The top half of the page features a complex, abstract background of overlapping, semi-transparent blue triangles and polygons, creating a faceted, crystalline effect. The colors range from light sky blue to deep navy blue. A white diagonal line separates this patterned area from the plain white background below.

User Guide  
020-000807-04

# **H Series, HS Series, and GS Series**

Warping and Blending

**CHRISTIE®**

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Learn the hazard and information symbols used in the product documentation.



Danger messages indicate a hazardous situation which, if not avoided, results in death or serious injury.



Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.



Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.



Information messages provide additional information, emphasize or provide a useful tip.

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# Installing the Blending and Warping application

Learn how to install the Blending and Warping application.

## Affected products

The following products can use the Blending and Warping application.

- **GS Series**
  - DHD635-GS and DWU635-GS
  - DHD700-GS and DWU700-GS
  - DHD850-GS and DWU850-GS
  - DHD1075-GS and DWU1075-GS
- **HS Series**
  - D12HD-H and D12WU-H
  - D13HD-HS and D13WU-HS

## Hardware requirements

Learn what hardware is required for the Blending and Warping application.

- Computer
  - Source input—NVIDIA or compatible display card that supports multiple displays and blending
  - Software controlling—One Ethernet port
- Network
  - One network hub
  - One Ethernet cable to connect the computer to the network hub
  - One Ethernet cable for each projector to connect to the network hub

## Software requirements

Learn what operating systems support the Blending and Warping application.

- Microsoft® Windows® XP (32 bits or 64 bits)
- Microsoft® Windows Vista® (32 bits or 64 bits)

- Microsoft® Windows® 7 (32 bits or 64 bits)

## Technical support

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or [Support.Americas@christiedigital.com](mailto:Support.Americas@christiedigital.com)
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or [Support.EMEA@christiedigital.com](mailto:Support.EMEA@christiedigital.com)
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  - South Korea: +82 2 702 1601 or [tech-Korea@christiedigital.com](mailto:tech-Korea@christiedigital.com)
- Christie Professional Services: +1-800-550-3061 or [NOC@christiedigital.com](mailto:NOC@christiedigital.com)

## Installing the Blending and Warping application

Install the latest version of the Blend and Warp application software.

1. To download version 1.1.0 or newer of the new GS Series software, go to <https://www.christiedigital.com/en-us/business/products/projectors/1-chip-dlp/gs-series>.
2. From the Overview tab, select the appropriate projector model.
3. Select **Downloads > Software Downloads**.
4. Under Christie Blend and Warp Manual Setup Software, select **Download**.
5. Extract the zip file to a location on the computer.
6. To install the software, double-click the msi file and install the software.

## Setting up the network environment

Learn how to connect projectors to a computer, and configure the network.

### Connecting a single projector to a computer

Follow these steps to connect a single projector to a computer.

1. Connect the Ethernet cable to the Ethernet port on the computer.
2. Connect the other end of the Ethernet cable to the Ethernet port on the projector.
3. To have the projector and the computer on the same network and subnet, configure the network.

## Connecting multiple projectors to a computer

Learn how to connect multiple projectors to a computer.

1. Connect Ethernet cables to the Ethernet port on each of the projectors.
2. Connect the other end of the Ethernet cables to a network hub.
3. Connect an Ethernet cable between the network hub and the computer.
4. To have the projector and the computer on the same network and subnet, configure the network.

## Configuring the network

To have the projector and the computer on the same network and subnet, configure the network.

1. Open the Control Panel and select **Network and Sharing Center**.
2. Select **Local Area Connection > Properties**.
3. Select **Internet Protocol Version 4 (TCP/IPv4) > Properties**.
4. On the General tab, select **Use the following IP address**.
5. Enter the IP address and Subnet mask for the network.  
Make sure the network IP address does not conflict with any projector IP addresses.  
The Subnet mask should be set to the same subnet as the projector.
6. Select **OK**.
7. To close the Local Area Connection Properties, select **OK**.
8. To close the Local Area Connection Status, select **Close**.

# Warping and blending

The projector provides three major functions: warp, edge blending, and black leveling.





## Adding a projector

Connect to the projector before performing any warping and blending. The software can only be connected to one projector at a time.

