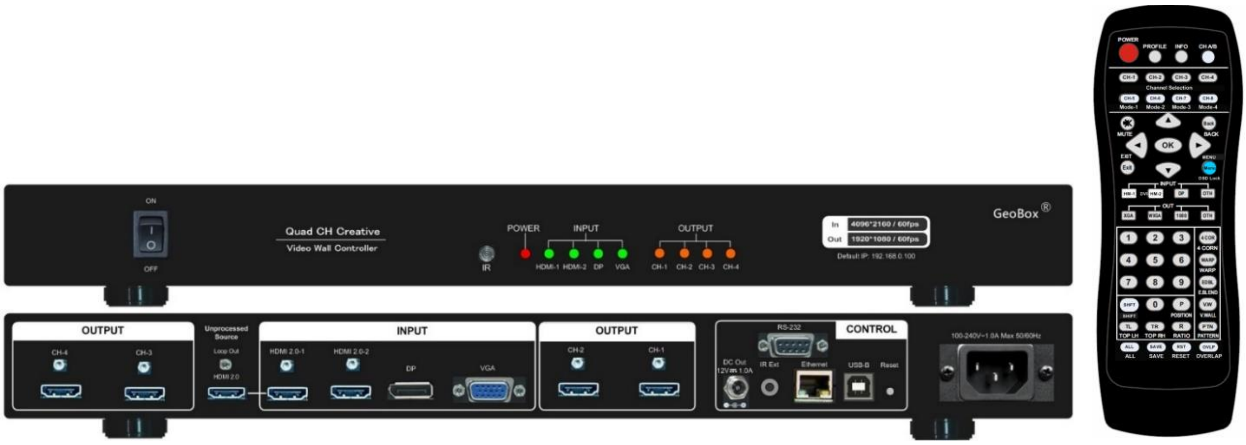
The absolute opposite of ordinary

G413 Creative video wall controller Datasheet

Quad channel creative video wall controller

- *27 preset display modes*
- *Custom modes with LCD at any angle and position*
- *PIP/POP*
- *Multi-unit cascade*
- *Flexible aspect ratio and display region adjustment*
- *Seamless looping playback with different display modes*



1. Introduction

VNS creative video wall controller G413 is world unique and the first pure hardware solution that can create all kinds of display styles through IR remote controller. 27 pre-defined display modes can be selected through OSD. User can also create any display mode for regular and irregular video wall using LCDs with different dimension, resolution and bezel. Conventional low-cost monitor and TV can be used as display devices. The LCD can be installed at any angle and position. User can install LCD first, then crop the required image for each LCD by remote controller or PC tool.

G413 is 4 screen video wall controller with PIP/POP function and supports up to 8k/1k 30Hz and 4k/2k 60hz input signal. HDMI 2.0 loop out port is available for daisy chain connection. It can be cascaded to create large scale video wall.

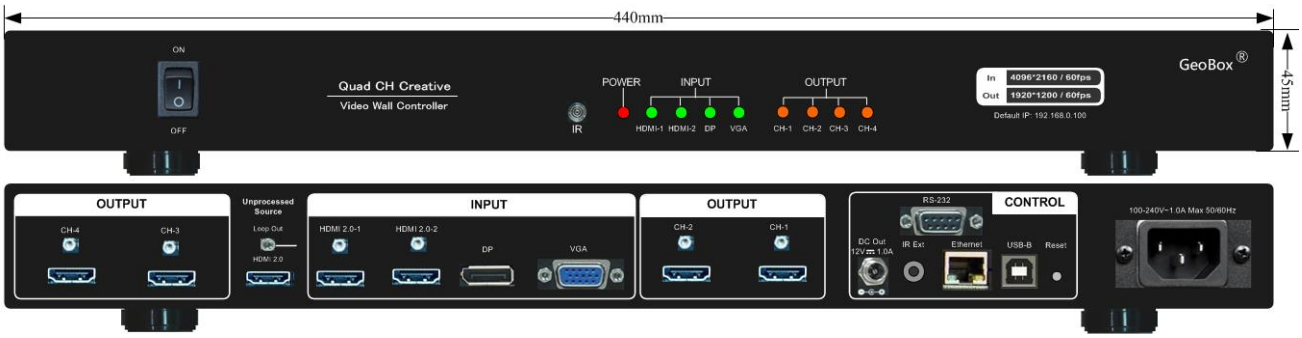
Dynamic aspect ratio and position adjustment for entire video wall are special features for G413. User has flexibility in showing different shape or cropping area contents on the video wall. It provides programmable background color in video wall blanking area if the content is not at full screen. Seamless looping playback is another feature to allow user to setup up to 10 display modes from the same source content and looping playback with selectable time interval. This function can be used to highlight specific image region or to show special effect on the video wall dynamically from the same content.

