



The absolute opposite of ordinary

G406 Video Wall Controller Datasheet

4 channel Video Wall Controller

Up to 7680x1200 30 fps/ 4096x2160 60 fps inputs

With multi-video display function

*4 in/ 4 out, 4K60 inputs, 4:4:4 Chroma sampling, 2x4 Matrix Switch function,
Multi-video display, Independent rotation / scaling / cropping / color adjustment*



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DCi/UHD
4k/60/4:4:4

HDMI 2.0
DisplayPort 1.2

HDCP
2.2/1.4

10-bit
High-end
scaler

Cadence
Film 3:2 / 2:2

3D Motion
De-interlace

Deep Color
xvYCC/12-bit

Matrix SW
Free source
selection

Mosaic
Irregular wall

Multi-Unit
Cacade

Multi-view
Discrete display

Flexible
Aspect Ratio
Bezel Correction

Rotation
Landscape
Portrait

Loop Out
Daisy chain

Control
IR/USB/RS232
/Ethernet

Projector
Output
overlap

RoHS
CE FCC

G406 Quad channel controller

GeoBox G406 is new generation 4k2k @60Hz four screens video wall controller to allow great freedom in creating any scale video wall with multiple contents and different LCD arrays. It incorporates two HDMI 2.0b, two DisplayPort 1.2 inputs and two HDMI 2.0b loop-through ports with HDCP 2.2/1.4 as well as four synchronized HDMI 1.4 outputs. Each output has independent image rotation/flip, scaling, cropping and color adjustment.

G406 is designed with 2x4 matrix switcher and multi-video display function to display 1, 2, 3 or 4 independent contents on four LCD video wall. Two HDMI 2.0b loop-through ports are designed for multiple unit cascade and allows user to select two different contents for entire video wall.

It is pure hardware, standalone system with easy-of-use. All operations can be implemented through front panel keypads, IR remote controller, USB, RS232 or Ethernet. No additional PC, Zero Client, appropriate device or software tool is required.

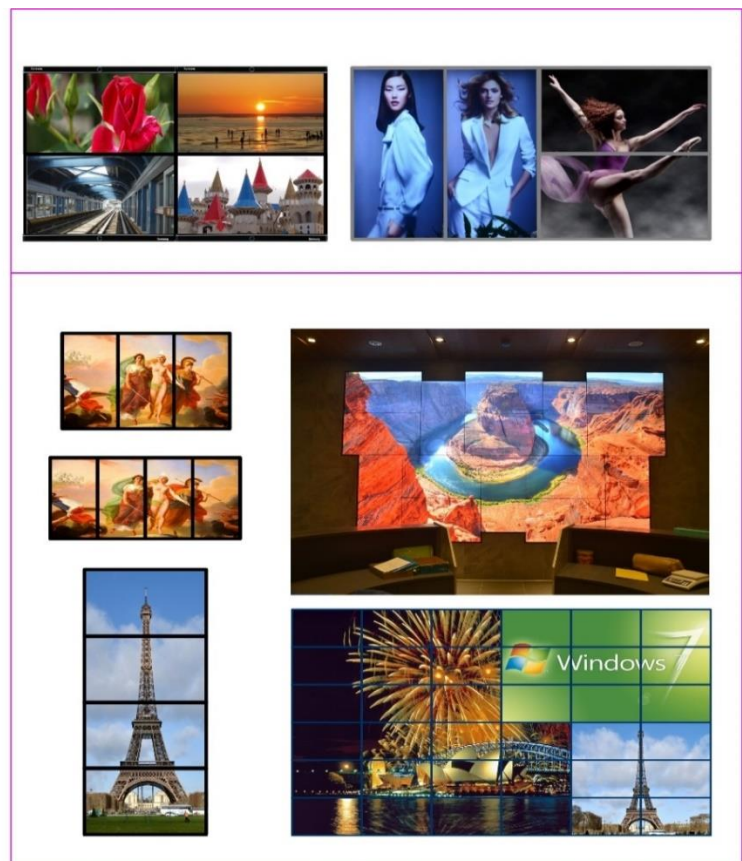
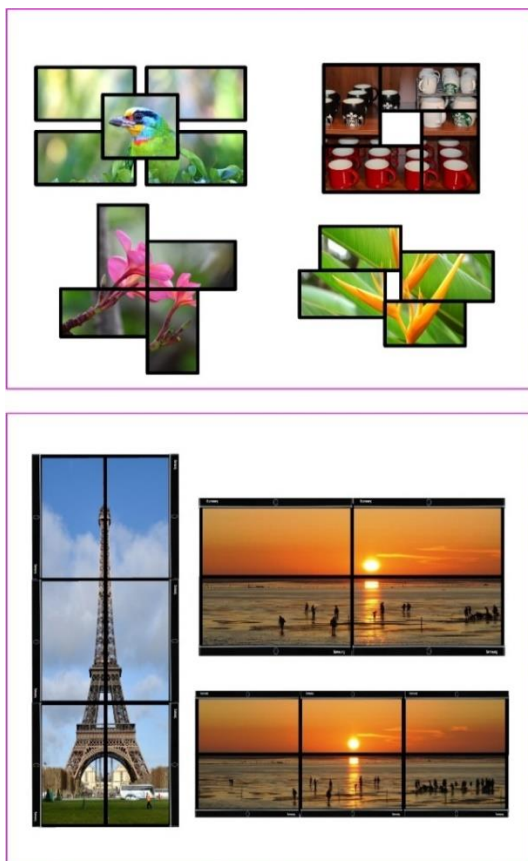
Infinite creative configuration

