

Christie high frame rate

High frame rate (HFR) content plays at higher speeds so viewers see fewer motion artifacts, as well as less motion blur and stuttered movement on-screen.

Increasing the frame rate not only provides more frames to better represent fast moving objects, it also provides increased image detail as there is less dark time in between frames.

Affected products

The following products support high frame rate.

- Christie M RGB Series
- Griffyn® Series
- Mirage SST
- Sapphire® 4K40-RGBH

Required components

The following components are required.

- Mirage Pro license

Additional components

- Christie Twist™ 2.8 or higher

Video sources

Three video sources and Christie Link are supported for Christie high frame rate.



- All sources must be frame synchronous.
- 1920 x 1080 (FHD) image formats are supported.
- 1/1.001 fractional frame rates are supported.

Christie M RGB Series

Layout	Port	Signal	Mapping
1-port	DisplayPort1 and DisplayPort 2	1920 x 1080 @240Hz 4:4:4 8-bit	
	Christie Link Input 1, Input 2, or multi-stream	1920 x 1080 @240Hz 4:4:4 8-bit	
2-port column mode	DisplayPort1 and DisplayPort 2	1920 x 1080 @240Hz 4:4:4 8-bit	
	DisplayPort1 and DisplayPort 2	1920 x 1080 @360Hz 4:4:4 8-bit	
	DisplayPort1 and DisplayPort 2	1920 x 1080 @480 Hz 4:4:4 8-bit	
	Christie Link Input 1 and input 2	1920 x 1080 @240Hz 4:4:4 8-bit	
1920 x 1080 @360Hz 4:4:4 8-bit			
1920 x 1080 @480 Hz 4:4:4 8-bit			

Griffyn[®] Series and Sapphire[®] 4K40-RGBH

Layout	Port	Signal	Mapping
1-port	DisplayPort1 and DisplayPort 2	2048 x 1080 @240Hz 4:4:4 8-bit	
	Christie Link Input 1, Input 2, or multi-stream	2048 x 1080 @240Hz 4:4:4 8-bit	
2-port column mode	DisplayPort1 and DisplayPort 2	2048 x 1080 @240Hz 4:4:4 8-bit	
	DisplayPort1 and DisplayPort 2	2048 x 1080 @360Hz 4:4:4 8-bit	
	DisplayPort1 and DisplayPort 2	2048 x 1080 @480 Hz 4:4:4 8-bit	

Layout	Port	Signal	Mapping
	Christie Link Input 1 and input 2	2048 x 1080 @240Hz 4:4:4 8-bit	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Christie Link </div>
		2048 x 1080 @360Hz 4:4:4 8-bit	
		2048 x 1080 @480 Hz 4:4:4 8-bit	

Mirage SST

System	Layout	Port	Signal
QDPIC	1-port	[0-1] [0-2] [0-3] [0-4]	2048 * 1080 @ 240Hz
	2-port	[0-1][0-2] [0-3][0-4]	1024 * 1080 @ 240Hz 1024 * 1080 @ 360Hz 1024 * 1080 @ 480Hz
	4-port	[0-1][0-2][0-3][0-4]	1024 * 540 @ 480Hz
HBMIC	1-port	[0-4]	2048 * 1080 @ 240Hz
	(QSFP+)	See the Christie Link section below	
TDPIC	2-port	[1-1][2-1] [3-1][4-1] [1-2][2-2] [3-2][4-2]	1024 * 1080 @ 240Hz
	4-port	[1-1][2-1][3-1][4-1] [1-2][2-2][3-2][4-2]	1024 * 540 @ 240Hz 1024 * 540 @ 360Hz 1024 * 540 @ 480Hz
Christie Link	1-port	[0-1] [0-2]	2048 * 1080 @ 240Hz
	2-port	[0-1][0-2]	1024 * 1080 @ 240Hz 1024 * 1080 @ 360Hz 1024 * 1080 @ 480Hz

Adding the Mirage Pro software license to the projector

Add the Mirage Pro software license to the projector using Christie Twist™ 2.8 or higher.

The Mirage Pro license must be installed on the projector for high frame rate to function.

1. Record the serial number of the projector(s) and send it to Christie Technical Support requesting the Mirage Pro software license.
The serial number is available on the projector label, from the **Status > Configuration** menu, or you can send the (SST+CONF?1) serial API command.
Christie Technical Support will send zipped license file(s) to you. If you sent more than one serial number, you will receive multiple license files as the .key file is based on the serial number of the projector.
2. Unzip the license file(s) to a known location on your computer.
3. Make sure the projector you want to apply the license to is running and is on the same subnet as your computer.
4. From the Start menu, select **Christie > Twist 2.x > Projector License Utility**.
5. In the Christie Projector License Utility dialog, select **Browse**.
6. Navigate to the location of the unzipped license file (.key) and select the Mirage Pro license.
7. From the Projectors list, select the projector you want to apply the upgrade to.
8. Select **Apply**.
9. Reboot the projector.
10. To verify the license was installed, select **Menu > Admin > Licenses > View**.
11. Repeat steps 3 to 10 for each additional projector.

Enabling or disabling the high frame rate (HFR)

If the high frame rate (HFR) mode is enabled, the projector can only operate in 2K/HD output resolution. To use 4K/UHD resolution, disable this mode.



This option is only available when the Mirage Pro license is installed, the projector is in standby mode, and the **Keep Electronics On In Standby** menu option in the Power Settings menu is disabled.

1. Select **Menu > Configuration > Input Settings > High Frame Rate**.
2. To change to 2K/HD resolution for HFR, select **Enable**.
3. At the confirmation prompt, select **Enable**.
The projector reboots and the High Frame Rate button changes to Disable.
4. To change to 4K/UHD resolution, select **Menu > Configuration > Input Settings > High Frame Rate > Disable**.
The projector reboots and the High Frame Rate button changes to Enable.

Issuing the (OTR <0 | 1>) serial command for the Griffyn® Series, Sapphire® 4K40-RGBH, and Mirage SST also toggles between the 4K and 2K resolutions.

Selecting the high frame rate EDID

Configure the projector and/or Christie Link for the 3D source.

1. From the projector:
 - a) Select **MENU > Configuration > Input Settings > EDID Timing**.
 - b) Select one of the following EDID timings: 240Hz, 360Hz, or 480Hz.

- c) Select **Enter**.
2. From Christie Link:
 - a) Select **MENU > Configuration > INPUT PORTS > EDID Timing**.
 - b) Select one of the following EDID timings: 240Hz, 360Hz, or 480Hz.
 - c) Select **Enter**.

Technical support

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or Support.Americas@christiedigital.com
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or Support.EMEA@christiedigital.com
- Asia Pacific (support.apac@christiedigital.com):
 - Australia: +61 (0)7 3624 4888 or tech-Australia@christiedigital.com
 - China: +86 10 6561 0240 or tech-supportChina@christiedigital.com
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