27 preset modes are integrated in G413. User can select preset mode and no adjustment or setup is required. Preset modes can be further modified to meet different panel bezel sizes and installation conditions.

System setup and control can be through IR remote controller, RS232, USB or Ethernet.

Dual power supply systems are designed in G413. User can use AC 100-240V or DC12V. When AC is applied, there will be one DC12V 1A output as the power supply for signal extender.

G413 is designed with highest industrial standard for 7/24 working environment. It provides a simple, flexible and reliable solution for creative video wall.



2. Features:

a、 **Flexible video source connection**

- 2x HDMI 2.0b and 1x DP 1.2a: support up to 8k/1k @30 Hz or 4k/2k @60Hz resolution.
- 1x VGA: support up to WUXGA resolution.

b、 **Quad channel outputs:**

4x HDMI 1.4 outputs for connecting with 4x LCD or conventional TV / monitor.

c、 **System cascade display**

One HDMI 2.0 loop out port for multiple unit cascade for large scale video wall. No HDMI splitter is required.

d、 **Pre-defined display modes**

27 pre-defined creative display modes that can be selected through OSD. Preset modes can be further modified to meet user's requirements.

e、 **Create any irregular video wall by user**

- User can create any display mode for regular, portrait and irregular video wall using LCDs with different dimension, resolution and bezel. Use can crop the required image for each LCD through inputting the coordinates of Top Left and Top Right corners in each monitor.
- Galign PC tool and remote controller are available to upload coordinates into G413.
- Windows "Paint" software can be used to capture the coordinates in each monitor.

f、 **Flexible aspect ratio control**

Flexible aspect ratio control across entire video wall through OSD menu is integrated. User can decide how to display content on the video wall if the content can't match video wall aspect ratio. The adjustment range is from 25% to 200% independently in horizontal and vertical directions.

g、 **Anyplace cropping**

User can crop any image location to be displayed in monitor.

h、 **Flexible position adjustment**

The combination of flexible aspect ratio control and position adjustment function (25% to 200%) will allow user to determine the best image region for the display on the video wall.

i、 **Auto looping playback**

User can setup up to 10 display modes from the same display content and looping playback with selectable time interval (1 second to 600 seconds). This function can be used to highlight specific image region to show special effect on the video wall dynamically from the same content.

j、 **Any display devices**

Conventional TV/monitor can be used at top/bottom, LH/RH flip position to balance TV bezel difference between top and bottom edges.

k、 **Programmable EDID**

Preset 23 EDID + programmable EDID setting to optimize input resolution. Programmable EDID has below resolution range: H: 1024-3840, V: 720-2400

l、 **LCD burn-in mark protection**

Auto image position shift to prevent LCD from burn-in mark.

m、 **Adjustable OSD position**
OSD menu position can be shifted for convenient OSD operation.

n、 **PIP function**
Picture in Picture from two selected signal sources with flexible position and image size (up to 1920*1200), PIP image can be further adjusted by Overlap function to get various size and shape. PIP image can cover full screen across entire video wall.

o、 **POP function**
Image Side by Side display with full screen or maintain original aspect ratio. Two POP contents can be displayed on LCDs at RH/LH or up/down positions with monitor at landscape direction.

p、 **System setup**
User can setup the system through IR remote controller, USB or Ethernet. User can connect G413 to WiFi router and execute system setup via WiFi through any device connected with the same WiFi router. WebGui and Galign PC tool is available for Ethernet operation.

q、 **System control**
User can control G413 through IR remote controller, USB, RS232 and Ethernet.

r、 **Auto power on/off control**
When no input signal is detected, GeoBox can auto-turn off output signal. Once input signal is detected, it will auto-turn on GeoBox and send out signal again. It is convenient for system power on/off control.

s、 **Selectable background color**
When adjusting aspect ratio, user may see some blank background in the video wall. User can select background color by OSD.

t、 **Custom settings**
Up to 10 different display modes settings in the same signal source can be stored. 5 display Profiles with different input source and PIP/POP setting can be stored. User can recall at any time through remote controller, RS232, USB or Ethernet.

