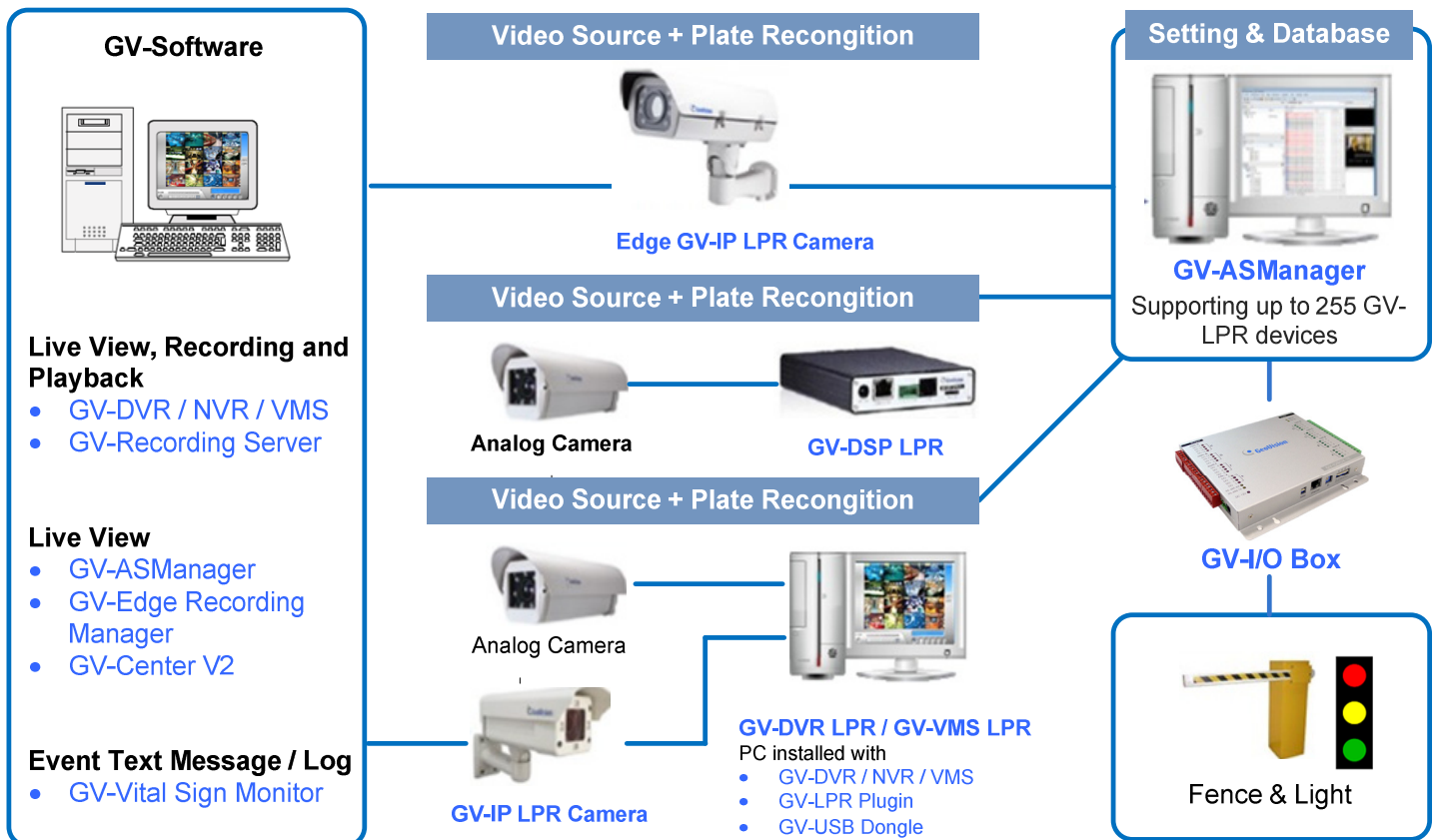


Introduction

GeoVision's License Plate Recognition is an effective and low-maintenance solution to ensure the security of parking lots, which are prone to crimes due to isolated and unstaffed corners. In addition to providing high-resolution video monitoring, the LPR solution can detect and recognize vehicle license plates upon motion or I/O trigger.