- ✧ 4x HDMI2.0b inputs & 4x HDMI1.4 outputs with flexible multi-unit cascade.
- ✧ Support up to 4k/2k @60Hz and 7680x1200 @30Hz input resolution.
- ✧ All inputs and outputs support are HDCP compliance: input: HDCP 2.2/1.4, output: HDCP 1.4
- ✧ Matrix switch function to allow multiple-video display, 1/2/3/4 contents on 4x LCD.
- ✧ Dual Loop-through ports for multiple unit cascade with two selectable inputs.
- ✧ Pixel base position alignment up to +_ 1800 pixels in H&V for flexible image capture, cropping, position alignment, bezel compensation & irregular video wall.
- ✧ Set overlap pixels up to 1800 pixels for projector edge blending application.
- ✧ Independent Image color adjustment, cropping, scaling and bezel correction in each channel.
- ✧ Independent image rotation and flip/mirror in each channel for variable landscape, portrait and irregular video wall display.
- ✧ Selectable output resolution and programmable EDID to optimize video quality.
- ✧ Flexible aspect ratio adjustment in each edge up to +_ 1800 pixels.
- ✧ Frame-Lock function to get perfect synchronization among output channels.
- ✧ G406 can sever as one Quad channel processors or two independent dual channel processors.
- ✧ Easy setup via IR, front panel Keypad, USB, RS232 & Ethernet. No PC is required.
- ✧ Ready for 24/7 working environment.

