



Introduction

The GV-LPR solution is an effective video security and parking monitoring solution that can enforce parking lot security. Many parking lots security are rated high risk due to their poor response to crimes and the common nature of parking lot incidents. Isolated corners or levels of a large lot make it difficult for security officers to patrol and monitor. To provide security and assurance to customers and employees, parking lots need high efficiency digital surveillance systems that provide live monitoring and continuous recording to enhance lots security and surveillance efficiency.

The GV-LPR system provides high-resolution video monitoring and recording at good quality. When emergency intercoms are activated or panic buttons pushed, the parking attendants can judge the situation from the live view and respond correctly. The GV-LPR is a reliable security surveillance system that is high on recording performance and low on maintenance.

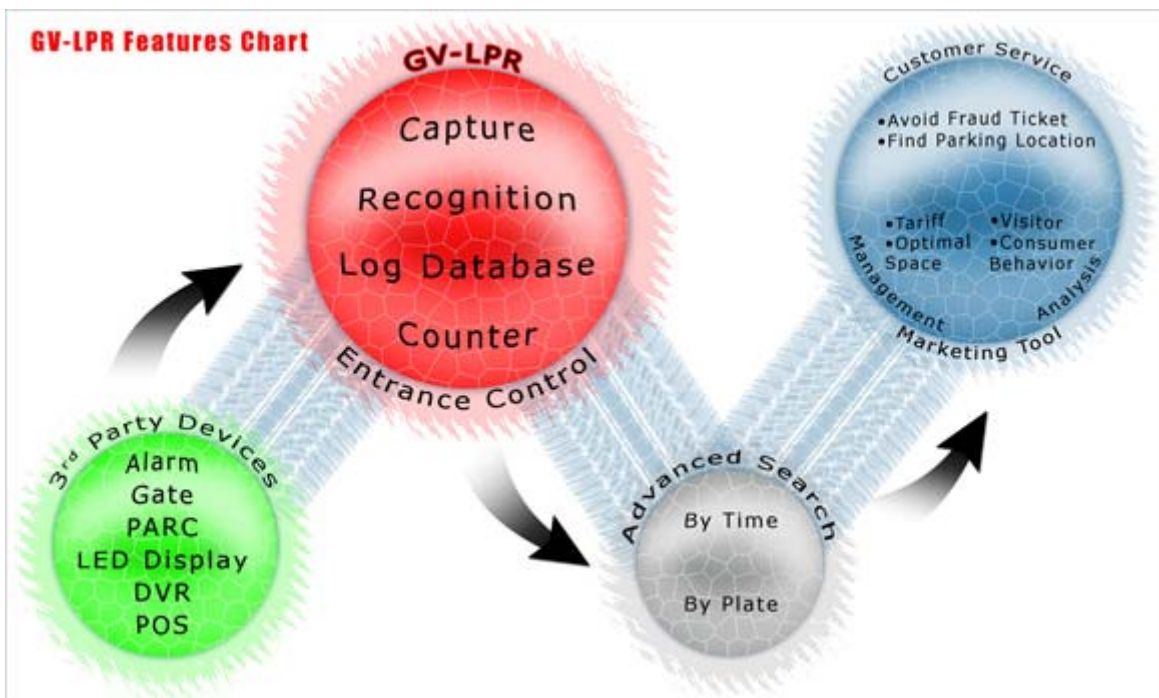
Recognition

GV-LPR activates recognition process in two ways. One is by software video motion detection, which detects vehicles passing through the camera and illuminator zone. Second is by I/O activation, which the action triggers recognition and recording on I/O activation. The system supports two view modes including Camera Overview and Picture-in-Picture with ease of monitoring.

Setup Guidelines

Please follow our guidelines to reach optimal recognition accuracy.

