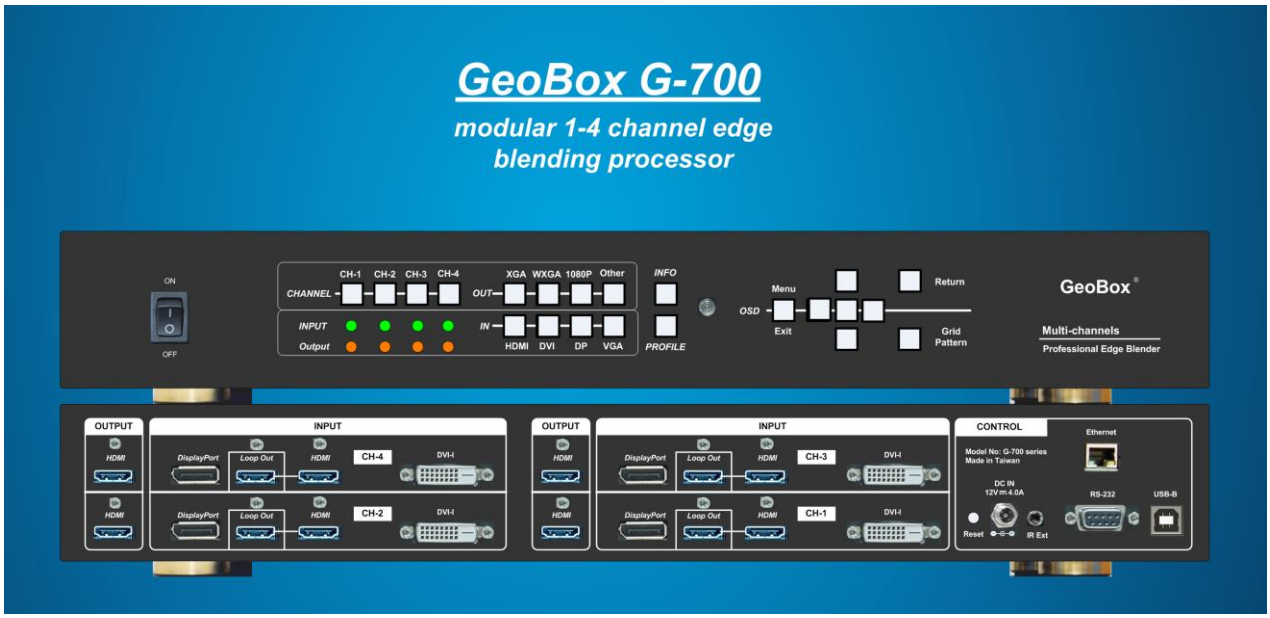
G-700 multiple Channel 4K Curve Edge Blending Processor



G-700 is a curved screen edge blending processor with the ability to provide multiple processing modules to control from 1 to 4 projectors based on user's requirements. G-701 can provide single processing module for one projector, G-702 for 2 projectors, G-703 for 3 projectors and G-704 for 4 projectors. It was designed for sophisticated edge blending as well as image warping, stacking, projection mapping, irregular video wall and passive 3D…etc.

Each processing modules has 3 input ports (1x HDMI, 1x DP, 1x DVI-I) to support 5 input formats (HDMI, DP, VGA, DVI-D, YPbPr) and 1x HDMI output port. One HDMI loop out port can provide raw signal output for daisy chain connection to other processing modules. It means one 1x G-704 can execute 4 projectors' edge blending without any additional equipment or splitter. Two G-704 can execute edge blending for up to 8 projectors.

Input ports support up to 3840x1080 @60Hz and 4k UHD @30Hz resolution with 4:4:4 full color sampling. It is integrated with 10-bit high end processor with motion adaptive de-interlace, 3:2/2:2 pull-down.

