GeoVision inc
The Vision of Security

# GV-IP Decoder Box Plus

## *User's Manual*

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

DBPV101-UM-A

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**Note:** No memory card slot or local storage function for Argentina.

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# Chapter 1 Introduction

The GV-IP Decoder Box Plus is designed to decode incoming IP streams from GeoVision and third-party IP devices, and to serve as a medium for connecting the cameras and the monitor for video display in Single View, Quad View, and 9-Division View. It supports third-party IP cameras that adhere to RTSP or ONVIF, and can automatically search for ONVIF supported third-party IP devices under the same LAN. To be used with only a monitor, the GV-IP Decoder Box Plus provides a cost-effective solution for video surveillance as opposed to the traditional DVR and PC setup. The security administrator can monitor channels, take snapshots of critical moments, and pause at a channel when events occur. GV-Joystick V2 can be installed to control GeoVision and third-party PT / PTZ / Speed Dome cameras.

### The IP Devices and GV-Software that Can Connect with GV-IP Decoder Box Plus

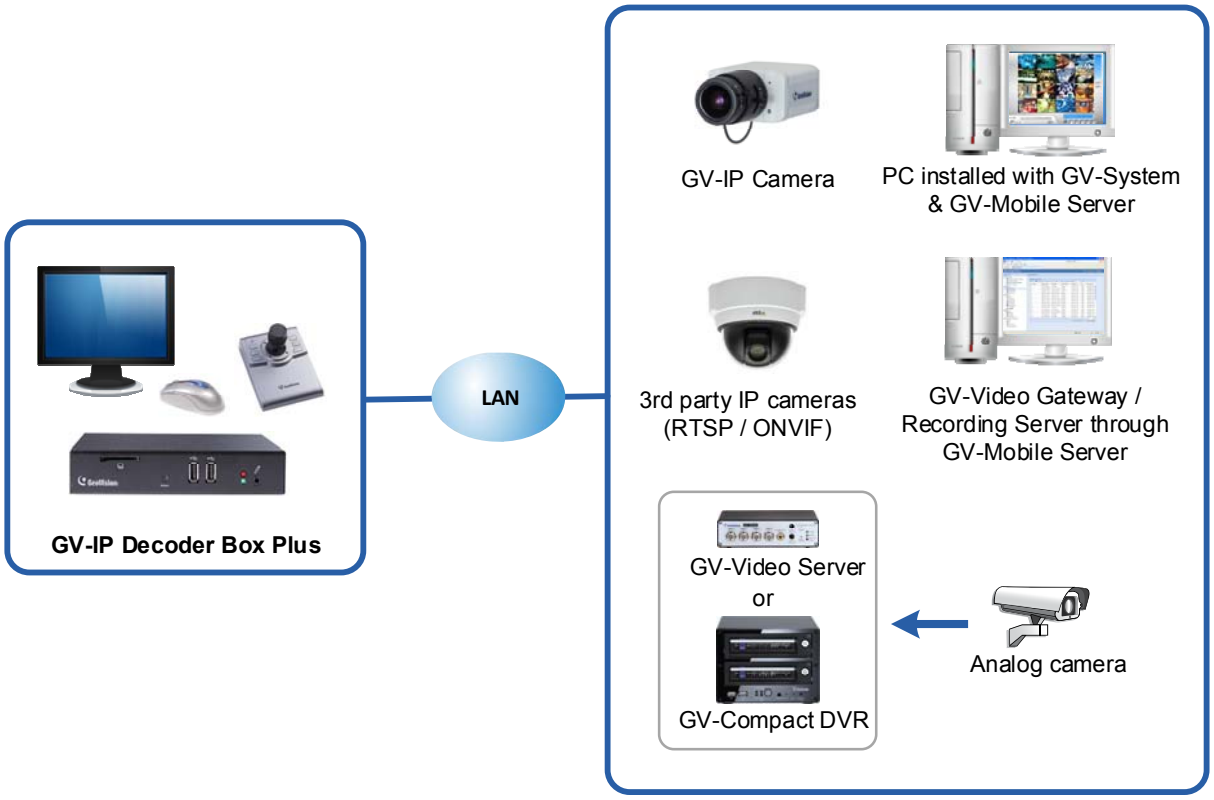


*Figure 1-1*

## 1.1 Features

- Decode video streams in H.264 codec at up to 30 fps
- Decode up to 64 IP streams
- Decode up to 4 megapixel IP cameras
- Automatically search for ONVIF IP devices
- Support for third-party IP cameras that adhere to RTSP or ONVIF
- Support for fisheye dewarping in Single View and top-left grid of Quad View
- Single View, Quad View and 9-Division View in sequential display
- Display of Matrix view through GV-Mobile Server
- Support for 10/100/1000 Ethernet over LAN
- VGA and HDMI Video outputs
- Video output resolution up to 1080p
- Control PTZ and Speed Dome cameras using GV-Joystick V2
- Remote firmware upgrade, IP address configuration and addition of new channel
- SD card slot and USB drive for snapshot storage and firmware upgrade

## 1.2 Compatible Devices

The GV-IP Decoder Box Plus is compatible with:

1. GV-IP Camera, GV-Video Server and GV-Compact DVR using H.264 codec
2. Third-party IP devices that support H.264 and adhere to RTSP or ONVIF
3. GV-Mobile Server

---

**Note:**

1. Upgrade your GV-IP Devices to the latest firmware version if you encounter any connection problems.
2. GV-Mobile Server is an application that encodes up to **64** video channels and subsequently allows the GV-IP Decoder Box Plus to decode and display:
   - analog cameras and IP cameras connected to GV-System
   - IP channels connected to GV-Recording Server / GV-Video Gateway
   - third-party IP cameras through ONVIF
   - 4 matrix views

   For details, see *GV-Mobile Server User's Manual* on GV-Mobile Server Software CD.

---

To decode and display **non-H.264** IP channels or **analog** channels, connect the devices to GV-System (GV-DVR / NVR) and access them through GV-Mobile Server.

## 1.3 Packing List

1. GV-IP Decoder Box Plus
2. AC/DC adapter (12 V, 3 A, 36 W)
3. Power cord
4. USB mouse
5. Software DVD
6. Warranty card

## 1.4 Optional Accessories

| Optional Accessories | Detail |
|---|---|
| **Wall Mount Kit**<br> | The Wall Mount Kit is used to mount the GV-IP Decoder Box Plus to the wall. |
| | ● L-type brackets x 2<br>● Small screws x 4 |
| **GV-Joystick V2**<br> | The GV-Joystick V2 facilitates focusing, zooming, panning, tilting of GeoVision and third-party PT, PTZ and Speed Dome cameras on GV-IP Decoder Box Plus. |
| | ● GV-Joystick V2<br>● USB Type A to Type B Cable<br>● RJ-45 Cable<br>● Software CD |

## 1.5 Overview

### 1.5.1 Front View

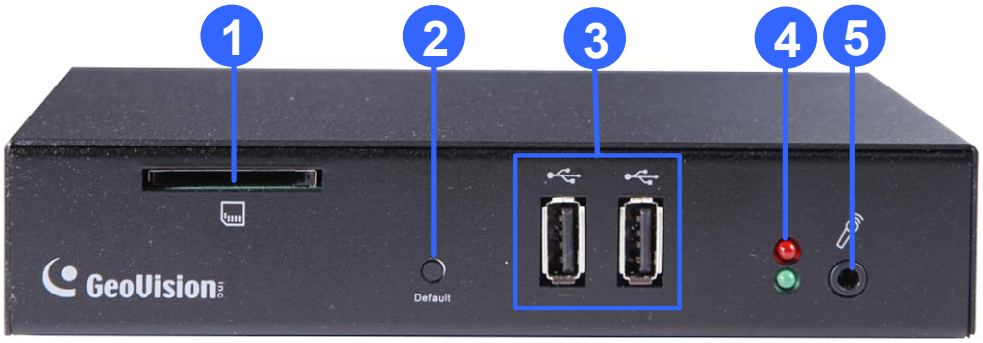


*Figure 1-2*

| No. | Name | Function |
|---|---|---|
| 1 | SD Card Slot | Connect to an SD card for local storage of snapshot and firmware upgrade. |
| 2 | Default | Reset the GV-IP Decoder Box Plus to the default factory settings. Use a pin to press the default button for about 10 seconds. The system will then reset and reboot itself shortly. |
| 3 | USB | Connect to a GV-Joystick V2, USB mouse, or USB storage device. |
| 4 | LED Indicators | The green LED indicates the system is ready for use.<br>The red LED indicates the power is supplied. |
| 5 | Audio In | Not functional. |

### 1.5.2 Rear View

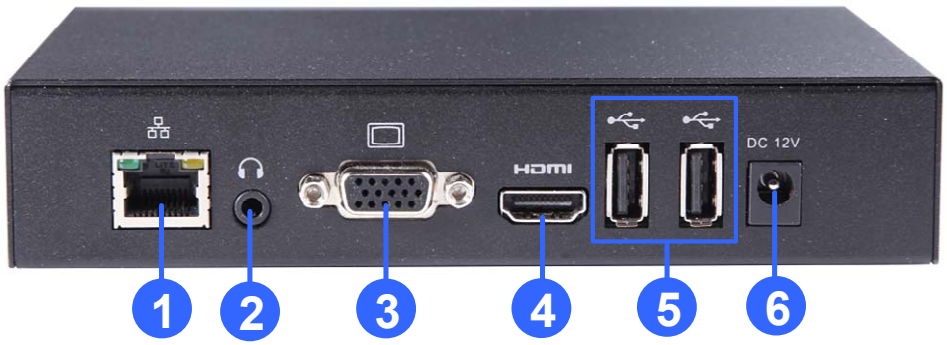


*Figure 1-3*

| No. | Name | Function |
|---|---|---|
| 1 | Network | Connect to the network. |
| 2 | Audio Out | Connects to a speaker. |
| 3 | VGA | Connect to a VGA monitor. |
| 4 | HDMI | Connect to an HDMI supported display device. |
| 5 | USB | Connect to a GV-Joystick V2, USB mouse, or USB storage device. |
| 6 | DC 12V | Connect to power by using the supplied power adapter. |

# Chapter 2 Getting Started

## 2.1 Installing the GV-IP Decoder Box Plus

You can install the GV-IP Decoder Box Plus on wall or simply use it as desk mount device.

### Wall Mount Installation

For wall mount installation, you need to purchase the wall mount kit.

