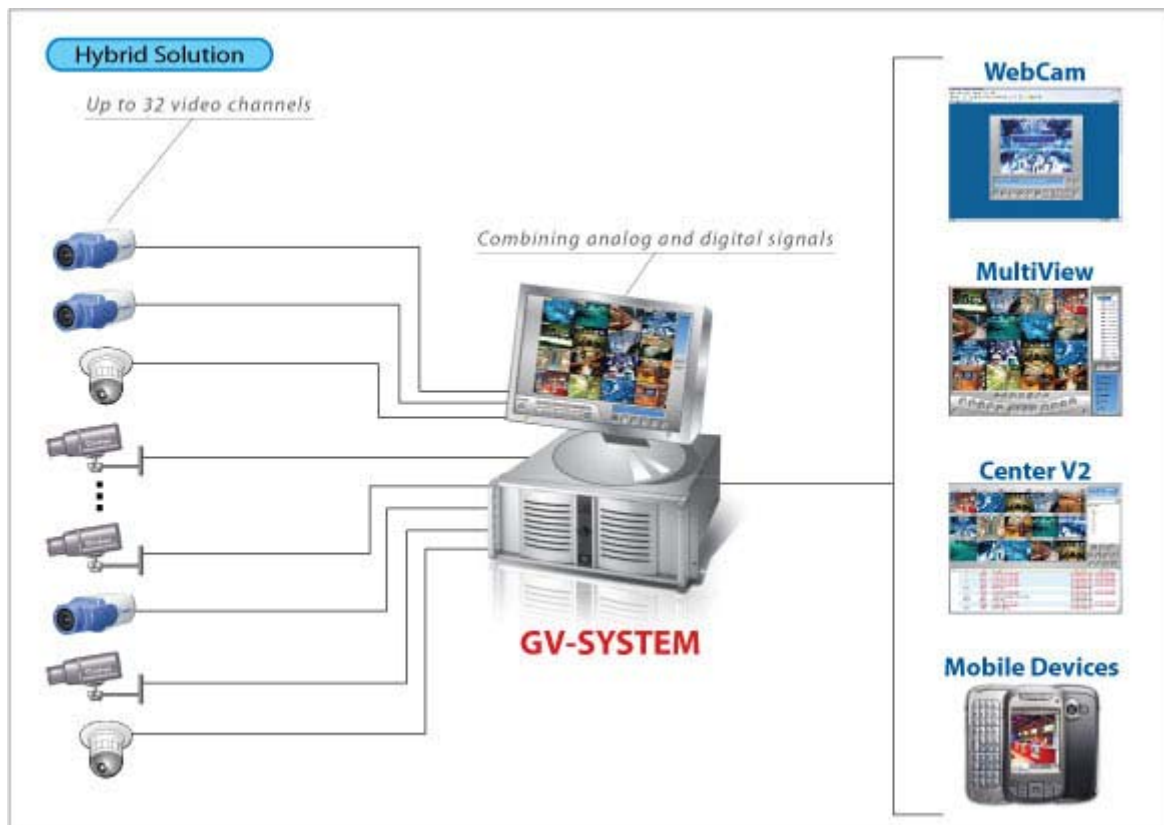


## INTRODUCTION

Thanks to the scalability of GV-Series, you can easily integrate surveillance system and IP cameras, and load analog and digital video data into the same interface to become a comprehensive hybrid solution. The GV-Series Surveillance System V8.3 is able to process video signals from IP cameras over TCP/IP network. Combining the best of both the analog and digital worlds, the GV-Hybrid DVR is a versatile video management platform. It answers needs for a transition from a legacy analog infrastructure towards a pure IP surveillance environment.

In the version 8.3, the GV-Hybrid DVR comes with a rich panel of features to streamline surveillance operations and enhance management capabilities. Remote surveillance is implemented via 3GPP, IE browser and GeoVision GV-MultiView. For the purpose of central monitoring, the GV-Hybrid DVR offers an extensible solution for multi-site surveillance and control to manage numerous cameras from subscribers.

