GV-FWC

1. Introduction

Paired with GV-Face Recognition Camera, the GV-FWC is able to generate Wiegand signals for access control management based on face recognition. It can be configured through TCP/IP and provides 3 inputs and 2 relay outputs.

1.1 System Requirements

- GV-ASManager V5.1.0.0 or later
- GV-Face Recognition Camera (GV-FD8700-FR / VD8700) V1.10 or later

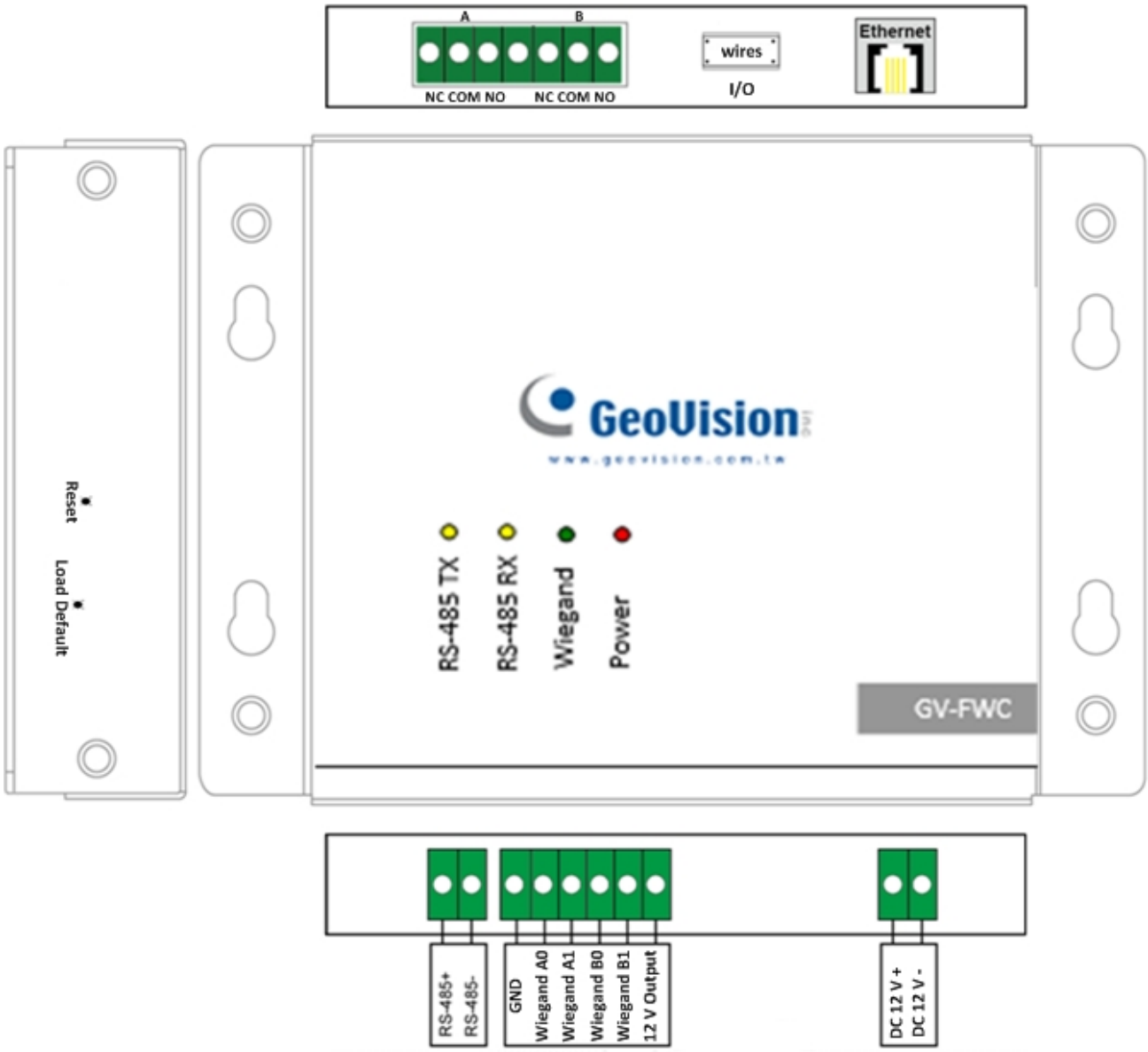
1.2 GV-AS Controller Supported (for TCP/IP connection)

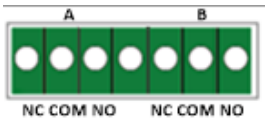
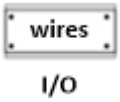
- GV-AS210 / 2110 / 2120 V2.20 or later
- GV-AS410 / 4110 / 4111 V2.20 or later
- GV-AS810 / 8110 / 8111 V2.20 or later