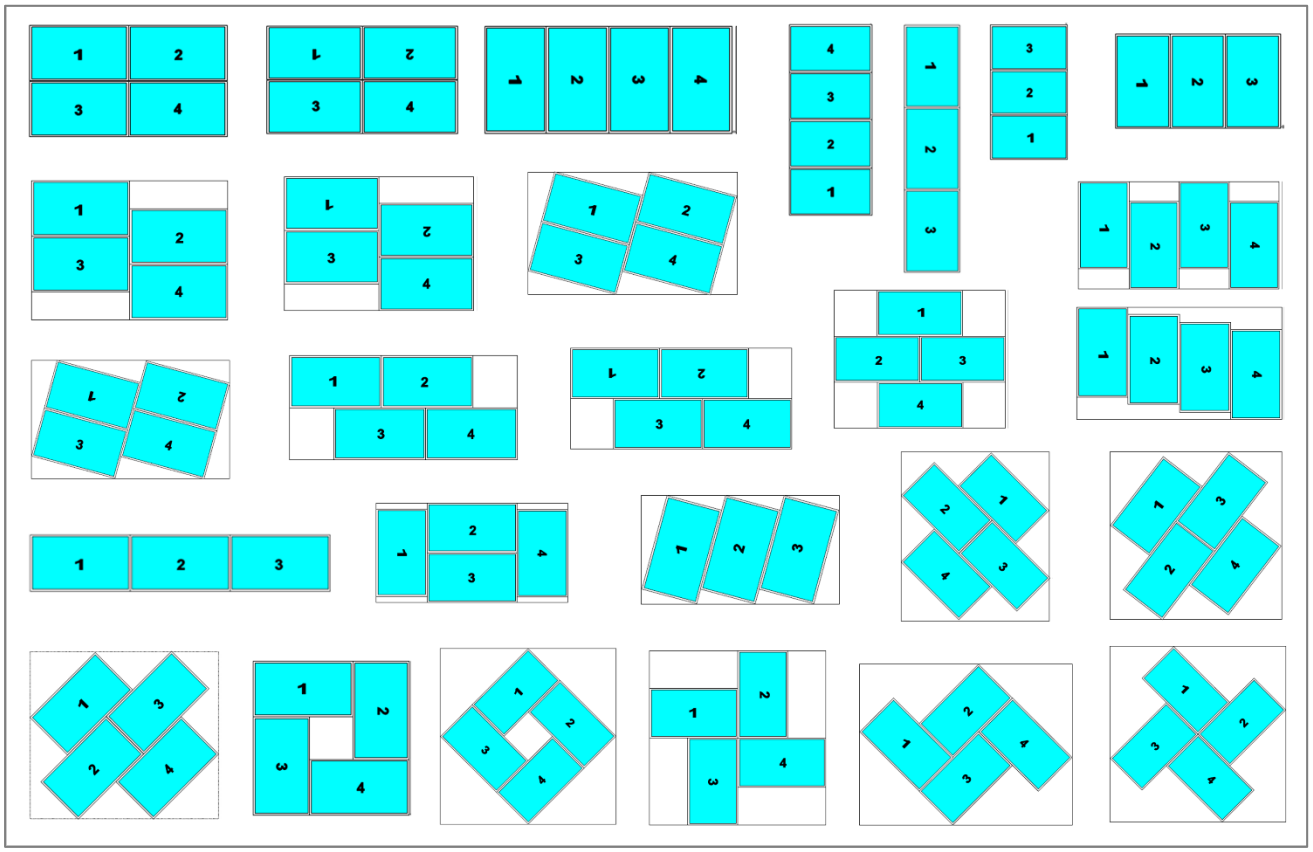
3. Specifications

Main items	Functions	Description
General description		4 screen LCD video wall controller with preset display modes and allow user to create all kinds of irregular creative video wall
Main function	Video processor	10-bits
	LCD to be controlled via one processing box	4
	Multiple unit cascade	Yes (more than 10 boxes)
	Video wall with portrait display	Yes, no need to rotate source image
	Video wall with PIP/POP	Yes
	Support 4k/2k @60hz input without compression	Yes (up to 7680*1200 @30Hz)
	Preset modes selected by OSD	Yes (25 preset modes)
Input & Output	Video Input Ports	1x DP 1.2, 2x HDMI 2.0b, 1x VGA
	Video Output ports	4x HDMI 1.4
	Output resolution to each LCD	1920*1080P
	Loop out port for daisy chain connection	HDMI 4k/2k @60Hz or 7680*1200 @30Hz
	Audio Output	HDMI embedded audio
	System synchronization	Frame Lock
	HDCP compliant for HDMI / DisplayPort	HDMI: HDCP V2.2/1.4, DP: HDCP V1.4
Image rotation	Image 90/180/270 flip and rotation up to 4k/60	Yes (Entire video wall image)
Latency	System latency	20ms
Preset Mode	27 preset modes	Selected from OSD through remote controller or Ethernet
		Preset modes are editable to meet different bezel size and installation condition requirements.
Advanced Video Wall setting	Display Unit (group) and cascade	One G413 can control 4x LCD (as one [Display Unit]). Multiple display units can be cascaded.
	Maximum signal resolution cropped for video wall when apply 4k/2k source signal.	• Video wall with one G413 (4x LCD): G413 will shrink 4k/2k image to FHD, then split into different sections and scale up to FHD for each LCD. • Video wall with 4x G413 (16x LCD):

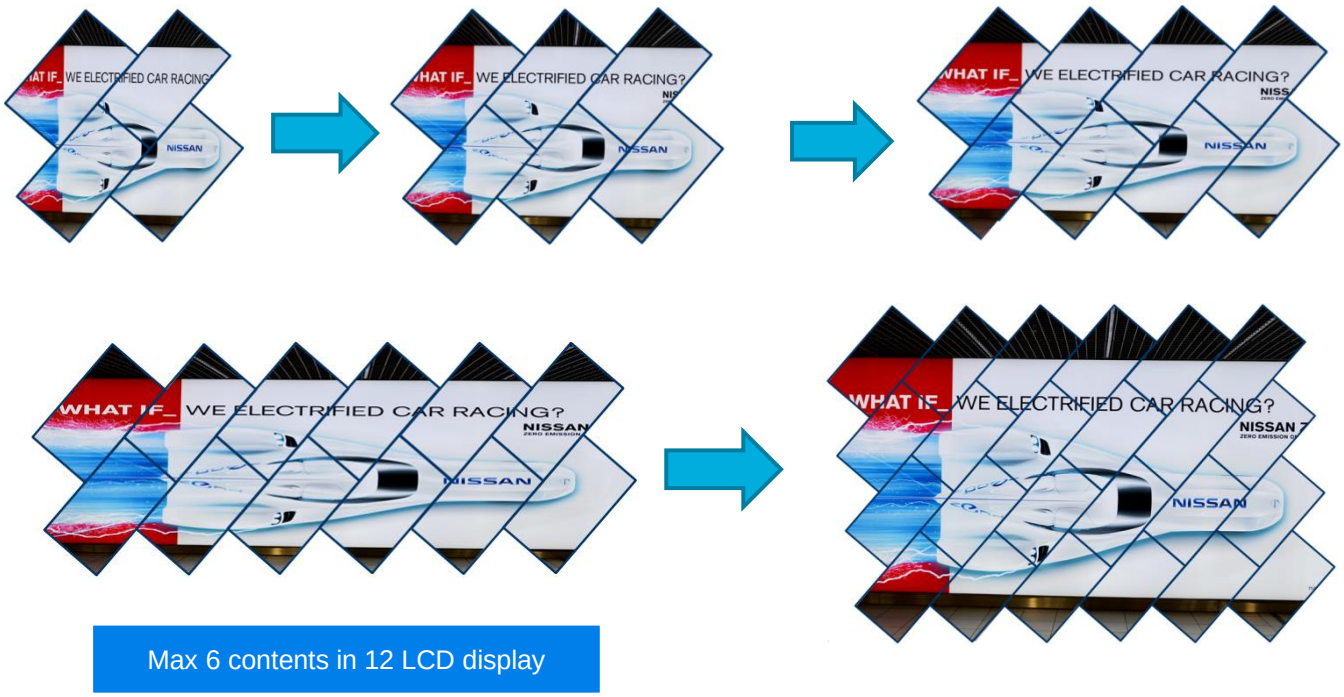
		Each G413 can crop one full HD image from 4k/2k and achieve high quality 4k/2k/60Hz video wall.
	Position shift in entire [Display Unit]	+_ 1800 pixels in horizontal and vertical directions for multiple [Display Unit] cascade alignment