### [Supported IP Camera List](#)



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 8.3 KEY FEATURES

- Support for 32 channels in GV-System and CMS applications
  - Support for two GV Video Capture Cards in GV-System
  - New features to Main System:
    - Digital Matrix
    - Automatic adjustment for DST (Daylight Saving Time)
    - Lost signal alarm
    - Talkback support when IP cameras provide 2-way audio
    - Windows-based direct POS integration (POS Text Sender)
    - Crowd Detection (\*\*)
    - Advanced Scene Change Detection (\*\*)
    - Advanced Unattended Object Detection (\*\*)
    - Advanced Missing Object Detection (\*\*)
    - Single Camera Tracking
    - Turbo Mode for GV-Combo A Cards (GV-1480A, 1240A, 1120A) to record at high speed
    - Iris button added to the PTZ control panel
    - Colorful Mode to enhance video color
    - Support for new PTZ cameras:
      - COP 15-CD53W (Pelco D), Elmo PTC-200C, Elmo PTC-400C, Elmo PTC-1000, Eyeview T-Power (T2-SA27), JVC TK-C686E, Lilin PIH-820,
      - Nang Wang WVD 2300PNT (firmware version 4.1), StorVision and 360 Vision ViD-18COP04 (Pelco P)
  - Support for new 3rd-party IP cameras:
 

|           |   |
|-----------|---|
| Arecont   | AV-3130, AV-8360  |
| Axis      | 209FD, 209FD-R, 209MFD, 209MFD-R, 211M, 211W, 215, 216MFD, 216MFD-V, 241Q, 241S, P3301, Q7401                 |
| Cannon    | VB-C50i, VB-C300  |
| IQEye     | IQEye 703, IQEye 705, IQEye 752, IQEye 753, IQEye 755   |
| JVC       | VN-V25U, VN-V26U, VN-V686U  |
| Mobotix   | M12D Web, M12D IT-DNIGHT, M12D Sec  |
| Panasonic | WV-NS202A, WV-NW484, WV-NW964   |
| Pelco     | IP110, IP3701   |
| SONY      | SNC-CM120, SNC-CS20, SNC-DM110, SNC-DM160, SNC-DS10, SNC-DS60, SNC-RX530N, SNC-RX530P, SNC-RX570N, SNC-RX570P |
- Note:** The feature with (\*\*) mark needs to work with an AVP dongle which you need to purchase additionally.
- 
- New features to ViewLog
  - Support for Daylight Saving Time (DST)
  - Playback of GPS tracks from GV-Compact DVR and GV-Video Server
  - Colorful Mode to enhance video color for playback
- 
- New features to Webcam
  - Multicast
  - Audio Broadcast
  - POS/Wiegand Live View option added to Single View
  - New GUI for Remote Playback (RPB)
  - Support for BlackBerry phones
- 
- New features to SMS Server
  - Unlimited log retention time
  - Support for new alert events, including Crowd Detection, Advanced Scene Change Detection, Advanced Unattended Detection and Advanced Missing Object Detection
  - Support for Wavcom GPRS Modem
- 
- New features to Center V2:
  - Remote control of I/O devices from GV IP devices
  - Unlimited log retention time
  - Colorful Mode to enhance video color
  - Assigning a DVR client to another Center V2
- 
- New features to VSM:
  - Remote control of I/O devices from GV IP devices
  - Unlimited log retention time
  - Automatic insertion of ID and Name to SMS messages
  - Support for new alert events, including Crowd Detection, Advanced Scene Change Detection, Advanced Unattended Detection and Advanced Missing Object Detection
- 
- New features to Dispatch Server:
  - Unlimited log retention time
  - Colorful Mode to enhance video color
- 
- New features to Control Center:
  - Support for new event settings in VMD, including Crowd Detection, Advanced Scene Change Detection, Advanced Unattended Detection and Advanced Missing Object Detection
  - Colorful Mode to enhance video color
  - GV-Keyboard support in Matrix
  - QView in Matrix for channel display on another monitor
  - Remote control of I/O devices from GV IP devices
  - Pop-up live view upon input triggers in I/O Central Panel

- New applications:
  - GV-GIS (Geographic Information System)
  - Multicast
  - Audio Broadcast
- New devices:
  - GV-I/O Box 4 Ports
  - GV-I/O Box 8 Ports
  - GV-I/O Box 16 Ports