When a GV-LPR device -- Edge GV-IP LPR Camera, GV-DSP LPR, or PC-based GV-DVR LPR / VMS LPR -- detects or recognizes license plates in video sources, it sends the LPR results to the access control system GV-ASManager. Access can be granted when the detected license plate numbers match the vehicles registered in GV-ASManager's database. Alarm notifications and playing back LPR results are also supported.



Note: Edge GV-IP LPR Camera includes GV-LPR2811-DL / GV-LPR2800-DL / GV-LPR1200.

Available Versions of Machine Learning (ML) Recognition Engines

	Argentina		Australia		Austria		Belgium
	Brazil		Canada		China		Chile
	Columbia		Croatia		Czech Republic		France
	Germany		Hungary		India		Ireland
	Israel		Italy		Morocco		Mexico
	Norway		Poland		Portugal		Qatar
	Russia		Slovakia		South Africa		Spain
	Taiwan		UK		USA		Vietnam

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

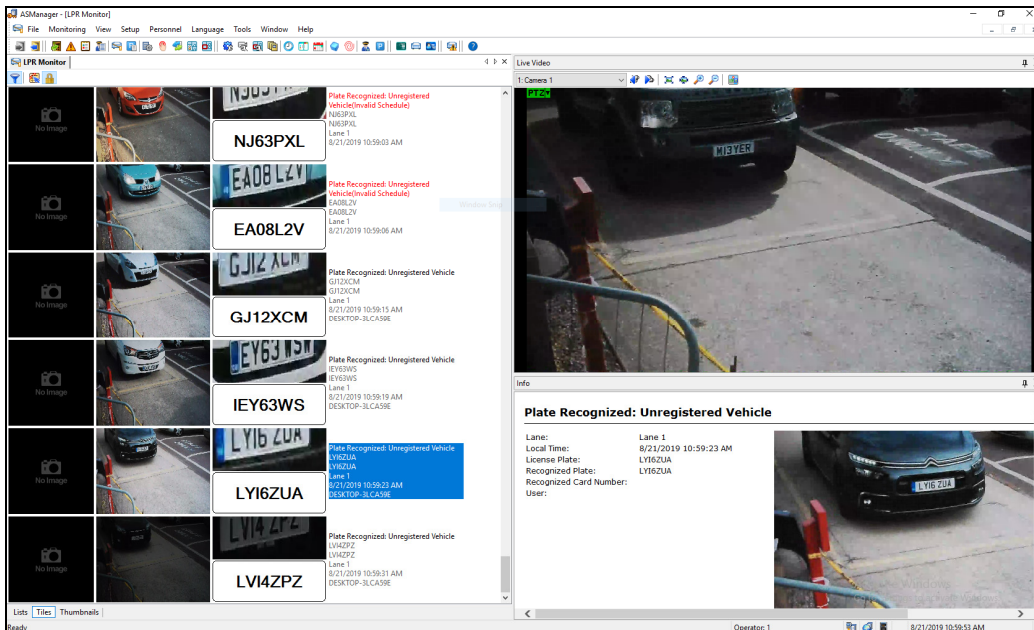
Available Versions of Deep Learning (DL) Recognition Engines

	Europe		France		Germany		Hungary
	Netherlands		Slovakia		Taiwan		UK
	Ukraine		USA - California		Vietnam		

Note: The DL recognition engines are only supported by GV-LPR Plugin V5.3.1 or later.

Features

- Control up to 255 units of GV-DSP LPR, PC-based GV-DVR LPR / VMS LPR and Edge GV-IP LPR Camera
- Up to 8 recognition channels per GV-DVR LPR / GV-VMS LPR
- Up to 100,000 vehicle data supported
- Up to 100 Web browser connections supported
- Multiple vehicles assigned to a single user available
- Import / export of vehicle data in Access or Excel file format
- Vehicle hotlist to identify stolen vehicles or other vehicles of interest
- Parking lot management to control vehicle access, the maximum stay time and number of vehicles allowed
- GV-ASWeb to remotely configure and access GV-ASManager configurations, database, snapshots and recordings
- GV-Access mobile app to remotely open LPR lanes and access live view
- UI languages supported: English, French, Hebrew, Japanese, Persian, Polish, Portuguese, Russian, Serbian, Spanish, Traditional Chinese, Turkish



System Requirements

GV-ASManager

The following are minimum system requirements to run GV-ASManager.