	Irregular creative display modes created by user	Through remote controller or Galign PC tool
	Overall video wall image aspect ratio adjustment	25% to 200% in H&V with 1% interval continuously
	Overall video wall image position shift	The range is subject to aspect ratio adjustment. Maximum is from 25% to 200%
Looping playback	Seamless looping playback for different display modes	Up to 10 display modes with selectable time interval from 1 second to 600 seconds.
Image shift for LCD protection	Image position shift to prevent LCD from burn-in mark	Using playback function to achieve it
PIP (picture in picture) and POP (Side by Side)	PIP (picture in picture on entire video wall)	• PIP image size is from 320*180 to 1920*1200 • Flexible position across entire video wall. • PIP image size and aspect ratio can be adjusted through Overlap function • Main & PIP input source is swappable
	POP (show side by side image on entire video wall)	• Full screen or keep original signal aspect ratio. • Two images can be side by side or top/down
	High end 3D motion adaptive de-interlace in PIP/POP	Yes
	Limitation in PIP/POP function	• When implement PIP/POP function, the main signal source can't be rotated at 90/270° • Source: only one HDMI, DP & VGA source can be displayed on PIP/POP screen. • PIP Overlap function is only available up to 4k/30 input resolution.
Video processing	10 bits high end video processor with 4:4:4 full bandwidth uncompressed color sampling	3D motion adaptive de-interlace, smooth edge algorithm and 3:2/2:2 film mode processing
	High quality video and graphics scaling up/down	Yes
	Color adjustment (Hue, saturation, sharpness, contrast, brightness, preset modes, discrete RGB adjustment)	Applied to 4 LCD at the same time
System control for easy use	Full function IR Remote controller	Yes
	Cabled IR Receiver Extender	Can be extended up to 20m via audio cable
	Ethernet control and operation via LAN or WiFi	Yes

