

GeoBox

GWarp3 / WebGui PC Tool User Guide

Applicable models: G802/G804/M800/M800Ex/G116

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Table of Contents

GWarp3 Quick User Guide

1. Definition.....	3
2. Important concept.....	3
3. Steps for Edge Blending setup through GWarp3 operation	4
4. Geometry alignment through [Warp Adjust]	4
5. Switching between OSD operation and GWarp3 operation	5
6. How to save [Warp Data].....	6
6.1. Gwarp3 [Save to Box]→ Box [UserMap]	6
6.2. Save to Profile Index through Gwarp3 and remote controller.....	6
6.3. Save in PC	6
7. Modification of Warp data	7
7.1. Modified by Gwarp3	7
7.2. Modified by OSD menu (remote controller)	7
8. Permanently save the final settings — [Profile Save]	7
9. PC Back up and copy — [Save Setting] / Load] Setting]	8
10. System Reset	8
11. Convenient Hotkeys in keyboard for GWarp3 operation	9

GWarp3 PC tool & WebGui User Guide

1. GWarp3 features	10
2. Applicable Models	10
3. Equipment and connection interface	10
4. GWarp3 System connection	11
5. WebGui system connection and operation	12
6. GWarp3 PC tool download	14
7. GWarp3 operation procedures	14
7.1. Open GWarp3 and connect with PC	14
7.2. Set output resolution and image direction.....	14
7.3. [Warp Adjust]—geometry alignment	15
7.4. [Video Wall]: Zoom, Pan, Overlap & image rotation	18
7.5. [Bend 1]: edge blending pixel and Gamma settings	19
7.6. [Blend 2]: Black level uplift and white balance	20

7.7. [Mask]: Edge mask	20
7.8. [Image]: global color and output resolution settings	21
7.9. [EDID] setting	22
7.10. [System]: Profile Save/Load, Ethernet config, system Reset	22
7.11. [PIP] setting.....	23
7.12. [Digital Mapping]: only for M800Ex models	23
7.13. [Firmware Update]	24

GWarp3 PC Tool Quick User Guide

1. Definition

- 1.1. Gwarp3--PC tool for edge blending. It can be connected through USB Ethernet.
- 1.2. Warp Data—a group of parameters to determine the pixel location in the image.
- 1.3. UserMap (GWarp)--UserMap is warp data created from Gwarp3→ [Save To Box]. It will determine image position and shape. When it is saved to Box, it will be under [GWarp] OSD menu.
- 1.4. Profile Index--User can save custom settings into Profile Index and recall through remote controller, RS232, PC Tool or WebGui. User can save up to 5 different settings (5 Indexes).
- 1.5. [Save To Box]—a process to save Gwarp3 UserMap into GeoBox.
- 1.6. [Load Map Data]—to load back 17x17 warping data for further modification. Only 17x17 warp data needs to go through this load back process before further modification.
- 1.7. Profile Save/Profile Load--to save or load setting data from Profile Index.
- 1.8. [Save Setting] to PC / [Load setting] from PC--it is a process to save/load GWarp setting data from PC. User still needs to go through [Profile Save] & [Save to Box] to load Gwarp3 settings into GeoBox.
- 1.9. [Warp Adjust]—a tab to select sub-menu for geometry alignment.

2. Important concept

- 2.1. Gwarp3 is a PC tool for convenient operation through USB or Ethernet connection. When GeoBox is connected with Gwarp3, GeoBox is controlled by Gwarp3 but not from GeoBox internal settings. Unless user save Gwarp3 setting into GeoBox, when user turns off GeoBox, the settings will get lost. There are two ways to save Gwarp3 settings into GeoBox:
 - ✓ Through [Profile Save]—It will save all Gwarp3 settings into GeoBox with only one UserMap.
 - ✓ Through [Save to Box]—it only saves Warp Data only without including other settings.
- 2.2. Different Gwarp3 version needs to match MCU code and FW version. When user apply new version Gwarp3 and see [MCU code is too old] message, user needs to update new FW & MCU code.
- 2.3. The menu for Geometry alignment in Gwarp3 is called [Warp Adjust]. It can only execute geometry alignment up to 17x17 control points.
- 2.4. Under 9x5 control point, the geometry alignment result in Gwarp3 will be executed to the Box in real time. It is the same result as OSD or remote controller operation. User can switch operation between remote controller and Gwarp3 at any time.
- 2.5. 17x17 geometry alignment can't be executed in the Box in real time. User should execute [Save to Box] process to save the final data into Box and can find the result under [UserMap] OSD menu.
- 2.6. The data saved in Profile Index will save all user settings including UserMap. If the UserMap has no 17x17 data, user can recall Profile Index data and modify through OSD. When modify through OSD,

user shouldn't click [Warp] hotkey in the remote controller directly to open [Warp] menu but need to open [Anyplace]→ [9x5] to do further modification. Once clip [3x3], the grid pattern will only keep [3x3] data.

- 2.7. If the data includes up to 17x17, user can modify UserMap data through Gwarp3. To select User Map # and click [Load Map Data], then click [Warp Adjust]→ [17x17] mode to execute further modification. User can also execute 2x2 corner [Finetune] under [Anyplace]→ [GWarp]→[Finetune] OSD menu with +_50 pixels position shift in H&V directions through remote controller. This is for position finetune in after service after installation.
- 2.8. [Save Setting] to PC can only save "Current" setting data inside Gwarp3 to PC. It means Gwarp3 can only save the settings that is showed at that time. **Multiple Profile Index data and User Map data which are stored in the Box can't be stored into PC.**
- 2.9. The data saved in Gwarp3 through [Save Setting] to PC can be as backup or copied to another GeoBox through [Load Setting] process. After PC is connected with new box, user can open Gwarp3 and go through [Load Setting]→ [Load Map Data]→ [Warp Adjust]→ [17x17] mode to execute further modification or tag [System]→ [Profile Save] to save the settings into new box. If the warp data has no 17x17 data, user can use [9x5] to do geometry adjustment through remote controller or Gwarp3 directly without going through [Load Map Data] process.

3. Steps for Edge blending setup through GWarp3 operation

- 3.1. Set output with the same resolution as projector native resolution through remote controller, front panel keypad, OSD or tag Gwarp3→ [Image] after connected with Gwarp3 PC tool.
- 3.2. Connect GWarp3→ Select [Pattern] color→ [Warp Adjust]→ [2x2]→ [3x3]→ [5x3]→ [9x5]→ [17x17].
- 3.3. After finish each channel geometry alignment, please click # under [Save to Box] to save the warp data into Box. The data saved in each channel is independent. User can save into the same # key.
- 3.4. Execute [Video Wall] settings. Can be executed in GWarp3 or OSD.
- 3.5. Execute Edge [Blend] settings. Can be executed in GWarp3 or OSD.
- 3.6. After finish all settings, go to [System] → [Profile Save] to save all settings into Box permanently.
- 3.7. User can save the settings into PC through [Save Setting] as backup. The file name is WBF. It includes all the Gwarp3 settings for all channels. User can load back WBF file from PC for further editing or copy to another GeoBox of the same model.

4. Geometry alignment through [Warp Adjust]

- 4.1. Connect USD cable between PC and GeoBox through USB port. Open Gwarp3, select connection type [USB] or [IP Address], then click [Connect]. User will see the connection indicators at Gwarp3 right hand side.
- 4.2. Select [English] as keyboard language. Some keyboard function may not work if select other

language.

- 4.3. Click PC keyboard [P] to select grid pattern color. [CTRL + P] can disable the pattern and see background image for OSD operation.
- 4.4. Start from [2x2] alignment, then follow [3x3]→ [5x3]→ [9x5]→ [17x17] sequence for geometry alignment. If go back to lower control point adjustment, it will reset higher control point adjustment.
- 4.5. [2x2] alignment will not reset curve adjustment result.
- 4.6. Use [M] for adjusting [Warp Adjust] Mode selection (2x2, 3x3, 5x3...).
- 4.7. Use [CTRL + Arrow] key to select control point.
- 4.8. Use [Arrow] key to adjust control point position with default step (8 pixels/step)
- 4.9. Use [Shift + Arrow] key to adjust control point position with 1 pixel/step.
- 4.10. Click # key under [Save to Box] to save warp setting. Each channel shall save separately but can save to the same # for convenient recall.
- 4.11. After finishing all channel geometry alignment and [Save to Box], click [System] to save all channel settings into [Profile Save].

5. Switching between OSD operation and GWarp3 operation

- Warp data created by Gwarp3 under [9x5] will synchronize with the Box automatically but [17x17] warp data will not synchronize with the Box.