 [Quick Guide for GV-LPR Qualified Image Criteria](#)



BENEFITS

Unlike conventional surveillance systems which simply act as a security monitoring tool, the GV-LPR system incorporates several intelligent features for customer service and lots marketing tools. For example, parking managers can utilize database function of the GV-LPR to acquire analysis of lot utilization rate, such as vehicle counting, monthly parking frequency, or average parking time during holiday/weekday or at daytime/nighttime. The database function is an ideal tool for parking lot managers because it facilitates effective utilization of parking space.

By integrating with POS system, the GV-LPR will associate videos with data including license plate numbers, car entry/exit time, parking fee, and capture the driver's face, car type and the lot toll booth's cash register area as well. In case of fraud ticket or cash shrinkage investigation, parking managers can search for videos by any data available to expedite dispute settlement and increase the toll income. The GV-LPR provides multiple I/O connections to external devices such as gate controller, loop detector, or TITO system, as well as integrations to GV-Series DVR. Parking lot managers can use flexible integration according to their specific needs in parking management. When the TITO system is used and the CCTV cameras are installed in each area and floor of the parking lot, the GV-LPR provides a very useful function that helps drivers find their parking location. The entry/exit time, parking fee, license numbers, parking locale will be printed on the parking receipt. When the driver is ready to take his car and leave, he can refer to the ticket to remember where he parked his car.

GV-LPR is composed of:

- GV-LPR application for 1 to 8 cameras
- [GV-DSP LPR](#) for mobile recognition
- [GV-LPR Center](#) to manage multiple GV-LPR or GV-DSP LPR clients

All of the above GV-LPR applications compose a comprehensive and sophisticated solution.

AVAILABLE VERSION

 Argentina	 Australia	 Austria	 Belgium
 Brazil	 Canada	 China	 Chile
 Columbia	 Croatia	 Cyprus	 Czech Republic
 France	 Germany	 Guernsey	 Hungary
 India	 Ireland	 Israel	 Italy
 Malaysia	 Mexico	 Norway	 Poland
 Portugal	 Russia	 Serbia	 Slovakia
 Slovenia	 South Africa	 Spain	 Taiwan
 Thailand	 Turkey	 UK	 USA
 Vietnam			

There is a Global version which is suitable for most of the other countries. More are to be implemented.

CASE STUDY

▶ Bridge Surveillance vs GV-LPR/ANPR

Installation: GV-LPR/ANPR DVR



Harbour Bridge Auckland New Zealand has installed the GV-LPR DVR to enhance the security of public transportation. Police enforcement is able to monitor the passing through vehicles and if there is any criminal even happen, they are able to track back the relative video evidence by searching for specific car plate.

▶ Car Rental vs GV-LPR/ANPR

Installation: GV-LPR/ANPR



Three global car rental firms in German international airport adopted GV-LPR/ANPR to track on the rent out car, and GV_LPR as tool to enhance CRM {customer relationship management}. After install the LPR, rental firms can keep the driver photo + car plate number recognition, drive out time/ return time data in their database. Even more, the car rental firm would be able to pull out the customer profile before they reach counter if they want.

▶ **Hyatt Hotel vs GV-LPR/ANPR DVR**

Installation: GV-LPR/ANPR DVR

Hyatt Regency in CIS area had install GV-LPR/ANPR DVR to enhance the better security level for hotel safety management, and yet to provide a better CRM service {customer relationship management}. GV-LPR can open the gate automatically for VIP customer, prepare customer profile in advance. Also able to send SMS, Email to Hotel manager so they can welcome VIP customer in lobby.



▶ **Weighting system vs GV-LPR/ANPR**

Installation: GV-LPR DVR

A well-known Pan-East Europe recycling Co integrated GV-LPR DVR with their weighting system, to prevent the truck driver who may steal the valuable recycle material.

The recycle firm had suffered the recycle material shortage problem for a while. They suspected that some truck driver may steal the material by driving truck in full load of recycle material, and drive out with half load truck. After install the GV-LPR DVR, they record drive-in truck weight + Truck Car plate number + driver face and drive out truck weight, then this material stolen situation being improved.



