

# GV-DSP LPR

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## *User's Manual* *Firmware V1.25*



Before attempting to connect or operate this product,  
please read these instructions carefully and save this manual for future use.



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GeoVision, Inc.  
9F, No. 246, Sec. 1, Neihu Rd.,  
Neihu District, Taipei, Taiwan  
Tel: +886-2-8797-8377  
Fax: +886-2-8797-8335  
<http://www.geovision.com.tw>

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# Important Notice

GV-DSP LPR of firmware version 1.25 only supports the following versions of recognition engines:

No.	Country	Engine Version	No.	Country	Engine Version
1	Arabia	×	20	Israel	V3100
2	Australia	V4010	21	Italy	V4030
3	Austria	V2000	22	Japan	×
4	Belgium	V2000	23	Malaysia	×
5	Brazil	V3100	24	Mexico	V3100
6	Canada	×	25	Norway	V2000
7	Chile	V3200	26	Poland	V2000
8	China	V3100	27	Portugal	V3100
9	Columbia	V2000	28	Serbia	×
10	Croatia	×	29	Slovenia	×
11	Cyprus	V2000	30	South Africa	V3100
12	Czech	V3200	31	Spain	V3110
13	France	×	32	Taiwan	V4020
14	Germany	V2000	33	Thailand	×
15	Global	V2000	34	Turkey	×
16	Guernsey	V2000	35	UAE	V2000
17	Hong Kong	×	36	UK	V4030
18	Hungary	V2000	37	USA	V3110
19	Ireland	V2000			

# Chapter 1 Introduction

The GV-DSP LPR is a Linux-based system built in a small box without a fan and hard drive. Integrating with a web server, the GV-DSP LPR can deliver live images and host its own web site, as well as sending recognition results and captured images to the GV-LPR System and GV-LPR Center. The GV-DSP LPR is beneficial for license plate recognition over long distance and in an outdoor environment.

## 1.1 Key Features

- Non-PC based solution for 1 port traffic or mobile license plate recognition
- Wide operating temperature range
- Web-based configuration for image, security settings and firmware upgrade
- Recognition triggered by video motion detection or sensor inputs
- Compatible with GV-LPR System and GV-LPR Center
- Digital watermark
- Hardware watchdog
- IP address filtering
- UMTS
- Recognition results, images and live videos compatible with other system through OCX SDK

## 1.2 Packing List

1. AC Power Cord x 1
2. Power Adaptor x 1
3. Wall Hook x 1
4. Conical Anchor x 4
5. Screw x 4
6. GV-LPR Software DVD x 1
7. GV-DSP LPR User's Manual on Software DVD
8. GV-LPR User's Manual on Software DVD
9. USB dongle for GV-LPR protection

## 1.3 System Requirements

These are the requirements for the computer that displays the image or controls the GV-DSP LPR.

- **OS:** Microsoft Windows 2000 / XP / 2003 / Vista
- **Web Browser:** Internet Explorer V6.0 or later

## 1.4 Physical Description

This section identifies the various components of the GV-DSP LPR.

### 1.4.1 Front View



Figure 1-1

No.	Name	Function
1	Video In	Connects a camera.
2	TV-Out	Connects an external monitor to output live videos and recognition results immediately. The TV-Out port can be used for adjusting the camera view when the unit is installed at the place where the Internet is not accessible.
3	Microphone In	Connects a microphone for audio input. (NOT functional now)
4	Audio Out	Connects a speaker or stereo device for audio output. (NOT functional now)
5	SD Card Slot	Inserts a removable Secure Digital (SD) card. The SD card is used for storing recognition images, and backing up offline data when connecting to the LPR Center or GV-LPR System.
6	Reset Button	Resets the unit and keeps all current configurations. When you press the Reset button, all three LED lights will be on. Wait until the Disk Full LED is off and Ready LED is on. Then you successfully reset the unit.
7	Default Button	Sets all configurations to their factory settings. To use this function, follow these steps: <ol style="list-style-type: none"> <li>1. Press and hold the <b>Default</b> button while press and then release the <b>Reset</b> button.</li> <li>2. Release the <b>Default</b> button only after Power LED is on and Ready and Disk Full LEDs are off.</li> <li>3. Wait until Ready LED is on. Then you successfully return to the default settings.</li> </ol>
8	Power LED	Indicates the power is supplied.
9	Ready LED	Indicates the unit is ready for connection.
10	Disk Full LED	Indicates the SD card or hard drive is full.



## 1.4.2 Rear View

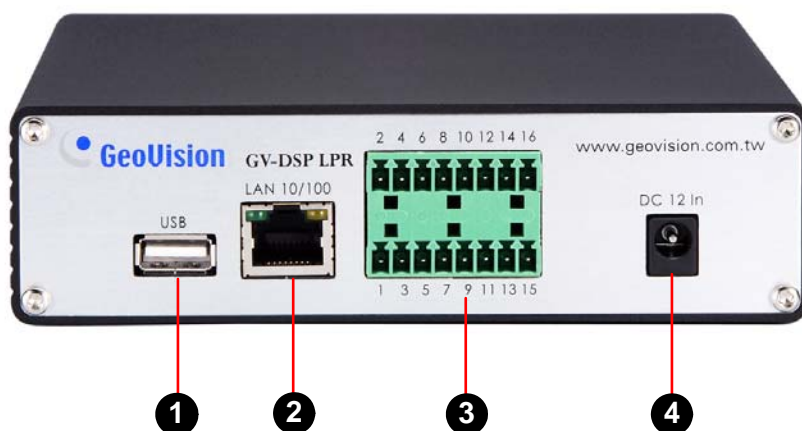


Figure 1-2

No.	Name	Function
1	USB Port	Connects to a UMTS modem. For details on UMTS, see <i>4.4.2 UMTS Setting</i> .
2	Ethernet Port	Connects to a 10/100 Ethernet network.
3	I/O Terminal Block	Connects digital inputs, relay outputs, RS-232 device and Wiegand device. For details, see <i>Chapter 6 The I/O Terminal Block</i> . Note: Wiegand and RS-232 interface are NOT functional now.
4	DC In 12V	Connects the supplied power adaptor.

## Chapter 2 Getting Started

This section provides basic information to get the GV-DSP LPR working on the network.

### 2.1 Installing on a Network

These instructions describe the basic connections to install the GV-DSP LPR on the network.

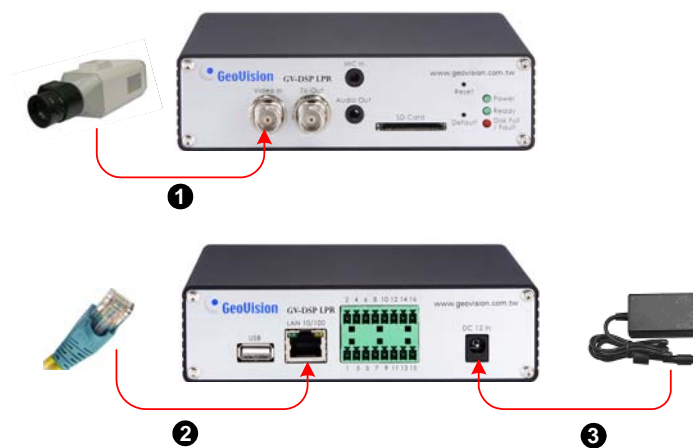


Figure 2-1

1. Connect the video output of your camera to the BNC video input.
2. Connect the hub or switch on the LAN to the unit's 10/100 Mbps Ethernet port.
3. Connect the power supply to the power input.
4. Wait until both Power and Ready LEDs are on and then you can set the IP address for the unit.

### 2.2 Assigning an IP Address

Designed for use on an Ethernet network, the GV-DSP LPR must be assigned an IP address to make it accessible.

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**Note:** The GV-DSP LPR has a default address of **192.168.0.230**. The computer used to set the IP address must be under the same IP and subnet sequence assigned to the unit.

---

1. Open your web browser, and type the default IP address <http://192.168.0.230/>
2. In both Login and Password fields, type the default value **admin**. Click **Apply**.
3. In the left menu, select **Network** and then **LAN** to begin the network settings.

**GeoVision**

- Video and Motion
- I/O Control
- Events and Alerts
- Network
  - Status
  - LAN**
  - UMTS
  - Advanced
  - TCP/IP
  - IP Filtering
- Management
- Logout

**LAN Configuration**

In this section you can configure LPR to work inside of LAN.

**LAN Configuration**

☐ Dynamic IP address Select this option to obtain IP address from a DHCP server  
☐ Static IP address Select this option to enter a Static IP address manually  
☒ PPPoE Select this option to establish a DSL connection

Username:

Password:

**Configure connection parameters**

IP Address:   
 Subnet Mask:   
 Router/Gateway:   
 Primary DNS:   
 Secondary DNS:  (Optional)

Figure 2-2

4. Select **Static IP address**. Type IP Address, Subnet Mask, Router/Gateway, Primary DNS and Secondary DNS in the **Configure connection parameters** section.
5. Click **Apply**. The GV-DSP LPR is accessible by entering the assigned IP address on the web browser.