5.1. [9x5] warp data:

- ✓ OSD warp data switched to Gwarp3:
User can open GWarp3 and directly modify warp data. Please select [Warp Adjust]→ [9x5] or [17x17] for further modification. If select [5x3], only [5x3] data will be kept. When transfer to [17x17] in Gwarp3, the image position may have minor position shift.
- ✓ GWarp3 warp data switched to OSD operation:
 - i. Use [CTRL + P] to turn off GWarp3 grid pattern so that user can see OSD menu and operate directly by remote controller. User needs to activate [Menu]→ [Anyplace]→ [9x5] OSD menu for further editing. If clip [Warp] hotkey in remote controller, please change the OSD menu to [9x5] location before press [Enter]. If located at [5x3] and press enter, only [5x3] data will be kept.
 - ii. User can save GWarp3 warp data through [System]→ [Profile Save] and user can load back from remote controller to do further modifications.

5.2. [17x17] warp data from Gwarp3

- ✓ [17x17] warp data can't be transferred to OSD operation directly. It will only keep up to [9x5] data.
- ✓ User can save [17x17] warp data to the Box through Gwarp3 [Profile Save] or [Save to Box].

6. How to save Warp Data

6.1. Gwarp3 [Save to Box]→ Box [UserMap]

- ✓ [Save to Box] is a process to save Gwarp3 geometry alignment settings into GeoBox. It will save the settings for selected channel only.
- ✓ Select the # and click [Save to Box] on GWarp3 will execute this function. The location to store this geometry alignment settings in the Box is under [Anyplace]→ [GWarp]→ [UserMap 1~10].
- ✓ Before [Profile Save], user needs to click [Save to Box]. Otherwise [17x17] settings will get lost and only the warp data below [9x5] will be saved.
- ✓ Each channel will save to different [UserMap] location. User can save all channel settings to the same # for convenient recall.
- ✓ The warp data from Profile Index can be saved to UserMap through Gwarp3 [System]→ [Load Profile]→ [Load Map Data]→ [Save to Box #]
- ✓ If user wants to save warp data created from remote controller into GWarp (UserMap), user needs to switch to GWarp3 operation, then save it into UserMap through [Save to Box].
- ✓ When execute system reset, UserMap will be kept without erase. User can see the result from OSD or GWarp3 [User Map] menu.
- ✓ User can delete UserMap data through [Do Factory Reset] or insert pin into Reset Hole on back panel for 5 seconds.

6.2. Save to Profile Index through GWarp3 and remote controller

- ✓ User can save all settings into the Box through Gwarp3 [System]→ [Profile Save] or through [Save] hotkey in remote controller.
- ✓ Before save Profile through remote controller, user needs to execute Gwarp3 [Save to Box] in advance. If not go through [Save to Box] process, [17x17] data will get lost.
- ✓ [Profile Save] will save the settings from all channels at the same time.
- ✓ User can Load the Profile setting through Gwarp3 or Remote controller and do further modifications. Before modify [17x17] warp data, user needs to click Gwarp3 [Load Map Data].

6.3. Save in PC

- ✓ PC [Save Setting] process will save all “current” data inside Gwarp3 with WBF or SBF file extension name. During [Save Setting] process, user can select (Warp Box Setting) to save all channels settings at the same time with WBF extension file or (Single channel setting) to save only one channel with SBF extension file.
- ✓ The data will only include “current” Profile Index or UserMap. User needs to execute [Save to

Box] or [Profile Save] to store the settings into the Box. Otherwise, when user turns off GeoBox power, the settings will disappear.

- ✓ It can only save one “Current” Profile Index and UserMap data. It will not save all Profile Indexes and UserMap data.

7. Modification of Warp data

7.1. Modify by Gwarp3:

- ✓ User can modify UserMap data through Gwarp3.
- ✓ Tag [Warp Adjust]→Click [User Map] # in Gwarp3 will show up geometry alignment result.
- ✓ If the warp data is only up to [9x5], user can modify directly. If it includes [17x17] warp data, user needs to click [Load Map Data] to recall [17x17] warp data for further adjustment.
- ✓ If the data is saved through [Save Setting] in PC, user can [Load Setting] from PC to do further modification. [Load Map Data] process is still necessary before modify [17x17] warp data.
- ✓ When UserMap WBF is copied to other GeoBox, it is still editable through Gwarp3.

7.2. Modified by OSD menu (remote controller)

- ✓ Warp data stored in UserMap can't be modified through OSD. User can only execute 2x2 corner [Finetune] under [Anyplace]→ [GWarp]→[Finetune] OSD menu with +_50 pixels position shift in H&V directions through remote controller.

8. Permanently save the final settings — [Profile Save]

- 1.1. Gwarp3 [System]→ [Profile Save] is to keep all settings into Box permanently.
- 1.2. During the setup stage, we propose user to execute [Profile Save] at each important stage.
- 1.3. [Save to Box] process shall be executed before Profile Save. Otherwise, 17x17 geometry result may be lost.
- 1.4. [Profile Save] in GWarp3 and WebGui will save all channel settings at the same time. If it is saved through OSD, it will only save one channel settings at selected channel.
- 1.5. The data Load from Profile Index can be modified by WebGui & OSD below [9x5] warp adjustment.
- 1.6. If the data is created from GWarp3 [warp adjust]→ [17x17] and store into Profile. User can recall this Profile settings and modify it through below procedures: [Load Profile]→ [Warp Adjust]→ [Load Map Data]→ [17x17] to do further modification.

9. PC back up and copy — [Save Setting / Load Setting]

- 1.7. User can use PC to back up GeoBox “Current” settings through [Save Setting].
- 1.8. User can select to save all channel data or single channel data by selecting WBF or SBF file type. It will include only “Current” settings without including Profile Index data or UserMap data.
- 1.9. The file saved in PC can be served as backup or copied to another Box.
- 1.10. User can execute [Load Setting] from PC to another Box and do further editing. User needs to click [Save to Box] & [System]→ [Profile Save]. Otherwise, it is still not been saved into Box.
- 1.11. GWarp3 will detect the information in the Box when it is connected. Some setting in the OSD may not be implemented in GWarp3 and can't be saved into PC at the same time.
- 1.12. The WBF file in Gwarp3 can be backup or copied to another unit through [Load Setting] process. After [Load Setting], user needs to click [Load Map Data] to execute [17x17] modification. If the warp data has no 17x17 data, user can clip [9x5] for further adjustment without going through [Load Map Data] process.

10. System Reset

- 1.13. OSD Reset:
 - ✓ Only reset one channel settings: Activate OSD→ [Options]→[Reset] → [Reset All] or only reset [Video Wall] / [Anyplace]. User can also click [Reset] hotkey in remote controller to do reset.
 - ✓ It will only reset selected channel only.
- 1.14. Reset Hole:

Reset by Reset Hole on the back panel near USB port for 5 seconds, it will execute deep System Reset in all channels to factory default settings including erasing Profile Index and UserMap data.
- 1.15. Reset from WebGui:

[Reset All] under [System] in WebGui can reset all channel settings at the same time. It will not erase the data stored in Profile Index and UserMap.
- 1.16. Reset from [GWarp3]:

Under [System] menu, there are three sub-menus:

 - ✓ [All Reset]: The function is the same as OSD reset but it will reset all channels at the same time.
 - ✓ [Reboot]: It will reboot the system same as power OFF/ON the system again.
 - ✓ [Do Factory Reset]: The function is the same as reset from [Reset Hole]. It will execute deepest reset and return all setting into factory default value, including erase the data in Profile Index and the data in UserMap.
- 1.17. [Profile Index] and [UserMap] data can only be erased through [Do Factory Reset] and [Reset Hole].

11. Convenient Hotkeys in keyboard for GWarp3 operation

Please set PC language in English so that user can use Keyboard hotkeys to execute system operation.

If not in English, some hotkey functions will be not functional.

- ✓ [M]: Change circularly Warp Adjust mode from [2x2] → [3x3] → [5x3] → [9x5] → [17x17] → [Wall] → [2x2]...
- ✓ [CTRL + Arrow]: Select control point
- ✓ [Arrow]: adjust value (control point position), default is 8 pixels/step.
- ✓ [Shift + Arrow]: Geometry adjustment with 1 pixel/step
- ✓ [P]: Enable grid pattern with different color
- ✓ [CTRL + P]: turn OFF pattern to see OSD menu for the operation by remote controller
- ✓ [R]: Reset geometry alignment settings in current mode and channel.
- ✓ [U]: undo the last geometry alignment step.

GWarp3 PC Tool & WebGui User Guide

1. Gwarp3 Features

- 1.1. Compatible with Windows USB HID class, no driver is required, ability to be used in all Windows OS version (Windows 7/8/10).
- 1.2. Embedded Ethernet system, user can setup and control the system through Ethernet or WiFi together with mobile devices.
- 1.3. Implement complete Edge Blending processes in Gwarp3 and store the result into GeoBox, then no PC is required. The functions include geometry alignment, Video Wall settings, Edge Blend settings, Color adjustment, System Setting, Profile Save/Load and Firmware Update.
- 1.4. Hotkeys for convenient Gwarp3 operation through keyboard and mouse, even user can execute complete geometry alignment without seeing GWarp operation window.
- 1.5. Gwarp3 tool version needs to match MCU code and FW inside GeoBox.