PIP (picture in picture) and POP (side by side) are standard functions in each processing module. In one G-704, user can display up to 8 different input contents on the screen. If user requires a PIP or POP image across entire screen, user can use the first module as PIP/POP processing and connect the output to other processing module input port to get PIP/POP image across entire screen. If user uses two modules for PIP/POP processing, then user can get 3 different contents across complete edge blending screen.

Advanced warp technology is embedded in G-700. User can use front panel keypad, IR controller or PC to perform edge blending and sophisticated geometry alignment up to 17x17 grids through user friendly operation interface. Geometry adjustment range is big enough for most of the applications. User can also apply serial connection among processing modules to increase geometry adjustment range for some special applications.

It can perform color and white balance adjustment in individual projector. Edge blending region color uniformity and non-edge blending area black level uplift are also standard function in G-700.

HDMI loop out supports daisy chain connection up to 3840x1080 @60Hz or 4k/2k @30Hz and allows large display with multiple G-700 cascaded. Video wall function in G-700 is to crop and allocate source image for each projector. Complete curved edge blending can be achieved without PC, video distributor and splitter.

In order to optimize video performance, G-700 is designed to support non-VESA standard input timing and allow user to create any EDID timing in the range between 1024x768 and 3840x2160.

With G-700, users can replace high end projector with low cost projector without lens shift, warp and edge blending. It provides easy configuration, low entry barrier, cost effective, reliable and flexible solution.

Function and features:

A. Structure

Each G-700 consists of 1-4 processing modules based on the requirement from customers. It will reduce the installation space as well as simplify the system connection.

B. Input and output in each processing module

1. Input ports in each processing module: 1x HDMI, 1x DisplayPort and 1x DVI-I (support HDMI, DVI, VGA, YPbPr input signals)。
   - ✓ HDMI & DisplayPort support 4k/2k @30Hz, WQXGA & 3840x1080 @60Hz with 4:4:4 sampling without compression.
   - ✓ DVI-I port: if the input is through HDMI cable, it can support 4k/2k @30Hz. If input from DVI or VGA signal source, it can only support up to 1920x1200 @60Hz.
   - ✓ Connect with all kinds of video sources and support none VESA standard input resolution.
2. Output ports: 1x HDMI. Preset output resolution: 720x480、XGA、WXGA、1280x1024、1366x768、1400x1050、1600x1200、1920x1080 & 1920*1200。
3. Loop out port: 1x HDMI (supports 3840*2160@30Hz) for daisy chain connection and monitoring.

C. Image warp, geometry alignment and edge blending

1. With full functions for quick 4 corner alignment, vertical and horizontal keystone correction, Pincushion & Barrel adjustment, image warp and image rotation and flip.
2. Each unit controls up to 4 projectors and can be expanded with multiple G-700 to support unlimited number of projectors.
3. Integrated with full function front panel keypads and IR remote controller. Manual geometry alignment up to 5*3 grid patterns.
4. PC software tool is available for warp and geometry alignment up to 17x17 grid pattern. After finishing geometry alignment, the parameters can be stored inside G-700, then no more PC is needed.
5. Through applying serial connection among several processing modules, user can expand geometry alignment range. It is convenient for special application required extreme big geometry adjustment range.
6. Execute 4 directions edge blending. No limitation in the number of edge blending.
7. Provide complete function for edge blending fine-tune and color correction.
8. Precise black level uplift at selectable area to compensate light leakage in the projector.
9. White balance and individual color correction for each projector.

10. One PC tool can control dual processing channels simultaneously.
11. Able to perform flat & curved screen seamless edge blending, including irregular curved screen and 360 degrees curved screen.

D. Passive and active 3D

1. Auto decode 3D signals for passive 3D display, including signal source from Blue Ray, STB, game console, media player and PC.
2. Auto decode Stereoscopic Player/ Nvidia 3D Vision 1080p @120Hz 3D format and Blue Ray 1080p 24Hz 3D signal into 720p/XGA 120Hz signal for active 3D display.
3. Support standard HDMI 1.4a 3D format, including 1080p/24Hz full HD, Side by Side, Top-Bottom, frame sequential & Line interleaved.
4. Support 3840x1080 Full HD Side by side 3D format and SONY 1080i/60Hz frame packed 3D..
5. “Perfect Sync” algorithm for Zero latency in RH/LH eye image to get the most comfortable 3D.
6. 3D display can be on flat and curved screen. It can be expanded by more projector image stacking or edge blending.