1. On the General tab, set the resolution of the new projector.
2. Enter the IP address of the projector.
3. Select **Connect**.
4. To connect to a different projector, repeat steps 1 to 3.

## Channel Network indicators

The Channel Network icons provide information about the connection to the Channel Network.

Icon	Description
	Indicates disconnection from the channel network.
	Indicates connection to the channel network. The selected channel appears in a blue box.
	Indicates the connection to the channel network is asleep.
	Indicates the selected channel.

## Shuttering a projector

Follow these steps to shutter a projector.

When warping and blending more than two projectors, to having a better visualization shutter for the projectors not being adjusted.

1. Switch to the **Warp** tab.
2. In the Blank area, select **Enable**.

## Deleting a projector

If a projector is no longer required, delete it.

1. In the Channel Network area, select a projector.
2. On the keyboard, select **Delete**.  
The selected projector is deleted.

## Creating a multi-function project

Create a new multi-function project for a single or multiple projectors.

1. To create a new project, select **File > New Multi-Function**.
2. Modify the projector profile, blending, and warping for each projector.
3. Save the file.

## Creating an edge blend project

Use blending to increase or decrease the borders of an individual image, so it blends with a neighboring image to create a single, seamless image.

1. Select **File > New Blending**.
2. Select the resolution of the projectors.  
All projectors must have the same resolution.
3. Select **Next**.
4. Select the layout from the list.
5. Define the horizontal and vertical overlapping area with the slider bars.
6. Select **Next**.
7. Select the number ID of the projector and set the IP address for the projector.
8. Select **Apply**.
9. Repeat step 7 and 8 for each projector in the layout.
10. Select **OK**.  
After the settings are applied, the general information is updated and Edge Blending is enabled.
11. Configure the edge blending.
12. Save the file.

## Saving current settings

Save your settings once you have them configured.

1. Make any adjustments required for warping, edge blending, or black leveling, or modify the general settings.
2. From the File menu, select **Save**.



3. Navigate to the location where the file will be saved, and select **Save**.

## Opening previously saved settings

After starting a new session, instead of creating new warping, edge blending, or black leveling settings, you can open the previously saved settings.

From the File menu, select **Open**.

## Applying previously saved settings

If you modified the general settings or made adjustments for warping, edge blending, or black leveling, you can revert to the previously saved settings.

1. From the File menu, select **Open**.
2. Switch to the **General** tab.
3. In the Network section, enter the required IP address.
4. Select **Connect**.
5. To apply the previous settings, select **Reconfigure**.

## Configuring edge blending

Combine several projected images into one single, seamless image with edge blending.

The warping adjustment determines if the blending area matches another blending area.

1. In the Projector Control dialog, switch to the **Edge Blending** tab.



2. To enable edge blending, select **Enable**.
3. For the Top boundary, in the Start list, enter the start of the blending area and select **Enter**.
4. In the Width list, enter the width of the blending area and select **Enter**.  
When setting the blending width make sure the edge blending marker is superimposed on the other blending marker.
5. To see the boundaries edge blending, select **Enable Marker**.
6. To change the color of the start marker of the blending area, select the **Start** color box and select a color.

7. To change the color of the end marker, select the **End** color box and select a color. The blending area is set in the center box.
8. To remove the markers, clear the color selection for the Start and End color boxes.
9. Repeat steps 2 to 7 for the Left, Right, and Bottom edge blending areas.
10. To enable the gamma function, in the Gamma section, select **Enable**.
11. To control the gamma curve of the blending area, enter a value and select **Enter**.  
To increase the gamma curve, select 1. To decrease the gamma curve, select 3. A standard curve is 2.22.  
For adjacent projectors make sure the gamma value is the same.
12. To display a test pattern for tuning the projecting image, select **Enable**.
13. Select red or green for the test pattern color.
14. To revert to the default settings, select **Reset**.
15. Save the file.

## Adjusting black level blending

Use black level blending to modify the brightness of non-blended regions to match the elevated brightness levels of the blended regions.

This feature is automatically disabled when you switch to the Warping tab.