2. Applicable models

- 2.1. G116: warping processor
- 2.2. G802: Dual channel edge blending processor
- 2.3. G804: Quad channel edge blending processor
- 2.4. M801: Single channel edge blending processor
- 2.5. M802: Modular dual channel edge blending processor
- 2.6. M803: Modular three channel edge blending processor
- 2.7. M804: Modular four channel edge blending processor
- 2.8. M801Ex: Single channel projection mapping box
- 2.9. M802Ex: Modular dual channel projection mapping box
- 2.10. M803Ex: Modular three channel projection mapping box
- 2.11. M804Ex: Modular four channel projection mapping box

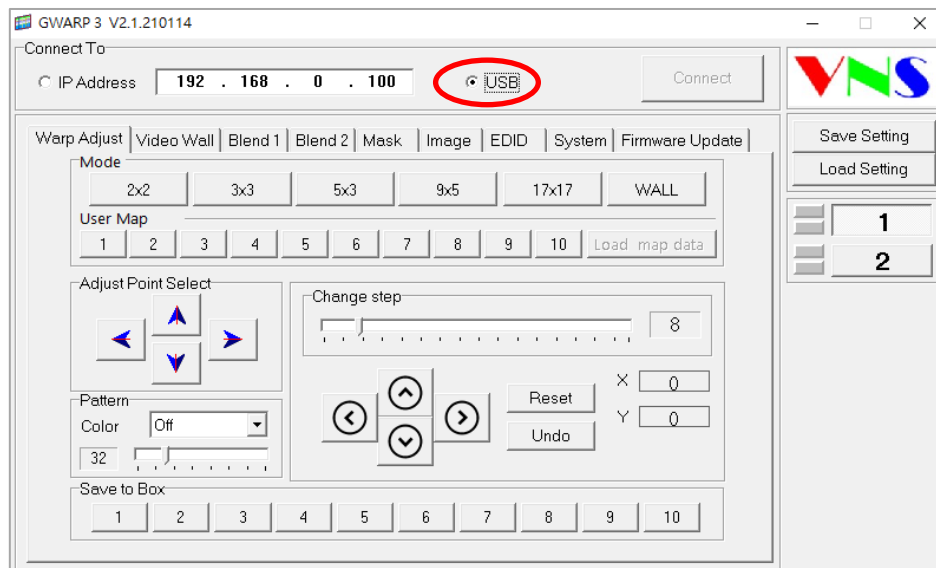
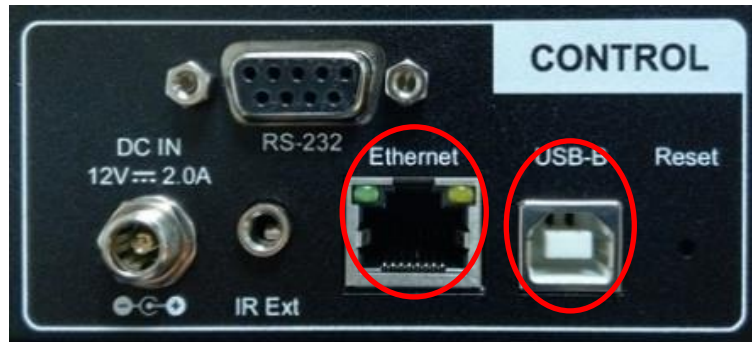
3. Equipment and connection interface

- 3.1. Two connection options:
 - ✓ USB Type B to USB (PC/Notebook) cable, or
 - ✓ Through Ethernet connection.
- 3.2. PC/Notebook with Windows standard USB HID driver. No special driver is required.
- 3.3. Please set PC language in English so that user can use Keyboard hotkeys to execute system operation. If not in English, some hotkey functions will be not functional.

4. GWarp3 System connection

4.1. Connection through USB type B cable

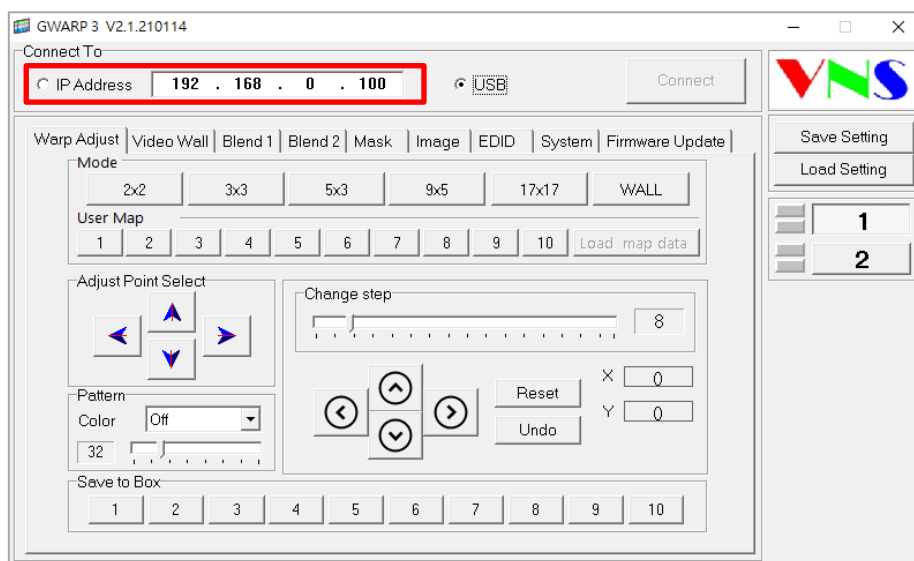
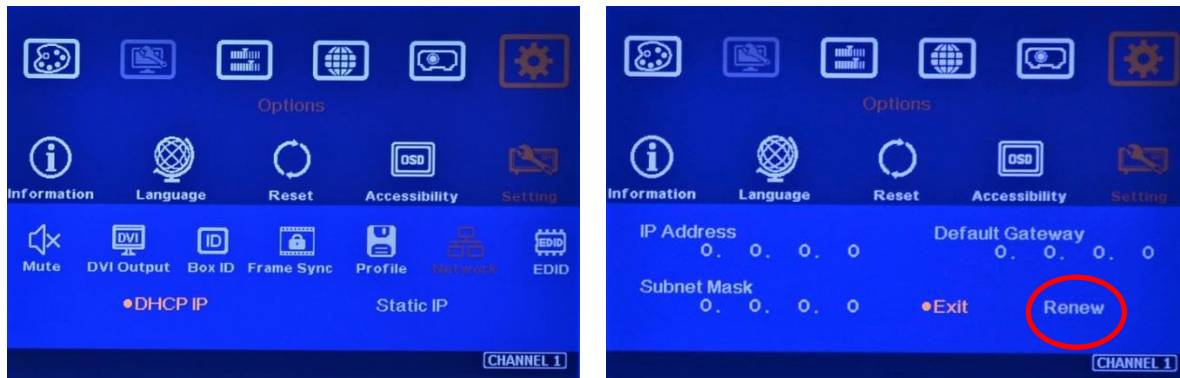
- ✓ Open Gwarp3 and default connection is “USB”.
- ✓ If the distance is too long, please use Ethernet instead of USB for the operation.



4.2. Connection through Ethernet:

- ✓ Connect PC & GeoBox to LAN port in Router or Switch/Hub
- ✓ To select Static IP or DHCP for the connection under OSD menu.
- ✓ If DHCP is selected, user can press [Renew] to get IP address. After open Gwarp3, user can input IP address assigned by Router to get connection.
- ✓ If Static IP is selected, user can connect Gwarp3 through selecting IP Address at 192.168.0.100 to get connection.
- ✓ GeoBox default IP address is 192.168.0.100. User can set different IP address in each unit of GeoBox to execute separate operation & control in multiple units.
- ✓ If WiFi Router is connected, user can control through any device (Mobile, iPad, PC...) which is connected with WiFi router.
- ✓ **User can connect UTP Ethernet cable (or cross-over cable) directly between PC and GeoBox.**

PC needs to set the same network segment such as 192.168.0.105 with Subnet Mask at 255.255.255.0 in TCP/IPv4 for the connection.