### Important:

- **Dynamic IP Address, PPPoE and UMTS** should only be enabled if you know which IP address the GV-DSP LPR will get from the DHCP server or ISP. Otherwise you must use the Dynamic DNS service to obtain a domain name linked to the GV-DSP LPR's changing IP address first.

For details on Dynamic IP Address and PPPoE settings, see *4.4.3 Advanced TCP/IP*.

- If **Dynamic IP Address, PPPoE or UMTS** is enabled and you cannot access the unit, you may have to reset it to the factory default and then perform the network settings again.

To restore the factory settings, see the **Default** button in *1.4.1 Front View*.

## 2.3 Configuration Basics

Once the camera is properly installed, these important features can be configured using the browser-based configuration page and are discussed in the following sections in this manual:

- **Date and time adjustment:** see *4.5.1 Date & Time Setting*.
- **Login and privileged passwords:** see *4.5.3 User Account*.
- **Network gateway:** see *4.4 Network*.
- **Video attribute (Brightness, Contrast, Saturation and Hue):** see *3.2.2 Adjustment of Video Attributes*.
- **Video format, resolution and frame rate:** see *4.1.1 Video Settings*.

## Chapter 3 Accessing the GV-DSP LPR

Two types of users are allowed to log in the GV-DSP LPR: Administrator and Guest. The Administrator has unrestricted access to all system configurations, while the Guest has the access to live view and network status only.

### 3.1 Accessing Your Surveillance Images and Recognition Results

Once installed, your GV-DSP LPR is accessible on the network. Follow these steps to access your surveillance images and recognition results:

1. Start the Internet Explorer browser.
2. Enter the IP address or domain name of the GV-DSP LPR in the **Location/Address** field of your browser.

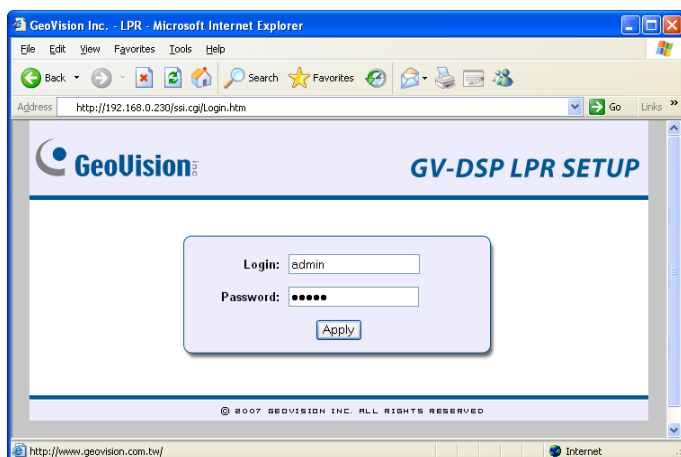


Figure 3-1

3. Enter a login name and password.
  - The default login name and password for Administrator are **admin**.
  - The default login name and password for Guest are **guest**.
4. A video image, similar to the example on Figure 3-2, is now displayed in your browser.

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**Note:** To enable the updating of images in Internet Explorer, you must set your browser to allow ActiveX Controls and perform a once-only installation of GeoVision's ActiveX component onto your computer.

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## 3.2 Functions Featured on the Main Page

This section introduces the features of the Live View window and Network Status on the main page. The two features are accessible by both Administrator and Guest.

### Main Page of Guest Mode

- ▼ Video and Motion
  - ▶ Live View
- ▼ Network
  - ▶ Status

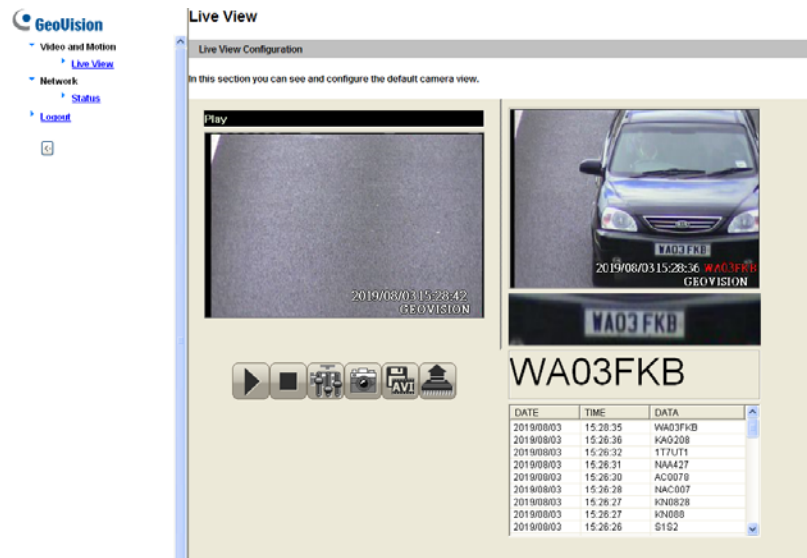


Figure 3-2

### 3.2.1 The Live View Window

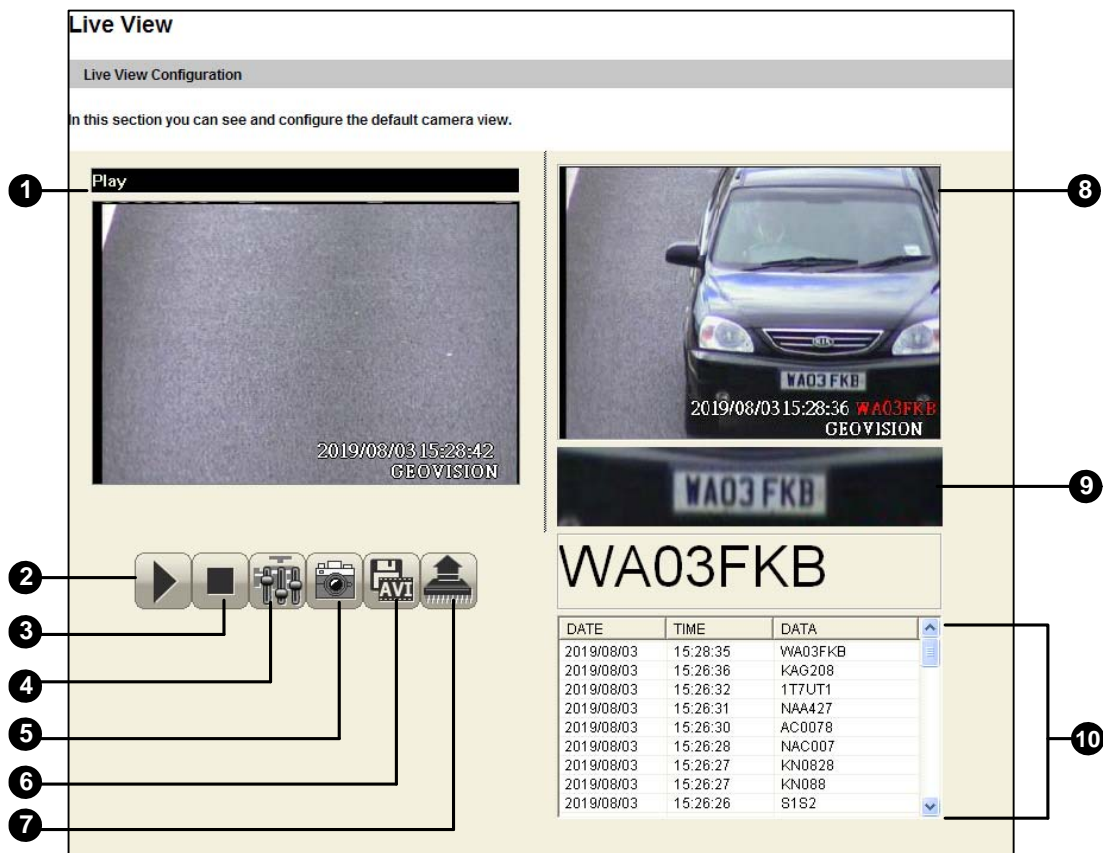


Figure 3-3

No.	Name	Function
1	Live View	Displays live video.
2	Play	Starts the connection and plays live video.
3	Stop	Terminates the connection.
4	Remote Config	Adjusts video attributes of the live video.
5	Snapshot	Takes a snapshot of live video.
6	File Save	Records the live video and saves in .avi format.
7	Firmware Upgrade	Upgrades the firmware of GV-DSP LPR.
8	Recognition Display	Displays the recognition image.
9	Number Display	Displays the plate number.
10	Record List	Lists the dates and times of detection results.

### 3.2.2 Adjustment of Video Attributes

To adjust video attributes of the live video, follow these steps:

1. Click the **Remote Config** button (No. 4, Figure 3-3).
2. Move the slide bars (Brightness, Contrast, Saturation and Hue) to adjust video attributes. Only the Administrator is allowed to adjust the configurations.