No of connected controllers	0-50	51-100	101-1000
OS	64-bit Windows 10 / Server 2016 / 2019		
CPU	Intel Core i3, 3.4 GHz (2 Cores, 2 Threads)	Intel Core i5, 3.4 GHz (2 Cores, 2 Threads)	Intel Core i7, 3.0 GHz (4 Cores, 8 Threads)
Memory	8 GB		16 GB
Database	MDB or Microsoft SQL database		Microsoft SQL database
Hard Disk	500 GB		1 TB
VGA	PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10		
DirectX	End-User Runtimes (November 2008)		
Software	.NET Framework 4.5 Microsoft SQL Server 2005 Express (optional)		
Browser	Internet Explorer 9.0 or later		

GV-DVR / NVR / VMS LPR (Machine Learning)

Number of LPR Channels	1-4 Channels	5-8 Channels
OS	64-bit Windows 10 / Server 2016 / 2019	
CPU	1.3 M	Intel Core i5 2400, 3.1 GHz
	2 M	Intel Core i7 4770, 3.4 GHz
Memory	2 x 2 GB Dual Channels	
Hard Disk	500 GB	
Processor Graphics	PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10	
DirectX	End-User Runtimes (November 2008)	
GV-DVR / NVR	GV-ASManager 5.1.1: (GV-LPR Plugin V5.1.4.A) + V8.8.0 GV-ASManager 5.2.0: (GV-LPR Plugin V5.3.0) + V8.8.0 GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V8.8.0 GV-ASManager V5.3.2: (GV-LPR Plugin V5.3.2) + V8.9.1 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V8.9.1	
GV-VMS	GV-ASManager 5.1.1: (GV-LPR Plugin V5.1.2) + V17.1.0 GV-ASManager 5.2.0: (GV-LPR Plugin V5.3.0) + V17.3.0 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1	
Hardware	External or internal GV-LPR Capture Dongle	

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-DVR / NVR / VMS LPR.
2. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
3. [GV-LPR Plugin](#) needs to be downloaded and installed separately. **GV-DVR / NVR LPR (with GV-LPR Plugin)** does not support Authentication Schedule and Card Mode functions.
4. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-DVR / NVR / VMS LPR (Machine Learning) + 32CH 2MP Camera Monitoring

Number of LPR Channels		1-4 Channels	5-8 Channels
OS		64-bit Windows 10 / Server 2016 / 2019	
CPU	1.3 MP	Intel Core i7 3770, 3.4 GHz	Intel Core i7 4770, 3.4 GHz
	2 MP		
Memory		2 x 4 GB Dual Channels	
Hard Disk		500 GB	
Processor Graphics		PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10	
DirectX		End-User Runtimes (November 2008)	
GV-DVR / NVR		GV-ASManager 5.1.1: (GV-LPR Plugin V5.1.4.A) + V8.8.0 GV-ASManager 5.2.0: (GV-LPR Plugin V5.3.0) + V8.8.0 GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V8.8.0 GV-ASManager V5.3.2: (GV-LPR Plugin V5.3.2) + V8.9.1 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V8.9.1	
GV-VMS		GV-ASManager 5.1.1: (GV-LPR Plugin V5.1.2) + V17.1.0 GV-ASManager 5.2.0: (GV-LPR Plugin V5.3.0) + V17.3.0 GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V17.3.0 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1	
Hardware		External or internal GV-LPR Capture Dongle	

Note

1. It is recommended to use separate PCs for GV-ASManager and GV-DVR / NVR / VMS LPR.
2. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
3. [GV-LPR Plugin](#) needs to be downloaded and installed separately. **GV-DVR / NVR LPR (with GV-LPR Plugin)** does not support Authentication Schedule and Card Mode functions.
4. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-VMS LPR (Machine Learning) + 64CH 2MP Camera Monitoring