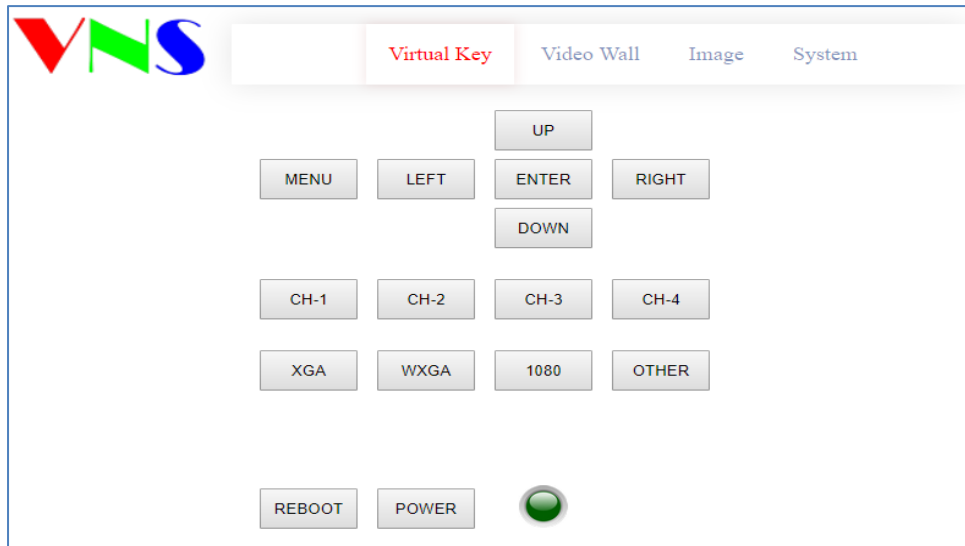


4.3. After PC/Notebook connected with GeoBox, user can use wireless keyboard and mouse for convenient operation in front of the screen.

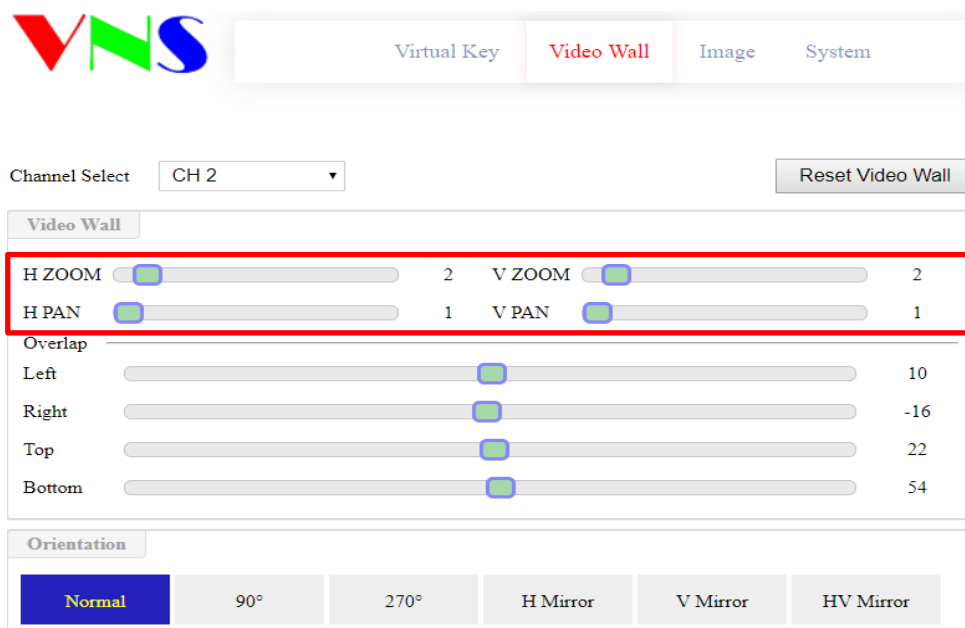
5. WebGui system connection and operation

5.1. User can connect GeoBox through web browser like Edge or Google Chrome through input the IP address 192.168.0.100 in GeoBox. User needs to set at the same IP segment such as 192.168.0.105.

5.2. After connection, user will see WebGui as below:



- 5.3. Use Mouse to click the button to do the operation. When user wants to adjust geometry position with big value, please fast click with the mouse and it will increase the adjusting speed to get to the value user need.
- 5.4. For the operation of the sliding bar for Video Wall PAN setting at H=2 or V=2, user needs to move the sliding bar or click the slid bar position more than middle point of the sliding bar to get the value.
- 5.5. User can Power ON/OFF the system or reboot the system through Buttons. The Power indicator will change color to Red if the system is power off.
- 5.6. User can also set different IP address and Save final settings into Profile Index under [System] menu.
- 5.7. The maximum geometry control points in WebGui is 9x5 control points, same as Remote controller or OSD operation.
- 5.8. If user uses mobile phone for the operation, it may have different behavior in different OS system. If meet trouble, please double check with different brand mobile phone.

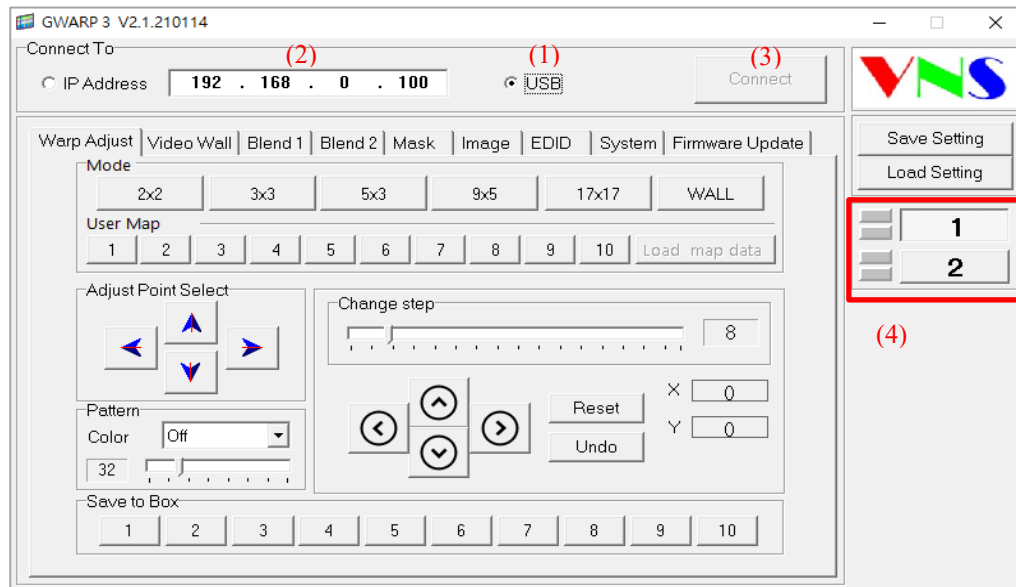


6. Gwarp3 PC tool download

Please download Gwarp3 PC Tool] file from website www.vnstw.com under [Support] tab

7. GWarp3 operation procedures

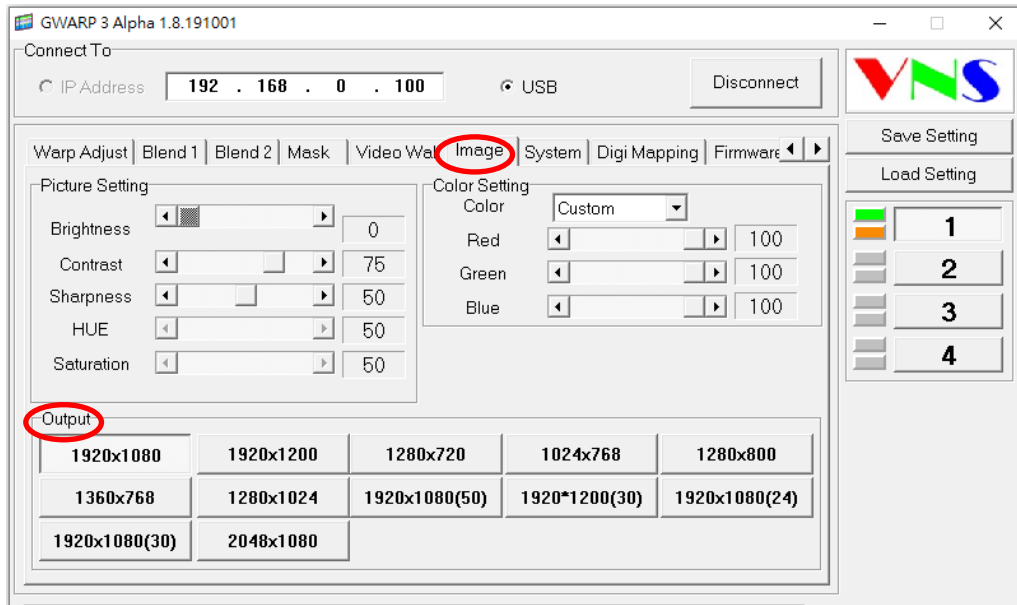
7.1. Open GWarp3 and connect with PC



- ✓ Open Gwarp3.exe software in PC and select [USB] (1) or [IP Address] (2), then click [Connect] (3) to link PC with GeoBox.
- ✓ User will see [Disconnect] (3) and GeoBox system connection status in (4). Green light means GeoBox has properly connected with projector in the channel. Orange light means the channel has detected input signal.

