GV-FER12203 Integration Notes

Article ID: V1-16-02-23-b
Release Date: 2/23/2016
Revision Date: 6/5/2020

Applied to

GV-VMS V15.10.1
GV-VMS V14.10.1
GV-System (GV-DVR/NVR) V8.6.2

Summary

The document consists of three sections:

1. The total frame rate and the number of channels GV-DVR/NVR/VMS can support **without** fisheye dewarping
2. The total frame rate and the number of channels GV-DVR/NVR/VMS can support with fisheye dewarping
3. The total frame rate and the number of channels GV-DVR/NVR/VMS can support with fisheye dewarping when the frame rate is limited to 2 fps per channel

Please note the following specifications pertaining to the integration of GV-FER12203 and GV-DVR/NVR/VMS:

1. The frame rate of GV-FER12203 is set to 15 fps at 4000 x 3000.
2. GV-System (GV-DVR/NVR) V8.6.2 and GV-VMS V14.10.1 only support single stream from GV-FER12203. GV-VMS V15.10 or later supports dual streams.
3. For GPU decoding, it is required to use Intel Ivy Bridge or Haswell Chipsets for decoding. For better performance, it is not recommended to use single stream with CPU decoding.
4. To support GPU dewarping of fisheye views, the graphics card must support DirectX 10.1 or above.

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1. Total Frame Rate and Number of Channels Supported

The tables below show the total frame rates and the number of full-frame channels GV-DVR/NVR/VMS can support for GV-FER12203.

The following tables are available:

- Table 1: Dual Streams with GPU Decoding
- Table 2: Dual Streams with CPU Decoding
- Table 3: Single Stream with GPU Decoding

When GV-FER12203 is set to **dual streams**, the total frame rate supported is increased because the lower resolution (640 x 480) is used for live view and the higher resolution (4000 x 3000) is used for recording. Therefore, the total frame rate supported for dual streams is much higher than that of single stream.

Table 1: Dual Streams with GPU Decoding

S/W	Dual Streams Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	VGA (640 x 480) 12 MP (4000 x 3000)	960	64 CH

Table 2: Dual Streams with CPU Decoding

S/W	Dual Streams Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	VGA (640 x 480) 12 MP (4000 x 3000)	960	64 CH

Table 3: Single Stream with GPU Decoding

S/W	Single Stream Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	12 MP (4000 x 3000)	210	14 CH
GV-VMS V14.10.1	12 MP (4000 x 3000)	195	13 CH
GV-DVR/NVR V8.6.2	12 MP (4000 x 3000)	195	13 CH

Note: The performance tests were conducted in round-the-clock recording mode with live view only, while remote connections and video analysis features being disabled.

2. Total Frame Rate and Number of Channels Supported for Fisheye Dewarping

When fisheye dewarping is activated, the total frame rates and the number of channels GV-DVR/NVR/VMS can support are affected accordingly. The tables below show the total frame rates and the number of channels GV-DVR/NVR/VMS can support when fisheye dewarping is activated.

The following tables are available:

- Table 1: Dual Streams with GPU Dewarping
- Table 2: Single Stream with GPU Dewarping

Table 1: Dual Streams with GPU Dewarping

S/W	Dual Streams Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	VGA (640 x 480) 12 MP (4000 x 3000)	195	13 CH

Table 2: Single Stream with GPU Dewarping

S/W	Single Stream Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	12 MP (4000 x 3000)	120	8 CH
GV-VMS V14.10.1	12 MP (4000 x 3000)	30	2 CH
GV-DVR/NVR V8.6.2	12 MP (4000 x 3000)	30	2 CH

Note:

1. The performance tests were conducted in round-the-clock recording mode with live view only, while remote connections and video analysis features being disabled.
2. The test data was obtained with the following conditions:
   - Built-in VGA
   - CPU usage at around 70%
   - 360 Degree view mode with “Auto Pan” function disabled
   - GV-VMS: 64-screen divisions (8 x 8) with the panel resolution set to 1920 x 1080
   - GV-DVR/NVR: 36-screen divisions (6 x 6) with the panel resolution set to 1920 x 1080

3. Total Frame Rate and Number of Channels Supported for Fisheye Dewarping (Frame Rate Limited to 2 FPS)

The higher the frame rate, the lower the total number of channels, and vice versa. Therefore, in order to have a larger number of channels, you can limit the number of frame rates per channel. The tables below show the total frame rates and the number of channels GV-DVR/NVR/VMS can support when the frame rate is limited to 2 FPS, while fisheye dewarping is activated.

The following tables are available:

- Table 1: Dual Streams with GPU Dewarping
- Table 2: Single Stream with GPU Dewarping

Table 1: Dual Streams with GPU Dewarping

S/W	Dual Streams Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	VGA (640 x 480) 12 MP (4000 x 3000)	42	21 CH

Table 2: Single Stream with GPU Dewarping

S/W	Single Stream Resolution	Total FPS Supported	Total Channels Supported
GV-VMS V15.10.1	12 MP (4000 x 3000)	40	20 CH
GV-VMS V14.10.1	12 MP (4000 x 3000)	30	15 CH
GV-DVR/NVR V8.6.2	12 MP (4000 x 3000)	26	13 CH

Note:

3. The performance tests were conducted in round-the-clock recording mode with live view only, while remote connections and video analysis features being disabled.
4. The test data was obtained with the following conditions:
   - Built-in VGA
   - CPU usage at around 70%
   - 360 Degree view mode with “Auto Pan” function disabled
   - GV-VMS: 64-screen divisions (8 x 8) with the panel resolution set to 1920 x 1080
   - GV-DVR/NVR: 36-screen divisions (6 x 6) with the panel resolution set to 1920 x 1080

4. Test Environment

The total frame rate and number of total channels supported were obtained using the following bitrate and test PC.

PC specifications used for the test	
OS	Windows 7 Ultimate SP1 x64
Motherboard	ASUS Z97-K
CPU	Core i7-4770 3.40 GHz
On-board Graphics	Intel HD Graphics 4600 (Driver: 10.18.14.4170_3/16/2015)
Chipset	Intel Z97
RAM	Kingston DDR3 1600 4GB x 2
VGA	Intel HD Graphics 4600

Bitrate used for the test (Codec used: H.264)	
VGA (640 x 480)	0.24 Mbit/s
12 MP (4000 x 3000)	13.7 Mbit/s