Specifications

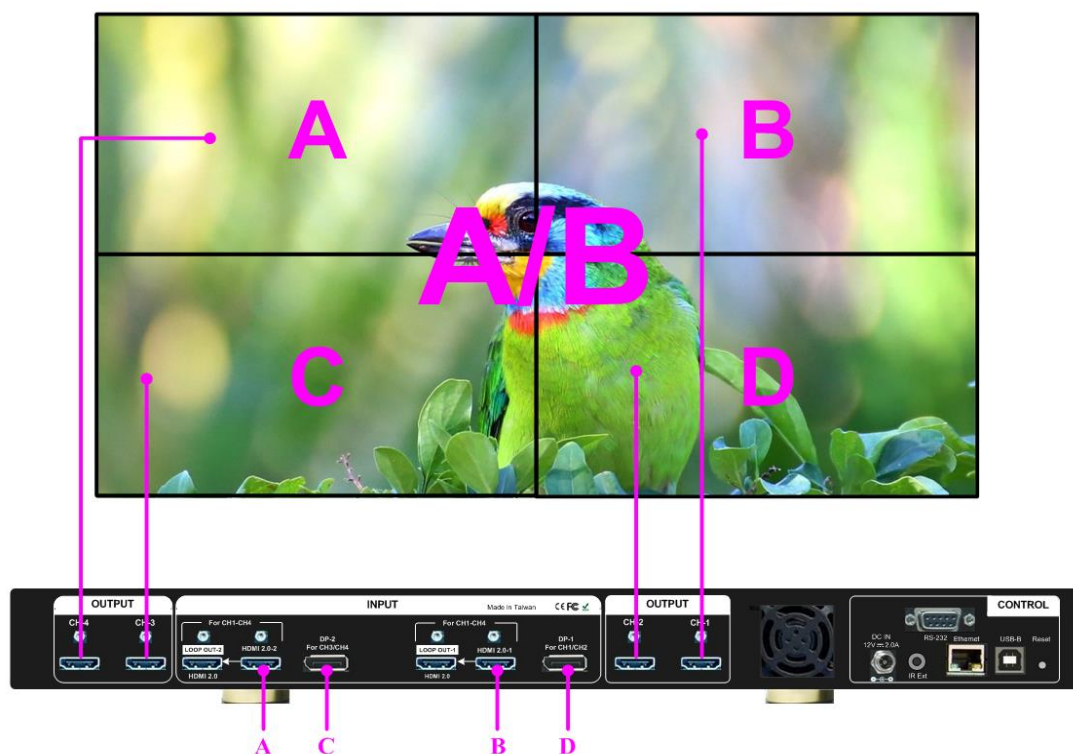
- ✧ Input: 2x HDMI2.0b for all channels, 1x DP1.2a for CH1/CH2, 1x DP1.2a for CH3/CH4
- ✧ Input HDCP: HDMI: V2.2/V1.4, DP: V1.3.
- ✧ Max. input resolution: 4096*2160 60fps & 7680x1200 @30Hz, 4:4:4 chroma sampling.
- ✧ Output: 4x HDMI1.4 up to 2048*1200 60 fps. 4:4:4 progressive, 24/30 bits.
- ✧ 2x HDMI2.0b loop out ports for multiple unit cascade & daisy chain connection.
- ✧ Support non-VESA STD input timings.
- ✧ 18 selectable output modes up to 2048x1200 60Hz in each independent output port.
- ✧ Selectable 8/10-bit output color depth.
- ✧ One frame latency: 16.7ms (V=60Hz)
- ✧ Support xvYCC color input processing & 8/10 bits deep color output.
- ✧ Overlap setting for edge blending in each edge up to +_ 1800 Pixels.
- ✧ 3:2/2:2 cadence, low angle smooth algorithm, high quality scaling engine.
- ✧ 3D motion adaptive de-interlace.
- ✧ 10-bit processor, frame rate conversion.
- ✧ 50Hz in/out to avoid video artifact.
- ✧ Matrix switch for multi-video display.
- ✧ Frame lock for synchronized outputs.
- ✧ Support HDR input signal but no HDR effect in the output.
- ✧ Individual 90/180/270 rotation, flip, cropping, scaling & color adjustment in each channel.
- ✧ When image rotation at 90/270 degrees, the maximum input is 4k/2k 30 fps.
- ✧ Embedded HDMI audio in each output.
- ✧ Selectable and programmable EDID.
- ✧ ESD Protection: ±15kV (Air-gap discharge), ±8kV (Contact discharge).
- ✧ DC 12V/1.1A, max. 13.2W, (100-240 VAC PSU)
- ✧ Working environment: 45 ° C, 10-90% RH
- ✧ Control: IR, RS232, USB, Ethernet
- ✧ Dimensions (Body only): 440mm*186mm*44mm (without protruding parts). 440mm*197mm*55mm (including protruding part)
- ✧ Weight: 2.31 kg (body only)
- ✧ CE/FCC/RoHS Certified
- ✧ 2 Year Warranty, extension package is available up to 5 years.

