

# GV-FR Face Recognition Reader

## GV-FR2020 User's Manual



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

FR2020-UM-B



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October 2021

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[Warranty]



[Technical Support Policy]

# Preface

Welcome to the *GV-FR Face Recognition Reader User's Manual*.

This Manual applies to the following GV-FR Face Recognition Reader:

Product
GV-FR2020

# Contents

<b>Preface.....</b>	<b>i</b>
<b>Regulatory Notices .....</b>	<b>iv</b>
<b>Installation Considerations.....</b>	<b>v</b>
<b>Firmware and Software Compatibility.....</b>	<b>vi</b>
<b>Chapter 1 Introduction .....</b>	<b>1</b>
1.1 Key Features.....	2
1.2 Packing List.....	3
1.3 Options.....	4
1.4 MAC Address .....	5
1.5 Physical Description .....	6
1.6 Installation .....	8
1.7 Connecting the Reader.....	9
<b>Chapter 2 Accessing the Reader.....</b>	<b>11</b>
2.1 Using the Keypad .....	11
2.2 Main Menu .....	12
<b>Chapter 3 Getting Started .....</b>	<b>13</b>
3.1 Looking up the IP address .....	13
3.2 Changing the IP address .....	14
3.3 Setup Flowchart .....	15
<b>Chapter 4 Access Control Configurations .....</b>	<b>16</b>
4.1 Connecting to GV-AS Controller.....	17
4.2 Setting up GV-ASManager .....	19
4.2.1 Adding GV-AS Controller .....	19
4.2.2 Configuring a Door .....	21
<b>Chapter 5 User Management .....</b>	<b>22</b>

5.1 Step 1: Enabling the Facial Features on GV-ASManager .....	22
5.2 Step 2: Uploading to the Face Recognition Reader .....	24
5.3 Step 3: Using the Face Recognition Reader .....	27
5.3.1 Face Recognition Mode .....	27
5.3.2 Card Mode .....	30
5.4 Downloading and Uploading the Data .....	31
5.4.1 Downloading the Data .....	31
5.4.2 Uploading the Data .....	31
<b>Chapter 6 Settings .....</b>	<b>32</b>
6.1 Device Settings .....	32
6.2 Time Settings .....	34
6.3 Record Rule .....	35
6.4 Network Settings .....	36
6.5 Initial Settings .....	38
<b>Chapter 7 Viewing Info .....</b>	<b>39</b>
7.1 Registration Information .....	39
7.2 Device Information .....	40
7.3 Manual Information .....	41
<b>Chapter 8 A Standalone Face Recognition Reader</b>	<b>42</b>
8.1 Wire Definition .....	42
8.2 Adding a User .....	43
8.3 Enrollment modes .....	44
8.3.1 Face Recognition Mode .....	44
8.3.2 Card Mode .....	45
8.3.3 Password Mode .....	45
<b>Chapter 9 Upgrading and Resetting .....</b>	<b>46</b>
9.1 Upgrading System Firmware .....	46
9.2 Resetting the Reader .....	47
<b>Specifications .....</b>	<b>48</b>

## Regulatory Notices



### FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

### Class A

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.



### CE Notice

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

## RoHS RoHS Compliance

The Restriction of Hazardous Substances (RoHS) Directive is to forbid the use of hazardous materials of production. To meet the RoHS Directive requirements, this product is made to be RoHS compliant.



### WEEE Compliance

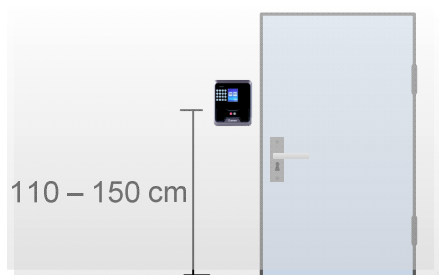
This product is subject to the Waste Electrical and Electronic Equipment (WEEE) Directive and made compliant with the WEEE requirements.

# Installation Considerations

To make sure the user's face can be recognized, follow the instructions below to set up GV-FR2020.

## Installation Height:

- When installed on the wall next to a door, GV-FR2020 should be about 1.1-1.5 meters above the ground.



## Face Recognition Limitations:

- GV-FR2020 may not be able to recognize faces wearing any type of masks or sunglasses.

## Lighting Conditions:

- GV-FR2020 is designed for indoor use only. Avoid exposing it to direct sunlight.