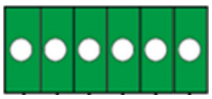
1.3 Packing List

- GV-FWC
- Download Guide
- Warranty Card
- I/O Wires

1.4 Overview

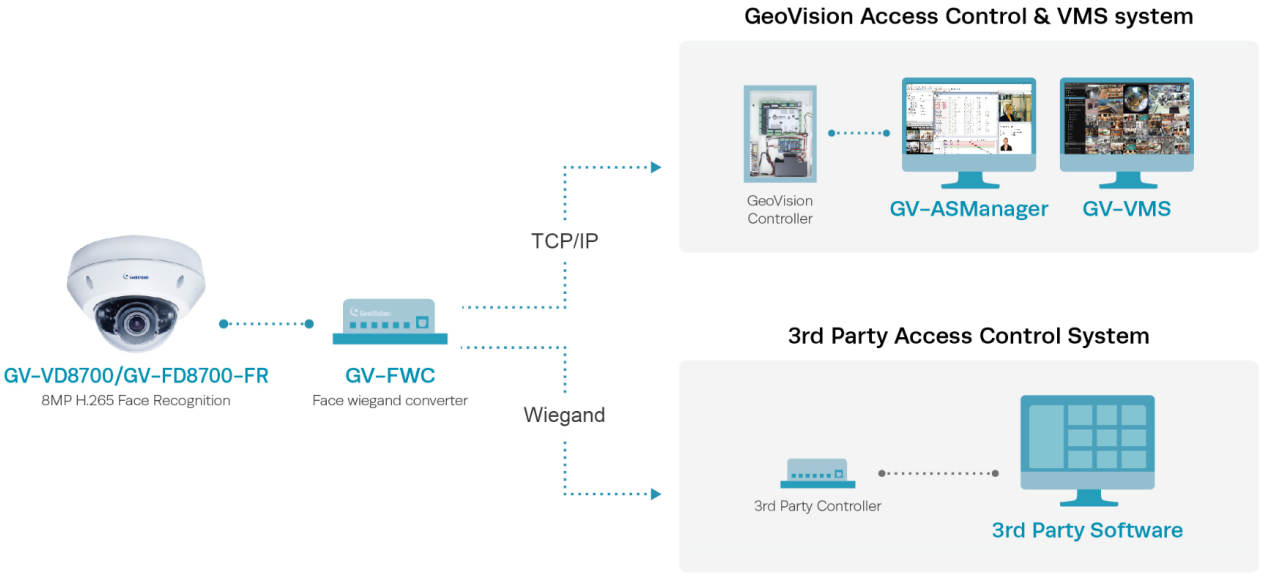


	The GV-FWC provides two relay outputs
	**Wire** / **Definition** Brown / Input 1 Purple / Input 2 White / Input 3 Gray / COM Note that the red, yellow and orange wires are currently nonfunctional.

 RS-485	Currently nonfunctional.
 Wiegand	The GV-FWC provides 2 Wiegand ports for connecting to GV-AS Controller, 3rd-party Wiegand controllers and/or Wiegand readers.
 DC 12 V	The GV-FWC can be powered through the DC 12 V.
Reset	Press to reboot the device.
Load Default	Press and hold for 3 ~ 5 seconds to restore the device to its factory default settings.

2. Basic Setup

GV-FWC is able to send access card data, paired to Face IDs of GV-Face Recognition Camera, to GV-AS Controller, regulated by GV-ASManager, upon recognition, as illustrated below. Make sure the GV-FWC, GV-AS Controller and GV-Face Recognition Camera are set up under the same LAN.



For the necessary configurations, follow the steps below:

- **Step 1 Connecting GV-AS Controller to GV-ASManager**

  To connect GV-AS ControlelIr to GV-ASManager, see *Adding Controllers*, *Chapter 4* in *GV-ASManager User's Manual*.

- **Step 2 Enrolling Faces with Access Card Data to Camera**

  To add Face IDs with access card data, see *2.2 Adding / Editing Face IDs* and *2.4.2 Batch Enrolling Faces + Cards* in *GV-Face Manager User's Guide*.

- **Step 3 Configuring GV-FWC**

  To configure and set up GV-FWC for communication, see *2.3 Accessing GV-FWC* and *3.1 Configuring for Communication on GV-FWC*.

- **Step 4 Connecting Camera to GV-FWC**

  To connect the camera to GV-FWC, see *3.2 Sending Face IDs from Camera*.

- **Step 5 Connecting GV-FWC to GV-AS Controller**

  There are two methods of connecting GV-FWC to GV-AS Controller:

  - **via TCP/IP (recommended):** See *3.3 Receiving Access Card Data by Controller* later in this guide
  - **via Wiegand:** See *GV-ASEV Controller User's Manual* based on the model of GV-AS Controller used for the physical connection.

Note:

1. GV-FWC connection to GV-AS Controller via TCP/IP is only supported by GV-AS210 / 2110 / 2120 / 410 / 4110 / 4111 / 810 / 8110 / 8111 V2.20 or later.
2. Face images are also sent to the GV-ASManager upon recognition only when the GV-FWC is connected to GV-AS Controller via TCP/IP.

- **Step 6 [Optional] Connecting GV-FWC to GV-Reader**

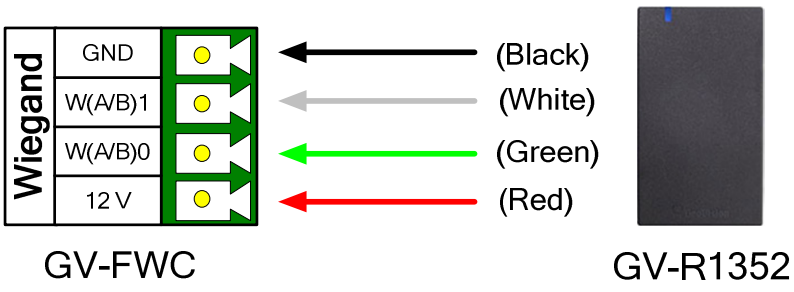
  Only for access control requiring both face recognition plus card swipe, to connect GV-FWC to a GV-Reader, see *2.1 Connecting Extended Reader*.

Note: For access control requiring both face recognition plus card swipe, GV-FWC must be connected to GV-AS Controller via TCP/IP.