Number of LPR Channels		1-4 Channels (*only up to 4 LPR channels are supported)
OS		64-bit Windows 10 / Server 2016 / 2019
CPU	1.3 MP	Intel Core i7 6770, 3.4 GHz
	2 MP	
Memory		2 x 4 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		PCI-Express, 1280 x 1024, 32-bit color and support DirectX 10
DirectX		End-User Runtimes (November 2008)
GV-VMS		GV-ASManager 5.1.1: (GV-LPR Plugin V5.1.2) + V17.1.0 GV-ASManager 5.2.0: (GV-LPR Plugin V5.3.0) + V17.3.0 GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V17.3.0 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1
Hardware		External or internal GV-LPR Capture Dongle

Note:

1. It is recommended to use separate PCs for GV-ASManager and GV-VMS LPR.
2. [GV-LPR Plugin](#) needs to be downloaded and installed separately.
3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
4. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-NVR / VMS LPR (Deep Learning)

Number of LPR Channels		1-4 Channels	5-8 Channels
OS		64-bit Windows 10 (version 1909 or later) / Server 2019 (version 1909 or later)	
CPU	1.3 MP	Intel Core i5 7600, 4.1 GHz	Intel Core i7 7700, 4.2 GHz
	2 MP		
Memory		2 x 8 GB Dual Channels	
Hard Disk		500 GB	
Processor Graphics		Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later	
GV-NVR		GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V8.8.0 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V8.9.1	
GV-VMS		GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V17.3.0 / V18.1.1 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1	
Hardware		External or internal GV-LPR Capture Dongle	

- Note:**
1. It is recommended to use separate PCs for GV-ASManager and GV-NVR / VMS LPR.
 2. [GV-LPR Plugin](#) needs to be downloaded and installed separately.
 3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
 4. The utilization of the graphics processor of 7th-gen Intel Core i5 / i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible, other brands of CPU do not work with the DL engine.
 5. DL engine only supports H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
 6. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-NVR / VMS LPR (Deep Learning) + 32CH 2MP Camera Monitoring

Number of LPR Channels		1-8 Channels
OS		64-bit Windows 10 (version 1909 or later) / Server 2019 (version 1909 or later)
CPU	1.3 MP	Intel Core i7 8700, 4.6 GHz
	2 MP	
Memory		2 x 8 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later
GV-NVR		GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V8.8.0 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V8.9.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V8.9.1
GV-VMS		GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V17.3.0 / V18.1.1 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1
Hardware		External or internal GV-LPR Capture Dongle

- Note:**
1. It is recommended to use separate PCs for GV-ASManager and GV-NVR/VMS LPR.
 2. [GV-LPR Plugin](#) needs to be downloaded and installed separately.
 3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
 4. The utilization of the graphics processor of 8th-gen Intel Core i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible, other brands of CPU do not work with the DL engine.
 5. DL engine only supports H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
 6. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

GV-VMS LPR (Deep Learning) + 64CH 2MP Camera Monitoring

Number of LPR Channels	1-4 Channels (*only up to 4 LPR channels are supported)	
OS	64-bit Windows 10 (version 1909 or later) / Server 2019 (version 1909 or later)	
CPU	1.3 MP	Intel Core i7 9700, 4.7 GHz
	2 MP	
Memory	2 x 8 GB Dual Channels	
Hard Disk	500 GB	
Processor Graphics	Intel UHD Graphics 630 or Intel HD Graphics 630 Driver date: 2019/09/25 or later Driver version: 26.2.100.7262 or later	
GV-VMS	GV-ASManager 5.3.0 – 5.3.1: (GV-LPR Plugin V5.3.1) + V17.3.0 / V18.1.1 GV-ASManager V5.3.2 – V5.3.3: (GV-LPR Plugin V5.3.2 – V5.3.3) + V17.4.1 / V18.2.1 GV-ASManager V5.3.4: (GV-LPR Plugin V5.3.4) + V17.4.3 / V18.2.1	
Hardware	External or internal GV-LPR Capture Dongle	

- Note:**
1. It is recommended to use separate PCs for GV-ASManager and GV-VMS LPR.
 2. **GV-LPR Plugin** needs to be downloaded and installed separately.
 3. If no LPR dongle is inserted, license plates will be captured but the plate numbers will not be recognized.
 4. The utilization of the graphics processor of 9th-gen Intel Core i7 or above is required, which only works when a monitor is connected to its PC, and only Intel Core processors are compatible, other brands of CPU do not work with the DL engine.
 5. DL engine only supports H.264 and H.265 video codecs with resolutions of **1920 x 1080 and 1280 x 720**.
 6. The above system requirements were determined with a bit rate of 2 Mbps for 1.3 MP resolution and 2 MP resolution.