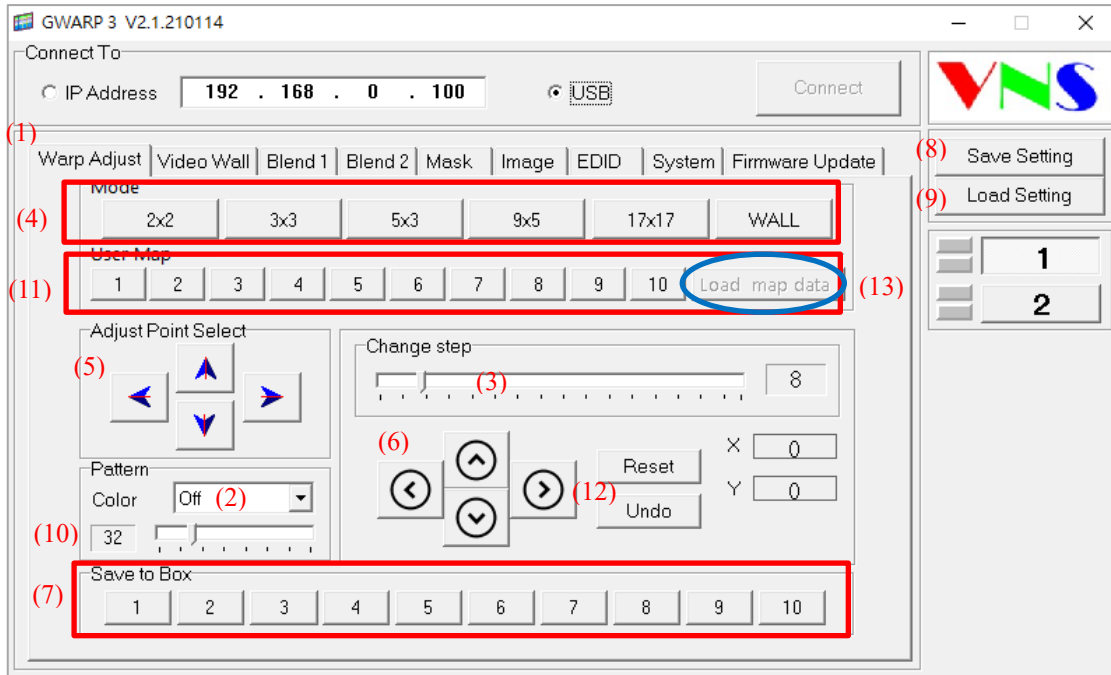
7.2. Set output resolution and image direction

- ✓ Output resolution setting is under [Image] menu.
- ✓ Please select output resolution same as projector native resolution to get the best video quality.
- ✓ If the input signal is 50Hz, please also select output with 50Hz to avoid repeat frame and not synchronization issue.
- ✓ Image flip and rotation is under [Video Wall] menu. User can see “R” direction to select the right direction of the image.
- ✓ All the settings will apply to one channel only. Each channel needs to be set separately.



7.3. [Warp Adjust]--Geometry alignment

- ✓ Please check [Image] tab to confirm input/output resolution. User can't change output resolution after geometry alignment. Otherwise, the result will change.
- ✓ [Warp Adjust] command will synchronize with GeoBox at real time for the adjustment up to 9x5. All the geometry alignment settings will be executed and saved into GeoBox directly. The result is the same as remote controller or WebGui operations. User can open the result through remote controller and OSD menu for further operation or modifications.
- ✓ If user wants to implement 17x17 geometry alignment, the command will not synchronize with Box at real time. User needs to click [Save to Box] button to save warp data into Box, then to save in Profile Index.
- ✓ [Save to Box] will save the data only for selected channel but not all channel at the same time. [Profile Save] and PC [Save Setting] will save the settings from all channels at the same time.



The item number in below corresponds to the item number in above figure.

- (1) Click [Warp Adjust] to open the menu for geometry alignment.
- (2) Select [pattern color]. Keyboard hotkey [P] can be used to select pattern color as well.
- (3) Select the adjustment step from 1-64 pixels. Default is 8 pixels/step.
User can press keyboard [Shift] + [Arrow key] to execute 1 pixel/step adjustment.
- (4) Select Mode for the adjustment.
 - ✓ [2x2]: 4 corner geometry alignment. This alignment is independent without reset other geometry alignment result. It can be executed at any time during alignment period.
 - ✓ [3x3]: It will execute 3x3 geometry alignment. Please move the control points to required location. In some case, the outside border of the image may be drawn inside the screen or some image output screen border. User can execute further alignment and let it move back to screen border.
 - ✓ [5x3], [9x5]: it will have more precise adjustment. If the curved screen is smooth curve, [9x5] geometry alignment will be enough to meet edge blending requirement.
 - ✓ All the geometry alignment up to [9x5] will be saved to Box in real time. User can turn off [Pattern] (2) and use Remote Controller to activate OSD [9x5] alignment menu for further adjustment. If user open OSD [3x3] alignment menu, GWarp adjustment result above [3x3] will be reset and only keep data under [3x3].
 - ✓ [17x17]: if [9x5] still can't meet requirement, user needs to apply [17x17] alignment. When switch from [9x5] to [17x17], the image position may have small shift in some location.
 - ✓ The result of [17x17] alignment is not saved to Box directly. User needs to click location # to save the data (7) into Box. User can find the result in [UserMap 1-10] under [Anyplace]→ [GWarp]→ [UserMap #]. User can also save the result to Profile Index under GWarp3→

- [System]→ [Profile Save] menu.
- ✓ Please execute [Warp Adjust] step by step from [2x2]→ [3x3]→ [5x3] If user finishes [17x17] alignment and return to [9x5] alignment. Only [2x2] to [9x5] alignment result will be kept and [17x17] alignment result will be deleted.
 - ✓ [2x2] adjustment will adjust 4 corner location and not erase the settings in [3x3] to [17x17].
 - ✓ User can use keyboard [M] key to select different [Warp Adjust] modes from [2x2]→ [3x3]→ [5x3] ... → [Wall]→ [2x2] circularly.
- (5) Adjust point Select: to select the control point in geometry alignment by mouse. User can use hot key [CTRL] + [Arrow] keys to select adjusting point through keyboard.
- (6) Geometry Adjustment Arrow key: User can click arrow key with mouse to adjust the position in selected point. Click Keyboard Arrow keys will execute the same function. The adjustment step will follow the setting in item (3). User can press keyboard [Shift] + [Arrow key] to do 1 pixel/step adjustment.
- (7) [Save to Box]: After select Save location (default is #1) user can Save [Warp Adjust] result into Box under OSD [GWarp] menu. User can recall the result from [Anyplace]→[GWarp]→ [UserMap] and combine it with other settings to achieve different applications in the system.
- ✓ User needs to close Grid Pattern in GWarp3 to see OSD for further OSD operation. User can turn OFF [Pattern] (2) or continuously click [Pattern] key in remote controller to change the grid color till turn off all pattern. [CTRL] + [P] in keyboard can turn off [Pattern] and see OSD.
 - ✓ After user turns off the pattern and wants to execute [Warp Adjust] again. User need to select [Pattern] (2) again to see grid pattern. Press [P] in the keyboard will also activate pattern.
 - ✓ The data in [UserMap] can't be modified again by remote controller. User can only use [Finetune] menu under [Anyplace]→ [GWarp] to do 4 corner geometry alignment and adjustment range is limited to +_50 pixels in each corner.
- (8) [Save Setting]: it can save GWarp3 result in PC with [WBF] format to save all channels at the same time or [SBF] to save single channel and recall through [Load Setting]
- ✓ It will save all the result of GWarp3 settings, including [17x17] without going through [Save to Box] process.
 - ✓ Before GWarp3 can cover all functions in OSD operation, some settings done by OSD may not be saved in PC file.
 - ✓ The file can be copied to other units for re-used.
- (9) [Load Setting]: after user executes [Save Setting], user can recall the setting from PC through [Load Setting] and executes further modifications.
- (10) Pattern grid size: user can select pattern grid size from 8x8 pixels up to 120 pixels. Default is 32 pixels.
- (11) [User Map]:
- ✓ After user clicks [Save to Box], user can check the result in [User Map 1-10].
 - ✓ User can recall the settings inside User Map for further modification through [Load Map Data]