## Firmware and Software Compatibility

The GV-AS Controller and GV-ASManager compatible with GV-FR2020 are listed below.

### GV-ASManager

<b>GV-FR2020</b>	<b>V2.44</b>	<b>V2.73</b>
GV-ASManager	V4.4.2	V5.2.0 or later

### GV-AS Controller

<b>GV-FR2020</b>	<b>V2.44</b>	<b>V2.73</b>
GV-AS210 / 2110 / 2120	V1.41	V2.21 or later
GV-AS410 / 4110 / 4111		
GV-AS810 / 8110 / 8111		
GV-AS1620	V1.0	V1.0 or later
GV-CS1320	V1.0	V3.02 or later



# Chapter 1 Introduction

The face recognition reader can work with GV-AS Controller and GV-ASManager for an intuitive, smart access control solution. When integrated with GeoVision controller and software, GV-FR2020 can operate under Face Recognition mode, as well as other modes including Card, Card + Face Recognition and Password + Face Recognition.

## Face Recognition Mode

Face profiles are stored in GV-FR2020 for managing and granting access by face recognition. The reader compares live face(s) detected by its sensor with the face data stored within. When the face detected is successfully authenticated, a signal is sent to momentarily activate the door relay of the controller.

The face and user data are managed by GV-ASManager to be assigned to face recognition readers connected via GV-AS Controllers for access control. Face data enrolled, either through GV-FR2020 or GV-ASManager, can be synchronized with each other through TCP/IP connection.

## Other Modes

While enrolling personnel, users can assign access cards and/or passwords to each and manage access by requiring individuals entering the premise to present the access cards assigned only, present the access cards while performing face recognition or enter passwords assigned while performing face recognition to the GV-FR2020 to be granted access.

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**Note:** GV-FR2020 can also work as a standalone device. For details, see [8. A Standalone Face Recognition Reader](#).

---

## 1.1 Key Features

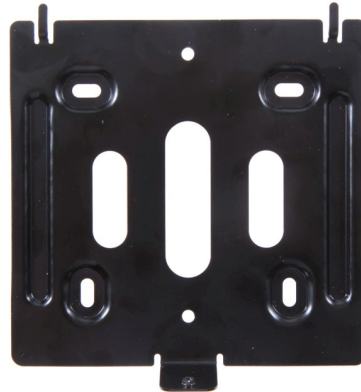
- 2.4" TFT color screen, 320 x 240-pixel display
- Special stereo dual sensors (Lens and IR sensor)
- Up to 80 cm (31.50 in) detection range
- 2,000 face capacity
- $\leq 0.5$  second verification speed
- 16-bit Hi-Fi voice and sound indication
- 12V DC, 2 A (only for standalone operation) / PoE+ (IEEE 802.3at)
- Built-in 13.56 MHz Reader
- Work with GV-AS21/41/81 series / AS1620 / CS1320 Controller and GV-ASManager
- Wiegand 26 / Wiegand 34 support for physical connection
- Can work as a standalone reader
- Four access modes for the integration with GeoVision controller and software: Face Recognition mode, Card mode, Card + Face Recognition mode and Password + Face Recognition mode
- Anti-Passback (APB) support
- 3 languages supported (English, Traditional Chinese and Hebrew)
- CE, FCC compliant

## 1.2 Packing List

- Face Recognition Reader



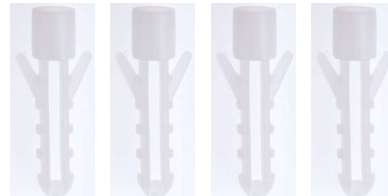
- Mounting Plate



- Standard Screw x 4



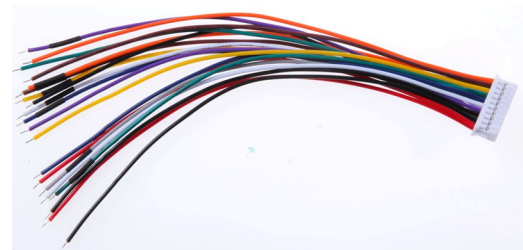
- Plastic Screw Anchor x 4



- Security Screw




- Data Cable



- Warranty Card

## 1.3 Options

You can order the following optional accessories:

<b>GV-AS ID Card &amp; GV-AS ID Tag</b>	<p>For Card and/or Card + Face recognition modes, the GV-AS ID Card / Tag is required. 13.56 MHz cards and tags are available.</p> 
<b>GV-POE Switch</b>	<p>GV-POE Switch is designed to provide power along with network connection for IP devices. GV-POE Switch is available in various models with different numbers and types of ports. Note GV-FR2020 is only compatible with mid-span PoE power supply, and supports the following GV-POE Switch models only: GV-POE0400-V2, GV-POE0410-E, GV-POE0801, GV-POE0810, GV-POE0812.</p>
<b>Power Adapter</b>	<p>Contact our sales representative for the countries and areas supported. Note this is only required for standalone mode.</p>

## 1.4 MAC Address

To find the MAC address of GV-FR2020, see the **Mac Address** on the back of your face recognition reader.



*Figure 1-1*

## 1.5 Physical Description

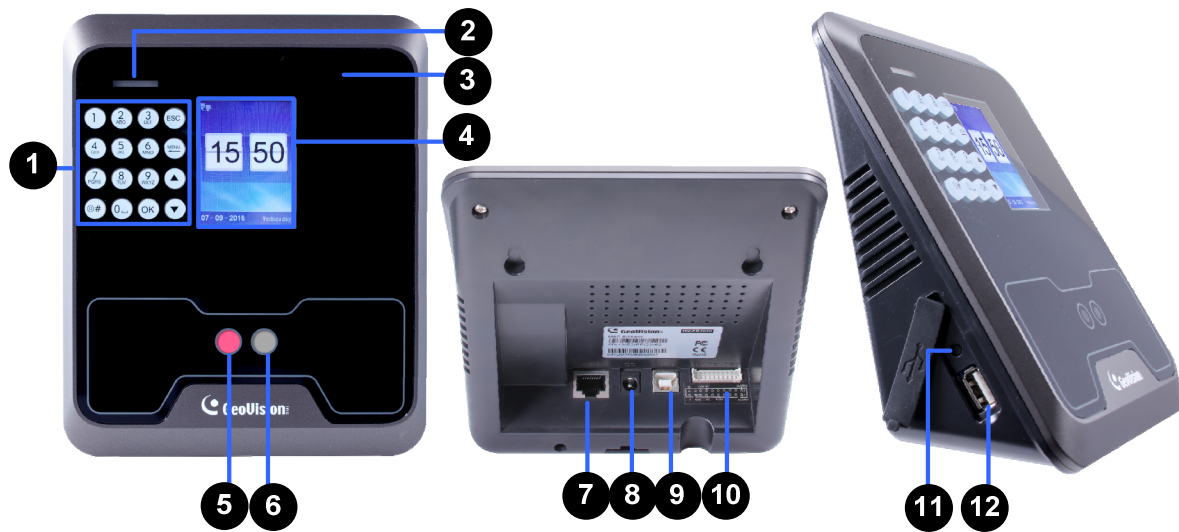


Figure 1-2

No.	Name	Function
1	Keypad	Enter information or select functions. See <i>2 Accessing the Reader</i> .
2	LED Light	See the <i>LED Status</i> section below.
3	Card Reader	Reads ID cards or tags.
4	LCD Screen	Displays the menu and images.
5	Lens	Captures live images.
6	IR Sensor	Detects motion.
7	Ethernet Port	Connects to network.
8	Power Jack	Connects to power supply.
9	USB Type-B Port	Not Functional.
10	Data Port	Connects to data cable for power and a locking device. This function is only applicable under standalone operation. See <i>8.1 Wire Definitions</i> .
11	Reset Button	Performs system reboot. See <i>9.2 Resetting</i> .
12	USB Port	Connects to a USB 2.0 device for data backup and/or firmware upgrade. See <i>5.4 Downloading and Uploading the Data</i> and <i>9.1 Upgrading System Firmware</i> .

## LED Status

Normally, the LED on GV-FR2020 flashes green when standby. The LED status under different conditions are listed below.

Condition	LED
Ready	Green
Access Denied	Displays red LED momentarily
Access Granted	Displays green LED momentarily

## 1.6 Installation

For installing GV-FR2020 on the wall, follow the steps below.

