INTRODUCTION

The GV-NVR (Network Video Recorder) records video and audio data over TCP/IP networks. With up to 32 channels of pure IP surveillance, the GV-NVR offers the same functions as GV-Series Surveillance System. With additional license, GV-NVR supports up to 32 channels of third-party IP devices. From monitoring features to video analytics as well as integration with LPR, POS/ATM and Access Control systems, it stands as one of the most comprehensive IP surveillance software in the security market.

Combined with GeoVision IP camera, the GV-NVR takes advantage of a better image quality thanks to the progressive scan technology and allows advanced video features such as Picture-In-Picture and Picture-And-Picture. Compatibility with a wide range of third party IP cameras through ONVIF and PSIA makes the GV-NVR the ultimate solution for pure IP surveillance environments.

Built upon comprehensive and easy-to-integrate hardware and supporting technologies, the GV-Surveillance and Video Management Platform is the core system platform that provides performance-optimized video monitoring and various advanced video analytics/control features to support many of enterprise's management functions. It is a scalable, extensible platform that can be customized and seamlessly integrated with other security system applications, such as:

1. POS/ ATM/ EAS for loss prevention
2. Access Control for building automation
3. License Plate Recognition system for law enforcement, entrance control and revenue collection
4. Megapixel IP devices for critical area and mobile object monitoring
5. Central Monitoring stations for high profile security areas in commercial, industrial and residential markets

In addition the remote management WebCam and versatile storage system framework offer high scalability and extensibility for future integration with other functions or systems at remote sites.

VERSION 8.7.3.0 NEW FEATURES

New:

- Support for GPU decoding on the 7th Generation Kaby Lake platform
- New saving options in Merging Log and Backup Log function to save files in excel format
- Implementation of a password strength meter
- Support for the connection setting of GV-VS2400 / 2800 series when adding IP devices to GV-IP Decoder Box Plus using GV-IP Device Utility V8.7.0.0

▶ **Monitoring**

- Support for 32 channels in GV-System and CMS applications
- Support for GPU decoding
- Digital Matrix, support maximum 8 monitors display
- Hybrid Solution integrating analog videos with digital videos from GV-IP video products and third-party IP cameras (*1)
- Codecs: Geo H265, Geo H264, Geo MPEG4
- Multithreading Encoding (*1)
- Higher UI Screen Resolutions (1920 x 1200, 1680 x 1050, 1600 x 1200, 1280 x 800, 1440 x 900, 1920 x 1080 and 1280 x 1024)
- Noise Tolerance for Motion Detection
- Noise Detection to Reduce File Size (*1)
- Noise Filter to Filter Out Video and Audio Noise (*1)
- Report Generator
- Support for Cardholder data from GV-Video Server
- Touch Screen Support
- Full screen view
- Dual display operation for live monitoring and ViewLog playback on two monitors
- Screen pop-ups on motion or alarm activation
- Advanced Motion Detection
- Digital watermark
- Video lost detection
- On screen video loss message
- Video de-interlace filter
- E-map
- Windows lockup
- Image size indicator
- Synchronized video an audio

- Backlight compensation
- Video auto gain controller (*1)
- Video scaling filter
- AVI repair utility
- System log
- Support 1,000 accounts for logins and passwords
- Multi level passwords protection
- Use Microsoft Remote Desktop to control another GV-System
- Twin DVR
- Embedded I/O devices control
- Embedded PTZ control panel
- Support dynamic IP address
- Password Expiration Management
- System Idle Protection
- Spot Monitor Controller
- POS Live Viewer
- Photo-ID Integration (GV-WT)
- Hard Disk Calculator (*1)
- Authentication Server
- Colorful Mode to enhance video color
- Live view buffer and frame rate control
- Wide Angle Lens Dewarping
- Dual stream on-demand display (*2)
- Fisheye GPU Dewarping (*2)
- 3rd party Fisheye Dewarping (*2)
- Support 3rd party IP Cameras - see IP Camera Support List(*2)
- Support ONVIF, PSIA, RTSP protocol(*2)