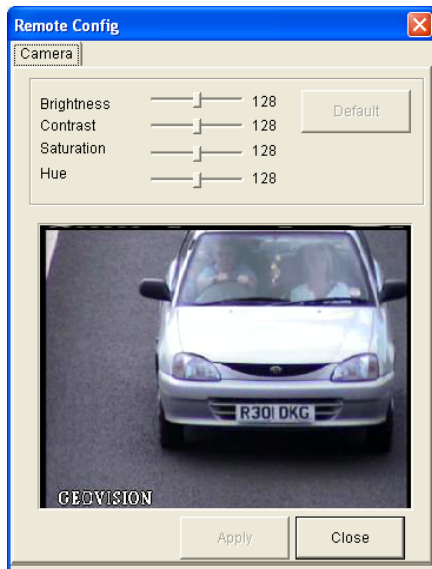


Figure 3-4

### 3.2.3 Snapshot of a Live Video

To take a snapshot of a live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 3-3). The Snapshot window appears.
2. Click the **Print** button to print out the displayed image. Or click the **Save** button to save the image to the local computer.

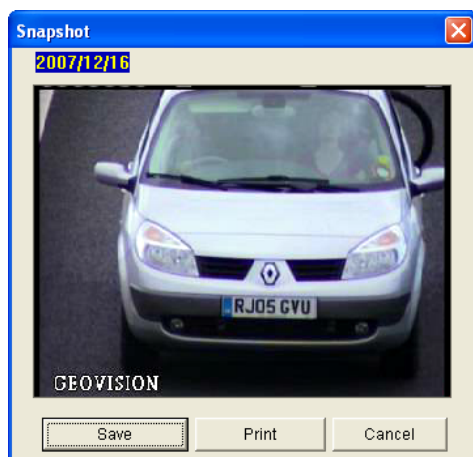


Figure 3-5



### 3.2.4 Video Recording

You can record live video for a certain period of time to your local computer.

1. Click the **File Save** button (No.6, Figure 3-3). The Save As dialog box appears.

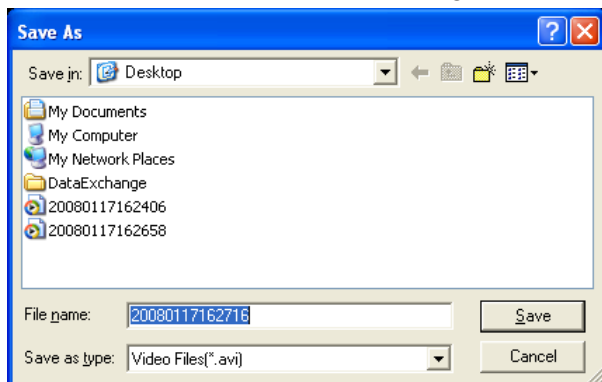


Figure 3-6

2. Specify **Save in**, type the **File name**, and click the **Save** button to start recording.
3. To stop recording, click the **Stop** button (No.3, Figure 3-3).

### 3.2.5 Firmware Upgrade

This window allows you to upgrade the firmware over LAN. For details, see Chapter 5.

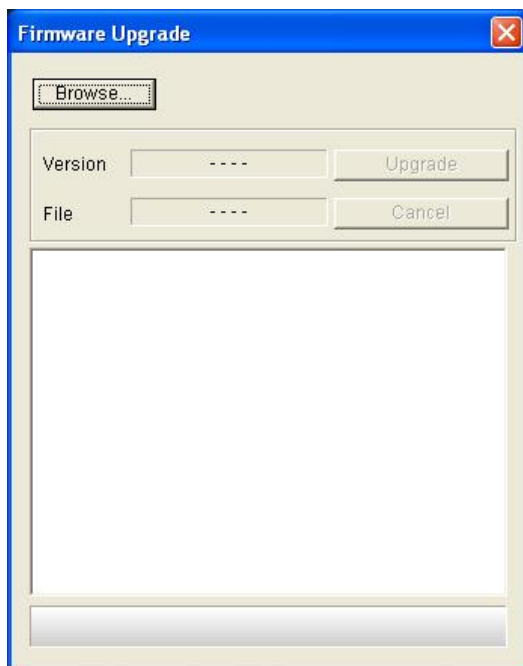


Figure 3-7

### 3.2.6 Network Status

To view the network status, in the left menu, click **Network** and select **Status**.

Network Status Information	
Current Status Information	
In this section you can see an overview of LPR status.	
interface:	Wired
IP Acquirement:	Fixed
MAC Address:	0013E20100F1
IP Address:	192.168.1.21
Subnet Mask:	255.255.254.0
Gateway:	192.168.0.1
Domain Name Server 1:	192.168.0.1
Domain Name Server 2:	192.168.0.2

*Figure 3-8*

# Chapter 4 Administrator Mode

The Administrator can access the system configuration via the Internet. Four categories of configurations are involved in the system configuration: **Video and Motion**, **I/O Control**, **Network**, and **Management**.

- ▼ **Video and Motion**
  - ▶ Live View
  - ▶ Video Settings
  - ▶ Detection Mode
  - ▶ LPR Center
  - ▶ Recognition Engine Settings
- ▼ **I/O Control**
  - ▶ Input Setting
  - ▶ Output Setting
- ▼ **Events and Alerts**
  - ▶ FTP
- ▼ **Network**
  - ▶ Status
  - ▶ LAN
  - ▶ UMTS
  - ▶ Advanced TCP/IP
  - ▶ IP Filtering
- ▼ **Management**
  - ▶ Date and Time
  - ▶ Storage Settings
  - ▶ User Account
  - ▶ Log Information
  - ▶ Tools
- ▼ **Logout**

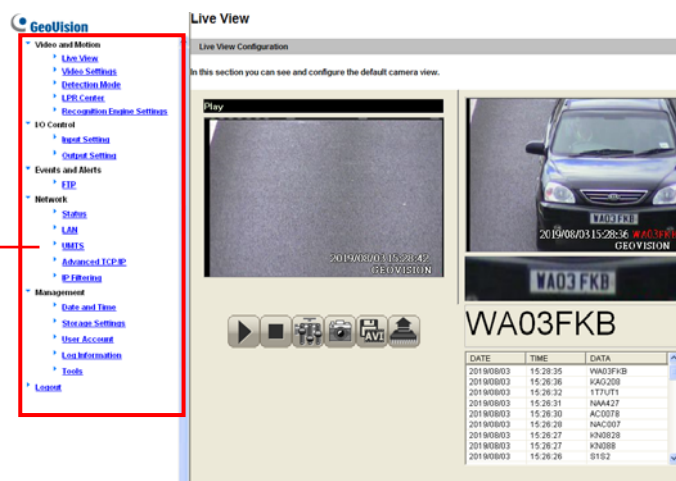


Figure 4-1

## 4.1 Video and Motion

This section includes video settings and detection methods to activate license plate recognition.

### 4.1.1 Video Settings

#### Video Settings

In this section you can define your country for engine and video signal type.

##### Engine Setting

Country UK

##### Video Signal Type

	Signal Format	Resolution	Live Resolution	Frames per second
<input checked="" type="radio"/>	NTSC	720*480	<span>360*240</span>	<span>10 (360*240 only)</span>
<input type="radio"/>	PAL	720*576	<span>360*288</span>	<span>10 (360*288 only)</span>
<input type="radio"/>	AUTO	ATUO	<span>CIF</span>	<span>10 (360*288 only)</span>

(Note: If you selected AUTO mode, please check video input port had connected and video singal had transmitted.)

☐ Overlay Text GEOVISION

☐ Watermark

☐ Overlay Time

Text Alignment Down Left

Save Image Size CIF

##### TV OUTPUT Port Setting

Frames per second 10

Overlay Plate and Time : Plate ID and Time

Apply

Figure 4-2

**[Engine Setting]** Select the country where you installed the system. The recognition engine performs license plate recognition by country.

**[Video Signal Type]** The GV-DSP LPR supports both NTSC and PAL video signals. The Administration can use automatic sensing by selecting **AUTO**, or manually select **NTSC** or **PAL**.

There are several resolution and frame rates available. Note that **10** fps is only available when the resolution is set to 360 x 240 (360 x 288).

NTSC	PAL
720 x 480	720 x 576
360 x 240	360 x 288

Frame Rate	1, 3, 5, 7, 10
------------	----------------

- **Overlay Text:** Enter a text message that is overlaid on live and captured images, e.g. company name.
- **Watermark:** Enable the watermark overlay that appears on captured images.
- **Overlay Time:** Enable the time stamp that appears on live and captured images.
- **Text Alignment:** Select a position for the text and time stamp overlay that appear on live and captured images, e.g. down left, down right, top left or top right.
- **Save Image Size:** Select the size of the captured image that is saved to the SD card.

**[TV Output Port Setting]** The unit allows the direct connection of an external monitor to output live images and recognition results immediately. When the unit is installed at the place where the Internet is not accessible, the TV-Out port can be used for camera adjustment to make sure the image of license plate is captured properly. Select the frame rate and text overlay. The default settings are 10 fps, and overlaid Plate ID and Time on the image.