1. Place the mounting plate on the wall as illustrated below.
2. Mark the location of the 4 screw positions and the oval-shaped hole as labeled above.
3. Drill a hole at the center of the oval-shaped mark for running the cables and wires through the wall.
4. At each of the 4 screw positions as marked on the wall, drill a hole slightly smaller than the plastic screw anchors provided.
5. Insert the 4 plastic screw anchors into the holes drilled.
6. Place the mounting plate on the wall and secure it with the 4 screws provided.
7. Place the face recognition reader on the mounting plate and thread the cables through the hole at the center of the oval-shaped mark.
8. Secure the reader to the mounting plate by using the security screw provided.



Figure 1-3



## 1.7 Connecting the Reader

The face recognition reader and GV-AS Controller can be connected through TCP/IP or its Wiegand interface. Refer to the respective illustrations below for connecting your GV-FR2020 via TCP/IP or Wiegand.

### ● Connecting via TCP/IP

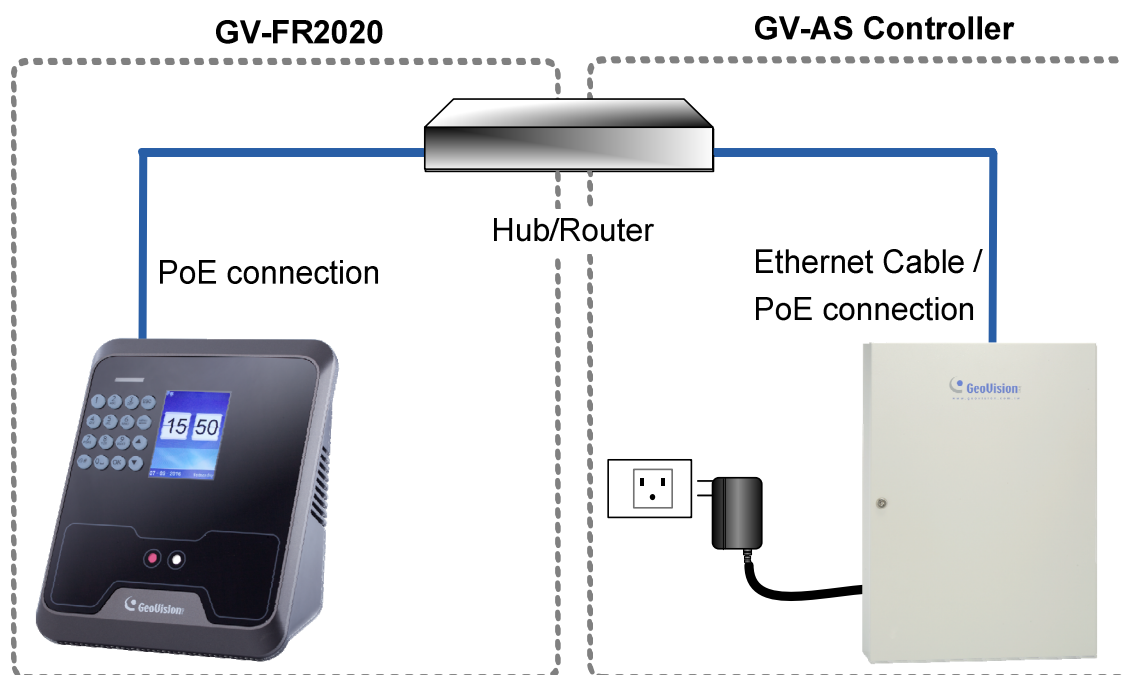



Figure 1-4

The GV-FR2020 and GV-AS Controller can be connected to a hub or router with PoE function. The PoE function provides both power and network at the same time to the connected devices.

#### Note:

1. The GV-AS Controller to be connected must be within the same LAN as the GV-FR2020.
2. Make sure your GV-AS Controller and GV-ASManager support connecting to GV-FR2020 via network connection. See Firmware and Software Compatibility.
3. For GV-AS Controllers without PoE function, you can purchase a power adapter for power supply.
4. GV-FR2020 only works within mid-span power supply. For details on which GV-POE Switch models are supported by GV-FR2020, see 1.3 Options.

5. The icon  appearing on GV-FR2020's main menu as shown below indicates that the connection between your face recognition reader and the Internet is successfully established.



*Figure 1-5*

- **Connecting via Wiegand**



*Figure 1-6*

The GV-FR2020 and GV-AS Controller can be physically connected via their respective Wiegand interfaces. For alternating between Wiegand 26 and Wiegand 34 formats, see *6.1 Device Settings*.