▶ **Intelligent Recording & Playback**

- Choice of recording at 30, 60, 120, 240, 480 and 960 fps (*1)
- Recording trigger by round-the-clock, motion detection, alarm and schedule
- Adjustable recording quality and frame rate for each camera
- Pre-motion and post-motion recording
- Supports Windows burning software
- Pre-Recording Using HDD
- Advanced Round-The-Clock Recording (*1)
- Instant Playback
- Time Merge From Different Clips

- Splitting Files for Backup onto Multiple Discs
- Extracting Frames from a Video Clip During Playback
- Support for Daylight Saving Time (DST)
- Playback of GPS tracks from GV-Compact DVR and GV-Video Server
- Support for recording in standard type of H.264, MPEG4 and JPEG codec
- Support for saving dewarped fisheye view in AVI format
- Wide Angle Lens Dewarping
- Support for configuration change without stopping recording
- Compact Video files

▶ **Audio**

- 32 channels of live audio streaming and recording

▶ **Video Analytics**

- Object Counting
- People Counting
- Intrusion Alarm
- Face Detection
- Privacy Mask
- Unattended and Missing Object Detection
- Scene Change Detection
- Advanced Scene Change Detection
- Advanced Unattended Object Detection
- Advanced Missing Object Detection
- Advanced Motion Detection

- Panorama View
- Video Stabilization
- Defog Function
- Crowd Detection
- Object tracking and zooming by PTZ domes (*1)
- Object tracking in fisheye view
- Single PTZ Tracking
- Digital Object Tracking
- Face Count
- Camera Popup
- Video Lowpass filter

Smart Search & Ease Playback

- Timeline Search
- Face Detection for Object Index
- Object search
- Index search
- Object Index
- Thumbnail browse for ease of search for specific frames within video footage
- Export a video footage within a specified time range
- Synchronized audio and video for both live and playback modes
- Continues playback of set frames A to B
- EXE format export, playable with any third-party players
- AVI format export in multiple screens mode
- DVD format export for Hybrid Card format files
- Option for recycling the input-triggered events (Never recycle function)

Notification

- E-mail notification with attached video images on motion and alarm activation
- E-mail or telephone notification on video lost or I/O error
- Directs PTZ dome to a preset location on motion and alarm activation
- SMS alerts available in Main System, Center V2 and Vital Sign Monitor
- Alarms on objects that pass between predefined regions

WebCam - Remote Surveillance

- POS Live View via IE Browser
- Support for connection with POS devices using OPOS and TCP/IP protocol
- 3G Mobile Phone Support (3GPP)
- SSL Encrypt Connection Support
- UPnP™ Support
- Control Panel on Single View to Provide Instant Information and Operation
- Support PIP, PAP, Defogging Live Videos, and Video Stabilizer in Single View
- Restricting Power User and User to Access WebCam Server at Specified Time Length
- Event List Query
- Download Center
- Drag-and-Drop Support for Camera, PTZ and I/O Icons on the 2 Windows of MPEG4 Encoder Viewer
- Remote E-Map
- Pop-up Live Images upon Input Trigger in Remote E-Map
- Multicast
- Audio Broadcast

Advanced I/O Control

- Visual Automation
- Virtual I/O Control
- One-Click I/O Status Control
- Multiple I/O Types Selection
- Latch Trigger Feature

Profile Management

- Selectable GUI Skin
- Custom Start-Up Splash Screen, Non-Active Video & Video Lost Screen
- Customizing System Features
- Easy Configuration Backup & Restore
- Custom DVR Setting's Template

Remote Monitoring Software

- WebCam
- Remote Playback System
- Edge Recording Manager (Windows Version)
- Android Smartphones
- iPhone / iPod / iPad

IT Technology

- RSA Network Security
- Authentication Server: central control of password settings in local GV-DVRs
- Authentication Server: Support for Windows Active Directory

Central Monitoring Station (CMS)

- Center V2
- Vital Sign Monitor
- Dispatch Server
- Control Center
- GV-GIS (Geographic Information System)