A. Application examples



B. Single G406 applications

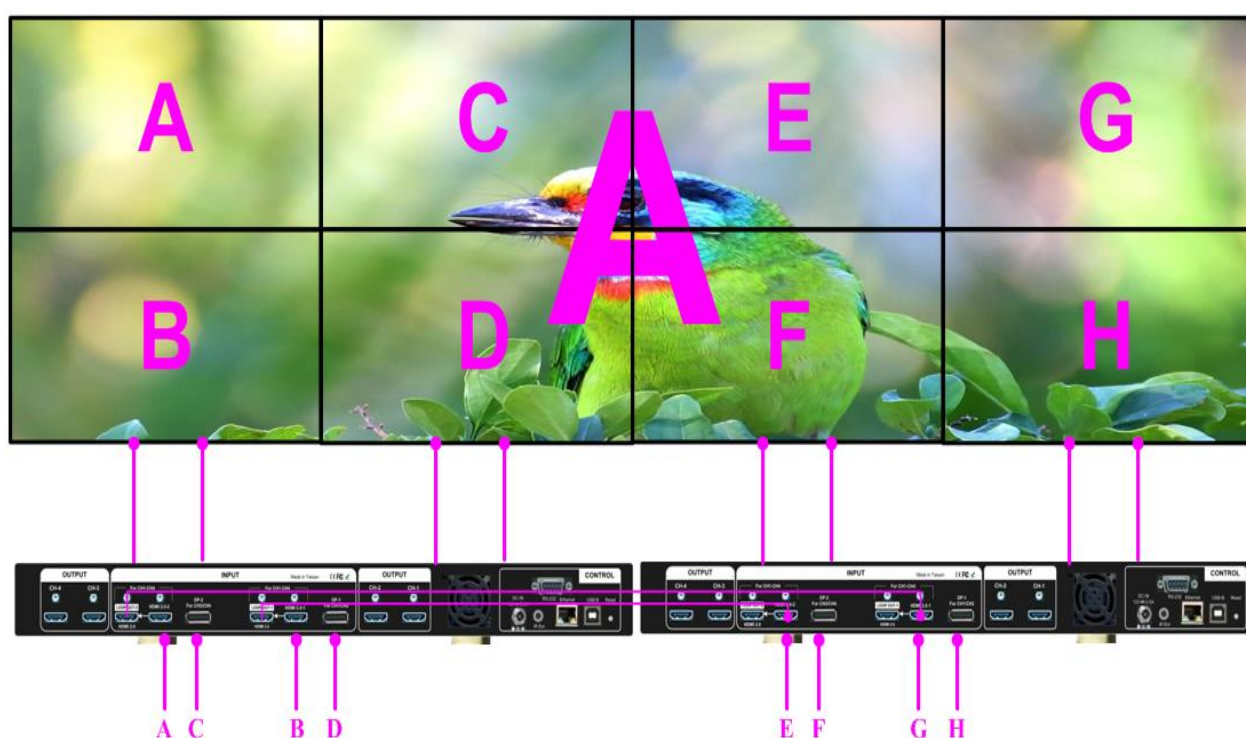
Configuration for 2x2 video wall with one G-406: (HDMI: A&B, DP: C&D)



- One content display: Display A or B on entire video wall (All-in-one)
- Two content display: Display A or C on two LCD and B or D on another two LCD (1+1)
- Three content display: Display A & C in two LCD and B or D across another two LCD (2+1/1+2)
- 4x content display: display A, B, C, D discrete contents across 4x LCD. (1+1+1+1)
- Each LCD can be randomly rotated at 90/180/270 degrees with 1800 pixels image alignment.
- Display 2x LCD at landscape + 2x LCD at portrait, like wind-mill style.
- Display 1/2/3/4 portrait or horizontal array.