## Chapter 2 Accessing the Reader

There are two types of access rights — **Manager** and **User** — for configuring GV-FR2020. While the Manager has unrestricted access to all system configurations, users can only access their facial or card verification settings.

### 2.1 Using the Keypad



Figure 2-1

No.	Name	Function
1	Alphanumeric Keys	Press to input letters, numbers and/or special characters.
2	Special Characters	Switch the input method to between upper, lower cases and special characters.
3	ESC	Exit or cancel the current setting.
4	Menu	Enter the main menu, or delete a previous entry.
5	Arrow keys	Press to select an item.
6	OK	Enter or confirm the current setting.

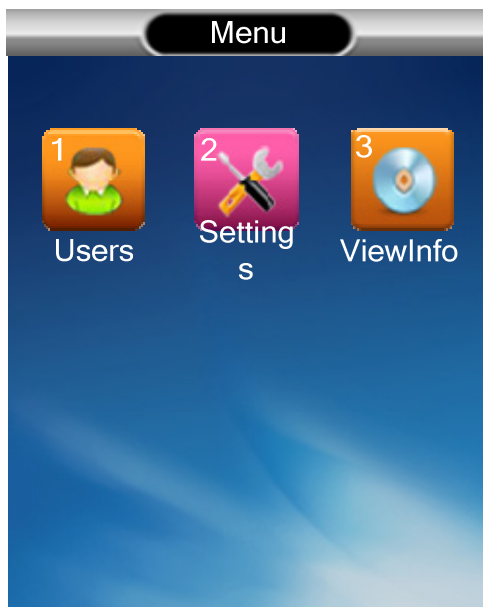
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**Note:**

1. Use the **Arrow** keys to choose a menu option and press **OK** to enter the highlighted option. Alternatively, you can press the corresponding number key to select your desired menu option. To cancel/exit the option, press the **ESC** key.
  2. To enter a period "." Press the 0/Space key twice in any input method except for special characters.
- 

## 2.2 Main Menu

Press **Menu** on the keypad to enter the main menu screen, as shown below:



*Figure 2-2*

The Main Menu includes three submenus.

- **Users:** The user data, including faces and cards, are stored through this submenu. It allows the manager to add, modify and delete a user.
- **Settings:** Contains network configurations and system-related parameters.
- **View Info:** Displays the general information, including user registration, device information and simple instructions.

## Chapter 3 Getting Started

This chapter will guide users in checking and configuring the IP address of GV-FR2020.

### 3.1 Looking up the IP address

By default, your face recognition reader is assigned with an unused IP address by the DHCP server when it is connected to the network. This IP address remains unchanged unless you unplug or disconnect your reader from the network.

Follow the steps below to check the IP address of your GV-FR2020:

---

**Note:** GV-FR2020 will get an IP address from the DHCP server only if both **Eth** and **DHCP** are enabled on the device. For details, see [6.4 Network Settings](#).

---

1. Press the **Menu** button (No. 3, Figure 2-1). The Main Menu appears.
2. Select **Settings** and press **OK**, or press **2** to enter the Settings submenu.
3. In the Settings submenu, select **Network** and press **OK**, or press **4** to enter the network settings.
4. Find the current IP address of your GV-FR2020 in the **Eth** field.