Once setup's complete, access records by Face IDs are recorded on GV-ASManager upon recognition. If a message of "Access Denied: Invalid Card" appears on GV-ASManager, you can right-click on the message to add the card to your access database.

2.1 Connecting Extended Reader

The following diagram is exemplified using GV-R1352. Up to two readers can be connected to GV-FWC through its Wiegand interface.



2.2 Powering On

Power can be applied to GV-FWC using one of the following methods:

- Plug the power adapter to the 12V terminal block. The power adapter is an optional device.
- Use the PoE function where the power is supplied over the network cable.

2.3 Accessing GV-FWC

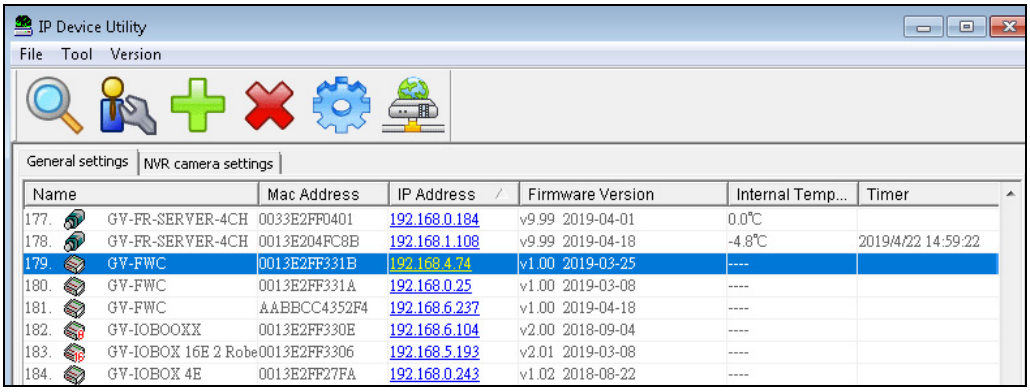
When GV-FWC is connected to a network with DHCP server, it will be automatically assigned with a dynamic IP address. Follow the steps below.

Note:

1. The PC used to access the Web interface must be under the same LAN as the GV-FWC.
2. If the network connected doesn't have DHCP server or is disabled, GV-FWC can be accessed by its default IP address 192.168.0.100, see *2.3.1 Assigning a Static IP Address*.

---

1. Download and install the GV-IP Device Utility program from the GeoVision website.
2. On the GV-IP Utility window, click the button to search for the IP devices connected in the same LAN. Click the **Name** or **Mac Address** column to sort.
3. Find the GV-FWC with its Mac Address, click on its IP address and select **Web Page**.

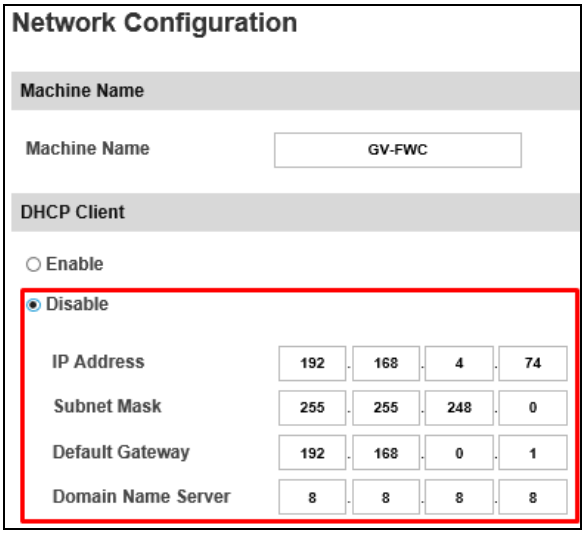


4. In the login page, Type the default ID and password **admin** and click **OK** to log in.

2.3.1 Assigning a Static IP Address

To assign a static IP address to GV-FWC, follow the steps below.

1. Open your Web browser, and type the default static IP address https://192.168.0.100.
2. In both Login and Password fields, type default value **admin**. Click **OK** and this page appears.

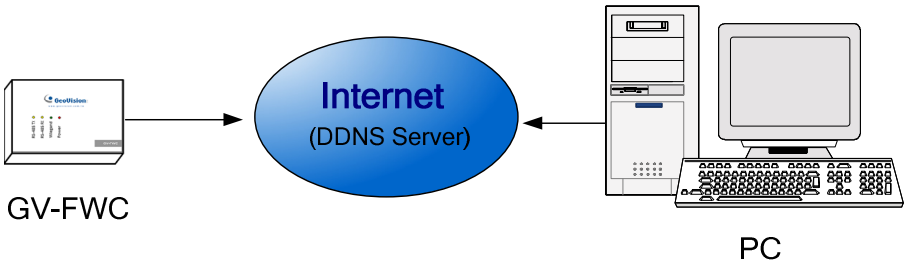


3. Under **DHCP Client**, click **Disable**. Type the static IP address information, including IP Address, Subnet Mask, Default Gateway and Domain Name Server.
4. Click **Submit**. When the setting is complete, the Status field displays *Register Success*. The GV-FWC can now be accessed through the static IP address configured.

2.3.2 Configuring a DDNS Domain Name

DDNS (Dynamic Domain Name System) provides another way of accessing GV-FWC when using a dynamic IP from a DHCP server. DDNS assigns a domain name to GV-FWC so that it can always be accessed using the domain name.