1. Unscrew the 4 screws on the back panel of the GV-IP Decoder Box Plus.

*Figure 2-1*

2. Use the 4 small screws in the package to tighten the L-type brackets on the GV-IP Decoder Box Plus.

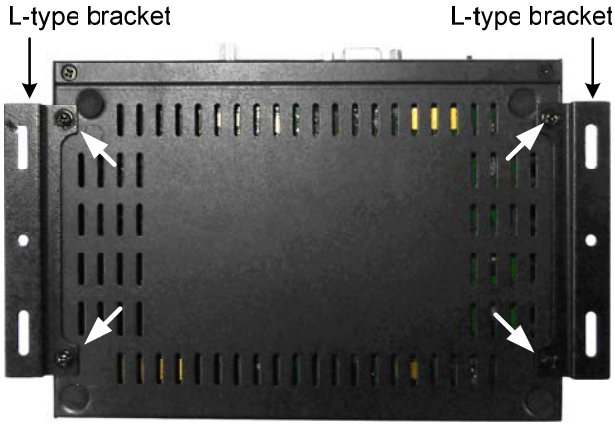


*Figure 2-2*

3. Secure the GV-IP Decoder Box Plus to the wall with self-prepared screws.

## 2.2 Connecting the GV-IP Decoder Box Plus

Follow the steps below to connect the GV-IP Decoder Box Plus:

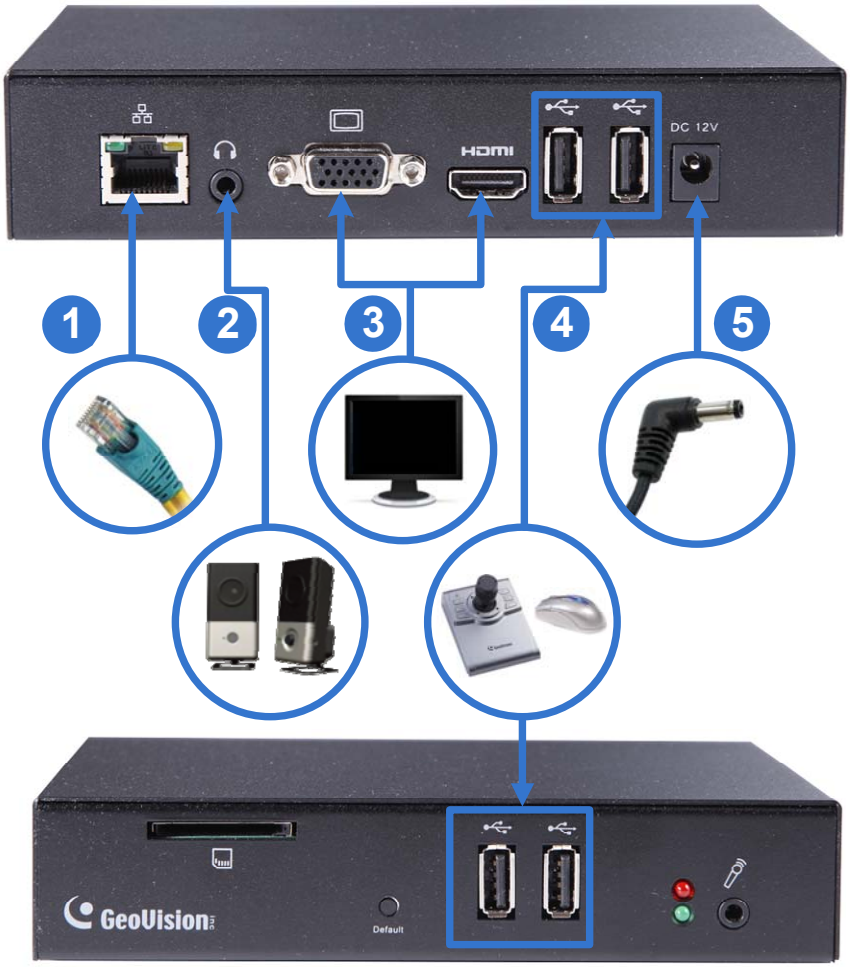


*Figure 2-3*

1. Connect the device to the LAN port using an RJ-45 cable.
2. Connect a speaker to the audio line out port if needed.
3. Connect a display device to VGA connector or HDMI connector for video output.
4. Connect a mouse and / or GV-Joystick V2 to the USB ports.
5. Connect to power using the supplied power adapter.

**Note:**

1. You can only connect the GV-IP Decoder Box Plus to one display device through the HDMI or VGA connector.
2. The default video output is set to HD 720P resolution. If you use a VGA monitor, be sure to change the output resolution to VGA 1024 x 768. To change the output resolution, see *4.1 System*.
3. Optionally configure the device date and time. For details, see *4.3 Date & Time*.

## 2.3 The Main Screen

After you have connected the necessary wires and cables, GV-IP Decoder Box Plus will power on.

*Figure 2-4*

## 2.4 Setting Up the Network

By default, GV-IP Decoder Box Plus will be **automatically assigned an IP address** by the DHCP server without further settings. To change the IP address to a fixed one, follow the steps below.

1. Click the **System Settings** icon , and select **Network**. This window appears.

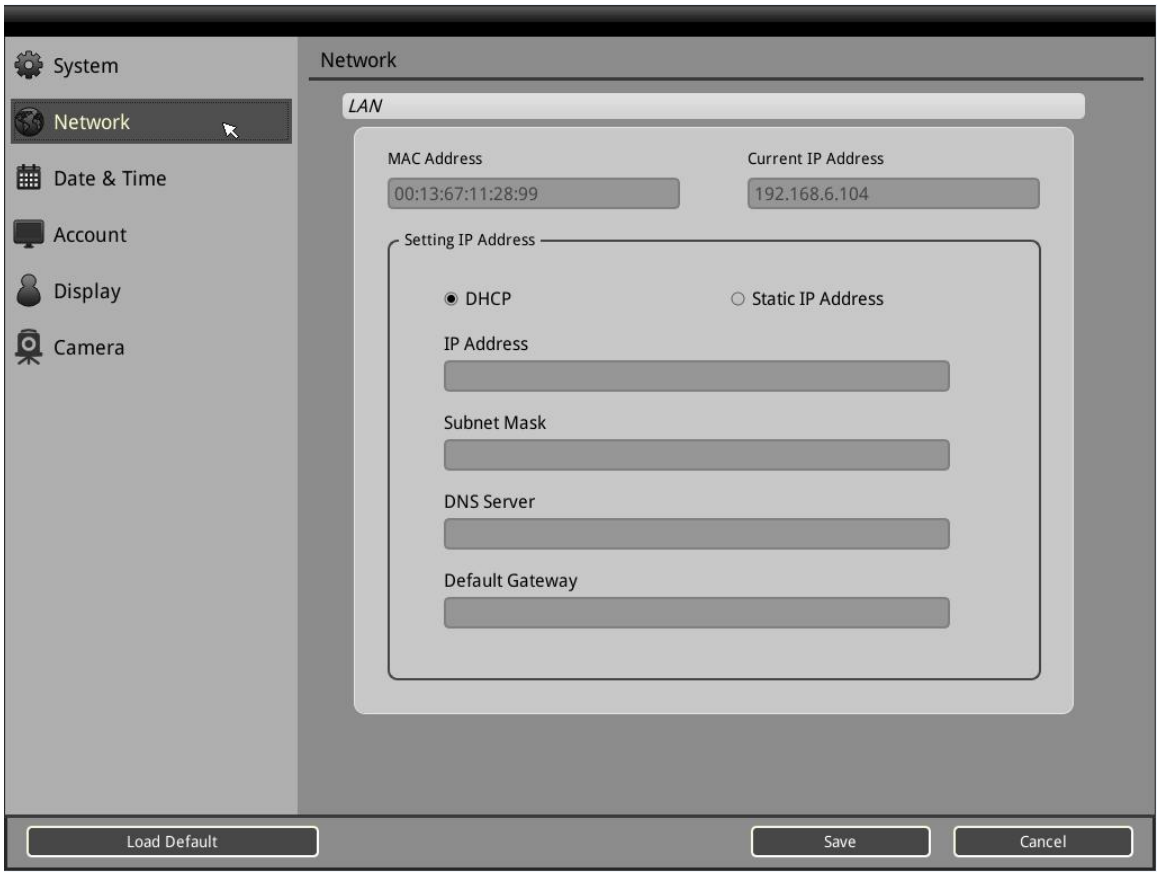


*Figure 2-5*

2. To assign a static IP address, select **Static IP Address**.
3. Double-click the fields to fill out the **IP Address**, **Subnet Mask**, **DNS Server**, and **Default Gateway**.
4. Click **Save**. When the device is connected to the network, the IP address will be shown in the Connected IP Address field.

**Tip:** You can also use GV-IP Device Utility (included in Software DVD) to modify the IP address by clicking the GV-IP Decoder Box Plus and selecting **Configure**.

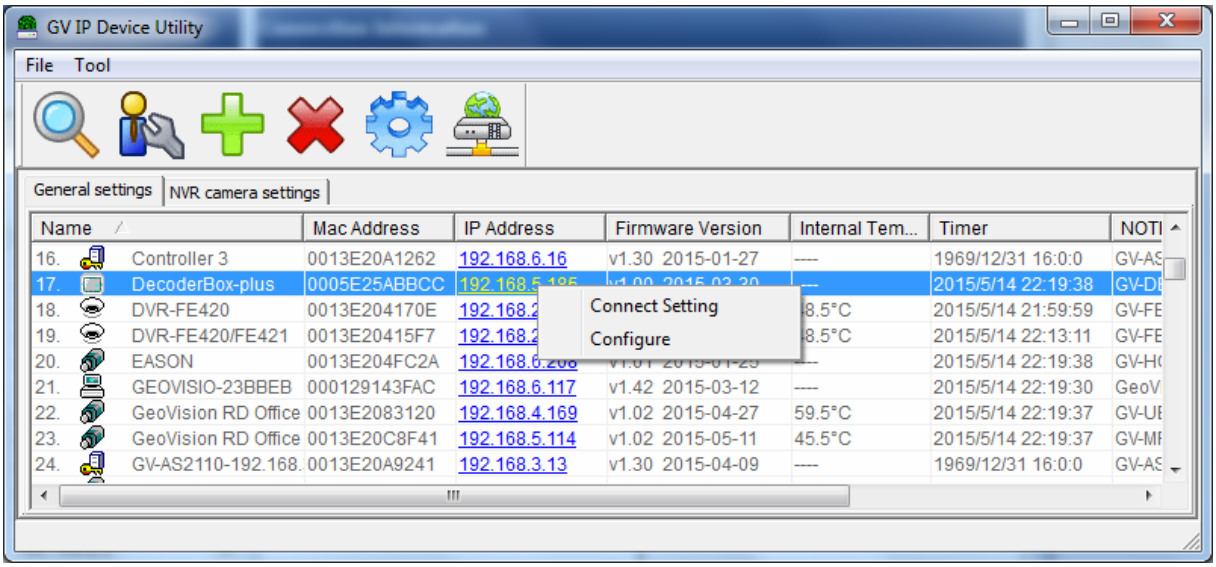


*Figure 2-6*

## 2.5 Adding IP Devices to Live View Grid

Before you start, make sure all IP devices and GV-Mobile Server are under the same LAN with GV-IP Decoder Box Plus.

### 2.5.1 Adding IP Devices through Automatic Search

1. Click the **IPCam Search** icon on the main page to search for GV-IP Devices, GV-Mobile Server and the third-party devices that adhere to ONVIF under the same LAN.