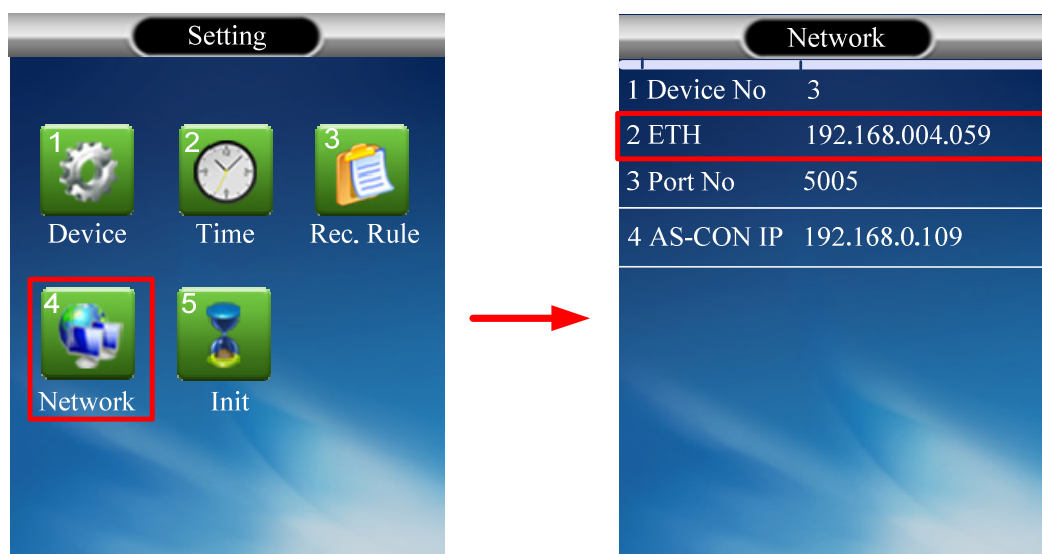


Figure 3-1

## 3.2 Changing the IP address

You can modify the IP address of your GV-FR2020 to avoid an IP address conflict with other devices within the LAN.

Follow the steps below to assign a new IP address:

1. Follow Step 1-3 in 3.1 *Looking up the IP address*.
2. Select **Eth** to enter the Ethernet setting.
3. Select **DHCP** and select **No** to disable the DHCP function.

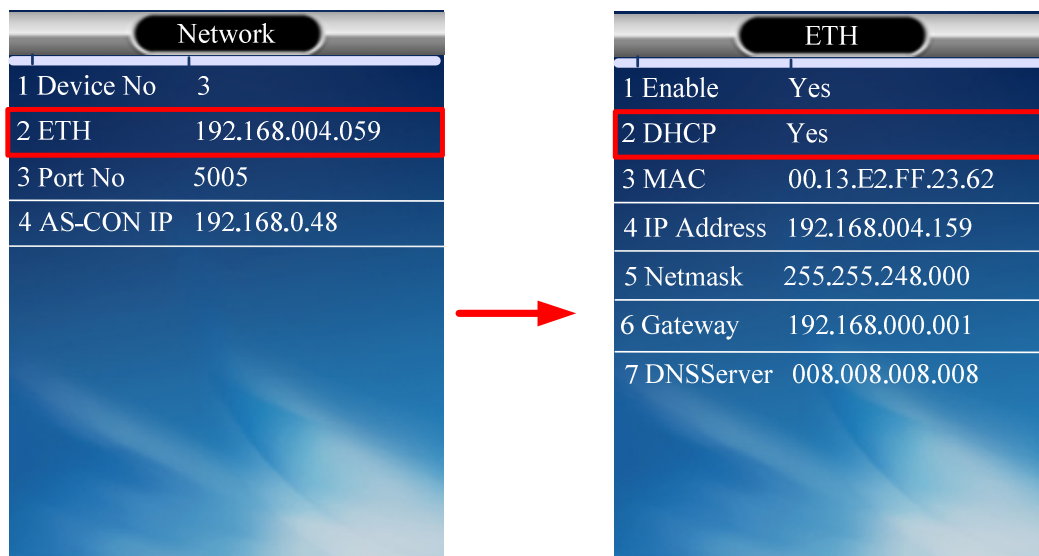


Figure 3-2

4. Press **OK** to confirm your setting.
5. Type a desired **IP Address**, **Netmask** and **Gateway** address, as well as the **DNSServer** address of your network provider.
6. Press **OK** to confirm your settings.

### 3.3 Setup Flowchart

To get started quickly with GV-FR2020 settings, follow the process illustrated below.