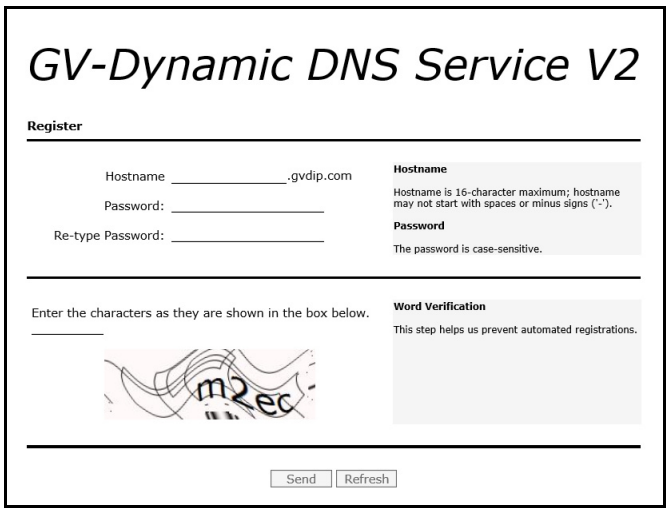
To enable the DDNS function, first you should apply for a domain name from either **GeoVision DDNS Server** or **DynDDS**, the DDNS service provider's website. See the following instructions to register at GeoVision DDNS Server.



2.3.3.1 Registering a DDNS Domain Name

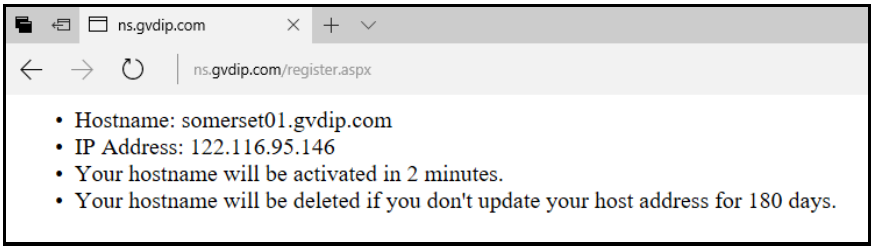
To obtain a domain name from the GeoVision DDNS Server:

1. Click the **GeoVision DDNS** button on the Network Configuration page. Or open an Internet browser, and type the Web address http://ns.gvdip.com/register.aspx This page appears.



2. In the **Hostname** field, type a desired name, which can be up to 16 characters containing "a ~ z", "0 ~9", and "-". Note that a space or "-" cannot be used as the first character.

3. In the **Password** field, type a desired password, which is case-sensitive and must be at least 6 characters in length. Type the password again in the Re-type Password field for confirmation.
4. In the Word Verification section, type the characters or numbers shown in the box. For example, type *m2ec* in the required field. Word Verification is not case-sensitive.
5. Click **Send**. When the registration is complete, this page appears. The **Hostname** shown is the domain name, consisting of the registered username and “gvdip.com”, e.g. somerset01.gvdip.com.

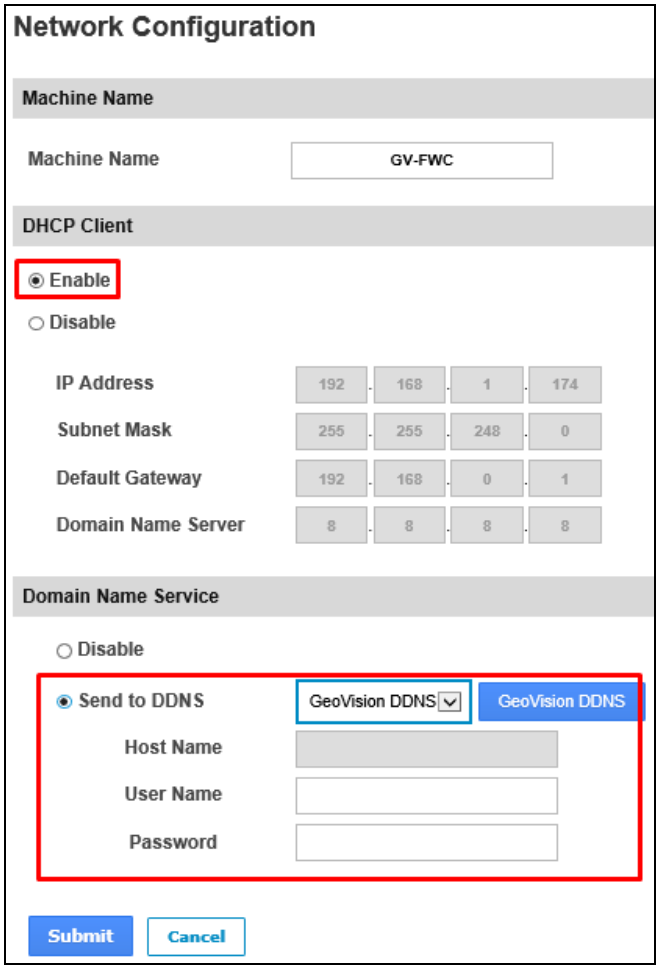


Note: The registered username becomes invalid after not being used for three months.

2.3.3.2 Configuring the DDNS Domain Name on Web Interface

After acquiring a domain name from the DDNS Server, follow the steps below to configure the domain name on GV-FWC's Web interface.

1. Refer to *2.3. Accessing GV-FWC* to access the Network Configuration page.
2. Select **Enable** and **Send to DDNS** under **DHCP Client** and **Domain Name Service**, respectively.
3. Type the **User Name** and **Password** that are registered on the DDNS Server. The system will automatically bring up the Host Name.



4. Click **Submit**. When the setting is complete, the Status field will indicate: Register Success. The GV-FWC can now be accessed with this domain name.