1. In the Projector Control dialog, switch to the **Black Level** tab.



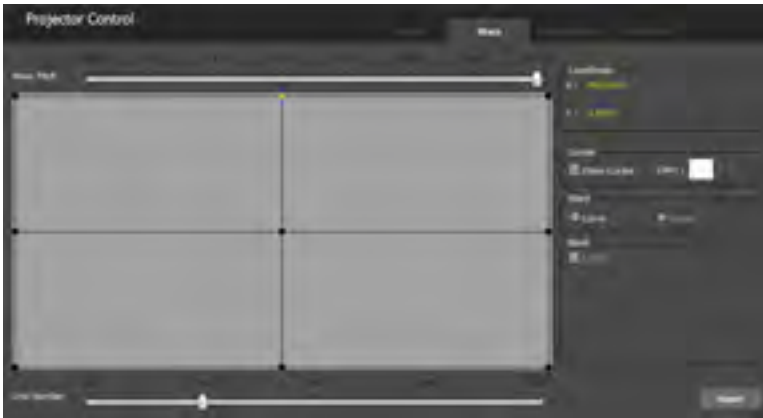
2. To select the control point, select **W** (up), **A** (left), **S** (down), or **D** (right), or select in the projection window.
3. Use the mouse to drag and position the control point at the required location.  
The selected control point appears as an empty square. All other control points appear as a solid square. To fine tune the control point location, use the arrow keys.
4. Change the color of the selected area.
  - a) To set the color of the selected area, select a palette.
  - b) In the Color Palette dialog, select the color and select **OK**.  
You can store up to ten color settings. Each color setting can be used repeatedly on different selected area.

- c) To make the applied color invisible, select **Transparency** and set the value to **3**.  
Christie recommends enabling transparency to make the applied color invisible while projecting a brighter image.
5. To apply the color setting on the selected area and send the black level settings to the projector, select **Overwrite**.  
Transparency and black level blending are automatically enabled.
6. Repeat steps 3 to 6 for each additional area that requires adjustment.
7. To clear the regions from the display, clear the **Enable** checkbox.  
The regions are no longer visible, but are still part of the configuration.

## Warping an image

Use warping to project images on any surface shape or correct image distortion.

1. In the Projector Control dialog, switch to the **Warp** tab.



2. To change the color of the grid cursor, depending on the projected image, select **Color** and select the color.
3. If the project contains two or more projectors, select **Enable** to shutter the projectors.
4. To simultaneously change the projecting image, select **Real time send result**.  
When enabled, the Send and Undo options are disabled.
5. Adjust the warping.
  - a) To increase or decrease the grid number, use the Grid Number slider.  
You can also use **Ctrl+** or **Ctrl-**.  
Start with a minimal number of grids and gradually increase the number of grids. Christie recommends starting with a 2x2 setup. Using fewer grids allows for less warping.
  - b) To select the cursor, select the cursor or select **W**, **A**, **S**, or **D**.
  - c) To increase or decrease the size of each adjustment step, use the Moving Pitch slider or select **plus sign (+)** or **minus sign (-)**.
  - d) To move the cursor, use the arrow keys.  
Start adjusting the outer cursors first, and then the inner cursors.  
Adjusting the outer cursors after adjusting inner cursors removes the inner cursor settings.

6. To revert to the previous warp table, select **Reset**.
7. Save the file.

# Troubleshooting

Learn about common issues and their solutions.

## Connecting a projector to the software fails

Attempting to connect to the projector shows the message "Projector unstable. Retry Connect".

### Resolution

1. Verify the Ethernet cable is connected correctly and securely to the projector and the network hub.
2. Make sure the Ethernet cable is connected correctly and securely to the computer.
3. Make sure the projector and the computer are on the same network and same subnet.
4. To check if the projector is connected to the computer, open the Windows command line dialog and send a ping command to the projector's IP address. For example, `ping 192.168.0.100`.

## Blending area is not smooth

The blending area is brighter than the non-blending area.

### Resolution

- Make sure the projectors have the latest firmware version installed.
- In the projector on-screen display (OSD), make sure the Picture Setting is set to Blending mode.
- In the Christie Manual AP software, on the Edge Blending tab make sure the specific locations are set to Enable (left, top, bottom, or right).
- Set the Gamma value to 2.2.

## Images do not match up

Images do not match up when the test patterns are aligned with each other.

### Resolution

- Verify the resolution of all the projectors is the same.
- When blending, in the Christie Manual AP software, on the Edge Blending tab make sure the blending width is the same blending size on the display card.