Index settings at some time intervals for LCD protection.
4. Procedures for image position fine-tune
  - a、 Please download the Video Wall test pattern from the website at [Support] → [Test pattern]
  - b、 To display the test pattern with full screen to the video wall.
  - c、 If some misalignment can be seen, then position fine-tuning is required.
  - d、 To align the image center area first, then spread to the outside area.
  - e、 PC tool [Galign] is the most convenient for position fine-tuning. Please apply [Shift Mode] to align the image position without changing each TV's size and angle.
  - f、 To check the [Real Time] button in [Galign] PC tool so the user can click the slide bar to change the image position. Users can use the [Shift] key to adjust each TV's horizontal and vertical image positions. If rotation angle and image size are required, the user can use the [Top Left] & [Top Right] buttons to align them. [Ratio] menu can change the complete video wall aspect ratio. [Position] menu allows users to shift the image position in the complete video wall after Ratio adjustment. Please note that the coordinate shall be in the range of 0-1920 in X and 0-1080 in Y. User can adjust the Ratio to get a full-screen display.
  - g、 If the user changes both Top Left and Top Right "X" coordinates (horizontal) to one direction simultaneously, the user can see the image shift in the horizontal direction. Users can use the [Shift] or Galign [Shift Mode] function in the remote control to execute this function.
  - h、 If users change both Top Left and Top Right "Y" coordinate (vertical) to one direction at the same



Time, the user can see the image shift in the vertical direction.

- i \ If the pattern grid size in adjacent TV differs, the user needs to decide which grid size should be applied. Users can measure the grid size in different TVs to decide which should be enlarged or shrunk.
  - j \ If the user enlarges the coordinate distance between Top Left and Top Right corners in one TV, it will capture more image pixels, and the grid size of the image will be shrunk. If the distance of the coordinates is reduced, the image will be ZOOM In, and enlarged the grid size.
  - k \ Users can adjust both H&V coordinates to rotate the image.
5. If the user requires a particular display mode with a non-16:9 LCD, it should be done in the factory with additional charges. We can create any display in any panel based on the user's request.

**Use the remote controller to fine-tune the image position.**

*Profile Load hotkey*  
*Output port selection (TV1~TV4)*  
*Display Mode (#1~#4)*  
*OSD operation buttons*

1. Select manual display Mode location—Mode #1~ Mode #4
2. Select output port—TV1-TV4 (LCD1-LCD4)
3. Click [Shift] to do image H&V position adjustment in each LCD
4. Click Top LH and Top RH to shift image size and display angles.
5. Click [R] to adjust entire video wall aspect ratio if necessary
6. Click [P] to adjust entire video wall display position if necessary
7. User can select Top LH/Top RH keys first, then select Mode or TV1-TV4 to key-in coordinates. No special sequence is required.

*Video wall Main menu for multiple unit cascade application*  
*Entire video wall position adjustment*  
*To adjust image position at H&V without changing image size*  
*Entire video wall aspect ratio adjustment*  
*Top Right coordinate menu*  
*Reset Hotkey*  
*Top Left coordinate menu*