3. Establishing Communication

For GV-FWC to receive Face IDs recognized from GV-Face Recognition Camera and send the paired access card data to GV-AS Controller, the necessary communication between them must first be established. To do so, refer to the sections below.

Note: Make sure the GV-FWC, GV-Face Recognition Camera and GV-AS Controller are all connected to the same LAN.

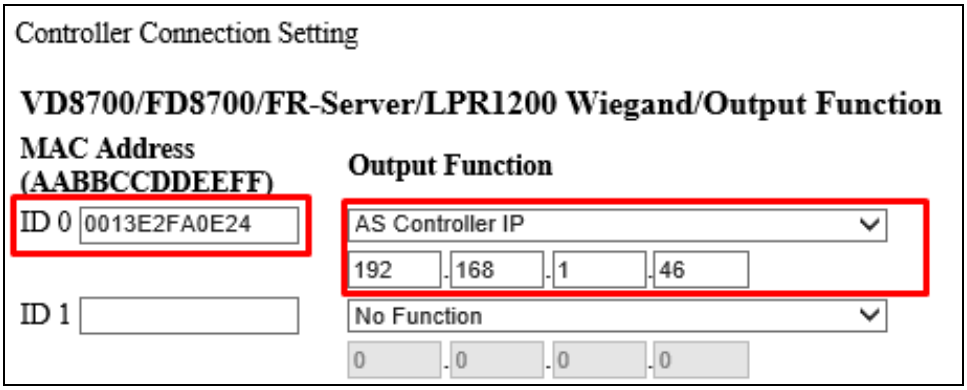
- For the required settings on GV-FWC, see *3.1 Configuring for Communication on GV-FWC.*
- For GV-Face Recognition Camera to send Face IDs to GV-FWC upon recognition, see *3.2 Sending Face IDs from Camera.*

3.1 Configuring for Communication on GV-FWC

For the GV-FWC to receive Face IDs and send the paired access card data to GV-AS Controller, follow the steps below:

1. In the left menu, click **Wiegand Setting**. The Controller Connecting Setting page appears.
2. Under **MAC Address**, type the MAC address of the GV-Face Recognition Camera you want to receive the Face IDs from.

3. In the corresponding **Output Function** dropdown box, select one of the following options.



- **Wiegand A/B:** For connection to controller via Wiegand, select the Wiegand port, A or B, the GV-AS Controller is connected to.
- **AS Controller IP:** For connection to controller via TCP/IP, select and type the IP address of the GV-AS Controller you want to send the access card data to.
- **AS Controller IP (Face + Card with Wiegand A/B):** For access control requiring both face recognition plus card swipe, select the Wiegand port, A or B, the GV-Reader is connected to and type the IP address of the GV-AS Controller you want to send the access card data to. Once selected, the access card paired must be swiped within 10 seconds of recognizing its Face ID.

4. Optionally modify the default **HTTP Event Port** of *8080* if needed.
5. Click **Submit** to save the settings.

Note:

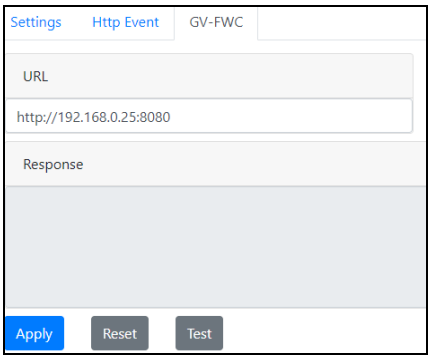
1. GV-FWC connection to GV-AS Controller via TCP/IP is only supported by GV-AS210 / 2110 / 2120 / 410 / 4110 / 4111 / 810 / 8110 / 8111 V2.20 or later.
2. For AS Controller IP (Face + Card with Wiegand A/B), enable Wiegand Port Monitor to record all card swipes done to the GV-Reader connected. See *4.7 Wiegand Port Monitor* for details.

3.2 Sending Face IDs from Camera

For the GV-Face Recognition Camera to send Face IDs to GV-FWC upon recognition, follow the steps below.

Note: For any Face ID to be sent to GV-FWC upon recognition, it must be paired with a Wiegand access card, as configured in its face database, see *GV-Face Manager User's Guide*.

1. On the Web interface of the GV-Face Recognition Camera, click **System Settings > Events and Alert > Event Manager** and select the **GV-FWC** tab. This page appears.



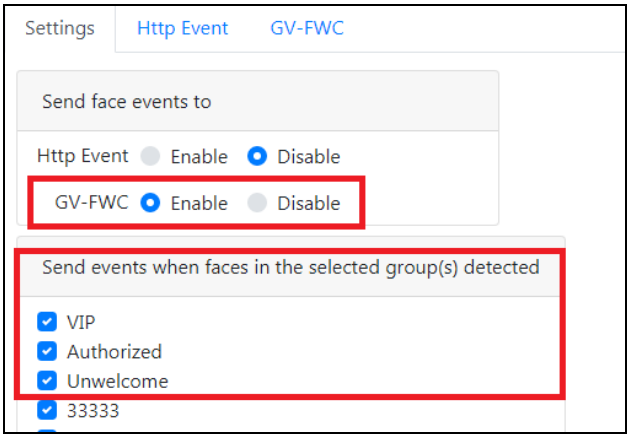
2. Type the IP address of the GV-FWC under **URL**, as exemplified.

   URL: http://<IP of GV-FWC>:<HTTP Event Port from *Step 4*, *3.1 Configuring for Communication on GV-FWC*>

   For example, http://192.168.0.25:8080

3. Optionally click **Test** to check if the GV-FWC is successfully connected.

4. Select the **Settings** tab, **Enable** GV-FWC and select the *Face Groups* for which you want the access card data to be sent to GV-FWC upon recognition.

