GV-Fisheye Camera Integration Notes

- GV-System V8.7

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Applied to

GV-Fisheye Cameras
GV-System (GV-DVR / NVR) V8.7.0.0

System Requirements

Operating System	**32-bit**	Windows 7 / 8 / 8.1 / 10 / Server 2008
	64-bit	Windows 7 / 8 / 8.1 / 10 / Server 2008 R2 / Server 2012 R2
GV-System Version		GV-System V8.7.0.0 or later
Note: To support GPU dewarping of fisheye views, the graphics card must support DirectX 10.1 or above.		

1. Total Frame Rate Supported by GV-System V8.7

The table below lists the total frame rates supported by GV-System V8.7.0.0 for fisheye dewarping based on CPU capacity. The number of frames supported by GV-System is increased when a high-end CPU such as Core i7 is used. Note that fisheye dewarping is only supported on GV-System when using single stream.

The table is based on the following resolutions and frame rates:

For H.264

- 1 MP at 15 fps (1280 x 1200)
- 2 MP at 15 fps (1440 x 1376)
- 3 MP at 15 fps (2048 x 1536)
- 4 MP at 15 fps (2048 x 1944)
- 5 MP at 10 fps (2560 x 1920)
- 8 MP at 25 fps (2896 x 2768)
- 12 MP at 15 fps (4000 x 3000)

For H.265

- 5 MP at 10 fps (2560 x 1920)

Total FPS supported

Codec	CPU	1 MP	2 MP	3 MP	4 MP	5 MP	8 MP	12 MP
H.264	i7 - 6700	285	225	135	105	80	50	30
	i5 - 6400	210	165	105	75	60	50	30
H.265	i7 - 6700	N/A	N/A	N/A	N/A	60	N/A	N/A
	i5 - 6400	N/A	N/A	N/A	N/A	60	N/A	N/A

Note: The test data is obtained using the following conditions:

- Built-in VGA
- CPU usage at around 70%
- 360 Degree view mode with “Auto Pan” function disabled
- 32-screen divisions with GV-System’s panel resolution set to 1920 x 1080

2. Maximum Number of Channels Supported by GV-System V8.7

The following table lists the maximum number of dewarped fisheye channels that can be supported by GV-System V8.7.0.0 with the frame rate set to **2 fps per channel**. If you wish to increase the frame rate for each fisheye channel, you can decrease the number of GV-Fisheye Cameras connected.

Codec	Resolution	Total channels supported (CH)
H.264	1 MP (1280 x 1200)	32
	2 MP (1440 x 1376)	32
	3 MP (2048 x 1536)	32
	4 MP (2048 x 1944)	32
	5 MP (2560 x 1920)	32
	8 MP (2896 x 2768)	20
	12 MP (4000 x 3000)	14
H.265	5 MP (2560 x 1920)	27

Note: The test data is obtained using the following conditions:

- Built-in VGA
- Frame rate limited to 2 fps per channel
- 360 Degree view mode with “Auto Pan” function disabled
- 32-screen divisions with GV-System’s panel resolution set to 1920 x 1080

3. Testing Environment

The data is obtained using the following bitrate.

	H.264	H.265
1 MP (1280 x 1200)	4.91 Mbit/s	N/A
2 MP (1920 x 1080)	6.50 Mbit/s	N/A
3 MP (2048 x 1536)	10.23 Mbit/s	N/A
4 MP (2048 x 1944)	10.92 Mbit/s	N/A
5 MP (2560 x 1920)	10.11 Mbit/s	3.07 Mbit/s
8 MP (2896 x 2768)	6.39 Mbit/s	N/A
12 MP (4000 x 3000)	13.74 Mbit/s	N/A

The PC specifications used for testing GV-System V8.7.0.0 are listed below:

Core i7 – 6700

OS	64-bit Windows 7
Motherboard	MSI H170A PC Mate
CPU	i7 6700 3.4 GHz
Chipset	Intel H170
RAM	DDR4 4 GB x 2
Built-in VGA & Driver	Intel HD530, Driver: 20.19.15.4377
GV-System	V8.7.0.0

Core i5 – 6400

OS	64-bit Windows 7
Motherboard	MSI H170A PC Mate
CPU	i5 6400 2.7 GHz
Chipset	Intel H170
RAM	DDR4 4 GB x 2
Built-in VGA & Driver	Intel HD530, Driver: 20.19.15.4377
GV-System	V8.7.0.0