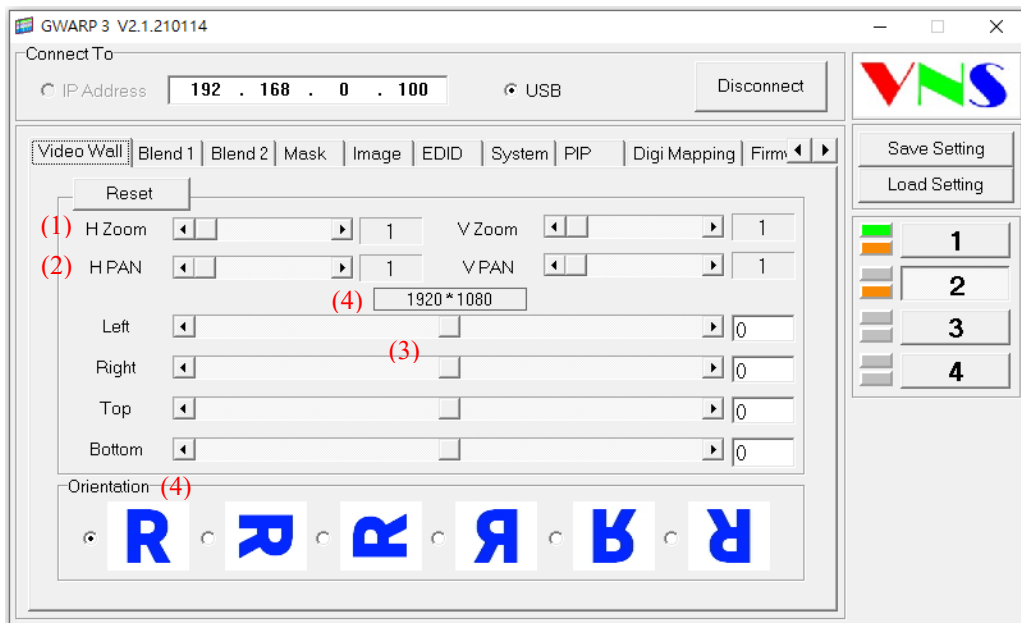
(13) or recall the data from PC under [Load Setting] (9) menu.

- ✓ The data stored in UserMap can be deleted through [Do Factory Reset] or Reset Hole on back panel. This kind of Reset will apply to all channels at the same time.

(12) [Reset] & [Undo]:

- ✓ User can click [Reset] to reset current [Warp Adjust] mode settings and can also implement one step back through [Undo].
- ✓ Keyboard hot key [R] will implement [Reset] function and [U] will implement [Undo] function.

7.4. [Video Wall]: Zoom, Pan, Overlap and image rotation



Four major functions:

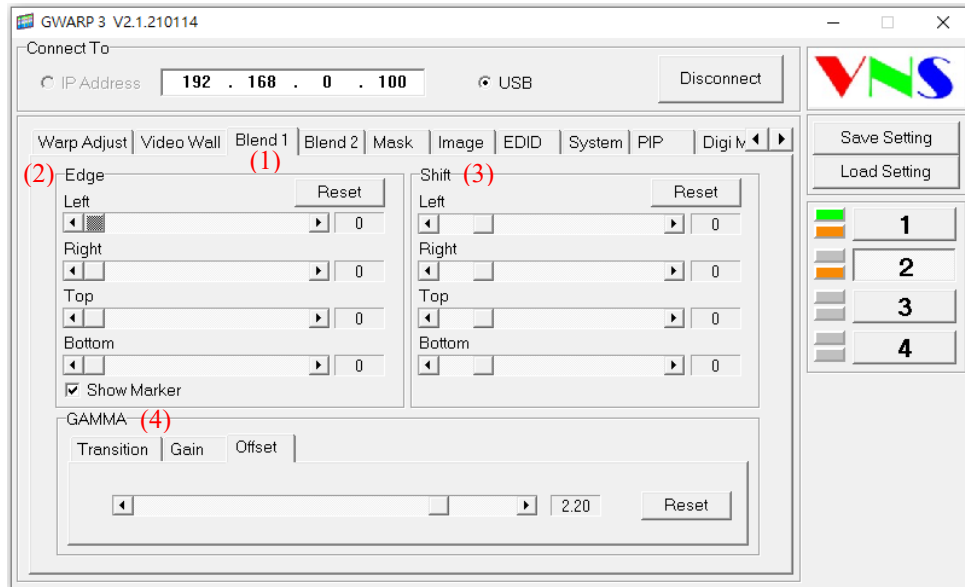
- (1) [Zoom]: Split the image in H&V directions. Maximum is 15x15.
- (2) [Pan]: assign each section image for each projector.
- (3) [Overlap]: set overlap pixels based on overlap location for edge blending.
- (4) [Orientation]: image flip and rotation. G800 supports only up to 4k/2k 30Hz input for 90/270 degree flip/rotation. M800 can support up to 4k/2k @60Hz.

Important notice:

- ✓ The Overlap value is calculated from [Edge Blend Excel Spread Sheet]. Please contact dealer for this Excel file.
- ✓ Please connect with input source resolution same as Spread Sheet calculation before Video Wall settings. Without input signal, the Overlap setting value will be wrong.
- ✓ Please check (4) to know the output resolution in the system.

7.5. [Blend 1]: Edge blending pixel and Gamma setting

[Blending 1] is to execute edge blending after geometry alignment and video wall settings. Usually, this function will be executed after [Warp Adjust] and [Video Wall] settings.

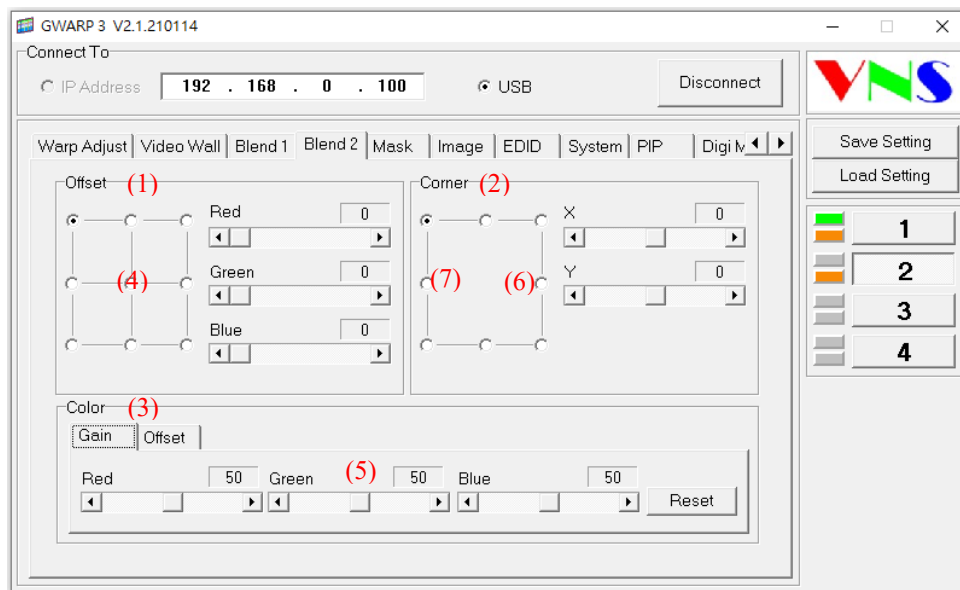


- (1) Click [Blend 1] to get into Edge blending function.
- (2) [Edge]: to select the edge in each projector and set correct range for edge blending. The pixel number for edge blending setting is the same as actual overlap pixels. For instance, if overlap is 10 grids with 32 pixels in each grid (default), the total edge blending is 320 pixels in this region. User needs to apply 320 pixels as edge blending value in this region.
- (3) [Shift]: there are two functions
 - ✓ To do edge mask at non-overlap edge. The edge mask will follow the result of geometry alignment at that edge. Maximum value is 500 pixels.
 - ✓ To shift edge blending region location without changing overlap size. It is used to verify edge blending color banding issue.
 - ✓ It can correct some darker line near edge blending edge. Usually, the value for this kind of correction will be less than 10 pixels in negative (-) direction.
- (4) [GAMMA]: to correct banding issue in overlap color issue.
 - ✓ [Transition]: main gamma value adjustment. RGB value is independent. Default is gamma 2.2. If the projectors have the same 2.2 gamma, it will get the best result. Each channel is independent.
 - ✓ [Gain]: to finetune gamma curve for each projector after [Transition] gamma adjustment. Each channel is independent.
 - ✓ [Offset]: to adjust gamma for [Offset] adjustment in black level uplift. If user lowers the value, black level uplift will also affect higher brightness level image. It can be used for balance the brightness level between adjacent two projectors in edge blending area.

7.6. **[Blend 2]: Black level uplift and white balance**

The menu under this item is also for edge blending adjustment.

- (1) [Offset]: to execute black level uplift to compensate projector light leakage in optical system. There are nine areas for user to select the location for black level uplift.
- (2) [Corner]: to adjust black level uplift location in each selected area.
- (3) [Color]: individual color finetune in each processing channel. It will apply to entire image and affect complete image color. Please verify with different images to confirm the final result.