## 4.1.2 Detection Mode

You can activate license plate recognition by motion detection or sensor triggers. For motion detection, up to 8 detection areas can be defined; whenever vehicles cross the defined detection areas, the license plate recognition will be activated.

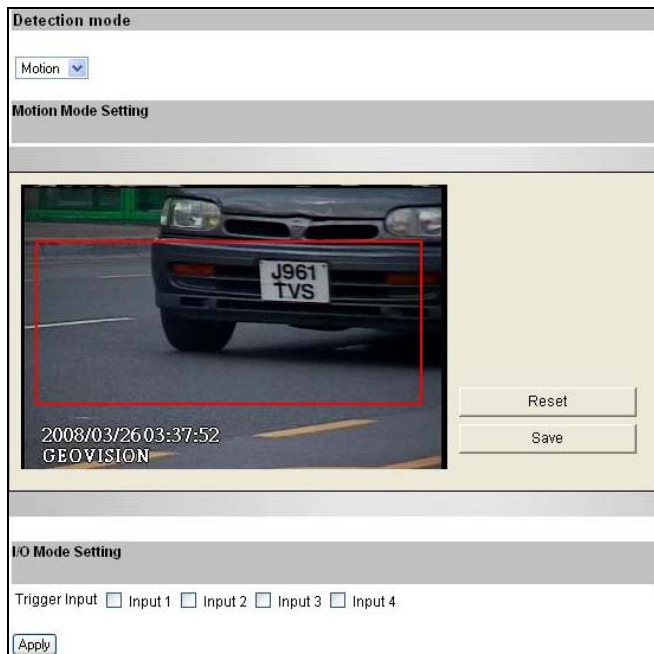


Figure 4-3

1. From the drop-down list on top left, select the method to activate license plate recognition.
  - **Disable:** Deactivate recognition.
  - **Motion:** Activate recognition by motion detection.
  - **I/O:** Activate recognition by input triggers. If this option is selected, choose which inputs (Input 1 to Input 4) will trigger recognition in the **I/O Mode Setting** section.
2. To configure the area of motion detection, first click **Reset** to clear the default setting. Then drag the mouse button to select an area of the image. You can define up to 8 areas to outline your detection areas. Every time when an area is selected, you will be prompted for confirmation.
3. Click **Save** to save the defined areas.
4. Click **Apply** to take effect.

For the related settings of input devices, see [4.2.1 Input Setting](#).

### 4.1.3 LPR Center

When the alarm events of motion detection and sensor trigger occur, the GV-LPR Center can get alerts by recognition results and captured images.

**LPR Center**

**LPR Name Setting**

Name:

**Period of Connection Checking (Second)**

Set time interval:

**Connection Port Settings:**

POS Port number:

POS ACK Port number:

LPR Live Center Port:

**Center Remote Control**

Control Pin ☐ Output 1 ☐ Output 2 ☐ Output 3 ☐ Output 4

**Center IP setting**

No.	IP Address	Port number	Offline Backup	Customize	Connect Status
1	192.168.0.151	7550	Disable <input type="button" value="Change"/>	<input type="button" value="Clear"/>	Disconnect

Add New Center IP Address:

Port number:

Offline Backup:

Figure 4-4

**[LPR Name Setting]** Type a descriptive name for the GV-DSP LPR.

**[Period of Connection Checking]** Set the time interval in seconds of each reconnection attempt.

**[Connection Port Settings]** Both of **POS Port** and **POS ACK Port** are used for transmitting the recognition result to GV-DVR System. The default port numbers are 4000 and 3999 respectively. The **LPR Live Center Port** is used for displaying the recognition result on the live view. When you want to access more than one GV-DSP LPR on the browser screen, set different LPR Live Center Ports for each GV-DSP LPR; otherwise you cannot see the recognition result on the live view.

**[Center Remote Control]** Select outputs allowed to be triggered by the GV-LPR Center remotely.

**[Center IP Setting]** Connect the GV-DSP LPR to the GV-LPR Center for central monitoring. The maximum of 4 GV-LPR Centers can be connected at one time.

- **Add New Center IP Address:** Type the IP address of the GV-LPR Center you want to enable connection. Then click **Apply** for connection.
- **Offline Backup:** When disconnected from the GV-LPR Center, the GV-DSP LPR can store recognition data to the SD card. When the connection recovers, the GV-DSP LPR can immediately send the stored data to the GV-LPR Center. For the Offline Backup to work, you must select **Enable saving results on SD Card** in Storage Settings (Figure 4-11) ahead.



### 4.1.4 Recognition Engine Settings

You can fine-tune the recognition engine to improve the recognition process and increase the accuracy.

Note this page is only available on the following engines: Australia, Brazil, Chile, China, Czech, Israel, Italy, Mexico, Portugal, South Africa, Spain, Taiwan, UK and USA.

### Recognition Engine Settings

In this section you can set parameters of LPR engine.

#### Recognition Engine Settings

Recognition loop:(1~20)	<input type="text" value="10"/>
Maximum number of characters :(1~16)	<input type="text" value="7"/>
Minimum number of characters:(1~16)	<input type="text" value="5"/>
Maximum height of characters:(1~720)	<input type="text" value="120"/>
Minimum height of characters:(1~720)	<input type="text" value="10"/>
Maximum numbers of Plate:(1~8)	<input type="text"/>
<input type="checkbox"/> Enable two row plate	
<input type="checkbox"/> Fast Slope Detetion Enable	
<input checked="" type="checkbox"/> Slope Detection Enable	
Minimum angle of slope:(-15~15)	<input type="text"/>
Maximum angle of slope:(-15~15)	<input type="text"/>
<input checked="" type="checkbox"/> Slant Detection Enable	
Minimum angle of slant:(-5~5)	<input type="text"/>
Maximum angle of slant:(-5~5)	<input type="text"/>
<input type="checkbox"/> Special Enable	
Maximum number of characters:(1~16)	<input type="text"/>
Minimum number of characters:(1~16)	<input type="text"/>
Number of Rules:(0~5)	<input type="text"/>
Rule1	<input type="text"/>
Rule2	<input type="text"/>
Rule3	<input type="text"/>
Rule4	<input type="text"/>
Rule5	<input type="text"/>

Figure 4-5

- **Recognition loop:** You can set the number of recognition the system will perform to the same license plate.
- **Maximum number of characters:** You can set the maximum number of characters allowed on the license plate to activate the recognition process. If the plate number exceeds the maximum limit, the system will not start the recognition.
- **Minimum number of characters:** You can set the minimum number of characters allowed on the license plate to activate the recognition process. If the plate number does not reach the minimum required, the system will not start the recognition.
- **Maximum height of characters:** You can set the maximum height of characters on the license plate in pixels to activate the recognition process.
- **Minimum height of characters:** You can set the minimum height of characters on the license plate in pixels to activate the recognition process.
- **Maximum number of plates:** You can set the maximum number of plates to be recognized simultaneously.

**[Enable two row plate]** This option can recognize two rows of characters on license plates. Note this option is only available on the Italy and UK recognition engines.

**[Fast Slope Detection Enable]** This option can increase the recognition speed by 10 % but decrease the accuracy by 3%.

**[Slope Detection Enable]** The license plate tilting in a horizontal direction can be detected.

- **Minimum angle of slope:** You can set the minimum tilt angle to be allowed to activate the recognition process.
- **Maximum angle of slope:** You can set the maximum tilt angle to be allowed to activate the recognition process.

**[Slant Detection Enable]** The license plate tilting in a vertical direction can be detected.

- **Minimum angle of slant:** You can set the minimum tilt angle to be allowed to activate the recognition process.
- **Maximum angle of slant:** You can set the maximum tilt angle to be allowed to activate the recognition process.

**[Special Enable]** This option can recognize special characters, such as Chinese characters. Note this option is only available on the Taiwan recognition engine.

- **Maximum number of characters:** You can set the maximum number of special characters to be allowed to activate the recognition process.
- **Minimum number of characters:** You can set the minimum number of special characters to be allowed to activate the recognition process.

- **Minimum number of characters:** You can set the minimum number of special characters to be allowed to activate the recognition process.
- **Number of Rules:** You can set up recognition rules to increase the recognition accuracy. For example, the letters “I” and “O” on a license plate “IO-1234” might be misidentified as the figures “1” and “0”. To improve the recognition of the plates as in the example, you can type “IO-1234” in one of the Rule fields. Up to 5 Rules can be set.

## 4.2 I/O Control

The I/O terminal block on the rear panel of the GV-DSP LPR provides the interface for digital inputs and relay outputs. For details on the I/O terminal block, see Chapter 6.

### 4.2.1 Input Setting

The GV-DSP LPR can connect up to 4 input devices, e.g. sensors.

**Input Setting**

In this section you can configure LPR digital input port (4 sets).