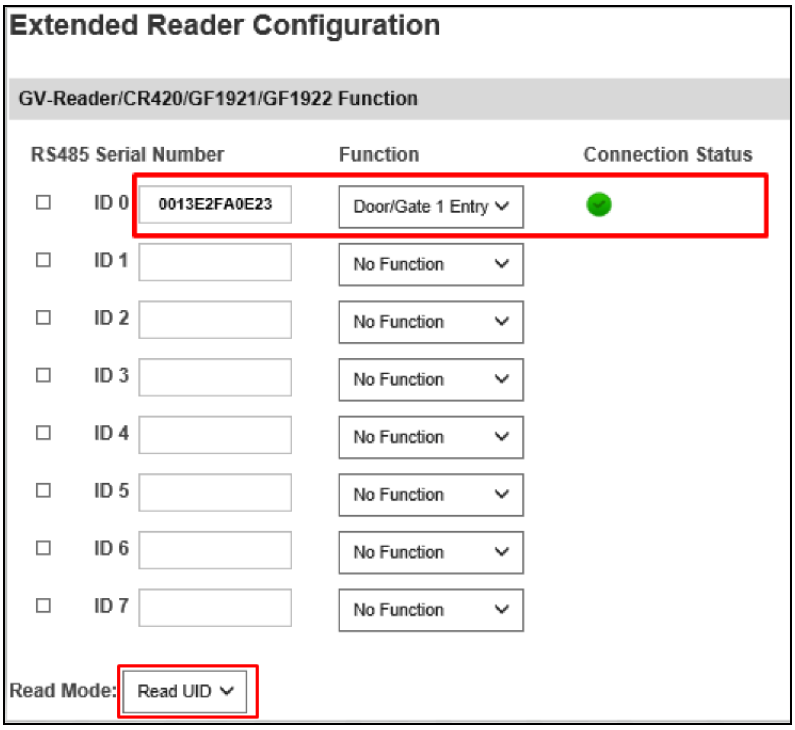


5. Click **Apply**. Face IDs, along with its access card data paired, can now be sent to GV-FWC upon recognition.

3.3 Receiving Access Card Data by Controller

For the GV-AS Controller to receive the access card data, paired to Face IDs, from the GV-FWC upon recognition, follow the steps below.

1. On the Web interface of the GV-AS Controller, click **Extended Reader Configuration** under **Extended Device**. The Extended Reader Configuration page appears.
2. Under **Serial Number**, type the same MAC address, of the camera, as that of *Step 2* in *3.1 Configuring for Communication on GV-FWC*.
3. In the corresponding **Function** field, select the door in which its access is controlled for.
4. Select UID under **Read Mode**.
5. Click **Submit** to save the changes. Once successfully connected, the icon is shown under **Connection Status**.



Once the necessary settings among the GV-FWC, GV-Face Recognition Camera and GV-AS Controller are configured, Face IDs of GV-Face Recognition Camera are regarded as Wiegand access cards by the GV-AS Controller to manage access control as set by GV-ASManager.

4. The Web Interface

The following covers all of the settings available on the GV-FWC Web interface, aside from Network and Wiegand Setting (see *2.3 Accessing GV-FWC* and *3. Establishing Communication*, respectively), which include: Other Setting, Input Setting, Output Setting, In/Out Monitor, Firmware Update, Account Setting, Wiegand Port Monitor and System Log Viewer.

4.1 Other Setting

In the left menu, click **Other Setting**. This page appears.

[Device ID] Select a desired ID for the device.

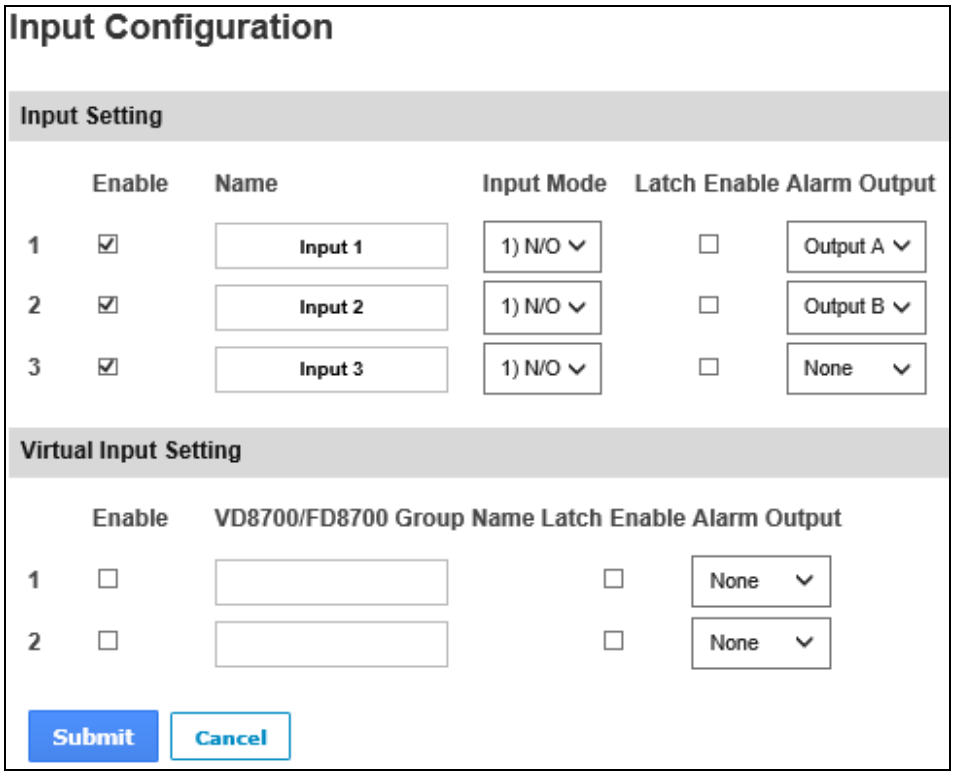
[Mac Address / Firmware Version] Indicates the MAC address of the network medium and the Ethernet module version of GV-FWC.