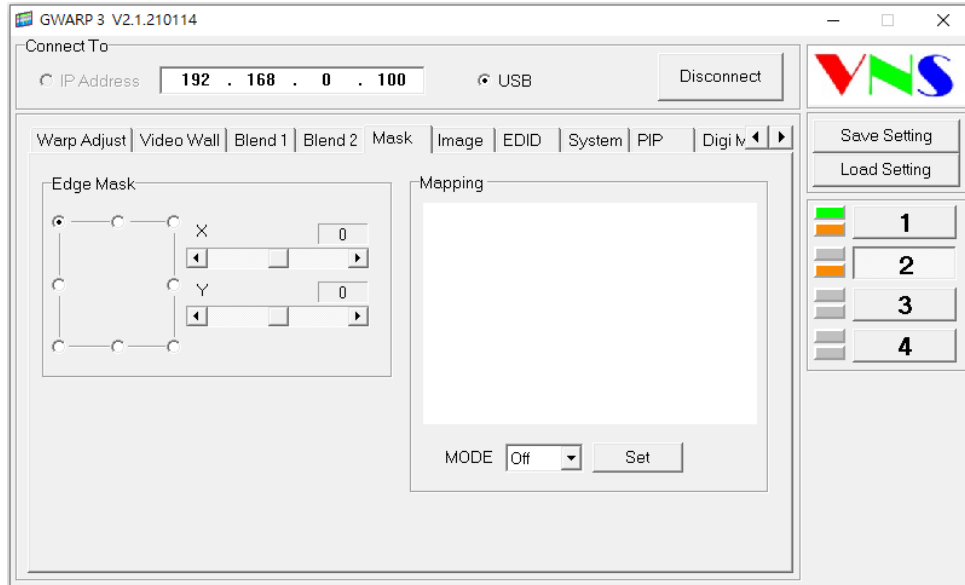


Below are the procedures for black level lift adjustment for two projectors at landscape:

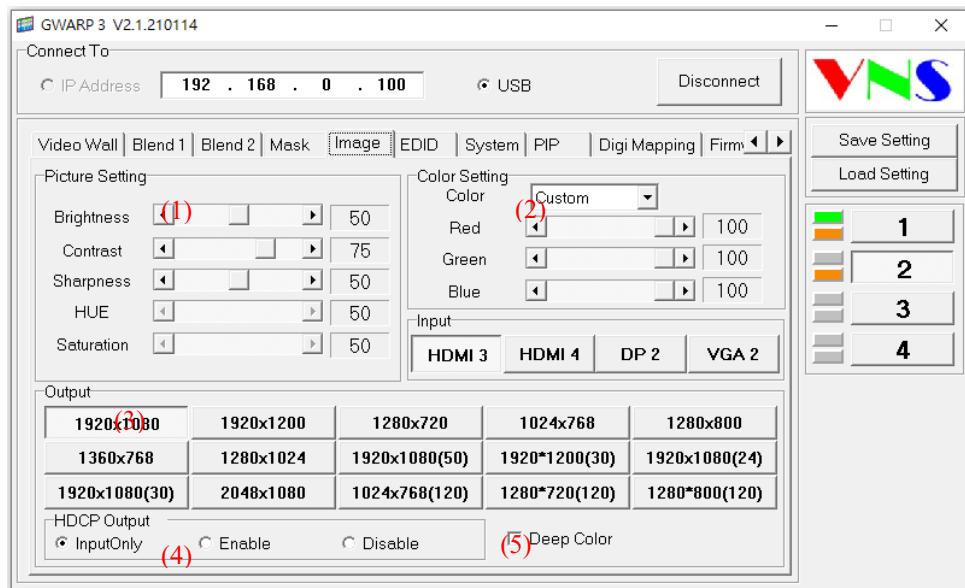
- ✓ Select center area for black level uplift. (4)
- ✓ Increase one of RGB gain in selected area to maximum value for easy verification of the range in black level uplift. (5)
- ✓ Precise compensate position adjustment. (LH projector: select RH edge (6), RH projector: select LH edge (7))
- ✓ Adjust the RGB color again to the optimized values. (5)

7.7. **[Mask]: Edge mask**

- ✓ [Mask] is to do edge mask up to 900 pixels in each control points.
- ✓ There are 8 control points for the adjustment.
- ✓ The mask area will calculate from original image location.
- ✓ It will co-exist with edge mask from [Shift] function under [Blend 1] menu. Edge mask under [Shift] will follow edge curve after geometry result.

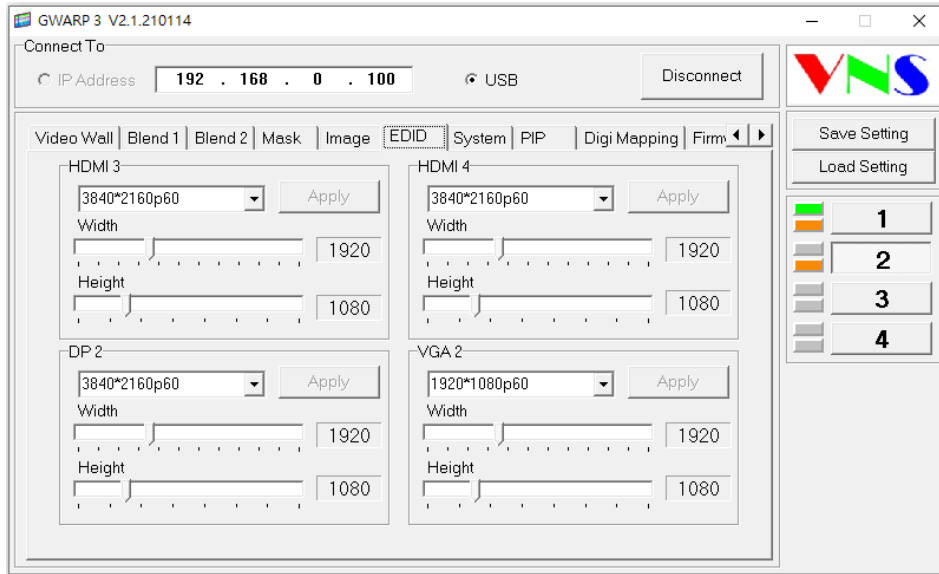


7.8. Image: global color and output resolution setting



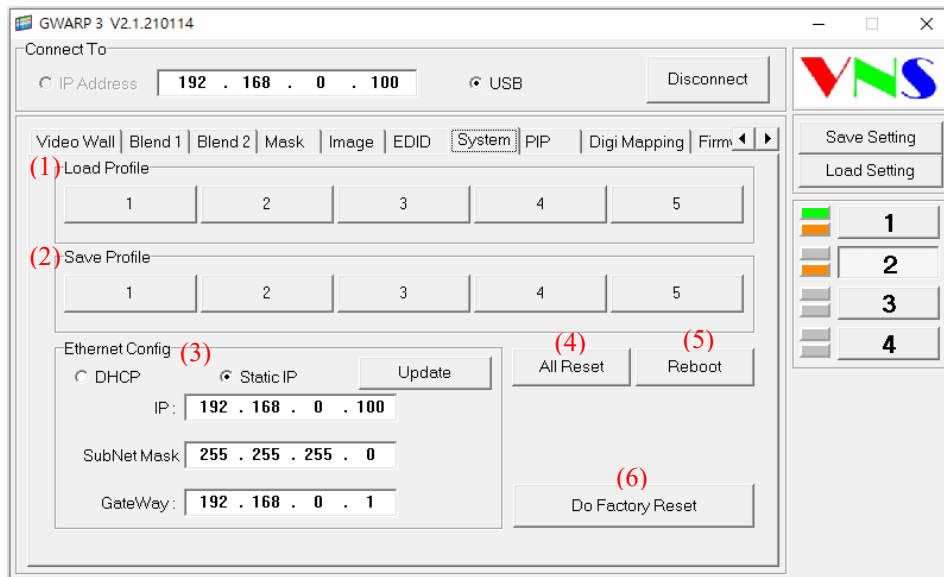
- (1) [Picture Setting]: execute global color adjustment in each channel.
- (2) [Color Setting]: independent R.G.B. color gain adjustment in each channel.
- (3) [Output]: select output resolution. If the input is 50Hz, please select 50Hz output to avoid frame tear or not synchronization in the system. User can also check the output resolution from output resolution table.
- (4) [HDCP Output]:
 - a. [Input Only]: Encrypts HDCP only if the input signal has HDCP
 - b. [Enable]: Always output HDCP
 - c. [Disable]: Doesn't encrypt HDCP. Only non-HDCO compliant input signal can be output
- (5) [Deep Color]: If [Deep Color] block is checked, the system will output 10-bit color image.