Integration Solution

- Point-Of-Sale
- EAS Integration
- Access Control
- Megapixel Integration
- Licence Plate Recognition
- Central Monitoring Station

Note:

(*1) Not supported by GV-NVR

(*2) Not supported by GV-DVR

VERSION 8.7.3.0 GV-NVR Specifications

NVR		
Model	**GV-NVR (GV)**	**GV-NVR**
Video Input	32	1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32
Audio Input	32	1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32
Video Codec	MJPEG, MPEG4, H.264, H.265	
Audio Codec	16 kHz / 16 bit, 32 kHz / 16 bit	
Video Resolution	From CIF to 12 Mega pixel	
Networking	LAN, WAN, Internet, Modem Dial-up, Modem-to-Modem, ISDN	
Backup Device	HDD, NAS, CD-R / R-W, DVD+R / +RW, DVD+R (DL), ZIP, JAZ, Blu-ray, GV-Storage System	
Language	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian /Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish	

Minimum System Requirements				
		GeoVision IP Camera	3rd-party IP Camera		
		Up to 32 Channels	1 - 4 Channels	5 - 8 Channels	Up to 32 Channels
OS	32-bit	Windows 7 / 8 / 8.1 / 10 / Server 2008			
	64-bit	Windows 7 / 8 / 8.1 / 10 / Server 2008 R2 / Server 2012 R2			
CPU		2nd Generation Core i5, 3.3 GHz	2nd Generation Core i3, 3.1 GHz	2nd Generation Core i5, 3.3 GHz	2nd Generation Core i7, 3.4 GHz
RAM		4 GB Dual Channels			
VGA		HD Graphics 3000	HD Graphics 2000	HD Graphics 3000	
		To obtain the maximum frame rate possible, please see the GPU Decoding Specifications below.			

Note:

1. For the users of 32-bit Windows, the memory limit of GV-NVR is 1.7 GB with 2 GB RAM. For the users of 64-bit Windows, the memory limit of GV-NVR is 1.7 GB with 2 GB RAM and 3 GB with 4 GB RAM. If the high memory issue persists, the GV-NVR will become unstable.
2. GV-System has ended support for Windows XP and Vista.
3. For users of earlier versions of Windows, you may need to install the DVR V8.7 patch file.

Minimum System Requirements	
Free License	32 channels from GV-IP devices
Maximum License	32 channels from third-party IP devices
Increment for Each License	1 to 32 third-party IP cameras at an increment of 2
Optional Combinations	N/A
Dongle Type	Internal or external

Note:

1. It is recommended to use the internal GV-USB Dongle to have the Hardware Watchdog function which restarts the PC when Windows crashes or freezes.
2. The Maximum License is a paid service.

Frame Rate Limit in a Single Hard Disk						
Video resolution	H.264		H.265		MJPEG	
	Frame Rate	Bit Rate	Frame Rate	Bit Rate	Frame Rate	Bit Rate
12 MP	330 fps	14.47 Mbit/s	N/A	N/A	56 fps	65.98 Mbit/s
8 MP	660 fps	14.13 Mbit/s	N/A	N/A	96 fps	58.52 Mbit/s
5 MP	220 fps	8.5 Mbit/s	660 fps	6.73 Mbit/s	80 fps	30.4 Mbit/s
4 MP	330 fps	10.4 Mbit/s	550 fps	7.74 Mbit/s	105 fps	40.53 Mbit/s
3 MP	440 fps	9.83 Mbit/s	660 fps	5.35 Mbit/s	140 fps	38.67 Mbit/s
2 MP	660 fps	12.59 Mbit/s	N/A	N/A	210 fps	44.93 Mbit/s
1.3 MP	660 fps	6.16 Mbit/s	N/A	N/A	300 fps	32.26 Mbit/s

Note: The data above was determined using the bit rate listed above and hard disks with average R/W speed above 110 MB/s. The frame rate limit is based on the resolution of video sources. The higher video resolutions, the lower frame rates you can assign to a single hard disk. In other words, the higher frame rates you wish to record, the more hard disks you need to install. For the information of recording frame rates, you may consult the user's manual of the IP camera that you wish to connect to.