[Reboot System/Set Default]

- **Reboot System:** Performs a warm boot of GV-FWC. This operation keeps the current configuration.
- **Default Value:** Resets all configuration parameters back to factory settings. This may take 3 ~ 5 minutes to complete.

4.2 Input Setting

In the left menu, click **Input Setting**. This page appears.



[Input Setting]

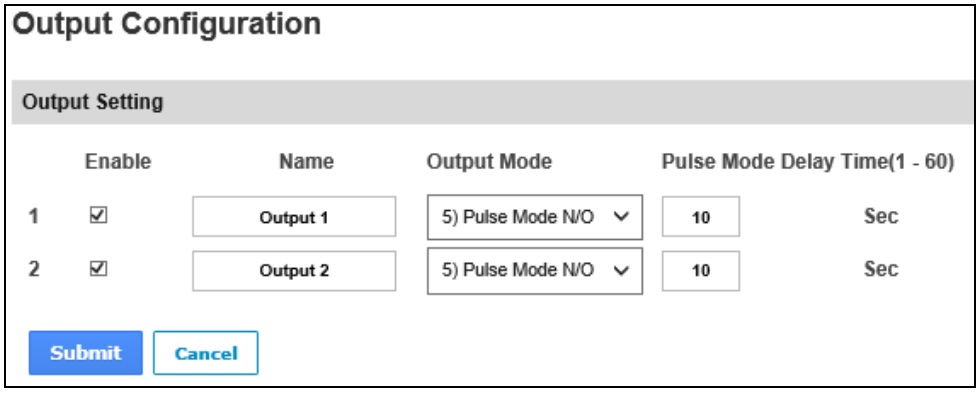
- **Enable:** Select to enable this Input function to be used by GV-FWC.
- **Name:** Name the input. The name is restricted to 16 alphanumeric characters or 5 Chinese characters.
- **Input Mode:** Configure the input to **NC** (normally closed) or **NO** (normally open) mode.
- **Enable Latch:** Instead of a constant output of N/O or N/C, this option provides a momentary alarm when triggered.
- **Alarm Output:** Select **None** for no alarm output, or select between **Output A** and **Output B** to trigger when the input is detected.

[Virtual Input Setting] Select **Enable** and type the name of a *Face Group* of the connected GV-Face Recognition Camera to set it as a virtual input upon recognition. For **Latch Enable** and **Alarm Output**, refer to the same settings in *Input Setting* above.

Note: When an output is triggered by Virtual Input, it will last for a minimum of 0.5 seconds before turning off.

4.3 Output Setting

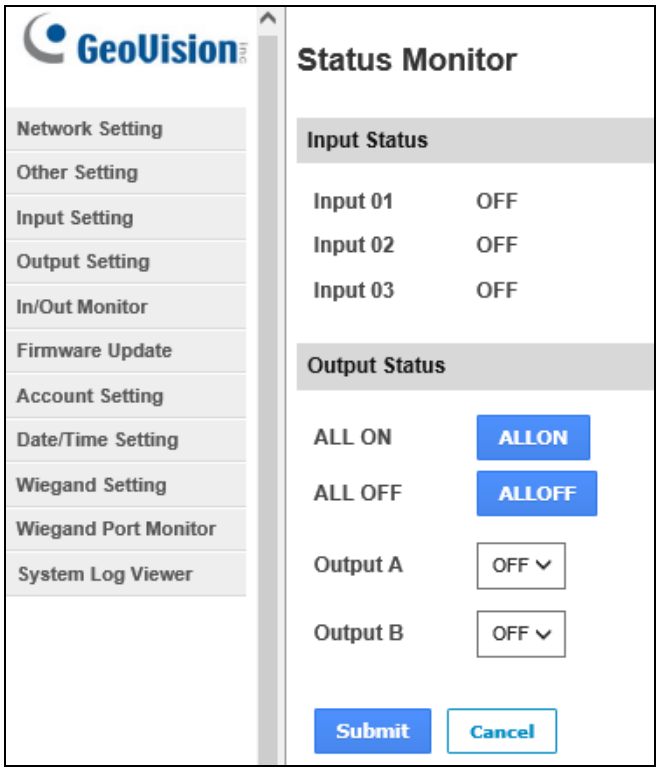
In the left menu, click **Output Setting**. This page appears.



- **Enable:** Select to enable this Output function to be used by GV-FWC.
- **Name:** Name the output. The name is restricted to 16 alphanumeric characters or 5 Chinese characters.
- **Output Mode:** Configure the input to **NC** (normally closed) or **NO** (normally open) mode.
  - ⊙ **Normal Mode (N/O and N/C):** Output continues to be triggered until the source of the output condition is stopped.
  - ⊙ **Toggle Mode (N/O and N/C):** Output continues to be triggered until a new input trigger ends the output.
  - ⊙ **Pulse Mode (N/O and N/C):** Output is triggered for the amount of time set in the **Pulse Mode Delay Time (1-60)** field.
- **Pulse Mode Delay Time (1-60):** Type the time in seconds for the pulse delay time from 1 to 60 seconds.