▶ **Gas Station vs GV-LPR/ANPR**

Installation: GV-LPR

A chain Gas-station store in Asia has installed several GV-LPR in their gas-station, to catch gasoline drive off vehicle which didn't paying their bill. The gas-station Head-quarter has hot-list customer who fill up gas without paying, we call it black-list car. Every time those black-list vehicles drive in the gas-station, GV-LPR would sent a pre-warming alarm to counter. The counter staff can stop the pumper service so it would prevent the gas-station lost.



▶ **Pay-for-Park Lots**

Installation: GV-LPR + Ticket In Ticket Out System

Many parking lots are using GeoVision GV-LPR system to integrate with their parking lot ticket-in/ ticket-out system. When a vehicle passes the entrance, the GV-LPR captures and outputs license plate numbers to the ticketing system, which then prints ticket with license plate numbers on. If a driver loses his ticket, the GV-LPR system and the ticketing system can easily retrieve the parking time log by license plate number. The GeoVision parking lot solution is especially convenient for monthly rental customers. Vehicles with parking certificates will be allowed the passage to the parking lot without the trouble of getting tickets or checking in at the parking attendant. The improved video coverage and the license plate recognition database can expedite dispute resolution in case of customer claim.



▶ **Hospital**

Installation: GV-LPR + RFID reader

GeoVision GV-LPR system is helping one of the largest and successful general hospitals in Taiwan manage their parking lot, improve management, and reduce operational costs. This hospital uses GV-LPR system for 4 lanes and a GV-Central Monitoring Station to control 4 entries and 4 exits of the parking lot. The system is used to automatically allow entry of authorized staff, whose RFID card numbers match the license plate numbers in the database. The GV-LPR provides the hospital with the ability to access all time logs and video data remotely from the office, save maintenance cost, and enhance security at the same time.



▶ **Office Building Parking Lot**

Installation: GV-LPR

A well-known Taiwan-based international airlines company uses GeoVision GV-LPR system to manage their corporate building entrance. The GV-LPR provides a security solution that can help the company monitor the entrance where more than 1000 visitors and staff vehicles access to everyday. All vehicles license plate numbers are saved in the GV-LPR database in advance. The occupant of a visitor's car must register at the parking attendant before entering. Once vehicles enter or leave, the system will retrieve plate numbers from the database and automatically allow access to the lot entry points. The time log of cars entering and leaving will be stored in a database for central management. After introducing the GV-LPR system, this company has saved tremendous costs on night shift expense, while enhancing their corporate building security.



▶ **Staff Parking Lot**

Installation: GV-LPR + GV-DVR

Numerous factories adopt GeoVision GV-DVR and GV-LPR systems to monitor the surroundings and the entrance security. A big factory lot accommodates about 1000 vehicles parking everyday. The GeoVision DVR-LPR solution has been integrated well with all security equipments already in place. Not only can it save cost, but its Center Monitoring function has created a seamless surveillance for the factories



▶ **Airport Parking Lot**

Installation: GV-LPR

After careful research and consulting with GeoVision distributors in Europe, a famous East Europe international airport employed GeoVision GV-LPR system to integrate with their Control Center at the airport parking lot. It is used to monitor all authorized staff vehicles or visitors cars at the parking space, and also to efficiently manage all lease parking spaces.



▶ **Apartment/Condo**

Installation: GV-LPR

Many apartments, condominiums and multifamily housing are at great risk of parking lot security, in part because unauthorized vehicles are using fake copies of identity cards or counterfeit remote control to intrude the parking lot. This illegal intrusion issue has caused management problem and led to poorer living quality.

GeoVision GV-LPR system is a reliable and economical solution that can effectively help apartments and condos solve the problem. The apartments and condos managers need to register all approved plate numbers in the system database in advance. It is suggested that only adjacent entry points or a single gate should be linked to the system and accessible to registered vehicles. The GV-LPR System can record vehicles' license numbers, drivers' faces, and entry and exit time, all major deterrents to criminals and intrusions; it can assist police investigation as well.