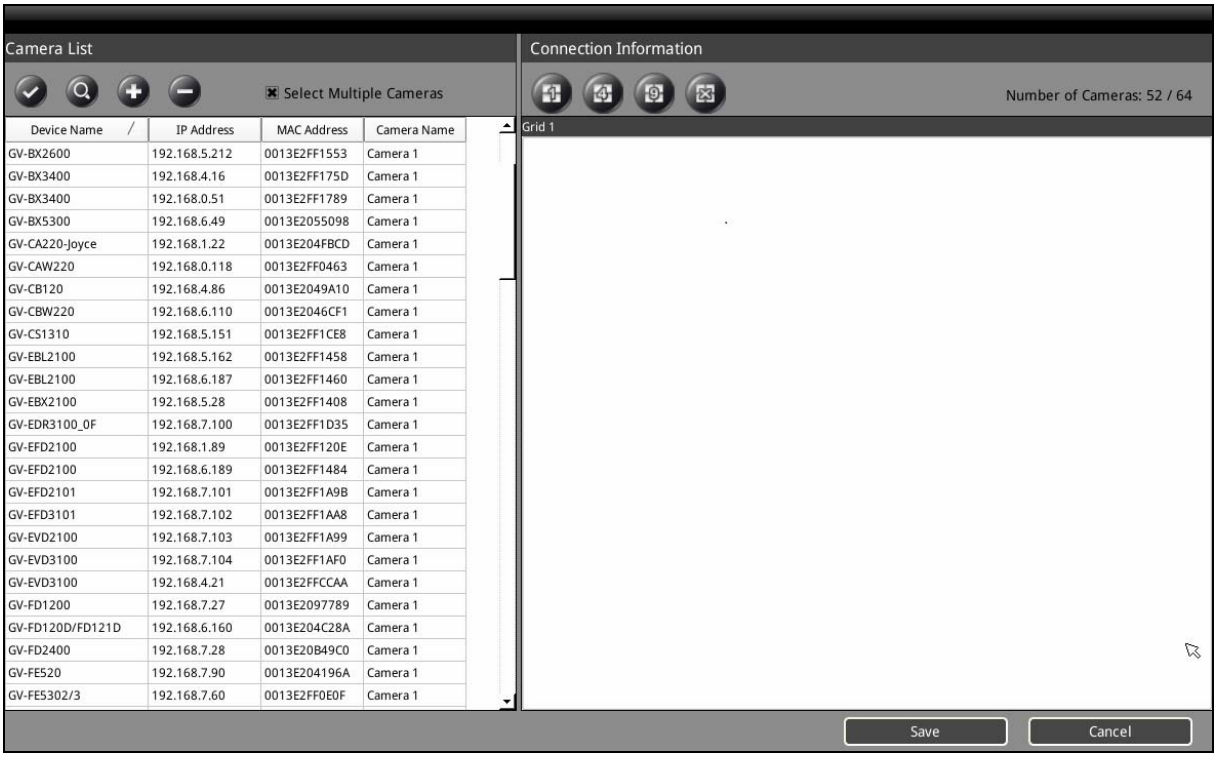


*Figure 2-7*

2. To change the device settings, right-click the device in the Camera List and select **Edit**. Double-click to modify the following default settings:
   - **Port:** The default port is 10000.
   - **Loop Time Interval:** By default, the live view of this device will be shown for 30 seconds before switching to the next device.
   - **Login Information:** The default user name and password are both **admin**.
3. Click **Save** to apply.

**Note:** All the GeoVision IP devices have the default user name and password of **admin**. If you want to change the default settings, you may change the user name and password under **Camera** in System Settings (see *4.6 Camera)*.

### 2.5.2 Adding IP Devices Manually

If you are unable to detect the IP device using the search function, you can add the device manually.

1. Click the **IPCam Search** icon on the main page and click the **Add IPCam** icon . This dialog box appears.

*Figure 2-8*

2. Fill out the following camera information. Double-click the fields to type.
   - **IP Address:** Type the IP address of the device.
   - **Port:** The default port is 10000.
   - **Loop Time Interval:** By default, the live view of this device will be shown for 30 seconds before switching to the next device.
   - **Login Information:** Type the ID and password of the IP device if needed. The

default ID and Passwords are **admin**.

- **Brand:** Select **GeoVision** for GV-IP Devices. To connect to third-party cameras through ONVIF or RTSP, select **Protocol**.
- **Model / Protocol:** For GV-IP Devices, select the model of the GV-IP Devices. For third-party devices, select **ONVIF** or one of the **RTSP** protocols.

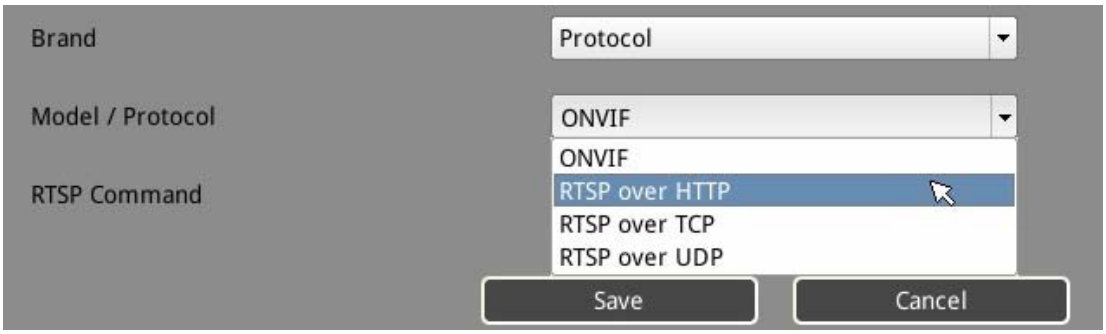


*Figure 2-9*

- **RTSP Command:** Type the RTSP link if you are connecting to the device through RTSP protocols.

3. Click **Save**.

---

**Note:** All the GeoVision IP devices have the default user name and password of **admin**. If you want to change the default settings, you may change the user name and password under **Camera** in System Settings (see *4.6 Camera)*.

---

## 2.5.3 Assigning IP Devices to Live View Grid

GV-IP Decoder Box Plus can display camera live views in 1-Division, 4-Division, and 9-Division. You can assign a total of 64 streams of IP cameras.

1. Select a live view layout: 1-Division, 4-Division, and 9-Division.

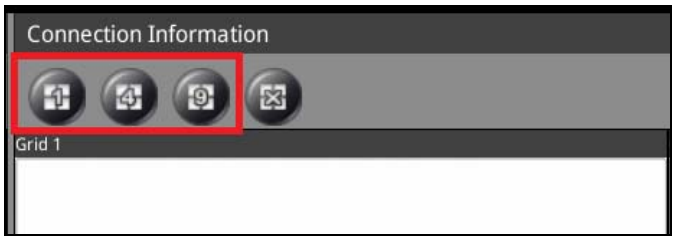


*Figure 2-10*

2. Drag and drop the camera from the Camera List to the grids under Connection Information. To select multiple cameras at a time, click **Select Multiple Cameras** on the top.

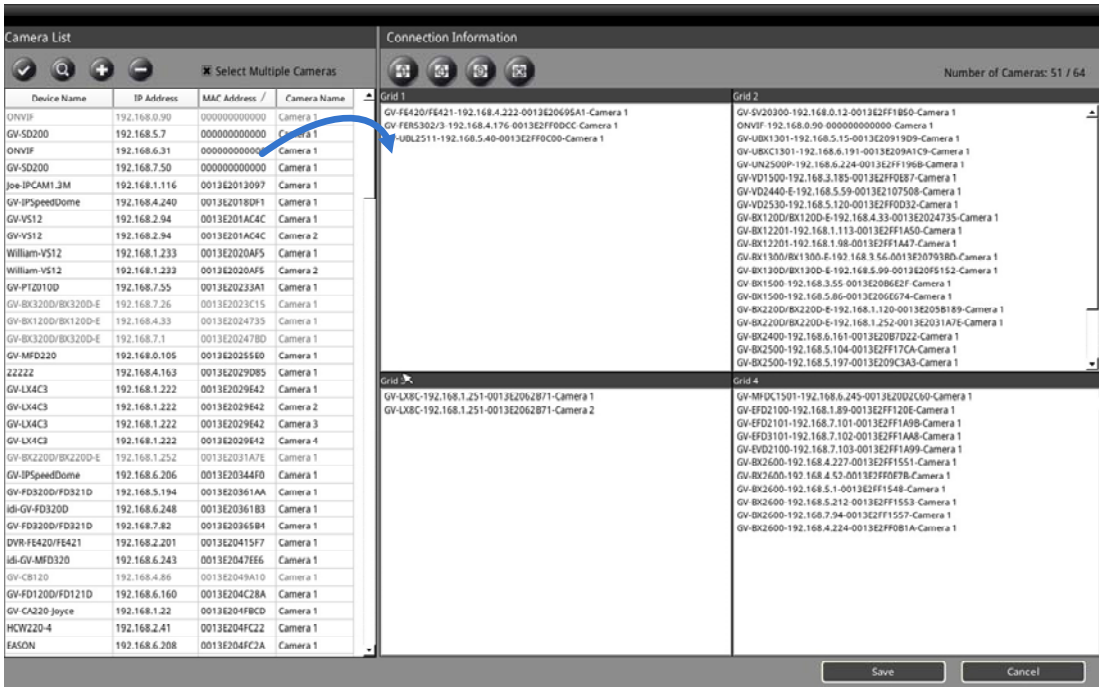


*Figure 2-11*

3. To adjust the display order of the cameras, right-click the camera and click **Move Up** or **Move Down**.
4. To remove a camera, right-click the camera and click the **Delete** button.
5. Click **Save**.

The selected channels will be displayed on the monitor and be looped at an interval of 30 seconds by default. To change the looping interval, right-click the camera and click **Edit**.

**Note:**

1. Refer to *3.1 Live View* for the maximum resolution supported in different live view layout.
2. For fisheye cameras, you will need to choose 1-division layout or assign the camera to the top-left grid of the 4-division view in order to dewarp the fisheye view.

## 2.6 Adding Devices Using GV-IP Device Utility

You may utilize the GV-IP Device Utility to add channels from GV-IP Devices, GV-System (with GV-Mobile Server) and third-party IP devices that adhere to RTSP or ONVIF. This method is recommended for adding third-party IP devices using RTSP protocols.

Before you start, make sure the following:

- All IP devices and GV-Mobile Server must be under the same LAN with the GV-IP Decoder Box Plus.
- You have installed the GV-IP Device Utility on a computer under the same LAN.

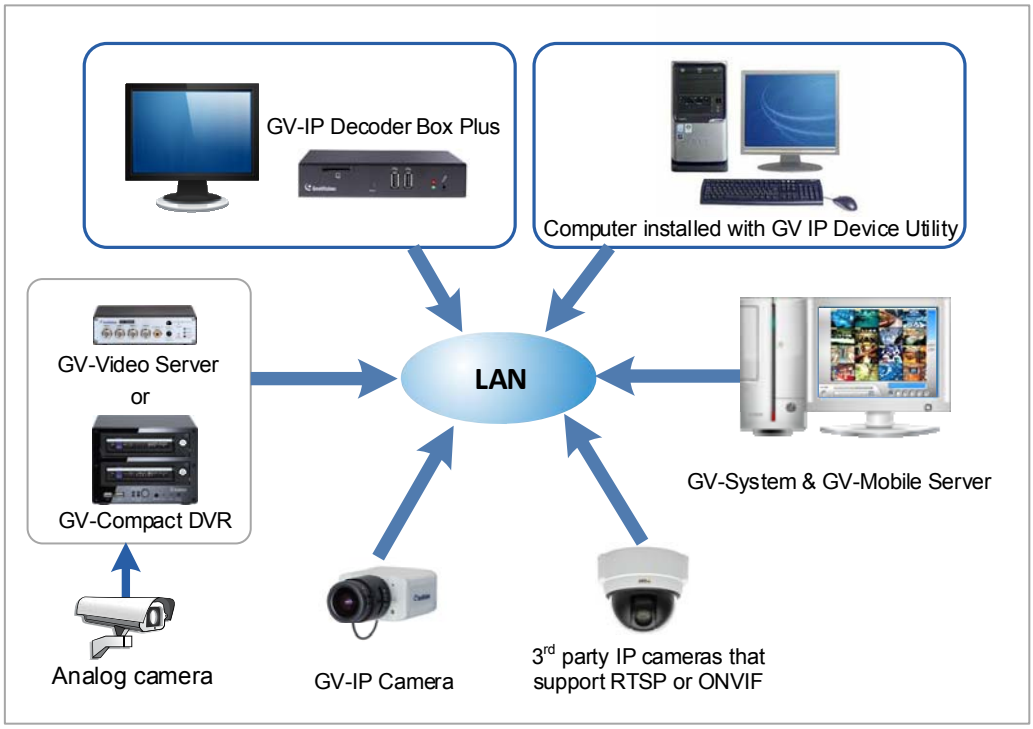


*Figure 2-12*

### 2.6.1 Adding a GV-IP Device

1. Run the **GV IP Device Utility** from the Software DVD. The GV-IP Device Utility window appears. It automatically searches for all the GV-IP Devices under the same LAN.