**Digital Input 1**

☒ Enable

Name

Normal State ☒ Open Circuit (N/O) ☐ Grounded Circuit (N/C)

Latch Mode ☒ Enable

Trigger digital output relay ☒ Output 1 ☐ Output 2 ☒ Output 3 ☒ Output 4

**Digital Input 2**

Figure 4-6

- **Normal State:** Set up the input state to trigger actions by selecting **Open Circuit (N/O)** or **Grounded Circuit (N/C)**.
- **Latch Mode:** Enable this option to have a momentary output alarm.
- **Trigger digital output relay:** Select the output(s) to be triggered after the input is activated.

## 4.2.2 Output Setting

The GV-DSP LPR can connect up to 4 output devices, e.g. alarms. There are six output signals are available: N/O (Open Circuit), N/C (Grounded Circuit), N/O Toggle, N/C Toggle, N/O Pulse and N/C Pulse. Choose the one that mostly suits the device you are using. Set the pulse duration for the pulse mode.

**Output Setting**  
In this section you can configure LPR digital output port(4 sets).

**Digital Output 1 - Normal State**

Name

Output1

☒ Open Circuit (N/O) ☐ Grounded Circuit (N/C)

Toggle Mode

☐ Open Circuit (N/O) ☐ Grounded Circuit (N/C)

Pulse Mode

☐ Open Circuit (N/O) ☐ Grounded Circuit (N/C)

Trigger Pulse Mode for

1

seconds

**Digital Output 2 - Normal State**

Figure 4-7

## 4.3 Events & Alerts

### 4.3.1 FTP

The GV-DSP LPR can act as a FTP server, receiving the images from GV-Video Server and sending its own captured images and overview images from GV-Video Server together to GV-LPR Center.

**FTP Server Setting**

**Act as FTP server**

In this section you can enable/disable LPR internal ftp server for file transfer.

☒ Enable ftp access to the LPR

Use alternative Port

Time Interval(-60~60 seconds)

Frame Interval(0~30 frames)

Figure 4-8

Follow the steps to build the connection among GV-DSP LPR, GV-Video Server and GV-LPR Center:

1. On the GV-DSP LPR, select **Enable ftp access to the LPR** to act as a FTP server and click **Apply**. The default port is 21.
2. There might be a time or a frame gap between the captured image from GV-DSP LPR and the overview image from GV-Video Server. To ensure the two images match each other, you can set the **Time Interval** or **Frame Interval**.

For example, the time difference between the captured image (GV-DSP LPR) and the overview image (GV-Video Server) is 60 seconds. To prevent from any matching errors, setting 60 in the Time Interval field can ensure the images match each other at the GV-LPR Center.

3. To connect to GV-LPR Center, in the left menu (Figure 4-1), click **Video and Motion**, click **LPR Center**, and type the IP address of the GV-LPR Center in the Add New Center IP Address field. For details, see 4.1.3 LPR Center.
4. At the GV-Video Server site, on the FTP setting page, enable the FTP function and type the IP address, User Name and Password to access the FTP server of the GV-DSP LPR. Make sure the port value is the same as that of the GV-DSP LPR.

## 4.4 Network

The Network section includes some basic but important network configurations that enable the GV-DSP LPR to be connected to a TCP/IP network.

### 4.4.1 LAN

According to your network environment, select among Static IP, DHCP, PPPoE and UMTS.

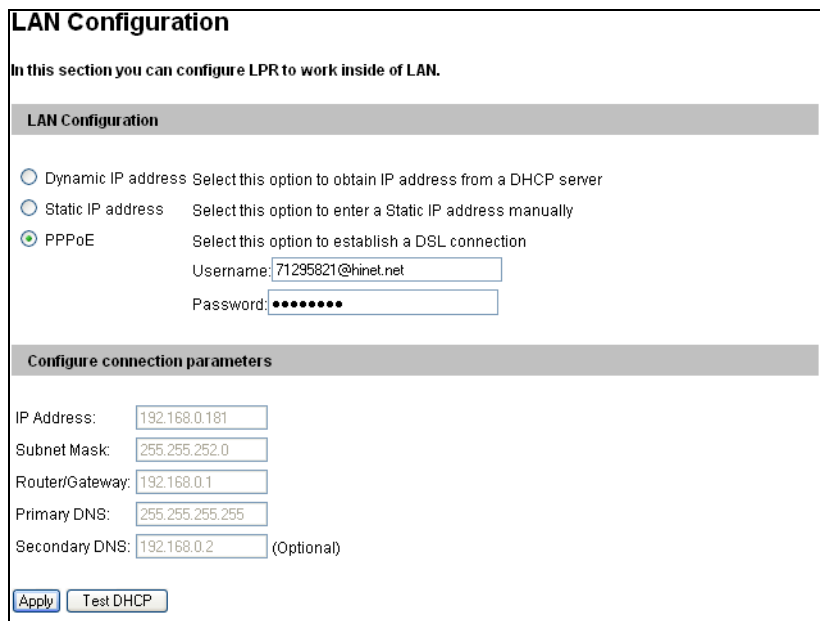


Figure 4-9

#### [LAN Configuration]

- **Dynamic IP address:** The network environment has a DHCP server. This option should only be enabled if you know which IP address the GV-DSP LPR will get from the DHCP server, or you have obtained a domain name from the DDNS service provider.
- **Static IP address:** Assign a static IP or fixed IP to the GV-DSP LPR. Type TCP/IP and DNS parameters of the unit in the **Configure connection parameters** section.
- **PPPoE:** The Network environment is xDSL connection. Type the Username and Password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, you must use the DDNS function to obtain a domain name linked to the changing IP address of the GV-DSP LPR first.

**[Configure connection parameters]** Type the IP address, Subnet Mask, Router/Gateway, Primary DNS server and Secondary DNS server of the GV-DSP LPR.

Parameters	Default
IP address	192.168.0.230
Subnet Mask	255.255.255.0
Router/Gateway	192.168.0.1
Primary DNS server	192.168.0.1
Secondary DNS server	192.168.0.2

For details on the DDNS function (Dynamic DNS Server), see *4.3.2 Advanced TCP/IP*.

## 4.4.2 UMTS

UMTS stands for Universal Mobile Telephone System. UMTS is a third-generation (3G) broadband, packet-based transmission of text, digitized voice, video, and multimedia at data rates up to 2 megabits per second. UMTS offers a consistent set of services to mobile computer and phone users, no matter where they are located in the world.

After an UMTS-compatible wireless device is attached to the USB port and the UMTS function is enabled, the GV-DSP LPR can have Internet access. Currently the GV-DSP LPR only supports the wireless module for UMTS applications: Huawei E220 USB Modem (HSDA/UMTS/EDGE/GPRS/GSM).

Figure 4-10

To enable the UMTS service, type Username, Password, PIN number and APN (Access Point Name) that are provided by your network operator. If you use the UMTS connection with dynamic IP addresses, you must enable the DDNS function to obtain a domain name linked to the changing IP address of the GV-DSP LPR first.

### 4.4.3 Advanced TCP/IP

This section introduces the advanced TCP/IP settings, including DDNS Server, HTTP port, and streaming port.

#### Advanced TCP/IP

##### Dynamic DNS Server Settings

In this section you can configure your LPR to obtain a domain name by using a dynamic IP.

☒ Enable

Service Provider: Geovision DDNS Server ex: [Register Geovision DDNS Server](#)

Host Name:

User Name:

Password:

Update Time : [Refresh](#)

##### HTTP Port Settings

In this section you can change the default HTTP port number (80) to any port within the range 1-65535. It is a simple method to increase system security using port mapping. You can configure HTTP connection to an alternative port.

HTTP Port:

##### LPR Streaming Port Settings

In this section you can configure Streaming connection from a determine port. The default setting is 10000.

VSS Port:

Figure 4-11

**[Dynamic DNS Server Settings]** DDNS (Dynamic Domain Name System) provides a convenient way of accessing the GV-DSP LPR when using a dynamic IP. DDNS assigns a domain name to the GV-DSP LPR, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed.

Before enabling the DDNS function, the Administrator should apply for a host name from the DDNS service provider's website. There are 2 providers listed in the GV-DSP LPR: GeoVision DDNS Server and DynDNS.org.



**To enable the DDNS function:**

1. **Enable:** Enable the DDNS function.
2. **Service Provider:** Select the DDNS service provider you have registered with.
3. **Host Name:** Type the host name used to link to the GV-DSP LPR. For the users of GeoVision DDNS Server, it is unnecessary to enter the host name. The system will detect the host name automatically.
4. **User Name:** Type the user name used to enable the service from the DDNS.
5. **Password:** Type the password used to enable the service from the DDNS.
6. Click **Apply**. The Update Time from the DDNS will be displayed.

**[HTTP Port Settings]**

The HTTP port enables connecting the GV-DSP LPR to the web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number within the range of 1024 through 65535.

**[LPR Streaming Port Settings]**

The VSS port enables connecting the GV-DSP LPR to the GV-LPR System or the GV-LPR Center. The default setting is 10000.

#### 4.4.4 IP Filter

The Administrator can set IP filtering to restrict access to the GV-DSP LPR.

### IP Filter Setting

IP Filtering

In this section you can allow or deny network connection listed in the table.