## FULL FEATURE LIST

### ▶ Monitoring

- Support for 32 channels in GV-System and CMS applications
- Support for two GV Video Capture Cards in GV-System (\*)
- 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 (\*)
- Codecs: Geo H264, Geo MPEG4 ASP, Geo H264 V2 (\*)
- Multithreading Encoding (\*)
- Higher Screen Resolutions (1920 x 1200, 1680 x 1050, 1600 x 1200, 1280 x 800, 1440 x 900 and 1920 x 1080)
- Noise Tolerance for Motion Detection
- Noise Detection to Reduce File Size (\*)
- Noise Filter to Filter Out Video and Audio Noise (\*)
- 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 and audio
- Backlight compensation
- Video auto gain controller (\*)
- 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 (\*)
- Authentication Server
- Colorful Mode to enhance video color

### ▶ Intelligent Recording & Playback

- Choice of recording at 30, 60, 120, 240, 480 and 960 fps (\*)
- 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 XP / Server 2003 burning software
- Pre-Recording Using HDD (\*)
- Advanced Round-The-Clock Recording (\*)
- 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

### ▶ Audio

- 32 channels of live audio streaming and recording

### ▶ Video Analytics

- Enhanced 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 (\*\*)
- Panorama View(\*\*)
- Video Stabilization(\*\*)
- Defog Function(\*\*)
- Crowd Detection(\*\*)
- Object tracking and zooming by PTZ domes (\*)
- Single PTZ Tracking (\*)

**Note:** The feature with (\*\*) mark needs to work with an AVP dongle which you need to purchase additionally.

▶ **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)
- Backup, save AVI and BMP functions accessible in LAN ViewLog
- Automatic refresh of the video event list in LAN ViewLog

▶ **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
- 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

▶ **Mobile Phone Application**

- Support 4, 9, and 16 screen divisions
- PTZ control via directional buttons
- Channel switch via middle button
- Support for Nokia S60 3rd Edition

▶ **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
- G-View for WinCE PDA
- I-Mode
- BlackBerry phones

▶ **IT Technology**

- RSA Network Security
- Authentication Server: central control of password settings in local GV-DVRs

▶ **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:** Not supported by GV-NVR