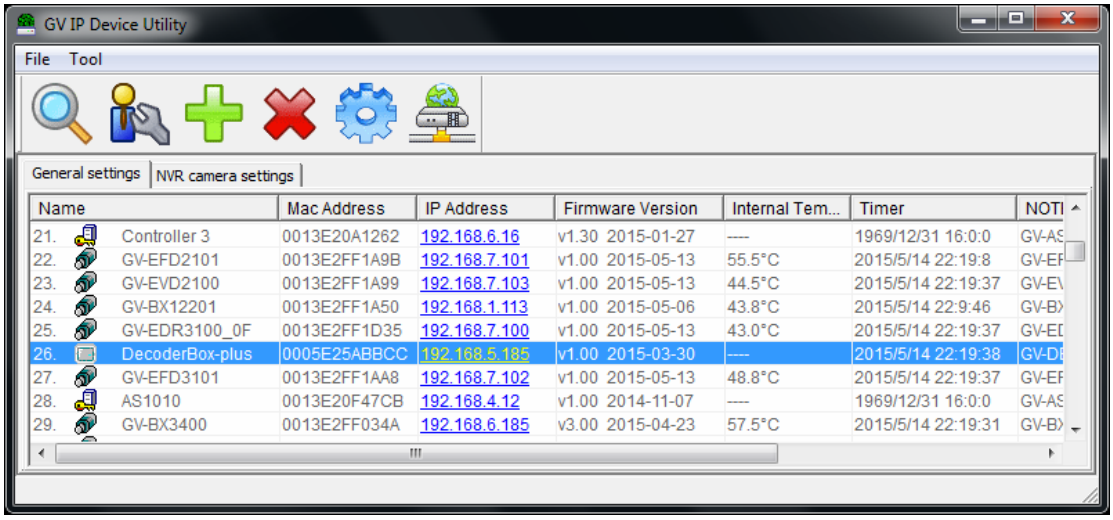


*Figure 2-13*

2. Click the IP address of your GV-IP Decoder Box Plus and select **Connect Setting**. This dialog box appears.

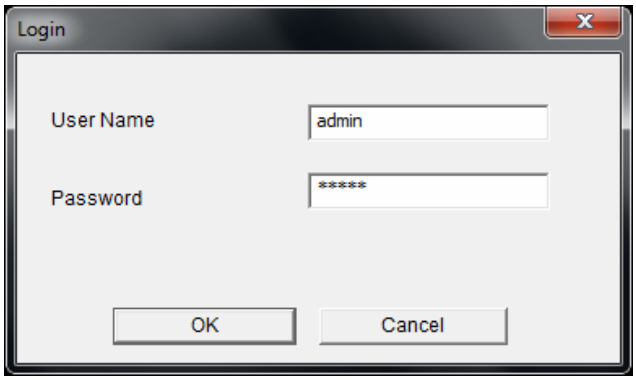


*Figure 2-14*

3. Type the ID and password of your GV-IP Decoder Box Plus and click **OK**. The default ID and password are **admin**. The Video Connection Setting window appears.

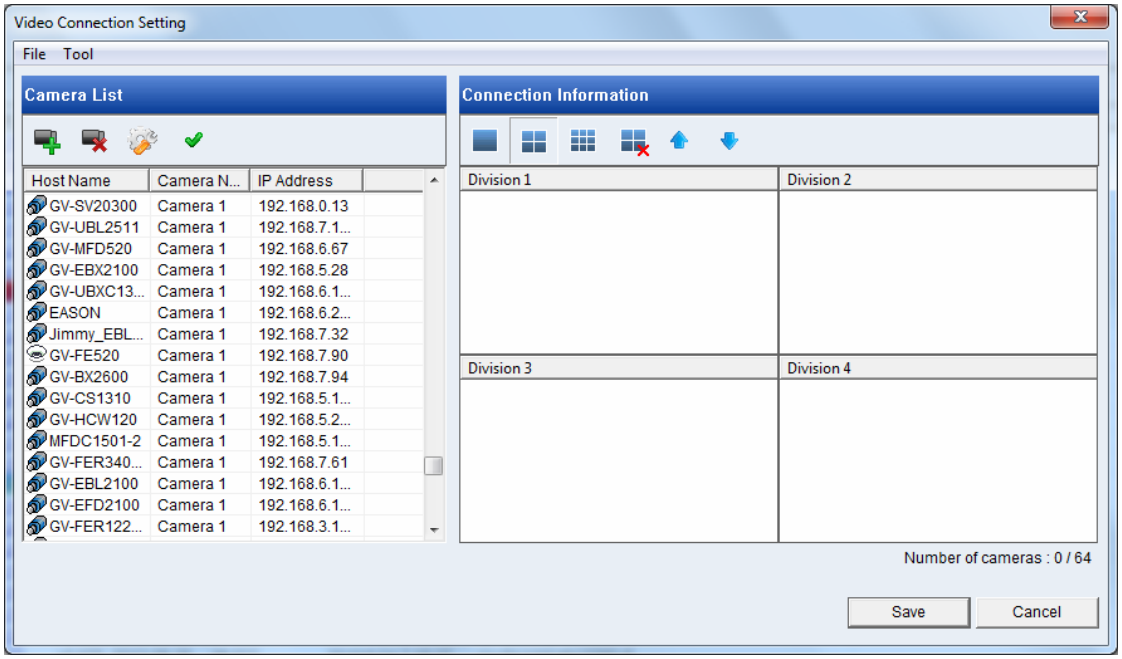


*Figure 2-15*

4. Use the Camera List toolbar to add, remove or configure a selected camera in the Camera List. Click the **Select All** button to select all the cameras on the list.
5. Under Connection Information, select a live view layout: **1 Division** (Single View) , **4 Division** (Quad View) , **9 Division** .
6. Add channels to the Connection Information column.
   A. Drag and drop the camera from the Camera List to the Connection Information column.
   B. Use the **Move Up** and **Move Down** buttons to change the display order of these channels.
   C. To remove a selected camera, click the **Remove** button.

D. If you have changed the default ID and password of the added GV-IP Devices and GV-Mobile Server, right-click the channel, select **Edit** and type the username and password to log in for connection. By default, the login ID and password for all GV-IP Devices are **admin**.

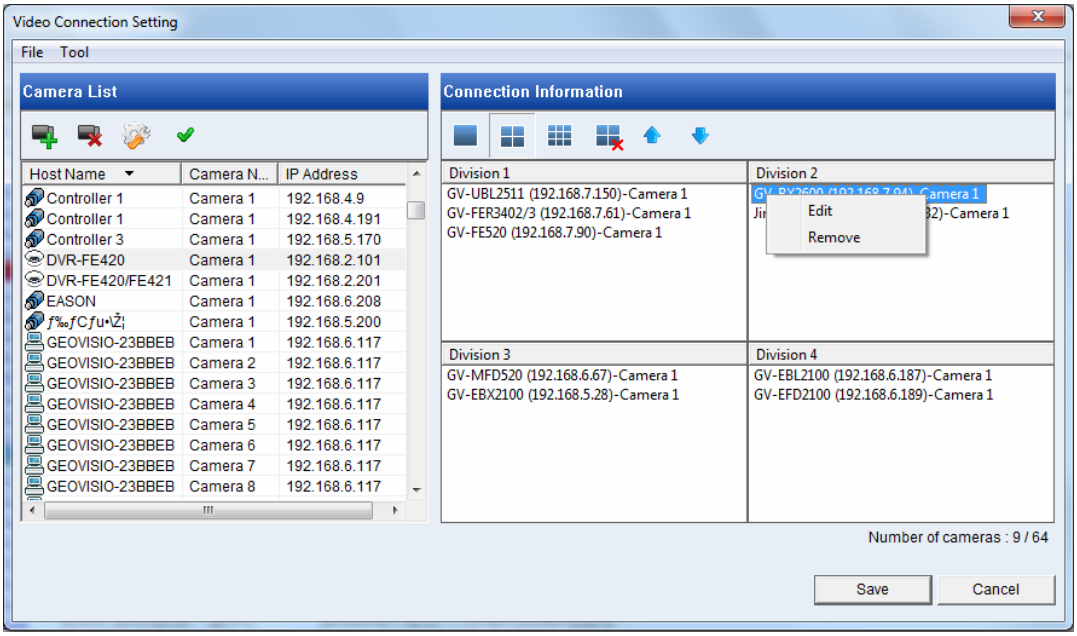


*Figure 2-16*

7. Click **Save**.

The cameras in the Connection Information column will be updated to the GV-IP Decoder Box Plus and looped at a 30-second interval by default.

---

**Note:** For fisheye cameras, you will need to choose 1-division layout or assign the camera to the top-left grid of the 4-division view in order to dewarp the fisheye view.

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## 2.6.2 Adding a Third-party Device

1. Click the **Add Camera** button on the Video Connection Setting window (Figure 2-17). This dialog box appears.

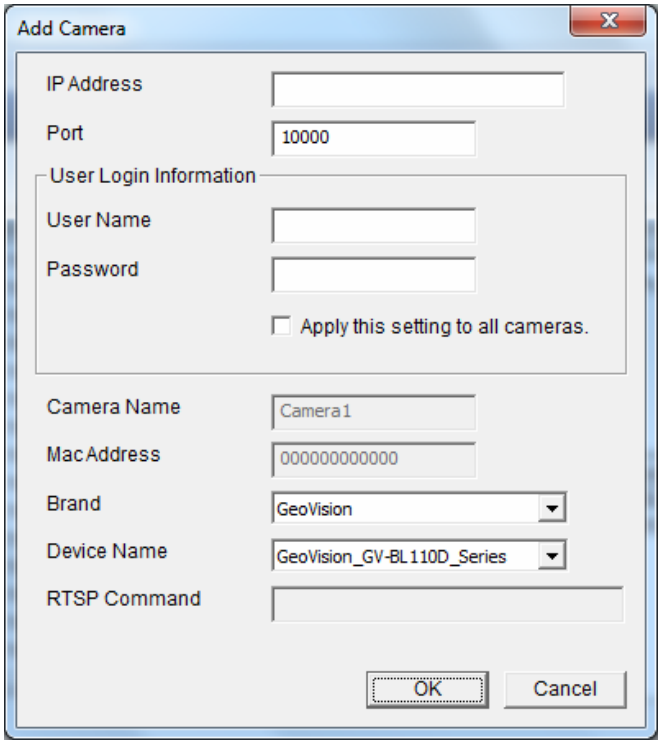


*Figure 2-17*

2. Type the IP address, user name and password of the device.
3. Select **Protocol** for Brand and one of the following protocols for Device Name. Type the RTSP command if required. Refer to your third-party IP camera's manual for this command.