☒ Enable IP Filtering

No.	IP Address Range in CIDR format	Action	Customize
1	192.168.0.33	Deny	<button>Delete</button>

Filtered IP:  (ex: 192.168.0.0/24)

Action to take: Allow ▼

Apply

Figure 4-12

To enable the IP Filter function:

1. **Enable IP Filtering:** Enable the IP Filtering function.
2. **Filtered IP:** Type the IP address you want to restrict the access.
3. **Action to take:** Select the action of **Allow** or **Deny** to be taken for the IP address you have specified.
4. Click **Apply**.

## 4.5 Management

The Management section includes the settings of data and time, SD card and user account. Also you can view the firmware version and execute certain system operations.

### 4.5.1 Date & Time Setting

You can set up the date and time appearing in the image's caption.

**Date and Time Settings**

In this section you can configure time and date or just synchronize with a NTP server.

**Date and Time on LPR**

Tue Jul 31 01:55:36 2007

**Synchronized with a Network Time Server**

☐ Synchronized with Network Time Server (NTP)

Host name or IP Address:

Update period: 24 hours; Update Time: AM 05:10

**Synchronized with your computer or modify manually**

☒ Modify manually

Date  (yyyy/mm/dd)

Time  (hh:mm:ss)

☐ Synchronized with your computer

Figure 4-13

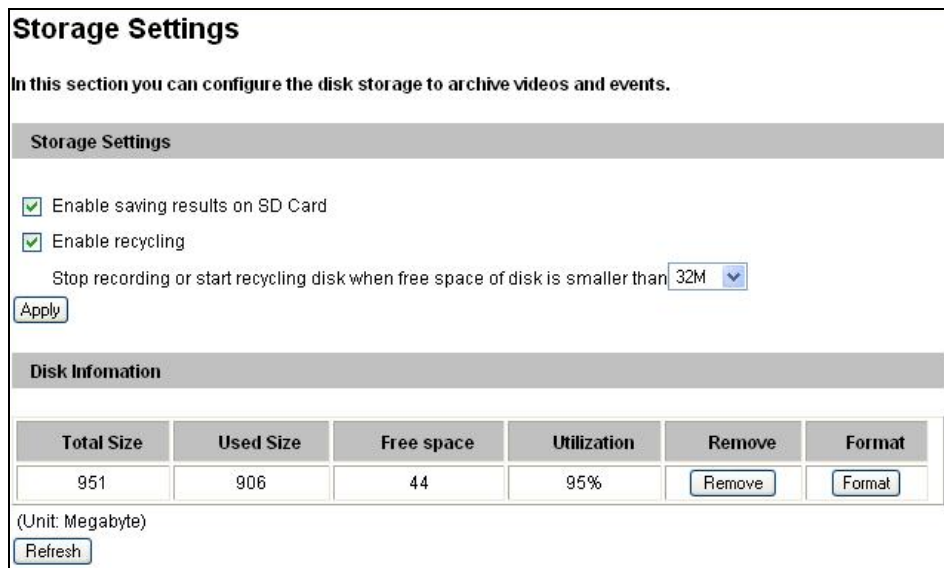
**[Date & Time on LPR]** Display the current date and time on the GV-DSP LPR.

**[Synchronized with a Network Time Server]** Use the NTP server to automatically update the date and time of the GV-DSP LPR every 24 hours. Type the host name or the IP address of the NTP server for connection.

**[Synchronized with your computer or modify manually]** Manually change the date and time of the GV-DSP LPR. Or, synchronize the date and time of the GV-DSP LPR with those of the local computer.

## 4.5.2 Storage Settings

The GV-DSP LPR has one SD card slot. You can store the recognition results or images to the SD card. The image is stored in the JPEG compressed format.



**Storage Settings**

In this section you can configure the disk storage to archive videos and events.

**Storage Settings**

☒ Enable saving results on SD Card

☒ Enable recycling

Stop recording or start recycling disk when free space of disk is smaller than 32M

**Disk Information**

Total Size	Used Size	Free space	Utilization	Remove	Format
951	906	44	95%	<input type="button" value="Remove"/>	<input type="button" value="Format"/>

(Unit: Megabyte)

Figure 4-14

### To add a SD card:

1. Insert a SD card to the SD card slot.
2. Click the **Refresh** button to detect the SD card. The total size, used size, free space and utilization of the SD card will be displayed. Note that it may take several seconds for your web browser to update the information of the SD card.
3. If you like to format the SD card or erase all data stored on it, click the **Format** button.

### To remove a SD card:

1. Click the **Remove** button.
2. When you are prompted to ensure the action, click **Yes**. The page will be refreshed and the displayed information of the will be cleaned.
3. Remove the SD card from the SD card slot.

---

**Note:** The captured images may be lost if you do not remove the SD card properly.

---

**[Storage Settings]**

- **Enable saving results on SD Card:** Enable this option to save the recognition results or images onto the SD card.
- **Enable recycling:** If this option is checked, the system will overwrite the oldest stored files when the space of the SD card is lower than the specified space. If this option is not checked, the system will stop recording when the specified space is reached.

---

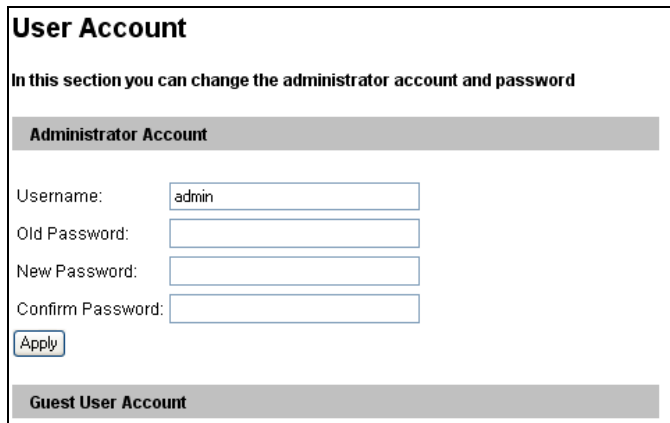
**Note:**

- The GV-DSP LPR doesn't support SD High Capacity (SDHC) cards.
  - The SD card of 1G capacity can save approximately 30,000 captured images of D1 resolution, and 120,000 captured images of CIF resolution. The SD card of 4G capacities can save approximately 120,000 captured images of D1 resolution, and 480,000 captured images of CIF resolution.
-

### 4.5.3 User Account

The GV-DSP LPR has two types of password protection: Guest password for restricting unwanted users from accessing the GV-DSP LPR, and Administrator password for restricting who can enter privileged commands.

Default Guest login name and password are **guest**. Default Administrator login name and password are **admin**.



**User Account**

In this section you can change the administrator account and password

**Administrator Account**

Username:

Old Password:

New Password:

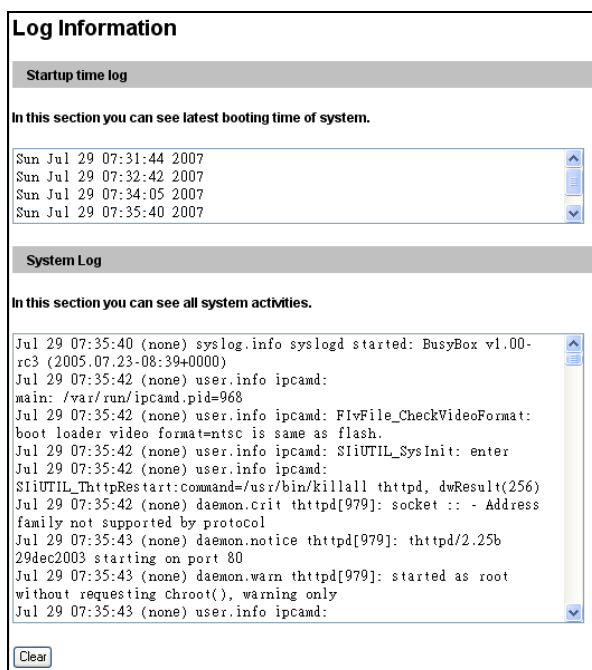
Confirm Password:

**Guest User Account**

Figure 4-15

### 4.5.4 Log Information

The log contains dump data that is used by service personnel for analyzing problems.



**Log Information**

**Startup time log**

In this section you can see latest booting time of system.

Sun Jul 29 07:31:44 2007  
 Sun Jul 29 07:32:42 2007  
 Sun Jul 29 07:34:05 2007  
 Sun Jul 29 07:35:40 2007

**System Log**

In this section you can see all system activities.