**VERSION 8.3 GV-Hybrid DVR Specifications**

| DVR (Supports 2 cards up to 32 channels) |  |                               |   |  |  |  |          |                                    |          |         |
|--|--|-------------------------------|---|--|--|--|----------|------------------------------------|----------|---------|
| Model                                    | GV-600   | GV-650                        | GV-800  | GV-1008  | GV-1120A   | GV-1240A   | GV-1480A | GV-4008                            |          |         |
| Video Input                              | 1,2,4,6,8,10,12,14,16  | 4,8,12,16                     | 4,8,12,16   | 8  | 8,12,16  | 8,16   | 16       | 8                                  |          |         |
| Audio Input                              | 1  | 2                             | 4   | 8  | 8,12,16  | 8,16   | 16       | 8                                  |          |         |
| TV Ooutput                               | No   | No                            | No  | 1  | 1  | 1  | 1        | 1                                  |          |         |
| Recording Rate                           | CIF  | NTSC                          | 30 fps  | 60 fps   | 120 fps  | 240 fps  | 120 fps  | 240 fps                            | 480 fps  | -       |
|  |  | PAL                           | 25 fps  | 50 fps   | 100 fps  | 200 fps  | 100 fps  | 200 fps                            | 400 fps  | -       |
|  | D1   | NTSC                          | 15 fps  | 30 fps   | 60 fps   | 240 fps  | 80 fps   | 120 fps                            | 240 fps  | 240 fps |
|  |  | PAL                           | 12.5 fps  | 25 fps   | 50 fps   | 200 fps  | 72 fps   | 100 fps                            | 200 fps  | 200 fps |
| Display Rate                             | CIF  | NTSC                          | 30 fps  | 60 fps   | 120 fps  | 240 fps  | 480 fps  | 480 fps                            | 480 fps  | -       |
|  |  | PAL                           | 25 fps  | 50 fps   | 100 fps  | 200 fps  | 400 fps  | 400 fps                            | 400 fps  | -       |
|  | D1   | NTSC                          | 15 fps  | 30 fps   | 60 fps   | 240 fps  | 480 fps  | 480 fps                            | 480 fps  | 240 fps |
|  |  | PAL                           | 12.5 fps  | 25 fps   | 50 fps   | 200 fps  | 400 fps  | 400 fps                            | 400 fps  | 200 fps |
| Input Type                               | BNC x 4 / DB15 x 2   | DB15 x 2                      | BNC x 4 / DB15 x 2  | DB15 x 1 (Video)<br>DB9 x 1 (Audio) / DVI x 1 (Video)<br>DVI x 1 (Audio) |  | DB15 x 2 (Video)<br>DB9 x 2 (Audio) / DVI x 1 (Video)<br>DVI x 1 (Audio) |          | DVI x 1 (Video)<br>DVI x 1 (Audio) |          |         |
| Dimension (W X H)                        | 145x98 (mm) / 5.71x3.86 (in)   | 145x107 (mm) / 5.71x4.21 (in) | BNC: 152x101 (mm) / 5.98x3.98 (in)<br>D-Type: 174x107 (mm) / 6.80x4.21 (in) |  |  | 179 x 99 (mm) / 7.04 x 3.89 (in)   |          | 169x106 (mm) / 6.65x4.17 (in)      |          |         |
| Video Compression                        | Geo MPEG4, Geo MPEG4 (ASP), Geo H264, Geo H264 V2  |                               |   |  |  |  |          |                                    | HW H.264 |         |
| Compression Rate                         | Variable, 300: 1 Maximum   |                               |   |  |  |  |          |                                    |          |         |
| Video Resolution                         | D1, Half D1, CIF Resolution  |                               |   |  |  |  |          |                                    |          |         |
| Video Signal Type                        | NTSC, PAL  |                               |   |  |  |  |          |                                    |          |         |
| PTZ Control Protocol Support             | <ul style="list-style-type: none"> <li>• AcutVista SSD-7971D</li> <li>• Ademco (Juptier)</li> <li>• Bosch (TC 700 / TC 8560)</li> <li>• Canon (VC-C3 / VC-C4 / VCC5i)</li> <li>• CBC GANZ (ZC-S120 Series)</li> <li>• Chiper (V9KRV)</li> <li>• D-Max</li> <li>• DongYang Dome (DOH-240)</li> <li>• Direct Perception (PTU-D46)</li> <li>• DynaColor (D-7720 / D-7722)</li> <li>• DynaHawk 701 Series</li> <li>• Elbex (Matrix / 1000)</li> <li>• EverFocus (EPTZ 1000 / 500)</li> <li>• GKB (SPD-221)</li> <li>• Hi-Sharp (HS-CC600 / HS-CC610)</li> <li>• JEC (ETXK8000)</li> <li>• JVC (TK-S576B / S655 / TK-C686E)</li> <li>• Kalatel Cyber Dome with KTD-312</li> <li>• Kampro Technology (K-ZC23)</li> <li>• Kenko (DMP23-H1)</li> <li>• Lilin PIH-7000 (17X) / PIH-7600 (22X) / PIH-7625 / PIH-7600PL / PIH-7625 (25X) / PIH-820</li> </ul> |                               |   |  | <ul style="list-style-type: none"> <li>• LG (LPT-OS553HQ)</li> <li>• Mintron (54G2AHN / P)</li> <li>• Minking Messoa (SDS600 Series / D-700 series)</li> <li>• NanWang (NVD 2300PNT) / V4.1 (NVD 2300PNT)</li> <li>• Panasonic (WV-CS850 / CS854)</li> <li>• Pelco (P / D / Spectra III / Spectra Mini Dome SD4-WO)</li> <li>• Pishion 22X</li> <li>• PTZ in I/O</li> <li>• SAE (DR-E588)</li> <li>• Samsung (SPD-1600 / SPD-3300 / SCC-641 / SCC-643)</li> <li>• Sensormatic (Ultra IV)</li> <li>• Sony (EVI-D100 / D100T)</li> <li>• TOA (CC551)</li> <li>• VIDO (Dome / G65)</li> <li>• YAAN</li> <li>• 360 Vision ViD-18COP04 (Pelco P)</li> <li>• COP 15-CD53W (Pelco D) / COP 15-CD55W-1000 (Pelco D) / COP CD55X -PELCO D2400</li> <li>• Elmo PTC-200C, Elmo PTC-400C, Elmo PTC-1000,</li> <li>• Eyeview T-Power (T2-SA27)</li> <li>• StorVision</li> </ul> |  |          |                                    |          |         |