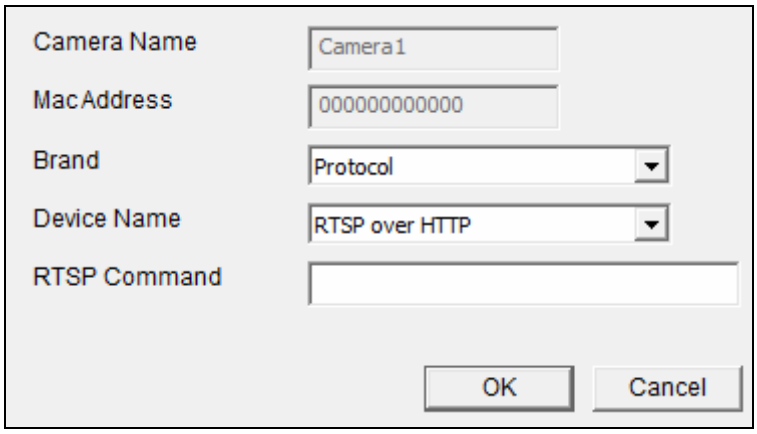


*Figure 2-18*

- **ONVIF:** Select this protocol if your camera adheres to ONVIF.

- **RTSP over HTTP:** The RTSP protocol uses an HTTP port for data streaming from the IP camera.
- **RTSP over TCP:** The RTSP protocol uses a TCP port for data streaming from the IP camera.
- **RTSP over UDP:** The RTSP protocol uses a UDP port for data streaming from the IP camera.

4. Click **OK**. The camera is added to the list.
5. Follow steps 5 and 6 in *2.5.1 Adding a GV-IP Device* to set up the play mode and display order for displaying channels. The channels will be displayed according to this order.
6. Click **Save**.

The cameras on the Connection Information column will be updated to the GV-IP Decoder Box Plus and displayed on the monitor with the looping interval of 30 seconds by default.

# Chapter 3 Accessing Live View

## 3.1 Live View

After adding and assigning IP devices to live view grid, the camera live views are displayed in the main screen.

*Figure 3-1*

Right-click a live view grid to access the following options.

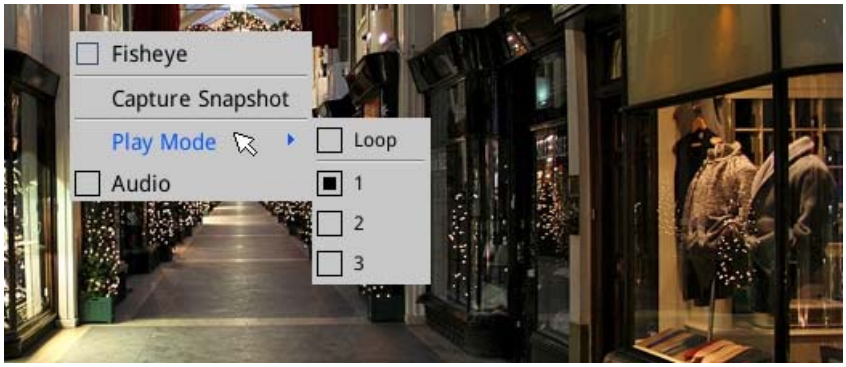


*Figure 3-2*

- **Capture Snapshot:** Captures a snapshot of the live view. This option is only available when the live view grid is not looping.

- **Play Mode:** Select **Loop** to start looping through the devices or select a device number to fix the live view grid to the selected device. A looping icon will appear on the live view grid if you select Loop.
- **PTZ:** Select to allow GV-Joystick V2 to control the PTZ device. This function is only available for devices with PTZ function and only one PTZ device can be enabled at a time.
- **Audio:** Enables or disables the audio out function. You can only enable the audio out function of one device at a time.

Note the following live view specifications

- The resolution of the added device must be lower than the maximum resolution listed below for each screen division. When the device resolution exceeds the maximum resolution supported, GV-IP Decoder Box Plus will connect to stream 2 of the device instead. If stream 2 is unavailable, the message “Resolution Error” appears on the screen.
- Fisheye dewarping is only supported in Single View and the top-left grid of Quad View.

| Screen Division | | Maximum Resolution | Fisheye Dewarping |
|---|---|---|---|
| 1-Division (Single View) | | 2048 x 1944 | Supported. |
| 4-Division (Quad View) | Top-left Grid | 2048 x 1944 | Supported. |
| | Other 3 Grids | 1920 x 1080 | Not supported |
| 9-Division | | 1280 x 720 | Not supported |

**Note:** The camera view will display the message “Connection Lost” if the login ID and password are incorrect.

## 3.2 Capturing Snapshots

You can take snapshots of the live view and the snapshots will be automatically saved to the selected storage device (USB drive or SD card) in JPEG format.

Before you start, be sure:

- You have inserted a USB drive or SD card for storage.
- You have at least 30 MB of space on your storage device.
- The storage type is configured as FAT32 format.
- You have assigned a storage device in the System Setting page (see below).

Otherwise, the error icon will appear when attempting to capture an image.

1. On the main menu, click the **System Setting** icon and select **System** on the left.
2. Under **Storage Device**, select a storage device to store the captured screenshots, and click **Save**.
3. If the live view grid is still under looping mode, right-click the live view grid, select **Play Mode**, and select the device number to stop the looping.
4. Right-click the live view grid again, and select **Capture Snapshot**.

When captured successfully, a snapshot icon appears at the top right corner of the screen.

## 3.3 Fisheye Dewarping

You can enable fisheye dewarping if the fisheye camera is in Single View or the top-left grid of the Quad View. Right-click the live view of the fisheye camera and select **Fisheye** to enable fisheye dewarping.

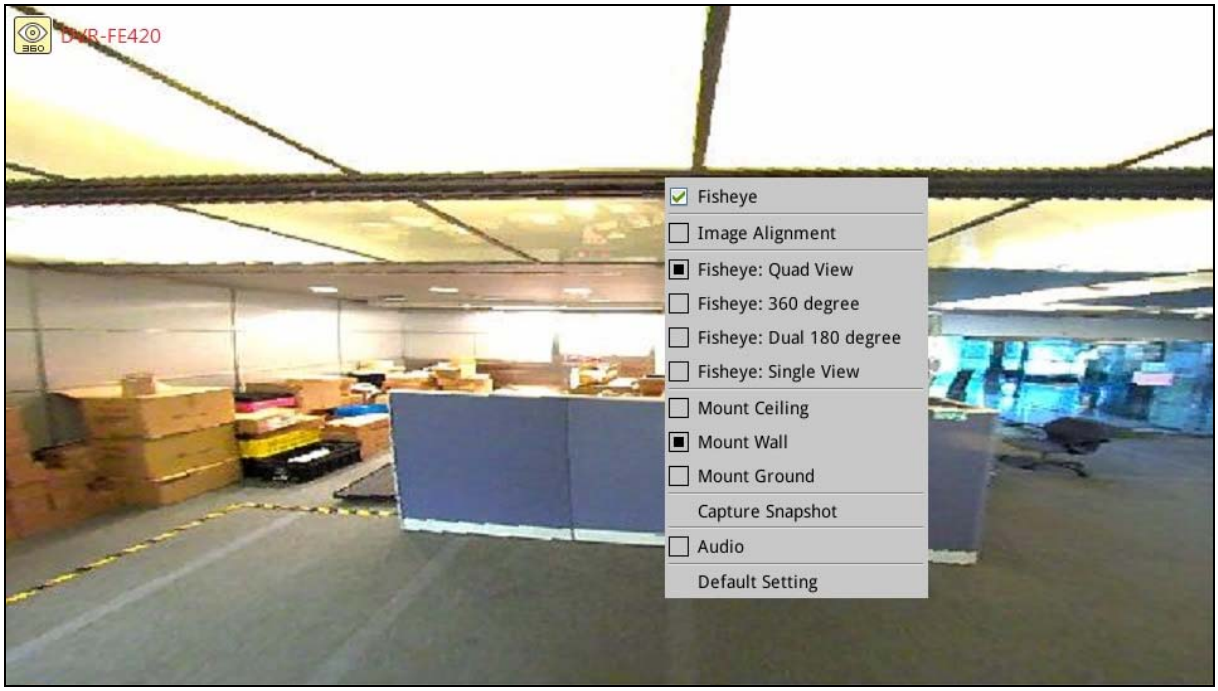


*Figure 3-3*

The following fisheye settings are available:

- **Image Alignment:** Align the red circle with the inner edge of the camera image if needed. You can adjust the red circle by dragging and by scrolling the mouse.
- **Camera Modes:**
  - **Fisheye: Quad view:** Composed of 3 PTZ views and a circular source image.
  - **Fisheye: 360 degree:** Composed of two PTZ views and one 360º panoramic view.
  - **Fisheye: Dual 180 degree:** Composed of two 180º views.
  - **Fisheye: Single view:** Composed of one PTZ view.
- **Mount Ceiling / Mount Wall / Mount Ground:** Select according to where the camera is mounted.

## 3.4 Controlling PTZ and Speed Dome Cameras

The GV-Joystick V2 can be connected to the GV-IP Decoder Box Plus to control GeoVision PT, PTZ and Speed Dome cameras, and also third-party PTZ and Speed Dome cameras. The supported functions include zoom in, zoom out, tilt (vertical movement), pan (horizontal movement), focus in, focus out and automatic focus. The functions corresponded to each button on GV-Joystick V2 is listed below:

| Button | Function |
|---|---|
| F1 | Focus In |
| F2 | Focus Out |
| F3 | Auto Focus |
| F4 | Home |
| F5 / F6 | No functions |

**Note:** For PTZ control, GV-SD200 and third-party cameras must be connected through ONVIF. GV-Joystick V2 cannot control channels connected through GV-Mobile Server or RTSP.

1. Connect a GV-Joystick V2 to the USB port.
2. Right-click the live view of the PTZ device and select **PTZ**.
3. You can start to control the camera using the GV-Joystick V2.

You can only enable the PTZ function of one PTZ device at a time.

# Chapter 4 System Settings

On the main screen, click the **System Settings** icon to access the following setting pages: System, Network, Date & Time, Account, Display.