Jul 29 07:35:40 (none) syslog.info syslogd started: BusyBox v1.00-rc3 (2005.07.23-08:39+0000)  
 Jul 29 07:35:42 (none) user.info ipcamd:  
 main: /var/run/ipcamd.pid=968  
 Jul 29 07:35:42 (none) user.info ipcamd: FlvFile\_CheckVideoFormat:  
 boot loader video format=ntsc is same as flash.  
 Jul 29 07:35:42 (none) user.info ipcamd: \$IiUTIL\_SysInit: enter  
 Jul 29 07:35:42 (none) user.info ipcamd:  
 \$IiUTIL\_ThttpRestart:command=/usr/bin/killall tthttpd, dwResult(256)  
 Jul 29 07:35:42 (none) daemon.crit tthttpd[979]: socket :: - Address family not supported by protocol  
 Jul 29 07:35:43 (none) daemon.notice tthttpd[979]: tthttpd/2.25b 29dec2003 starting on port 80  
 Jul 29 07:35:43 (none) daemon.warn tthttpd[979]: started as root without requesting chroot(), warning only  
 Jul 29 07:35:43 (none) user.info ipcamd:

Figure 4-16

### 4.5.5 Tools

This section allows you to execute certain system operations and view the firmware version.

**Additional Tools**

**Firmware Version**

In this section you can see LPR firmware version.

v1.10 2008-03-25

**System Settings**

Restore to factory default settings

**Reboot**

Do you wish to reboot now?

Figure 4-17

**[Firmware Version]** This section displays the firmware version of the GV-DSP LPR.

**[System Settings]** Clicking the **Load Default** button will make the GV-DSP LPR restore factory default settings. The Ready LED on the front panel will turn off. Wait until the Ready LED turns on and then you can re-log in the GV-DSP LPR.

---

**Note:** After applying default settings, you will need to configure the GV-DSP LPR's network settings again.

---

**[Reboot]** Clicking the **Reboot** button will make the GV-DSP LPR perform software reset. The Ready LED on the front panel will turn off. Wait until the Ready LED turns on and then you can re-log in the GV-DSP LPR.

# Chapter 5 Advanced Applications

This chapter introduces more advanced applications.

## 5.1 Upgrading System Firmware

GeoVision will periodically release the updated firmware on the website. The new firmware can be simply loaded into the GV-DSP LPR over LAN or by using the IP Device Utility included in the Software DVD.

### Important Notes before You Start

Before you start updating the firmware, please read these important notes:

1. While the firmware is being updated,
  - A. the power supply must not be interrupted, and
  - B. do not unplug the Ethernet cable if the cable is the source of power supply (Power over Ethernet or PoE supported).
2. Do not turn the power off in 10 minutes after the firmware is updated.
3. If you use the IP Device Utility for firmware upgrade, the computer used to upgrade firmware must be under the same IP and subnet sequence of the GV-DSP LPR.

---

**WARNING:** The interruption of power supply during updating causes not only update failures but also damages to your GV-DSP LPR. In this case, please contact your sales representative and send your device back to GeoVision for repair.

---



### 5.1.1 Upgrading Firmware over LAN

1. In the Live View window, click the **Firmware Upgrade** button (No. 7, Figure 3-3). This dialog box appears.

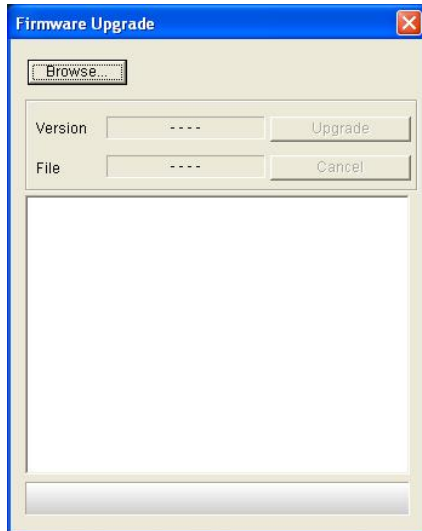


Figure 5-1

2. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
3. Click the **Upgrade** button to process the upgrade.

### 5.1.2 Upgrading Firmware by Using the Utility

The IP Device Utility provides a direct way to upgrade the firmware to multiple GV-DSP LPRs. Note the computer used to upgrade firmware must be under the same IP and subnet sequence of the GV-DSP LPR.

1. Insert the Software DVD, select **IP Device Utility**, and follow the onscreen instructions to install the program.
2. Double-click the **IP Device Utility** icon created on your desktop. This dialog box appears.

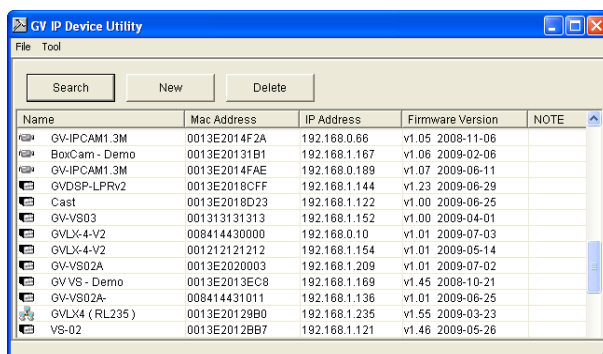


Figure 5-2

- Click the **Search** button to locate the available GV-DSP LPRs on the same LAN. Or click the **New** button and assign the IP address to locate a GV-DSP LPR over the Internet. Or highlight one GV-DSP LPR in the list and click the **Delete** button to remove it.
- Double-click one GV-DSP LRP in the list. This dialog box appears.

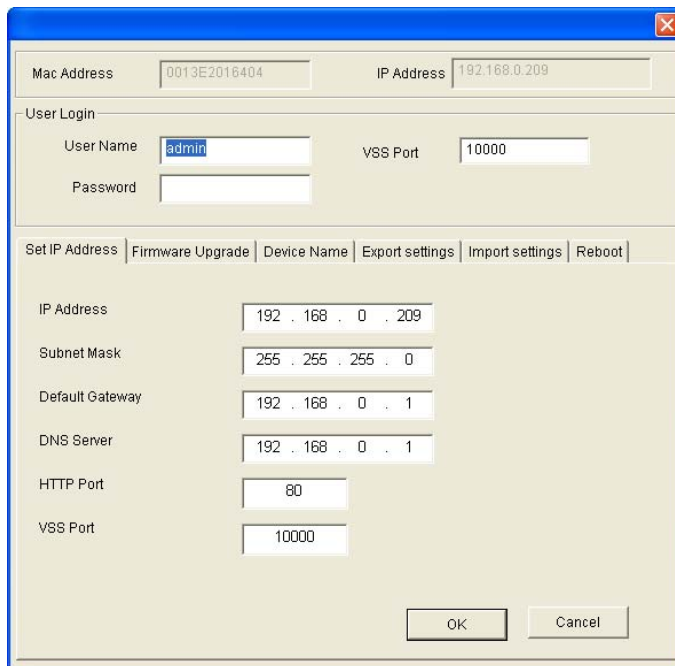


Figure 5-3

- Click the **Firmware Upgrade** tab. This dialog box appears.

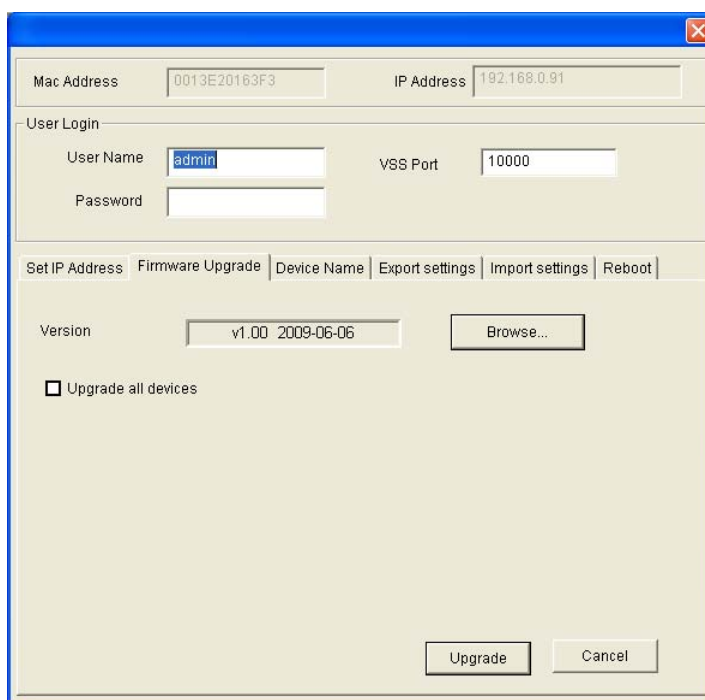


Figure 5-4

6. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
7. If you like to upgrade all the GV-DSP LPR in the list, check **Upgrade all devices**.
8. Type **Password**, and click **Upgrade** to process the upgrade.

## 5.2 Backing Up and Restoring Settings

With the Utility included in the Software DVD, you can back up the configurations in the GV-DSP LPR, and restore the backup data to the current unit or import it to another unit.