E. High end 10-bit video processor

1. Designed 10-bit high end processor with 3D motion adaptive de-interlace, low angle smooth algorithm and 3:2/2:2 film mode detect and recovery function.
2. Complete colour adjustment function, including brightness, contrast, hue, saturation, preset colour mode and independent RGB color adjustment.

F. Video wall function

1. Image split and assign location
2. Overlap pixel adjustments up to 900 pixels for image position shift, bezel compensation and creating overlap region for edge blending.
3. Connect with 4k/2k input signal and split the image for display devices without additional PC, image splitter or other devices.
4. Serve as video wall controller for irregular video wall display up to 15x15 matrix display from single signal input source.

G. PIP/POP function

1. PIP (picture in picture): with flexible PIP size (max. up to 1024x768), location and input source selection.
2. POP (Picture outside picture): side by side images with full screen or maintain original aspect ratio.
3. If set one processing module at the front end, the PIP/POP function can be applied to entire display system.

H. Image rotation and flip

1. Image 90/180/270 degrees rotation.
2. Image flip in Front/Rear, Left/Right and Top/Bottom directions.

I. System control

1. 1U housing for easy rack installation. Professional design and reliable.
2. Replace high price projector with low cost projector and achieve the same functionality.
3. Full function front panel keypads, IR remote controller, USB and RS232.
4. USB interface for code update and PC tool operation.
5. Internal grid pattern for easy geometry alignment.
6. Programmable EDID for user to create any EDID with timing between 1024x768 and 3840x2160.
7. BOX ID for convenient multiple units control at the same time.
8. Five preset Profiles to save user settings and can be recalled at any time.
9. Automatic power ON/OFF through input signal control. While no input signal is detected, it will shut down output so that user can power ON/OFF complete system through the control in signal source.
10. Dimension and weight: 440x189x45mm, 2.4kg (Body only)