▶ **Law Enforcement**

Installation: GV-LPR

GeoVision GV-LPR system is not only used in commercial parking management but also in law enforcement to detect stolen vehicles. Taiwan traffic police have successfully utilized GV-LPR systems for stolen car search. To correlate GV-LPR with car search, the police need to build or import a stolen car database into the GV-LPR system first.

Anytime, anywhere when a car passes through road sections where cameras are installed, the license plate number will be captured and transmitted to the LPR system to recognize and compare with the database immediately. If the number is verified as a stolen car, GV-LPR system could instantly notify the police around to trace the stolen car and hunt down the criminal.



▶ **Schools**

Installation: GV-LPR+GV-DVR+GV-Center V2

Due to the shortage of parking place in Taipei, many schools have leased the parking space to the public after the school hours. In order to maintain parking lot safety, many schools adopt GeoVision's total surveillance solution using GV-LPR, GV-DVR, and GV-Center V2. The video surveillance solution provides schools with the ability to remotely monitor lot entry and exit points, allows access for cars with registered plate numbers, and limits entrance to unauthorized cars. Some schools also utilize GeoVision central monitoring service to ensure lots under remote surveillance 24/7 and provide a secure environment for lessee.



▶ **Motels**

Installation: GV-LPR

Motel managers need efficient and economical solutions to maintain ongoing security operation, while keeping security management in an unobtrusive manner to customers.

Many motels in Taiwan have installed GV-LPR systems as a method to thwart so-called unwelcome customers, other than general surveillance purpose. These motels have unwelcome customer database which even include the customers car license plate numbers in the LPR system. When a car of unwelcome guest gets near to motel gate, the system could send audio alarms to notify the parking attendants of the approach of suspicious car, and they could turn down customers in blacklist and limit their access to motels.



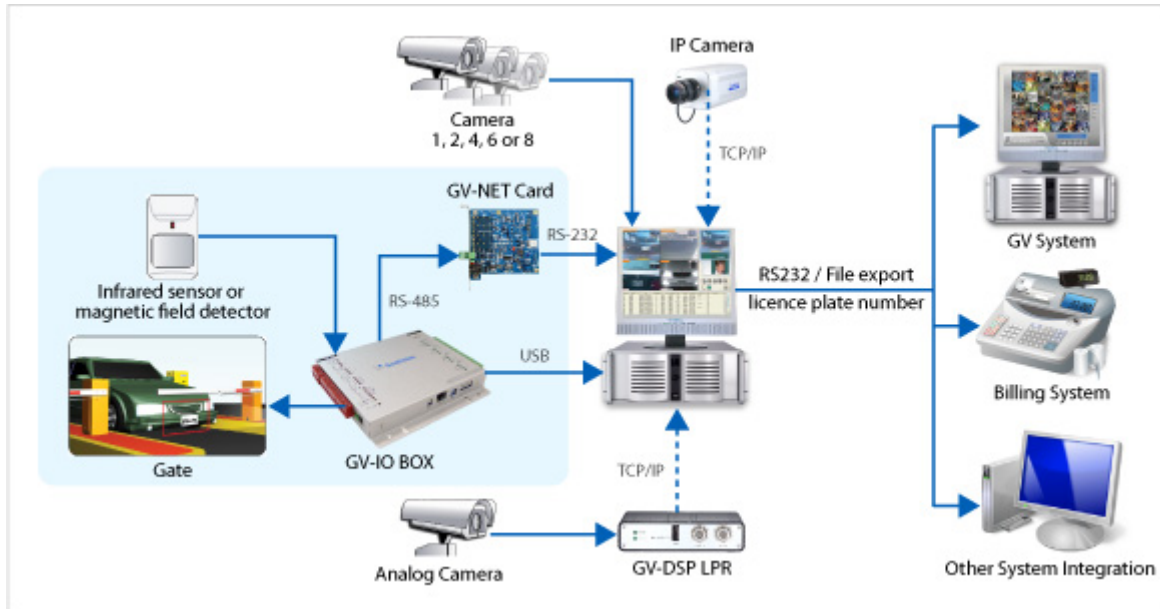
▶ **Transportation**

Installation: GV-LPR

A famous forwarder in East Europe is using GV-LPR to manage vehicle flow at the logistics center entrances. 16 cameras were connected to the LPR system to cover every inch of the center field. Traffic control in logistics center has been greatly improved ever since.