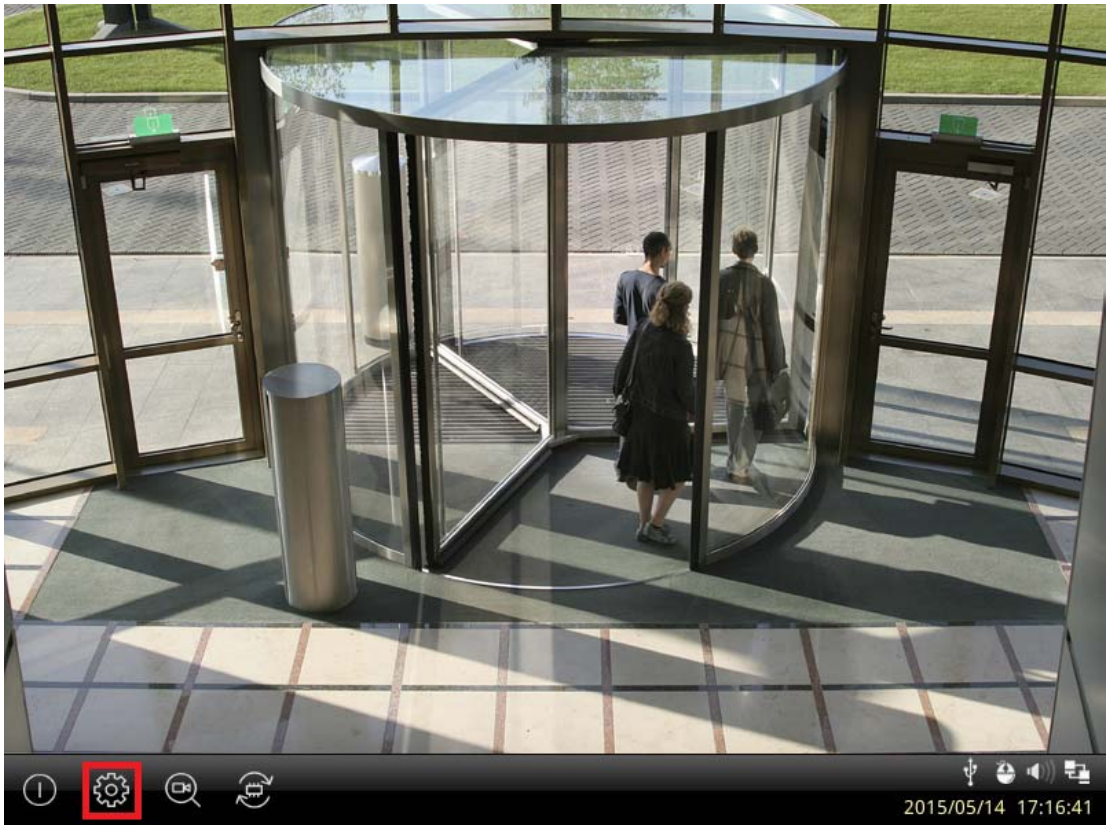


*Figure 4-1*

## 4.1 System

On the System page, you can change the device name, interface language, resolution and the designated storage device for storing snapshots.

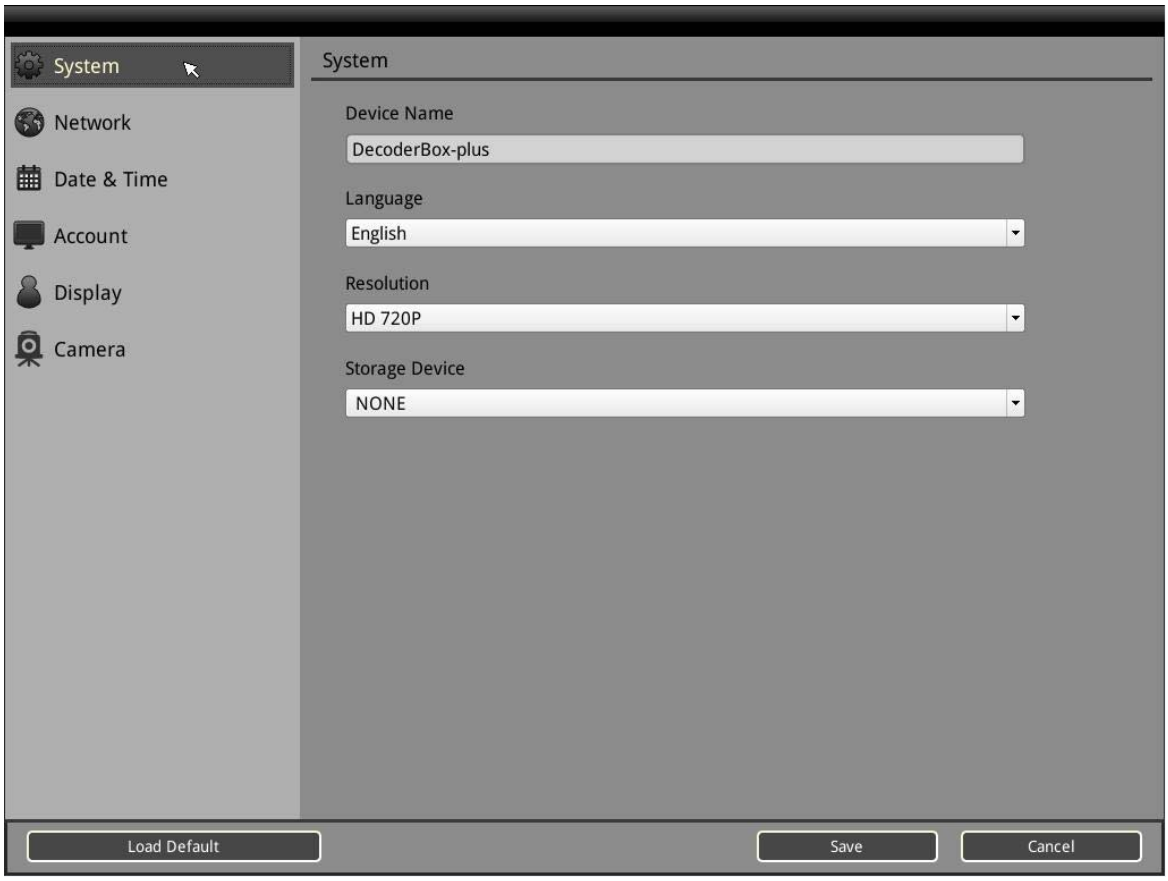


*Figure 4-2*

- **Device Name:** Double-click to change the device name of the GV-IP Decoder Box Plus.
- **Language:** Select a language for the user interface.
- **Resolution:** Select a resolution for your monitor. The default is HD 720P. If you are using a VGA monitor, select **VGA 1024 x 768**.
- **Storage Device:** Select the storage device you want to use for storing captured snapshots.

Click **Save** to apply the settings.

## 4.2 Network

To configure the network settings for the GV-IP Decoder Box Plus, see *2.4 Setting Up the Network*.

## 4.3 Date & Time

On the Date & Time page, you can configure the day and time of the GV-IP Decoder Box Plus.

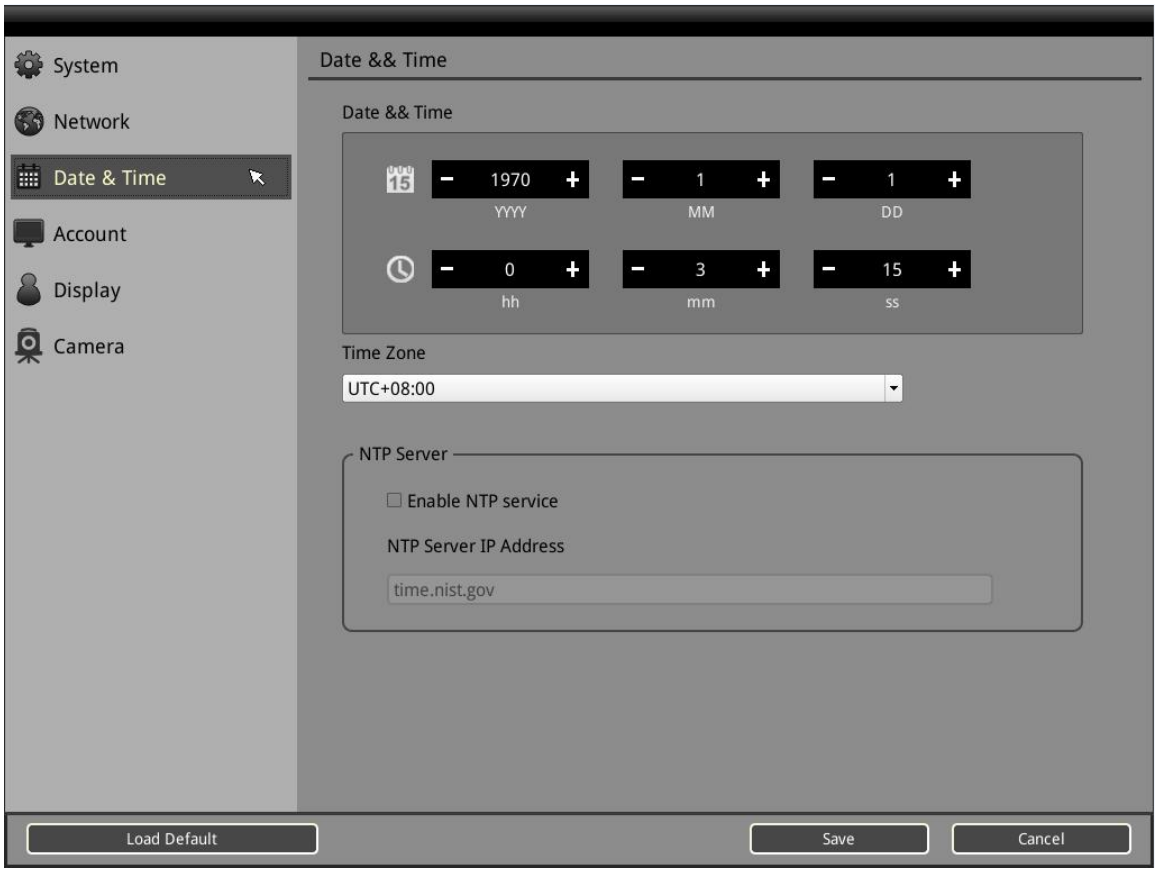


*Figure 4-3*

- **Date & Time:** Click to adjust the day and time of the GV-IP Decoder Box Plus if needed.
- **Time Zone:** Select a time zone for your location.
- **NTP Server:** Click **Enable NTP** and type the URL of a network time server to synchronize the clock of GV-IP Decoder Box Plus with the network time server.

Click **Save** to apply the settings.

## 4.4 Account

On the Account page, you can configure the login account of the GV-IP Decoder Box Plus. The default user name and password are both **admin**. You will need the login information if you want to access the GV-IP Decoder Box Plus through GV-IP Device Utility.

You can also specify a **Wait Time**. Once you have enabled the function, you must enter the User Name and Password if you have been idle for the specified time period.

Click **Save** to apply the settings.

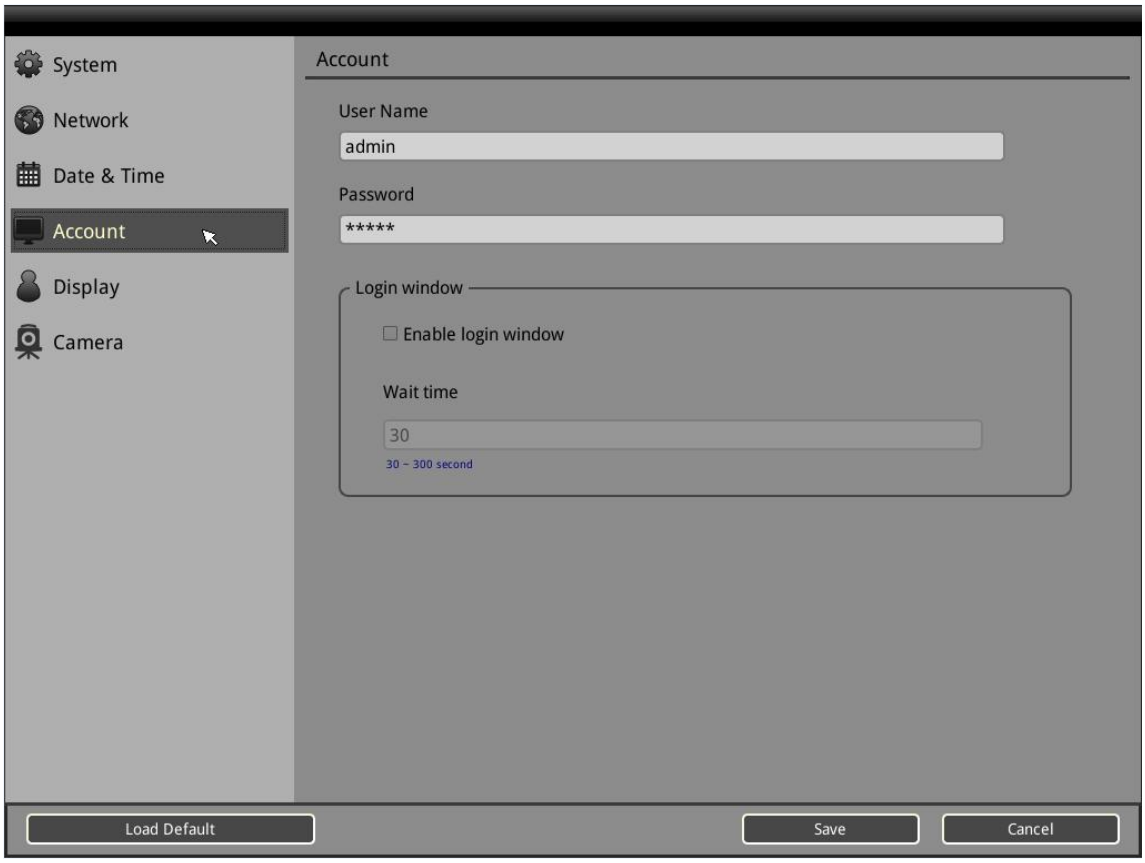


*Figure 4-4*

## 4.5 Display

On the Display page, you can specify what information to overlay on the live view.