C. Multiple units cascade applications

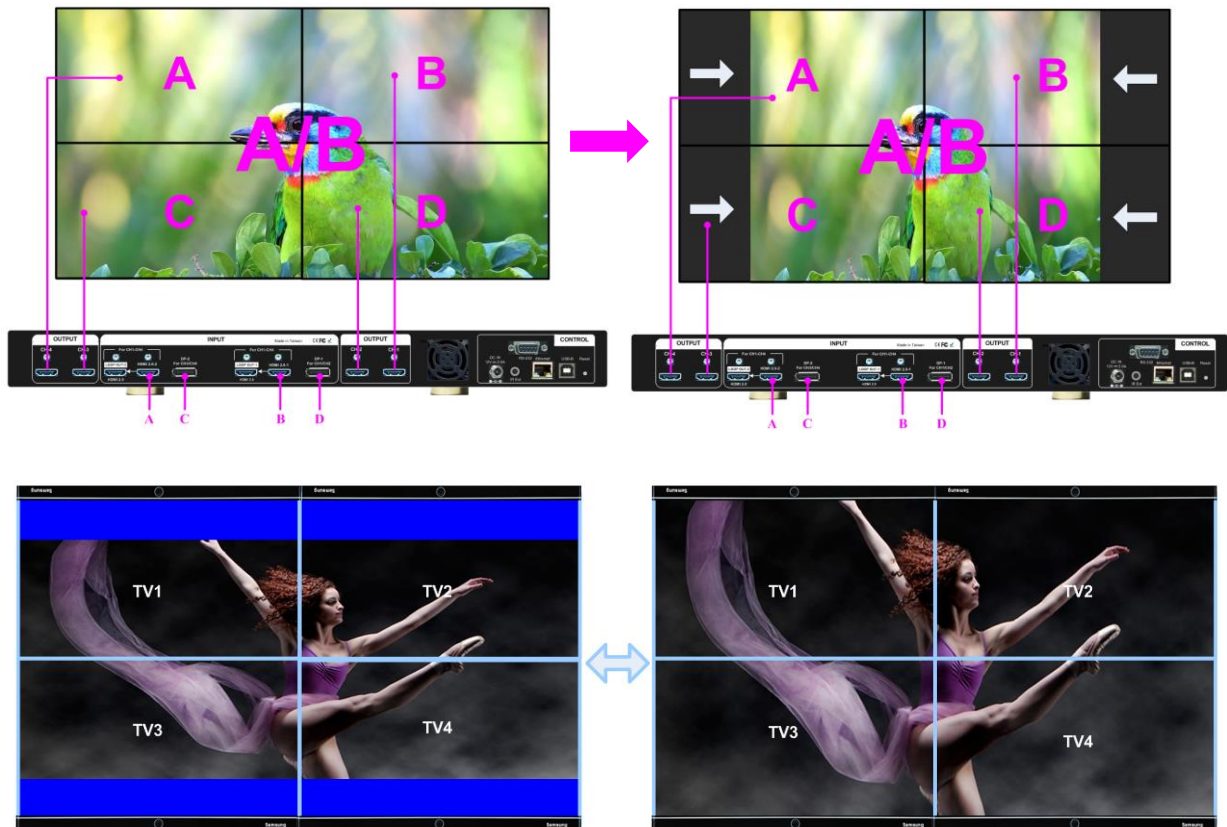
Example for 2 units of G406 application (HDMI input signal: A/B/E/G, DP input signal: C/D/F/H)



- Display A or B across entire video wall (All-in-one).
- If user adds two 2x1 HDMI switchers in front of E&G, user can display A or B contents across entire video wall as well as display 8 discrete contents across entire video wall.
- Display A on LH 4x LCD and B on RH 4x LCD or vice versa (1+1)
- Display 2/3/4/5/6/7/8 different contents across entire video wall. It depends on input connection configuration. Each LCD can select content from max. 3 input ports. Example: LCD-A can select signal from A, B and C. LCD-D can select signal from A, B & D.
- Any LCD can be independently at portrait or landscape position for irregular video wall.

D. Flexible Aspect Ratio Adjustment

User can shrink the image with black borders or stretch the image in specific direction to compensate the aspect ratio difference between video wall and the content. The Maximum adjustment range is +_1800 pixels in each edge.



E. Irregular Video wall

Each output channel can be rotate separately. User can use Video wall function to split the image and adjust Overlap value to align all image together to because seamless creative video wall. No limitation in panel size and bezel dimensions.