| NVR                  |   |   |
|----------------------|---|---|
| Model                | GV-NVR (GV)   | GV-NVR  |
| Video Input          | 4, 8, 12, 16, 20, 24, 28, 32  | 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32   |
| Audio Input          | 4, 8, 12, 16, 20, 24, 28, 32  | 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32   |
| Video Compression    | MJPEG, MPEG4, H.264   |   |
| Video Resolution     | From CIF to 5 Mega pixel  |   |
| IP Camera            | GeoVision<br>GV-Mini Fixed Dome 1.3M H.264 (GV-MFD110),<br>GV-IPCAM VGA H.264 (GV-BX010D),<br>GV-IPCAM 1.3M H.264 (GV-BX110D),<br>GV-IP Speed Dome Indoor (GV-SD010),<br>GV-IP Speed Dome Outdoor (GV-SD010-S),<br>GV-IP CAM1.3M BOX CAM,<br>GV-IP CAM1.3M VARIFOCAL,<br>GV-IP CAM1.3M VANDAL PROOF DOME,<br>GV-IP CAM1.3M MINI FIXED DOME,<br>GV-Video Server(GV-VS02),<br>GV-Video Server (GV-VS04A),<br>GV-H.264 Video Server (GV-VS12),<br>GV-Compact DVR | ACTi<br>ACD-2100, ACD-2200, ACM-1011, ACM-1231, ACM-1431N, ACM-1511, ACM-3001, ACM-3011, ACM-3311, ACM-3401, ACM-3411, ACM-3511, ACM-3601, ACM-3701, ACM-4000, ACM- 4101 , ACM-4200, ACM-4201, ACM-5001, ACM-5601, ACM-5611, ACM-5711, ACM-7411, ACM-8511N, CAM-6510N, CAM-6610, TCM-4301, TCM-5311   |
|                      |   | Arecont<br>Vision<br>AV_1300, AV_1305, AV_1355, AV_2100, AV_2105, AV_2155, AV_3100, AV_3105, AV_3130, AV_3135, AV_3155, AV_5100, AV_5105, AV_5155, AV_8180, AV_8185, AV_8360, AV_8365   |
|                      |   | AXIS<br>206, 207, 210, 211, 212, 214, 215, 221, 207MW, 207W, 209FD, 209FD-R, 209MFD, 209MFD-R, 210A, 211A, 211M, 211W, *213, 216FD, 216FD-V, 216MFD, 216MFD-V, 223M, *225FD, 231D, 232D, 233D, 241Q, 241S, 243Q, M1031W, P3301, Q7401   |
|                      |   | BOSCH<br>VIP X1, VIP X2, NWC-0455-10P   |
|                      |   | Canon<br>*VB-C300, *VB-C50i   |
|                      |   | GeoVision<br>GV-Mini Fixed Dome 1.3M H.264 (GV-MFD110),<br>GV-IPCAM VGA H.264 (GV-BX010D),<br>GV-IPCAM 1.3M H.264 (GV-BX110D),<br>GV-IP Speed Dome Indoor (GV-SD010),<br>GV-IP Speed Dome Outdoor (GV-SD010-S), GV-IP CAM1.3M BOX CAM, GV-IP CAM1.3M VARIFOCAL,<br>GV-IP CAM1.3M VANDAL PROOF DOME,<br>GV-IP CAM1.3M MINI FIXED DOME, GV-Video Server(GV-VS02),<br>GV-Video Server (GV-VS04A), GV-H.264 Video Server (GV-VS12),<br>GV-Compact DVR |
|                      |   | IQinvision<br>301, 302, 510, 511, 701, 702, 703, 705, 752, 753, 755, IQ041SI/IQD41SI, IQ042SI/IQD42SI, IQ045SI/IQD40SI, IQ540SI, IQ541SI, IQ542SI, IQ711/IQ751, IQ802/IQ852, IQ803/IQ853, IQ805/IQ855, IQ811/IQ851, IQA10S/IQA10N, IQA11S/IQA11N, IQA12S/IQA12N, IQA13S/IQA13N, IQA15S/IQA15N   |
|                      |   | JVC<br>VN-C20U, VN-C205U, VN-C215U, *VN-C625U, *VN-C655U, VN-V25, VN-V26, *VN-V686  |
|                      |   | Mobotix<br>M12D_Sec_DNIGHT, M12D_Web, M12D_IT_DNIGHT, M12D_Sec, M12D_Sec_R8   |
|                      |   | Panasonic<br>BB-HCE481A, BB-HCM110, *BB-HCM311, *BB-HCM331, BB-HCM371, *BB-HCM381, *BB-HCM403, BL-C10, BL-C30, WV-NF302, WV-NP1004, WV-NP304, *WV-NS202A, WV-NW484, *WV-NW964   |
|                      |   | Pelco<br>IP110, IP3701, IXE20, Spectra4   |
|                      |   | SONY<br>SNC-CS10, SNC-CS11, SNC-CS20, SNC-CS50N, SNC-CS50P, SNC-CM120, SNC-DF40N, SNC-DF40P, SNC-DF50N, SNC-DF50P, SNC-DF70N, SNC-DF70P, SNC-DF80N, SNC-DF80P, SNC_DF85N, SNC-DM110, SNC-DM160, SNC-DS10, SNC-DS60, SNC-P1, *SNC-P5, *SNC-RX530N, *SNC-RX530P, *SNC-RX550N, *SNC-RX550P, *SNC-RX570N, *SNC-RX570P, *SNC-RZ25N, *SNC-RZ25P, *SNC-RZ50N, *SNC-RZ50P   |
|                      |   | Verient<br>S1950e   |
|                      |   | VIVOTEK<br>IP7161, FD7160   |
|                      |   | * IP Cam with PTZ control   |
| Common Specification |   |   |
| Networking           | TCP / IP, 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  |   |
| Language             | Czech / Danish / English / French / German / Hebrew / Hungarian / Italian / Japanese / Polish / Portuguese / Russian / Serbian / Simplified Chinese / Spanish / Traditional Chinese   |   |