	Setup and control through USB	Yes
	ASCII control protocol over RS-232 & Ethernet	Yes
	[GAlign] PC tool for easy image alignment	Yes
	Auto Shut off output signal when input is missing	Yes
	Selectable EDID resolution for optimized video quality	Yes
	Ear mount	Option
Power supply	Dual power supply system, when use AC power supply, DC jack can provide DC12V 1A output power	AC: 100V-240V /0.25A, 240V/0.13A DC: 12V/3A Power adapter Power consumption without 12V/1A output: AC 110V: 27.5W, 240V: 31.2W, DC 12V: 13.2W Power consumption with 12V/1A output: AC 110V: 39.5W, 240V: 43.2W
Dimension	Only Box body, not including remote controller, power supply and packing	Dimensions (Body only): 440mm*181mm*44mm (without protruding parts). 440mm*192mm*55mm (including protruding part)
Weight	Without accessories	2.29kg

4. 27 Preset modes selected by OSD



5. Cascade with multiple units through preset mode



Max 6 contents in 12 LCD display

6. How to create custom display modes

a、 User can create all kinds of display modes for regular, portrait and irregular video wall with different size, resolution and bezel LCDs at any angle and position through input the coordinates of two corners (Top left and Top Right).

b、 4x LCD as one display unit and can be cascaded with multiple units without number limitation. The display panel shall be in 16:9 aspect ratio.

c、 User can convert project design drawings into 1920x1080 coordinates and pick up the coordinates at Top Left and Top Right corners in each LCD active display area, then upload to G413 through OSD or Galign tool to get the result.

d、 User can also install the LCD first, take a picture of the LCD layout and open the picture with Microsoft “Paint, trim active display area image and resize to 1920x1080 resolution, collect Top Left and Top Right coordinates for each LCD, then upload coordinates into G413 to get the result.

e、 After finish the video wall, user can fine-tune image position by remote controller or Galign PC tool.

f、 User can further adjust the aspect ratio and image display region.

g、 User can set different aspect ratio or cropping specific area in different display modes, then apply looping playback to show different display styles seamlessly and circularly.

7. PIP/POP function

G413 is designed with PIP/POP function in each processing module. Each processing module can display two contents with PIP (Picture in Picture) or POP (Picture outside picture). User can select two contents among HDMI, DP & VGA for PIP/POP display but can't select two HDMI input signals at the same time. The PIP image can be with variable size from 320*180 to 1920*1200 resolution. The location is flexible around entire display zone in video wall. The POP images can be full screen or keep original aspect ratio.