F. Split image for projector with embedded blending function

Two GeoBox outputs with
redundant data in overlap region



Projected images are overlapped
and blended by projectors



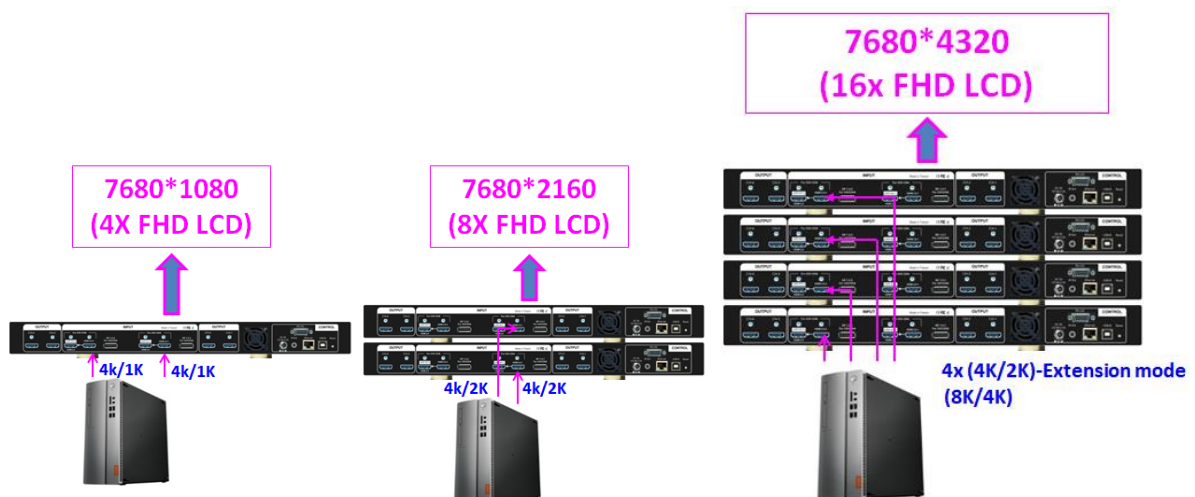
After projector
edge blending,
resulting
seamless image

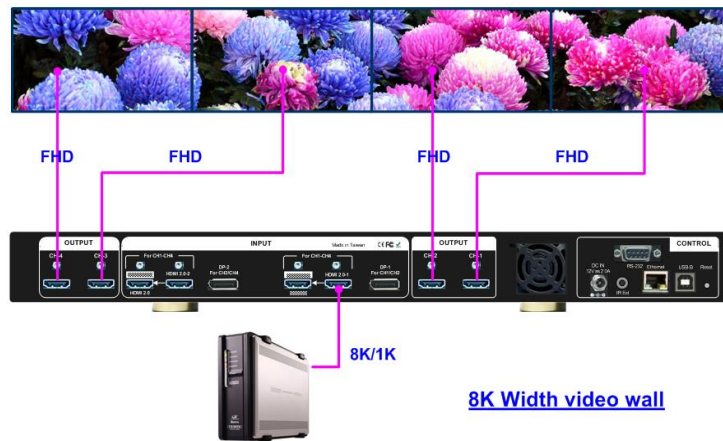




High resolution system applications

Multiple 4k signal sources can build super high resolution display system with high quality pixel to pixel mapping video wall.





G. Limitation in HDMI input ports

- G406 is designed with two display groups. Group A consists of CH1 & CH2. Group B consists of CH3 & CH4. It can be treated as two dual channel systems or one quad channel processor. User can use 4 units of G-406 together with 4x UHD signals (8k/4k signal source) to display pure 8k/4k video wall with pixel to pixel video quality.
- Two display groups will share the same HDMI input signal. User can select HDMI-1 or HDMI-2 signal for CH1/CH2 but can't select HDMI-1 & HDMI-2 at the same time for CH1/CH2. If HDMI-1 is selected for CH1, then CH2 will switch to HDMI-1 at the same time. User can further change CH2 to DP1 input signals to allow different contents displayed in CH1 and CH2.
- Group B CH3/CH4 will have the same limitation in HDMI-1 & HDMI-2 inputs.
- DP1 is for group A (CH1/CH2) and DP2 is for group B (CH3/CH4) only, not swappable. DP input selection is independent and will not affect all other input port selection.

H. Limitation in image rotation / flip mode

Image rotation at 90/270 degrees is only available for input resolution not larger than 3840x2400 @30Hz. Image flip or rotation at 180 degrees has no input resolution limitation. It can support up to 4k/60Hz input source.