4.4 In/Out Monitor

In the left menu, click **In/Out Monitor**. This page appears.

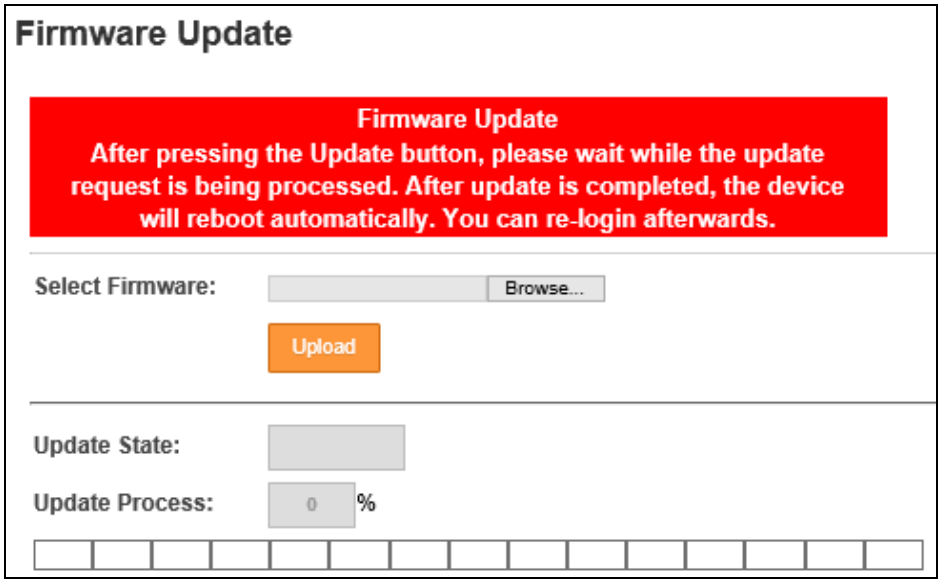


- **Input Status:** Indicates the current status of the 3 inputs, whether it is **On** (triggered) or **OFF** (no input).
- **Output Status:** Indicates the current status of the 2 outputs, whether it is **ON** (triggered) or **Off** (no output). Click the **ALL ON** button to force both outputs to be triggered. Click the **ALL OFF** button to turn off both outputs. Select the individual outputs to turn it **ON** to force the output to be triggered or turn it **OFF**.

4.5 Updating Firmware

To update the firmware of GV-FWC, follow the steps below:

1. In the left menu, click **Firmware Update**. This page appears.

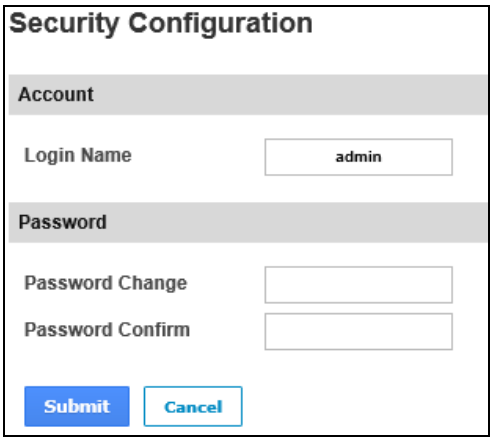


2. Click the **Browse…** button to open the firmware file (*.bin)
3. Click the **Upload** button. This update procedure may take up to 60 seconds.
4. When the update is complete, a dialog box appears and asks you to reboot the system.
5. Click **OK**. GV-FWC starts the Reboot operation.

IMPORTANT: It is required to reboot GV-FWC after updating the firmware. Without rebooting, the firmware update is not complete.

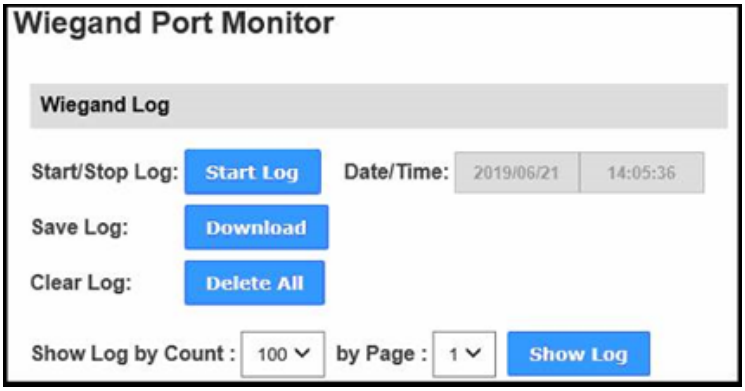
4.6 Changing Login ID and Password

In the left menu, click **Account Setting**. This page appears. You can modify the login name and password. The password can contain all alphanumerical characters and is case sensitive.



4.7 Wiegand Port Monitor

The **Wiegand Port Monitor** records and displays past Wiegand signals the GV-FWC has sent to GV-AS Controller. This function is only applicable when the GV-FWC is connected to the GV-AS Controller via Wiegand or when a GV-Reader is connected to one of the Wiegand ports of GV-FWC. To start recording log, click **Start Log**.



To see or download the log recorded, click **Show Log** or **Download**, respectively. Optionally clear all logs recorded by clicking **Delete All**.

Note: To connect the GV-FWC to GV-AS Controller via Wiegand, see *Connecting to Wiegand Readers*, *GV-ASEV Controller User's Manual* based on the model of GV-AS Controller used.

4.8 Viewing System Log Information

The system log information contains the current system status and dump data that can be used by service personnel for analyzing any problems encountered.