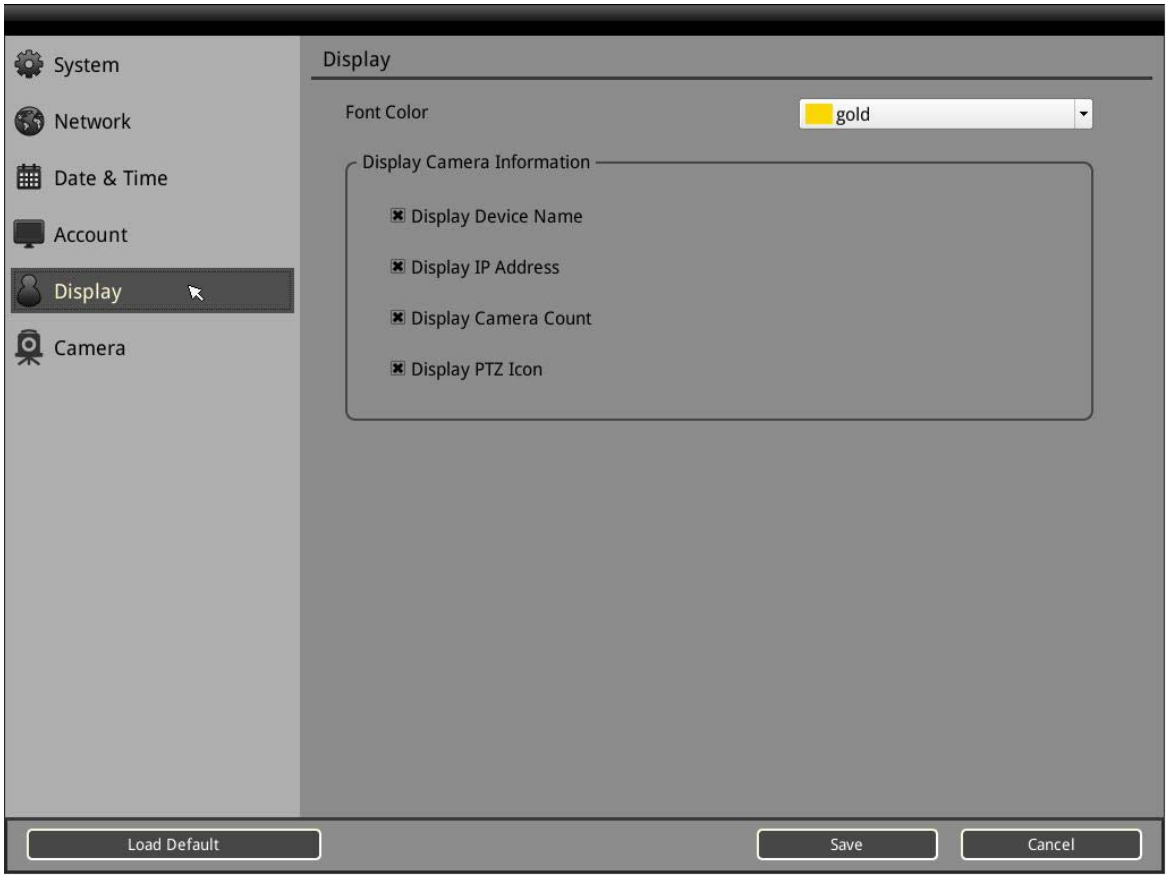


*Figure 4-5*

- **Font Color:** You can also change the font color of the text overlay.
- **Display Device Name:** Select to display the device name of the camera.
- **Display IP Address:** Select to display the IP address of the camera on the live view.
- **Display IPCam Count:** Select to display the camera count of the live view grid. For example, 7/8 indicates that there are 8 cameras assigned to the live view grid, and live view of the 7$^{th}$ camera is currently being displayed.
- **Display PTZ Icon:** Select to display PTZ icon when the camera supports PTZ functions.

Click **Save** to apply the settings.

## 4.6 Camera

On the Camera page, you can change the ID and password of the IP device, which automatically applies to all IP devices. The default ID and Passwords are **admin**.

Click **Save** to apply the settings.

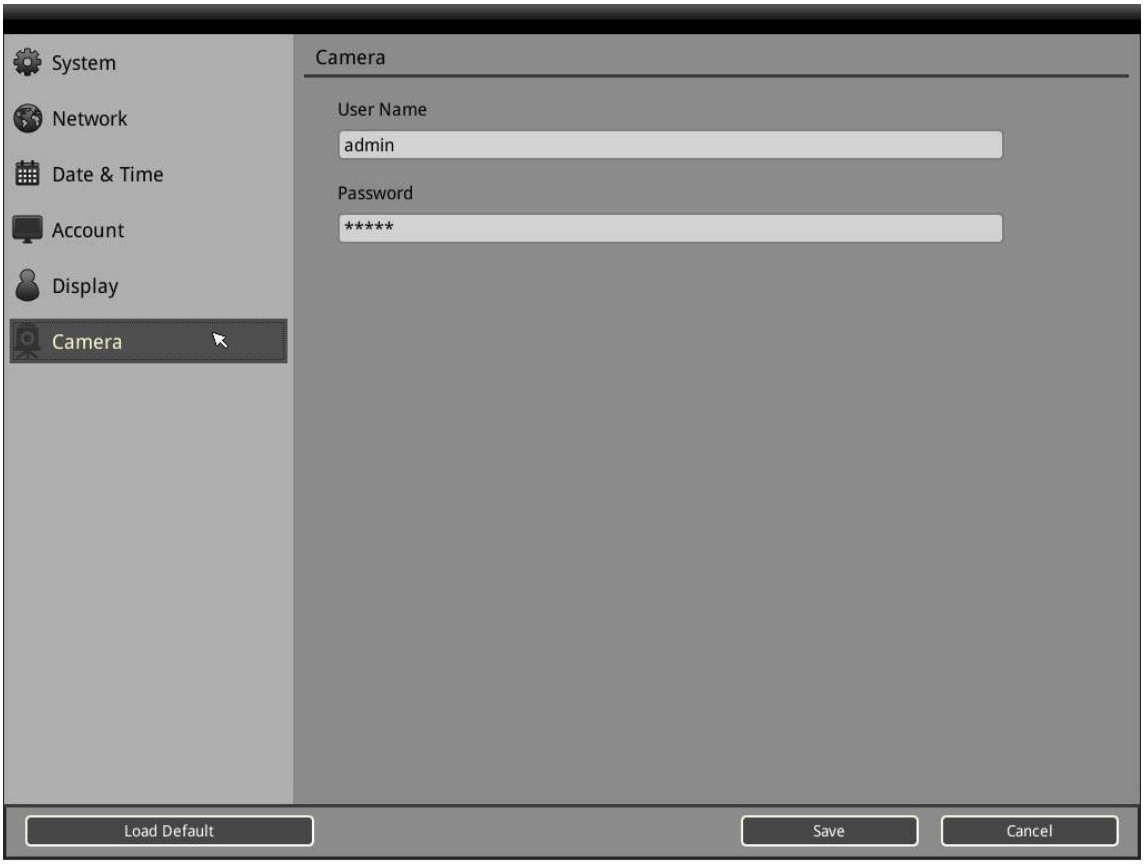


*Figure 4-6*

# Chapter 5 Advanced Applications

## 5.1 Upgrading the Firmware

GeoVision will periodically release firmware updates on the website. You can upgrade firmware locally using a USB drive or SD card, or remotely through the GV-IP Device Utility.

### 5.1.1 Upgrading Firmware through a Storage Device

1. Copy the firmware file to the root folder of a USB drive or an SD card.
2. Insert the USB drive or SD card to the GV-IP Decoder Box Plus.
3. On the main screen, click the **Firmware Update** icon.

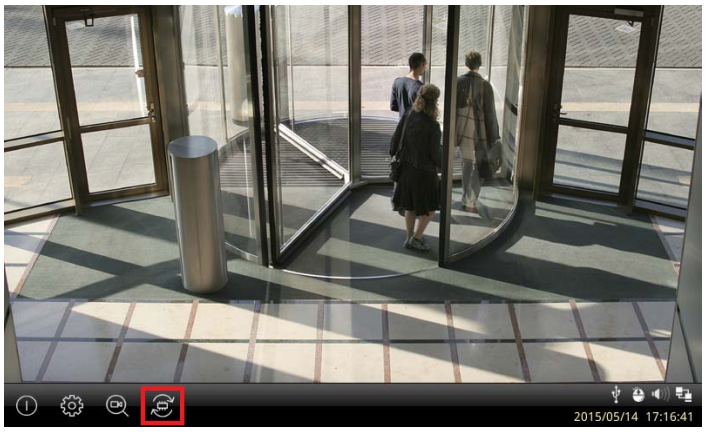


*Figure 5-1*

4. Select the storage device and select the firmware file.

*Figure 5-2*

5. Click **Update** to begin upgrading the firmware. The GV-IP Decoder Box Plus will restart after the firmware upgrade is completed.