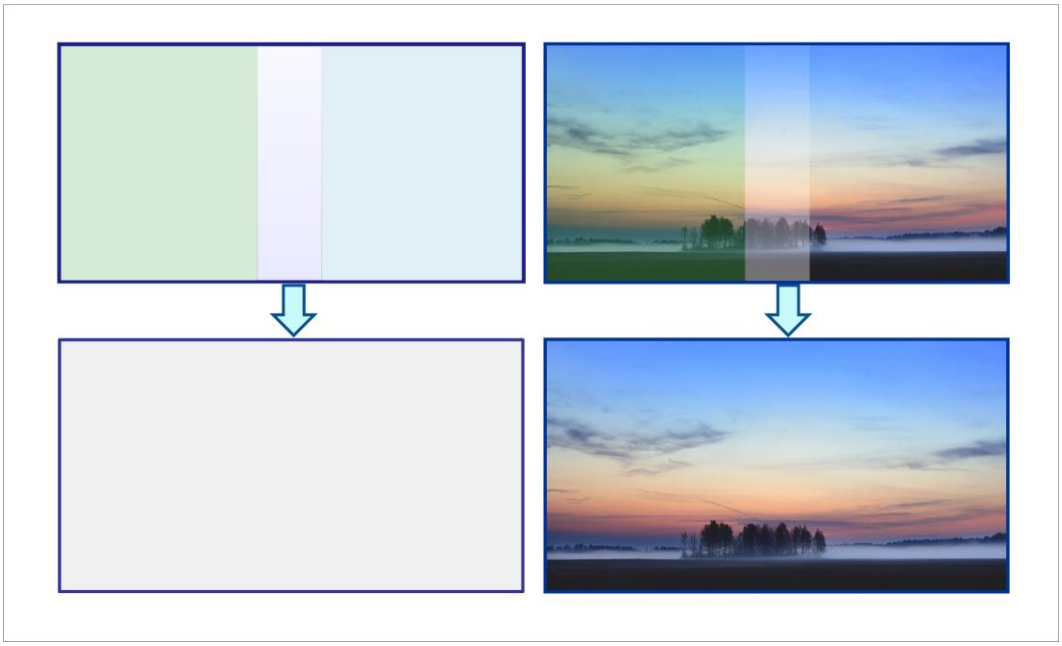
Application

1. Pro-AV installation
2. Immersive 3D theater
3. Hospital 3D training room
4. Advertising displays
5. Staging and special events
6. Houses of worship
7. Conference room
8. Lecture halls
9. Trade show display

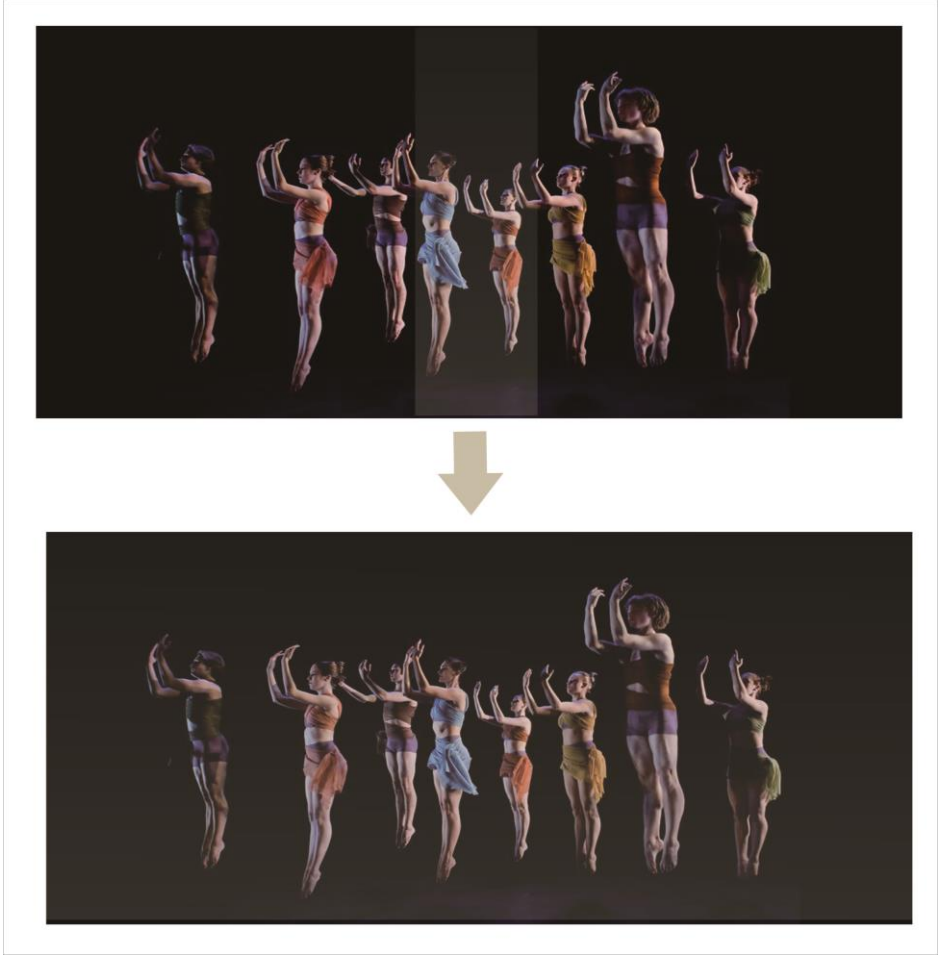
Application case study

Conventional curve screen edge blending

Black level uplift, White balance & Colour correction



Black Level Uplift



4K daisy chain connection