License Purchase

Free License	N/A
Maximum License	8 channels
Increment for Each License	1 channel
Dongle Type	Internal or external
Optional Combinations	<ol style="list-style-type: none"> 1. LPR 2. GV-VMS + LPR (1 to 8 licenses) 3. GV-NVR + LPR (1 to 8 licenses) 4. GV-DVR + LPR (1 to 8 licenses)

Note: LPR Dongles can be used in conjunction with GV-VMS Software Licenses.

GV-DSP LPR and GV-LPR1200 Compatible Versions

GV-ASManager V4.2.1 – 4.2.2 is only compatible with GV-DSP LPR firmware V2.0.3.

GV-ASManager V4.2.3 is only compatible with GV-DSP LPR firmware V2.0.4.

GV-ASManager V4.3 – 4.3.5 is only compatible with GV-DSP LPR firmware V2.10 and GV-LPR1200 V1.01.

GV-ASManager V4.4 – 4.4.3 is only compatible with GV-DSP LPR firmware V2.20 and GV-LPR1200 V1.1.

GV-ASManager V5.0 – 5.0.2.0 is only compatible with GV-DSP LPR firmware V2.30 and GV-LPR1200 V2.0.

GV-ASManager V5.1.0.0 – 5.3.3 is only compatible with GV-DSP LPR firmware V2.33 and GV-LPR1200 V2.03.

Options

For GV-DVR / NVR / VMS LPR

GV-IO Box Series	GV-IO Box series provides 4 / 8 / 16 inputs and relay outputs, and supports both DC and AC output voltages, with optional support for Ethernet module and 4E additionally supporting PoE connection.
GV-IP LPR Camera 5R	GV-IP LPR Camera 5R is a 1.3 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 60 km/hr (37 mph) or less.
GV-LPC1100	GV-LPC1100 is a 1.3 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 120 km/hr (75 mph) or less.
GV-LPC1200	GV-LPC1200 is a 1 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 200 km/h (124.27 mph) or less.
GV-LPR1200	GV-LPR1200 is a 1 MP B/W network camera designed for recognition of reflective license plates on vehicles traveling at 200 km/h (124.27 mph) or less. With a built-in LPR processor, the camera can recognize the plate numbers and comparing the captured license plates on edge.
GV-LPC2210	GV-LPC2210 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 120 km/h (75 mph) or less.
GV-LPC2211	GV-LPC2211 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 120 km/h (75 mph) or less.
GV-LPC2011	GV-LPC2011 is a 2 MP color network camera designed for recognition of reflective license plates on vehicles traveling up at 60 km/h (37 mph) or less.
GV-LPR2800-DL	GV-LPR2800-DL is a deep learning, varifocal, 2 MP color network camera designed for recognition of non-reflective license plates on vehicles traveling at up to 100 km/h (62 mph).
GV-LPR2811-DL	GV-LPR2811-DL is a deep learning, motorized, 2 MP color network camera designed for recognition of non-reflective license plates on vehicles traveling at up to 100 km/h (62 mph).

For GV-DVR LPR and GV-DSP LPR

GV-LPR Cam 20A ANPR Camera	GV-LPR CAM 20A provides 570 TVL high-contrast license plate recognition video to GV-DVR LPR or GV-DSP LPR that identifies license plates. The camera features 24 high-efficient LEDs for an illumination range of 15 ~ 25 m (49.21 ~ 82.02 ft).
GV-DSP LPR V3	GV-DSP LPR is a Linux-based license plate recognition system built in a small box. Integrating with a Web server, the GV-DSP LPR can host its own Web site and compare captured license plates with the database downloaded from GV-AS Manager and open a gate barrier when there is a match.