## 5.1.2 Upgrading Firmware through GV-IP Device Utility

1. Run the GV-IP Device Utility. All GV-IP Devices under the same LAN are searched.

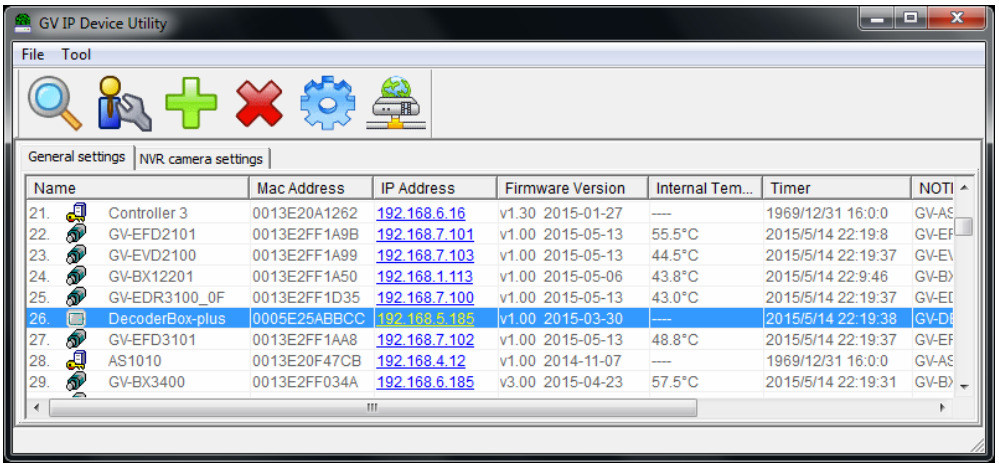


*Figure 5-3*

2. Click the IP address of your GV-IP Decoder Box Plus and select **Configure**. This window appears.

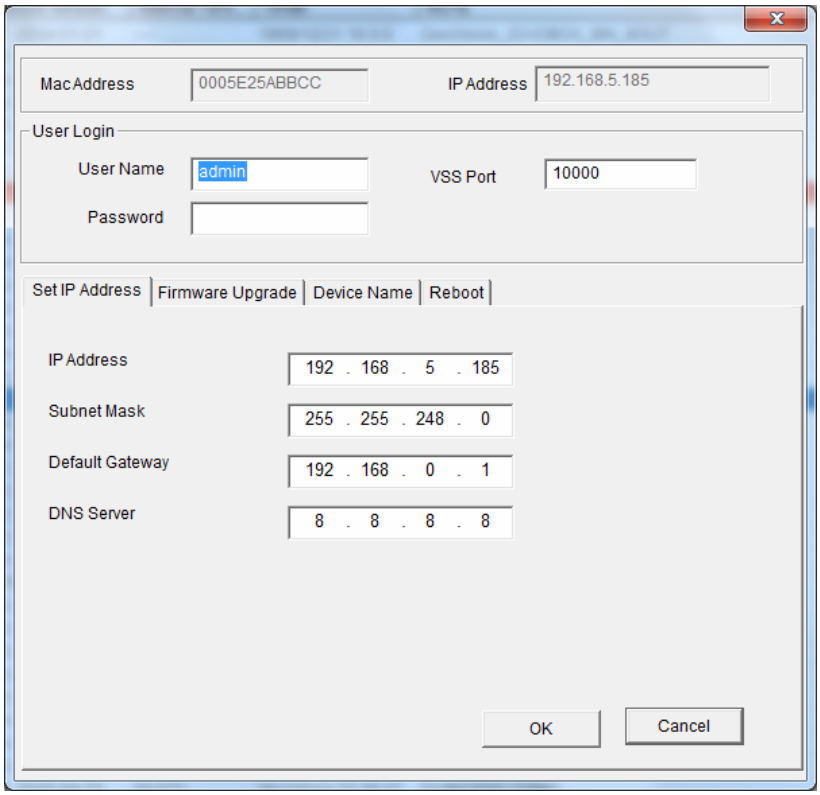


*Figure 5-4*

3. Select the **Firmware Upgrade** tab, type the User Name and Password, and click the **Browse** button to locate the firmware file saved at your local computer.

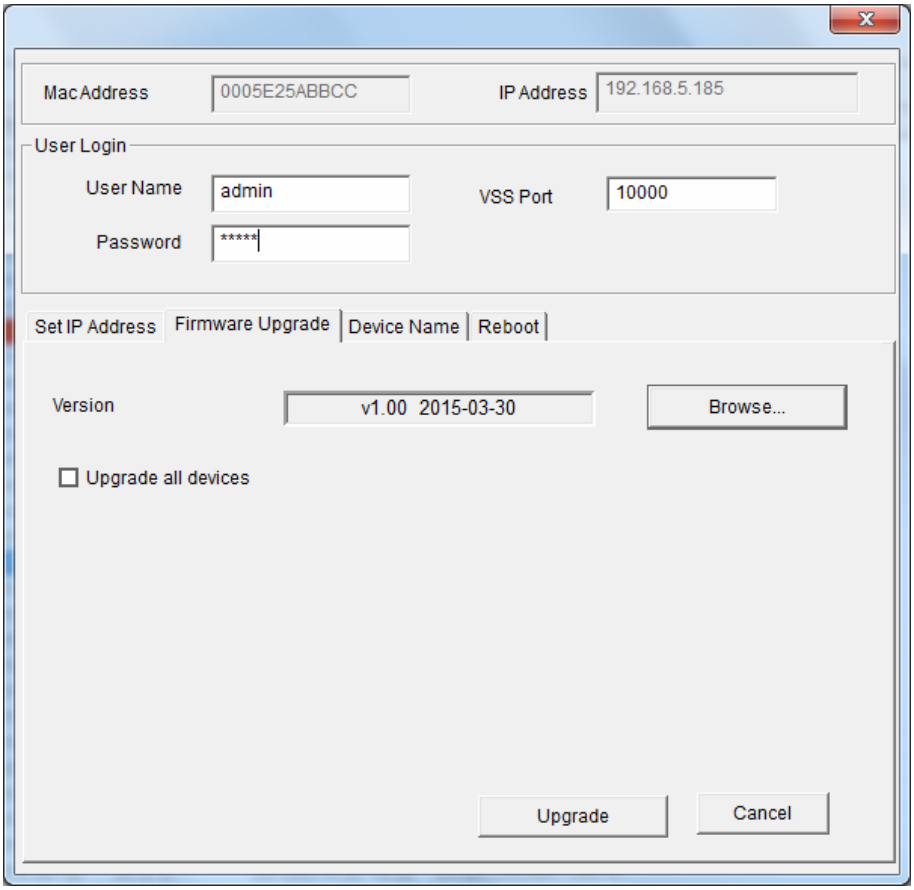


*Figure 5-5*

4. Click **Upgrade** to start upgrading. The system will restart itself when the upgrade is completed.

---

**Note:** The default user name and password are both **admin**. To see how to change the login information of GV-IP Decoder Box Plus, refer to *4.4 Account*.

---

## 5.2 Restoring Default Settings

There are two ways to restore the GV-IP Decoder Box Plus to default settings.

- Use the pin to press the load default button for about 10 seconds.

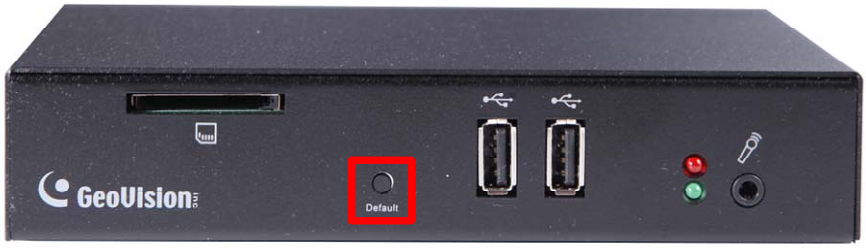


*Figure 5-6*

- On the main screen, click the **System Settings** icon and click the **Load Default** button on the bottom of any of the setting pages.

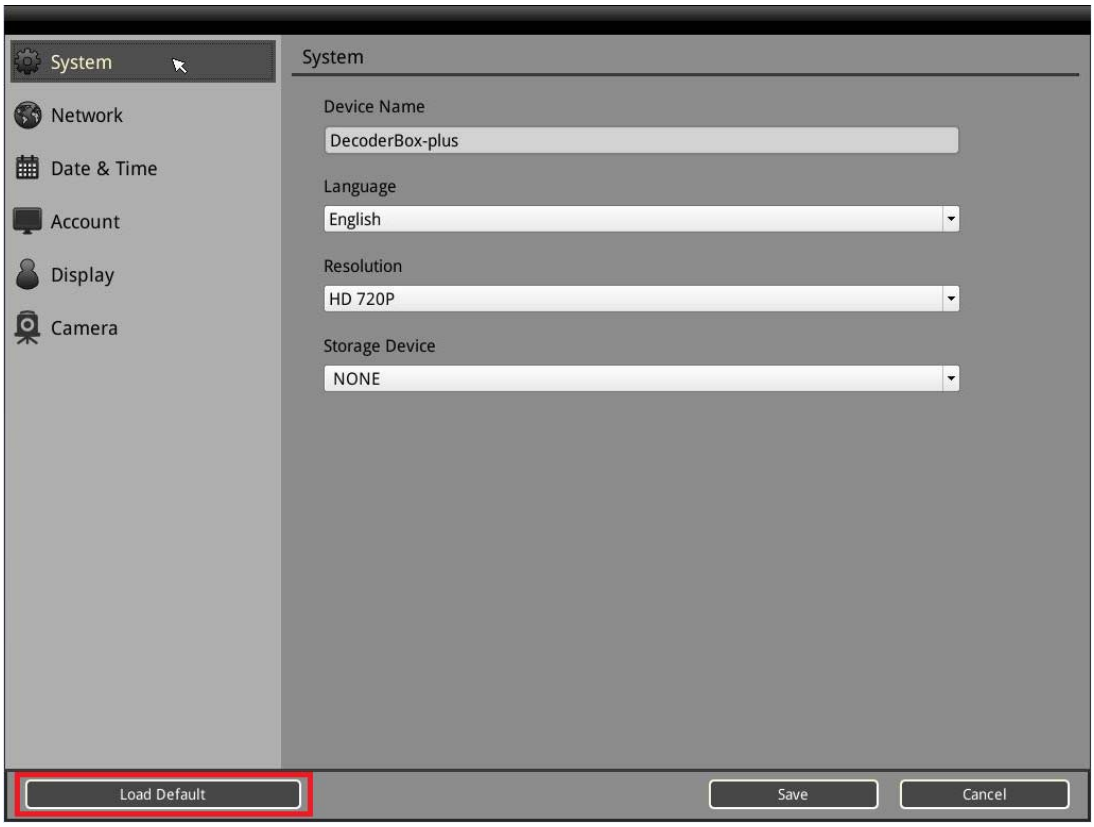


*Figure 5-7*

The system will restore default settings and reboot itself.

# Specifications

## Video

| | | |
|---|---|---|
| **Video Codec** | | H.264 |
| **Audio Codec** | | G.711 |
| **Maximum Resolution** | **1-ch Division** | 2048 x 1944 |
| | **4-ch Division** | Top-left grid: 2048 x 1944<br>Other grids: 1920 x 1080 |
| | **9-ch Division** | 1280 x 720 |
| **Video Output at 60 Hz** | **HDMI** | 720p / 1080p |
| | **VGA** | 1024 x 768 |

## Network

| | |
|---|---|
| **Interface** | 10/100/1000 Ethernet |
| **Protocol** | ONVIF, RTSP, TCP |

## Mechanical

| | | |
|---|---|---|
| **Connectors** | **Power** | 12V DC Jack |
| | **Ethernet** | RJ-45 |
| | **Monitor Output** | HDMI, VGA |
| | **Memory Card** | SD/SDHC card slot (for Class 6 card or above, FAT32 format) |
| | **USB 2.0** | USB slot x 4 (2.0 backward compatible, FAT32 format) |

## General

| | |
|---|---|
| **Operating Temperature** | 0°C ~ 40°C (32 °F ~ 104 °F) |
| **Operating Humidity** | 20 % ~ 80 % (with no condensation) |
| **Dimensions (W x H x D)** | 162.3 × 34.4 × 107.6 mm (6.39” × 1.35” × 4.24”) |
| **Net Weight** | 555 g (1.22 lb) |
| **Power** | DC 12 V |
| **Power Consumption** | 36 W (max. 3 A at 12V DC) |
| **Regulatory** | CE, FCC, LVD compliant |
| **Language** | English, French, German, Italian, Japanese, Portuguese, Russian, Spanish, Traditional Chinese |

**Note:** Specifications are subject to change without notice.