| Minimum System Requirements |   |                                   |                   |                     |
|-----------------------------|---|-----------------------------------|-------------------|---------------------|
|                             | Up to 4 Channels  | Up to 8 Channels                  | Up to 16 Channels | Up to 32 Channels   |
| OS                          | 32-bit  | Windows XP, Vista, 7, Server 2008 |                   |                     |
|                             | 64-bit  | Windows 7, Server 2008            |                   |                     |
| CPU                         | Core 2 Duo, 2.4 GHz   | Core 2 Quad, 2.4 GHz              |                   | Core i7-860, 2.8GHz |
| RAM                         | 2 X 1 GB Dual Channels / 2 x 2 GB Dual Channels (see IMPORTANT 2) |                                   |                   |                     |
| VGA                         | ATI X 1300  |                                   |                   |                     |

**Important :**

- To connect IP cameras with H.264 codec and GV-IP Speed Dome (no matter which codec you select), the minimum CPU requirement of Core 2 Quad can only support up to 8 channels. With CPU of Core i7 or higher, you can record up to 32 channels but note the following limit for live viewing:
  - For live viewing of 32 channels, you need to lower resolution and change the codec to MPEG 4 or MJPEG
- 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 2.4 GB with 4 GB RAM. If the high memory issue persists, the GV-NVR will become unstable.

**Frame Rate Limit in a Single Hard Disk**

Since the size of transmitted data from IP cameras may be quite large and reach beyond the transfer rate of a hard disk, you should note the total of recording frame rates that you can assign to a single hard disk, as listed below:

| Video resolution           | Limit of total frame rates (FPS) |
|----------------------------|----------------------------------|
| CIF (320 x 240)            | 480                              |
| D1 (720 x 480)             | 240                              |
| 1 Megapixel (1280 x 960)   | 270                              |
| 2 Megapixels (1600 x 1200) | 120                              |
| 3 Megapixels (2048 x 1536) | 110                              |
| 4 Megapixels (2560 x 1600) | 70                               |
| 5 Megapixels (2592 x 1944) | 54                               |

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.