### To back up the settings:

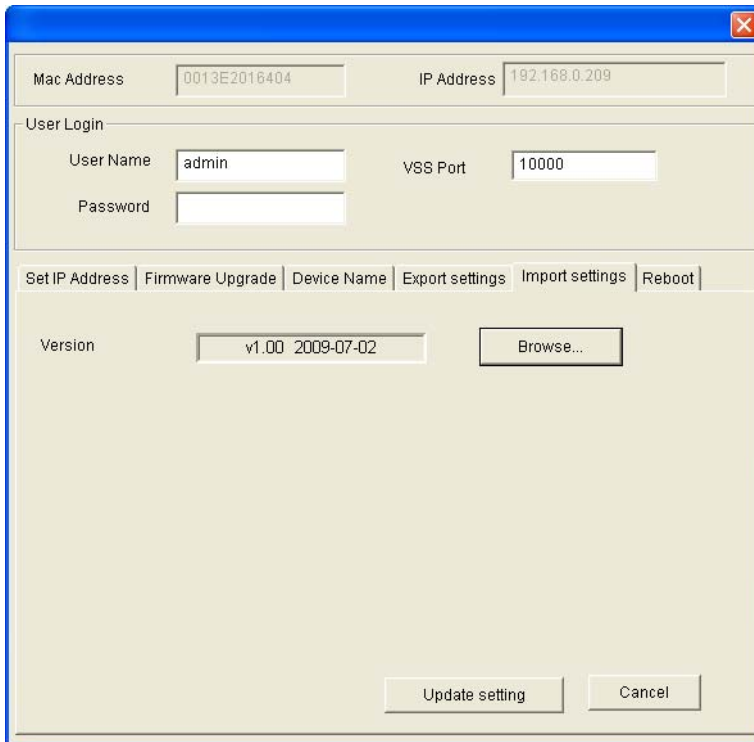
1. Run **IP Device Utility** and locate the desired GV-DSP LPR. See Steps 1-3 in 5.1.2 *Upgrading Firmware by Using the Utility*.
2. Double-click the GV-DSP LPR in the list. Figure 5-3 appears.
3. Click the **Export Settings** button. This dialog box appears.

Figure 5-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click **Export Settings** to save the backup file.

**To restore the settings:**

1. In Figure 5-3, click the **Import Settings** tab. This dialog box appears.



The dialog box has a blue title bar with a close button. It contains several input fields and buttons. At the top, there are fields for 'Mac Address' (0013E2016404) and 'IP Address' (192.168.0.209). Below these is a 'User Login' section with 'User Name' (admin), 'Password' (empty), and 'VSS Port' (10000). A tabbed interface is present with tabs for 'Set IP Address', 'Firmware Upgrade', 'Device Name', 'Export settings', 'Import settings' (selected), and 'Reboot'. Below the tabs, there is a 'Version' field showing 'v1.00 2009-07-02' and a 'Browse...' button. At the bottom right, there are 'Update setting' and 'Cancel' buttons.

*Figure 5-6*

2. Click the **Browse** button to locate the backup file (.dat).
3. Click **Update Settings** to start restoring.

## Chapter 6 The I/O Terminal Block

The 16-pin terminal block, located on the rear panel, provides the interface to: four digital inputs, four relay outputs, an RS-232 interface, a Wiegand interface and auxiliary power. The I/O terminal block can be used to develop applications for motion detection, event alerts, access control and a variety of other functions.

---

**Note:** RS-232 and Wiegand Interface are NOT functional now.

---

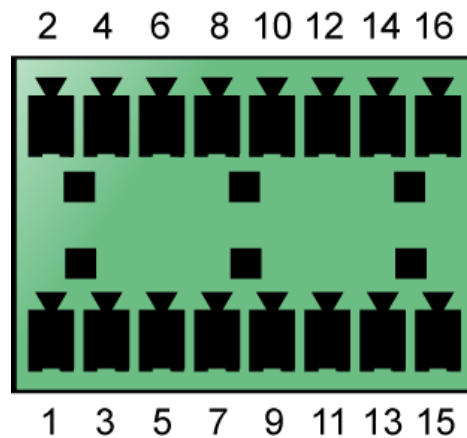


Figure 6-1

### Pin Assignment

The pin assignment for the terminal block is described in the table below.

Pin	Function	Pin	Function
1	Relay Output 1	9	DC 5V Out for GV-Relay Module
2	Digital Input 1	10	Ground
3	Relay Output 2	11	RS-232 (TX)
4	Digital Input 2	12	Wiegand D0
5	Relay Output 3	13	RS-232 (RX)
6	Digital Input 3	14	Wiegand D1
7	Relay Output 4	15	Ground
8	Digital Input 4	16	DC 12V Out for Wiegand Card Reader

## Relay Output

The relay outputs on the terminal block can only drive a maximum load of 5V. Working in conjunction with the GV-Relay V2 module, it can drive heavier loads. Refer to the figure and table below to connect the GV-Relay V2 module to the GV-DSP LPR.

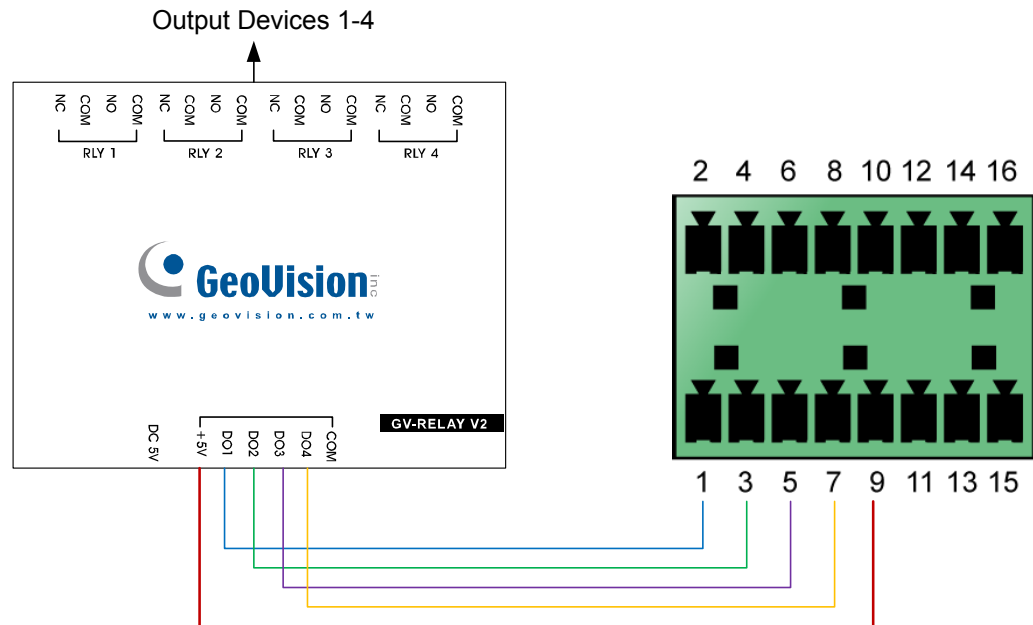


Figure 6-2

GV-Relay V2	I/O Terminal Block
DO 1	Pin 1
DO 2	Pin 3
DO 3	Pin 5
DO 4	Pin 7
+ 5V	Pin 9

Note that you don't need to use the DC 5V connector on the GV-Relay V2 module for power supply, since the power is supplied from the GV-DSP LPR.

---

**Note:** The GV-Relay V2 module is an optional product.

---

# Specifications

<b>Video Input/Output</b>	1 Video In, 1 TV Out
<b>Audio Input/Output</b>	1 Audio In, 1 Audio Out
<b>Video Compression</b>	GJPEG
<b>Audio Compression</b>	G.723
<b>Live Resolutions</b>	D1, CIF
<b>Live Frame Rate</b>	Up to 10 fps
<b>Image Setting</b>	Brightness, Contrast, Saturation, Hue
<b>Alarm and Event Management</b>	<ul style="list-style-type: none"> <li>• Events triggered by motion detection or sensor inputs</li> <li>• Central monitoring by LPR Center</li> <li>• Relay outputs triggered by sensor inputs or remotely by LPR Center</li> </ul>
<b>Connectors</b>	<ul style="list-style-type: none"> <li>• Video Input/TV Output: BNC ports</li> <li>• Audio Input/Output: Mini stereo jacks</li> <li>• Ethernet: 10/100Base-T</li> <li>• USB: 2.0</li> <li>• SD Card Slot: standard SD cards (Not support SDHC cards)</li> <li>• Terminal Block: 4 Digital Inputs, 4 Relay Outputs, RS-232, Weigand</li> </ul>
<b>Security</b>	IP address filtering
<b>Installation</b>	Web-based configuration
<b>Management Maintenance</b>	Firmware upgrade through Web Browser
<b>Protocol</b>	HTTP, TCP, UDP, DHCP, NTP, DynDNS
<b>Storage</b>	SD Card
<b>Operation Temperature</b>	-20~70°C
<b>Dimensions (W x D x H)</b>	174 x 145 x 40 (mm) / 6.85 x 5.7 x 1.57 (in)
<b>Weight</b>	0.75 (kg) / 1.65 (lb)

<b>Country Support</b>	Australia, Austria, Belgium, Brazil, Chile, China, Columbia, Cyprus, Czech Republic, Germany, Guernsey, Hungary, Ireland, Israel, Italy, Mexico, Norway, Poland, Portugal, South Africa, Spain, Taiwan, UAE, UK, USA
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