7.9. [EDID] setting



- (1) User can set EDID for each input signal in all input ports.
- (2) Preset EDID is selectable with [Customize] at the end of the list.
- (3) Customize EDID range is from 1024-3840 in H and 720-2400 in V.

7.10. [System]: Profile Save/Load, Ethernet Config and system Reset

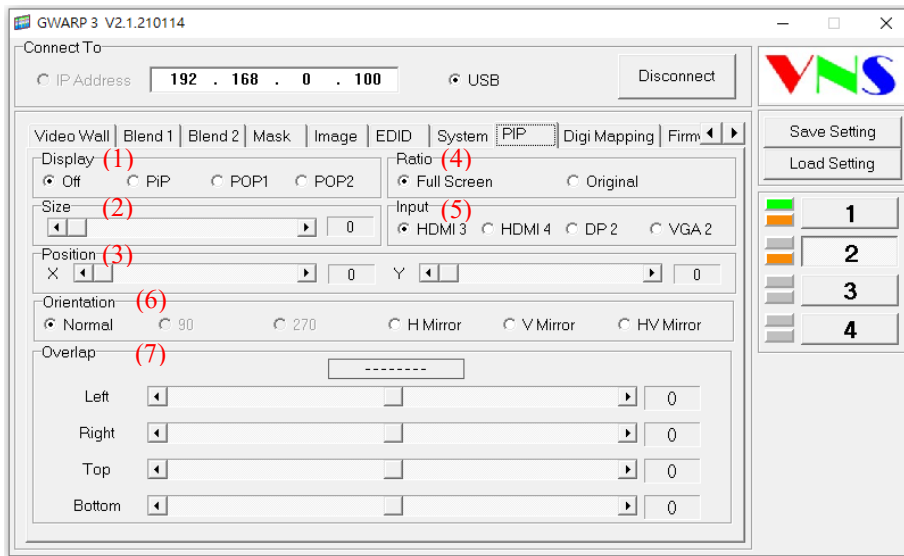


- (1) [Load Profile]: Load Profile saved in the Box.
- (2) [Save Profile]: Save settings into Profile.
 - ✓ This function is the same as Profile Save under OSD menu.
 - ✓ It will save all settings from both GWarp3 and remote controller.
 - ✓ User needs to execute [Save to Box] operation for [17x17] [Warp Adjust] value before Save to

Profile. Otherwise, it will only store the setting values up to [9x5] [Warp Adjust] value.

- (3) [Ethernet Config]: execute Ethernet customized settings
- (4) [All Reset]: It will reset all settings into default value in all channels. The settings stored in Profile Index will be kept without being deleted.
- (5) [Reboot]: same function as [Power off/on] again.
- (6) [Do Factory Reset]: same function as reset by inserting pin into Reset Hole on the back panel of the Box. It will initiate EEPROM and execute the deepest reset including deleting the data stored in Profile Index and UserMap.

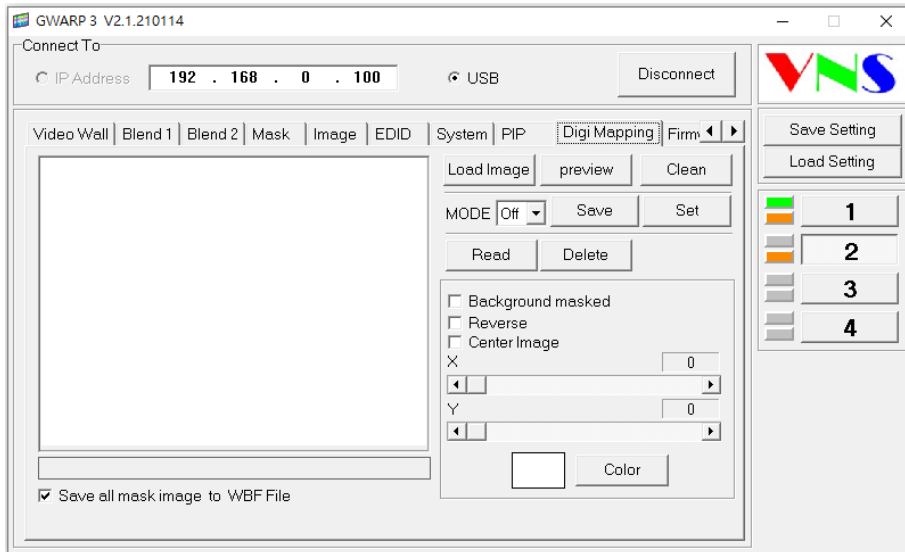
7.11. [PIP] setting



- (1) [Display]: Select the type of PIP/POP display.
- (2) [Size]: Set PIP or sub-image size.
- (3) [Position]: shift PIP image position.
- (4) [Ratio]: select sub-image display aspect ratio—either same as signal source or follow output resolution.
- (5) [Input]: select input source for sub-image.
- (6) [Orientation]: select sub-image display direction.
- (7) [Overlap]: change cropping area of sub-image.

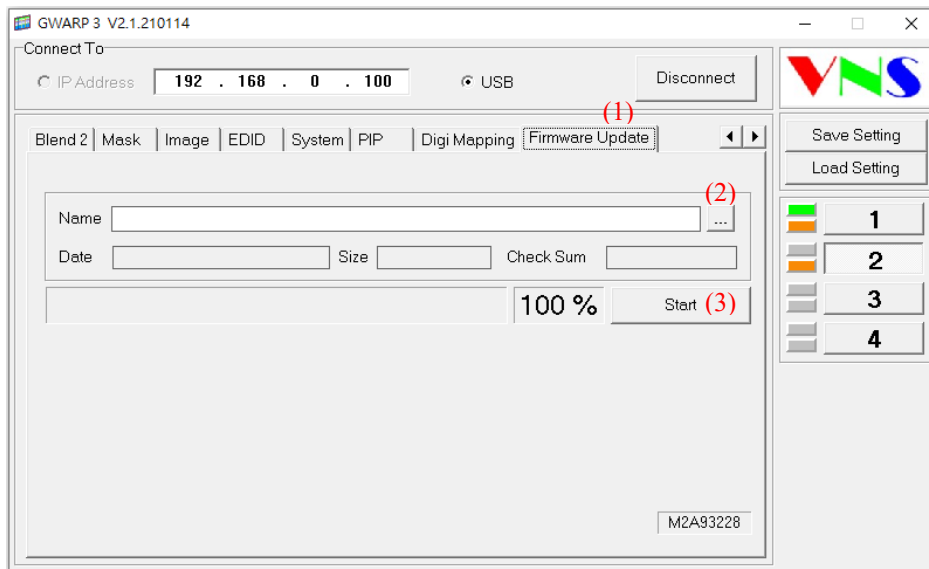
7.12. [Digital Mapping]: only for M800Ex models

- (1) Please see more details in [M800Ex Digital mapping application note]
- (2) [Digital Mapping] menu can only be seen in M800Ex models.



7.13. **[Firmware Update]**

User can update Firmware and MCU code through GWarp3.



- (1) Click [Firmware Update] to activate FW update window.
- (2) Click (2) button and browser .bin file for the update. Please decompressed the file into .bin file before code update.
- (3) Click [Start] (3) to execute code update.
 - a) No special sequence should be followed but we propose to update MCU code first.
 - b) MCU code update is around 10 seconds. After finish MCU code update and click [OK] button, the system will reboot.
 - c) Please re-connect GWarp3 to do FW update. FW update is around 3 minutes. It will stop at 8% for 5 seconds and 90% for system verification for about 50 seconds. During this period, user may see only noise on the screen.

- d) After finish code update, it will show Process Done message.
- e) Please click [OK], the system will reboot automatically and finish all the process.

Important notice

- ✓ There is no special sequence for MCU/FW update and it can be done separately. We recommend to update MCU code first if you want to update both.
- ✓ After finish MCU and FW update, GeoBox will reboot again.
- ✓ After boot up the system and see the display image, please use small Pin to insert Reset hole again for 5 seconds to erase all unnecessary settings from the system. User will see [Reset to Default] message and the system will automatically boot up again. It will also erase the settings inside Profile Index.
- ✓ If user wants to keep Profile Index data, user can neglect the process of system Reset through reset hole unless user sees abnormal behavior in GeoBox.
- ✓ If you fail during update process, user can execute FW/MCU update processes again or reconnect USB and or re-open GWarp3 to execute update procedure again.
- ✓ If user turns off power at during code update stage, it is possible that the system will not be recovered again and need to send whole unit back to factory for special FW update by different method.
- ✓ GeoBox USB Updater (GUU) is another tool for code update. Once you fail in the code update by GWarp3 or update wrong FW version, you need to use GUU for code update. Please download GUU PC tool and user guide from VNS website.
- ✓ If user sees blinking LED light on front panel when open on the system, it means that the MCU code is not for the right model. User can't connect with Gwarp3 again and needs to use GUU to update with new MCU code again.