GPU Decoding Specifications

A higher total frame rate can be achieved if your CPU or on-board VGA supports GPU decoding.

On-board VGA: GPU decoding is only supported when using the following Intel chipsets:

For **H.264** Video Compression

- 2nd Generation Intel Core i3 / i5 / i7 Desktop Processors (Sandy Bridge) - only support 1 MP to 2 MP videos
- 3rd Generation Intel Core i3 / i5 / i7 Desktop Processors (Ivy Bridge)
- 4th Generation Intel Core i3 / i5 / i7 Desktop Processors (Haswell / Haswell Refresh)
- 6th Generation Intel Core i3 / i5 / i7 Desktop Processors (Skylake)
- 7th Generation Intel Core i3 / i5 / i7 Desktop Processors (Kaby Lake)

For **H.265** Video Compression

- 6th Generation Intel Core i3 / i5 / i7 Desktop Processors (Skylake)
- 7th Generation Intel Core i3 / i5 / i7 Desktop Processors (Kaby Lake)

External VGA: GPU decoding is only supported when using NVIDIA graphics cards with compute capability 3.0 or above and memory 2 GB or above.

To look up the commute capability of the NVIDIA graphics cards, refer to: https://developer.nvidia.com/cuda-gpus

Note: NVIDIA graphic cards do not support H.265 GPU decoding.

On-board VGA + external VGA: To have both the on-board VGA and external VGA perform GPU decoding, the VGAs must follow their respective specifications listed above.

Note:

1. If you have both on-board VGA and external VGA installed, the on-board VGA must be connected to a monitor for H.264 / H.265 GPU decoding.
2. You can install multiple external graphics cards if needed.
3. CUDA compute capability 5.0 or higher is required to ensure optimal performance.

Total frame rate and number of channels supported

Refer to the documents below to see the total frame rate and number of channels supported by GV-NVR when connected to GV-Fisheye cameras and H.265 cameras.

- **GV-System V8.7 Supports H.265 GPU Decoding**

- **GV-Fisheye Camera Integration Notes**

Options

Optional Devices	Description
Internal USB Dongle	The USB dongle can provide the Hardware Watchdog function to the GV-DVR/NVR by restarting the computer when Windows crashes. You need to connect the dongle internally on the motherboard.
GV-HUB V2	An easy way for serial port extension, this hub can add 4 RS-232 / RS-485 serial ports through the GV-DVR/NVR's USB port.
GV-COM V3	GV-COM V3 can add 1 RS-485 port to your computer through a USB connector.
GV-IO Box (4 Ports V1.2)	GV-IO Box 4 Ports V1.2 provides 4 inputs and 4 relay outputs. It supports both DC and AC output voltages, and provides a USB port for PC connection.
GV-IO Box (8 Ports)	GV-IO Box 8 Ports provides 8 inputs and 8 relay outputs, and supports both DC and AC output voltages. You can connect the unit to the PC either by using its USB port or through network by using its Ethernet module.
GV-IO Box (16 Ports)	GV-IO Box 16 Ports provides 16 inputs and 16 relay outputs, and supports both DC and AC output voltages. You can connect the unit to the PC either by using its USB port or through network by using its Ethernet module.
GV-Joystick V2	GV-Joystick V2 allows you to easily control PTZ cameras. It can be either plugged into the GV-DVR/NVR for independent use or connected to GV-Keyboard.
GV-Keyboard V3	GV-Keyboard V3 is used to program and operate GV-VMS and PTZ cameras. Through RS-485 configuration, it can control up to 36 GV-DVR/NVR. In addition, you can connect PTZ cameras directly to the keyboard for PTZ control.
GV-Data Capture V3 Box	GV-Data Capture V3.1E Box can integrate the GV- DVR/NVR to an electronic POS system, while GV-Data Capture V3E Box can establish such integration through LAN or Internet.
GV-IR Remote Control	GV-IR Remote Control allows you to control GV-System at the maximum operation distance of 7 m (22.97 ft).