Several European truck companies install GV-LPR in logistic stations to monitor truck entry and exit. Time log of truck entry and exit from each station are logged in the GV-LPR to provide company managers with a better quality management method.





KEY FEATURES

- ▶ High recognition rate: 99% (at best performance)
- ▶ High recognition speed: < 0.2 second
- ▶ Support up to 8 I/O Trigger or 8 Motion Detection lanes
- ▶ Support Hardware Watchdog
- ▶ Support image up to 720 x 480 (NTSC) / 720 x 576 (PAL) providing higher accuracy
- ▶ Integrate with GV-series DVR to retrieve video footage by license plate number
- ▶ Vehicle counter feature tracks number of vehicles remaining in the parking lot by counting vehicles entering and exiting the gate
- ▶ Camera overview brings focuses on either the vehicle or the driver
- ▶ License plate recognition database are processed and stored in Microsoft Access Database for easy and multiple applications
- ▶ Multiple recognition technology is applied until a recognition result is reached
- ▶ Alarm will be triggered when an unauthorized or unrecognizable vehicle is spotted
- ▶ Picture-in-Picture window provides camera overview and the last recognized image
- ▶ Video or AVI file is used as recognition input source
- ▶ Digital watermark technology is applied to verify authenticity of video clips
- ▶ Text overlay displays license plate numbers on recorded video image
- ▶ Activate recognition by sensor triggers, video motion detection or Hot Key
- ▶ Recognition result triggers I/O Relay or user-defined application
- ▶ Recognize and display license plate image registered in database
- ▶ Retrievable vehicle entry and exit records by license plate number
- ▶ JPEG format support allows approximately 2 million JPEG images to be saved in a 160 GB HDD
- ▶ Auto recycle for image storage and database backup

SPECIFICATIONS (Minimum System Requirements)

Models	GV-LPR-1	GV-LPR-2	GV-LPR-4	GV-LPR-6	GV-LPR-8
Number of Lanes	1	2	4	6	8
Total FPS	30 FPS	60 FPS	120 FPS	240 FPS	240 FPS
FPS / Camera	30 FPS				
CPU	Core2 Duo E6300 / 1.86 GHz	Intel Core2 Quad Q6600 / 2.4 GHz	Intel Core2 Quad Q6600 / 2.4 GHz	Intel i7920 2.67 GHz	Core i7 3.4 GHz
OS Supported	32-bit	Windows XP / 7 / Server 2008			
	64-bit	Windows 7 / Server 2008			
HDD	250 GB				
RAM	DDR2 1GB	DDR2 2GB	DDR2 2GB	DDR3 1333 2GB	DDR3 1333 2GB

Note:

1. The specifications are determined by using the combination of GV-LPR System and GV-System in which a total of 32 channels are supported. Within the 32 channels, 8 channels of analog cameras are used for license plate recognition, and 8 channels of 1.3 megapixel IP cameras are for overview monitoring.
2. For users who want to connect IP cameras, 64-bit OS is required and it is highly suggested to connect 1.3 megapixel IP cameras for best system performance.
3. The camera used for Motion Detection function needs to achieve 30 fps at least. The camera used for I/O Trigger function needs to achieve 15 fps at least.

CAMERA REQUIREMENTS

Illumination	0.05 LUX or lower
Minimum Resolution	480 Horizontal Line
Auto Electronic Shutter	1 / 60 ~ 1 / 100,000 sec
Auto White Balance Compensation	Required
Backlight Compensation	Required

ACCESSORY

▶GV-Net Card V3.1



▶GV-IO Box 4/8/16 ports



▶GV-LPR CAM