**GV-DONGLE POLICY**

**Dongle Type**

An appropriate USB dongle is required for the computer to run the Hybrid and NVR solutions. There are three types of USB dongles available for both Hybrid and NVR solutions.

- NVR (GV) Dongle:** This is used only for GeoVision IP video devices, including GV-IP Camera, GV-Compact DVR and GV-Video Server.
  - The dongle options include: 4, 8, 12, 16, 20, 24, 28, 32 IP channels.
- NVR Dongle:** This is used for third-party IP devices.
  - The dongle options include: 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 IP channels.
- Combo Dongle:** This is used for a mix of GeoVision and third-party IP video devices.

It is required to install drivers from the software CD for above three dongles to work.

The three dongles can be upgraded to include the AVP (Advanced Video Process) functions.

**Hybrid Solution Description**

- Specifications of the Hybrid solution.** The Hybrid solution provides you 8 free IP channels for GeoVision IP video devices, with the limit of 32 channels in total.  
For example:  
Number of analog channels + 8 free GV IP channels + Number of channels in USB dongle (NVR(GV), NVR or Combo Dongle) <= 32 channels.
- Connection of GeoVision IP devices to GV-System.** To receive the video streaming of 8 channels or less from GeoVision IP video devices, there is no need to use an extra USB dongle. If more than 8 GV IP channels are required, you need a NVR (GV) Dongle.
  - The dongle options include: 4, 8, 12, 16, 20, 24 IP channels.

In this case, the total number of channels for your Hybrid system is: Number of analog channels + 8 free GV IP channels + Number of channels in your NVR (GV) Dongle <= 32 channels.
- Connection of third-party IP devices to GV-System.** To implement the Hybrid solution with third-party IP video devices, you need a **NVR Dongle**.
  - The dongle options include: 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 IP channel(s).

In this case, the total number of channels for your Hybrid system is: Number of analog channels (+ 8 free GV IP channels) + Number of channels in your **NVR Dongle** <= 32 channels.

4. **Connection of both GV and third-party IP devices to GV-System.** To implement the Hybrid solution with a mix of GeoVision and third-party IP video devices, you need a **Combo Dongle**.
  - The dongle options are the combined options of **NVR (GV) Dongle** and **NVR Dongle**. Inform your sales representative the exact number of third-party IP channels and additional GV IP channels you need, so the **Combo Dongle** can be delivered upon your requirements.For example, you need 8 third-party IP channels plus 8 additional GV IP channels, so the number of channels in the requested Combo Dongle is 16. The total number of channels for your Hybrid system will be: Number of analog channels + 8 free GV IP channels + Number of channels in your **Combo Dongle** (e.g. 16) <= 32 channels.

#### NVR Solution Description

1. **Specifications of the NVR solution:** When an appropriate USB dongle is attached to GV-NVR System, it can support up to 32 IP video channels.
2. **Connection of Geovision IP devices to GV-NVR.** To implement the GV-NVR solution with GeoVision IP video devices, you need a **NVR (GV) Dongle**.
  - Dongle options include: 4, 8, 12, 16, 20, 24, 28, 32 IP channels.
3. **Connection of third-party IP devices to GV-NVR.** To implement the GV-NVR solution with third-party IP video devices, you need a **NVR Dongle**.
  - Dongle options include: 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 IP channel(s).
4. **Connection of both GV and third-party IP devices to GV-System.** To implement the NVR solution with a mix of GeoVision and third-party IP video devices, you need a **Combo Dongle**.
  - The dongle options are the combined options of **NVR (GV) Dongle** and **NVR Dongle**. Inform your sales representative of the exact number of GV IP channels and third-party IP channels you need, so the **Combo Dongle** can be delivered upon your requirements.For example, you need 12 GV IP channels plus 8 third-party IP channels. Therefore, the number of channels in the requested Combo Dongle is 20, and the total number of channels for your NVR system is 20.