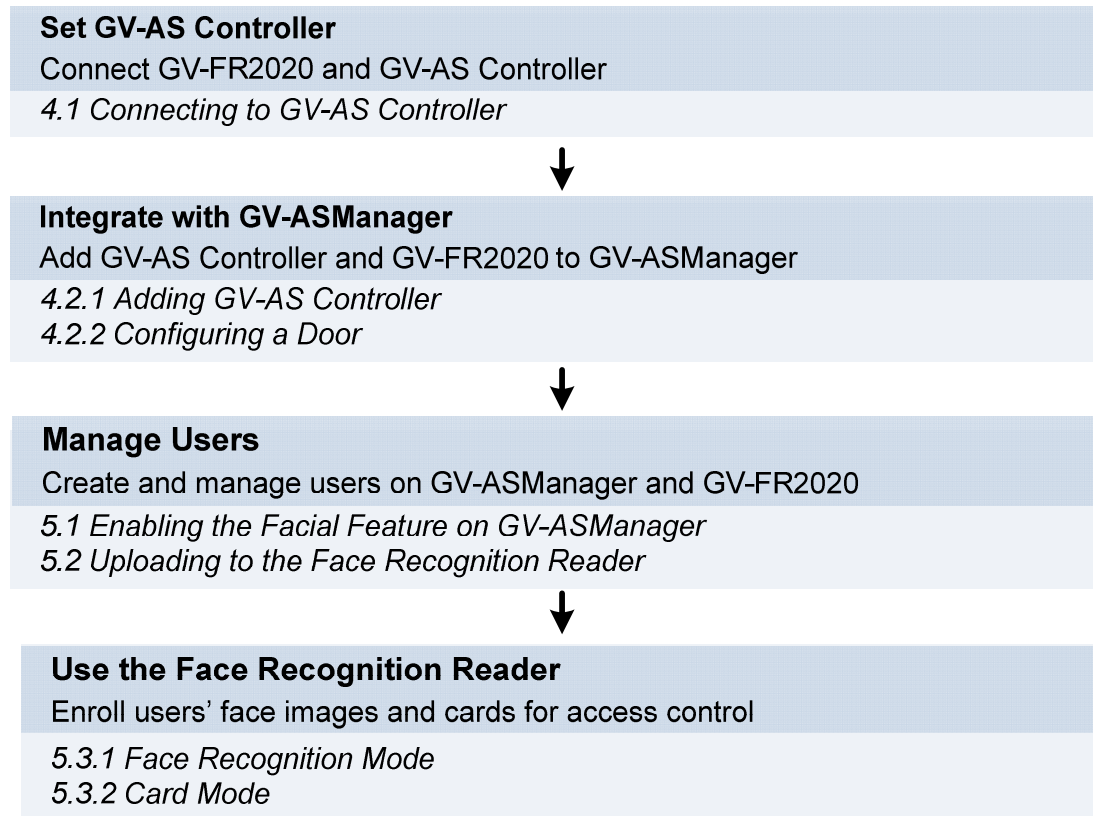


Figure 3-3

---

**IMPORTANT:** For GV-ASManager V4.4.3.0 or later, the GV-AS Controller's IP address will be automatically assigned to GV-FR2020 each time you connect. You can skip 4.1 *Connecting to GV-AS Controller* and start from section 4.2.1.

---

## Chapter 4 Access Control Configurations

This chapter explains how to set up access control related functions by integrating your GV-FR2020 with GV-AS Controller and GV-ASManager.

### 1. Connecting GV-FR2020 to GV-AS Controller

For connecting GV-FR2020 to GV-AS Controller, see 4.1 *Connecting to GV-AS Controller*.

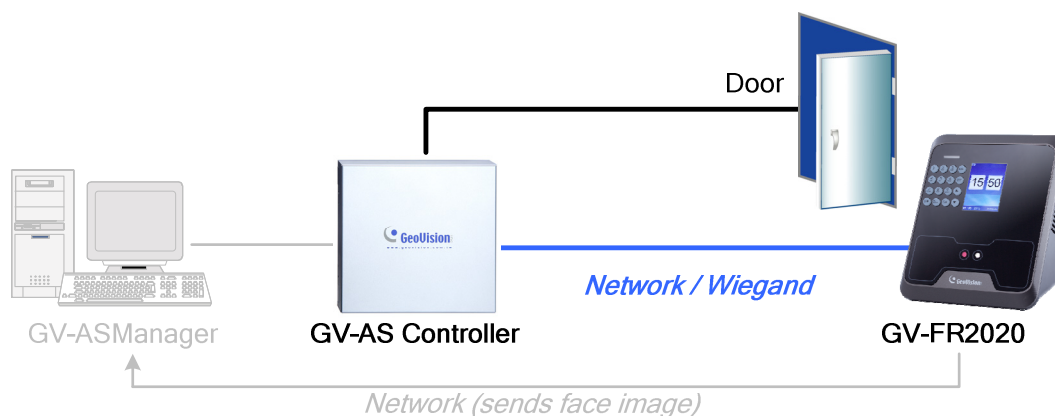


Figure 4-1

### 2. Setting up GV-ASManager

For adding GV-AS Controller to GV-ASManager and configuring a door for GV-FR2020, see 4.2 *Setting up GV-ASManager*.

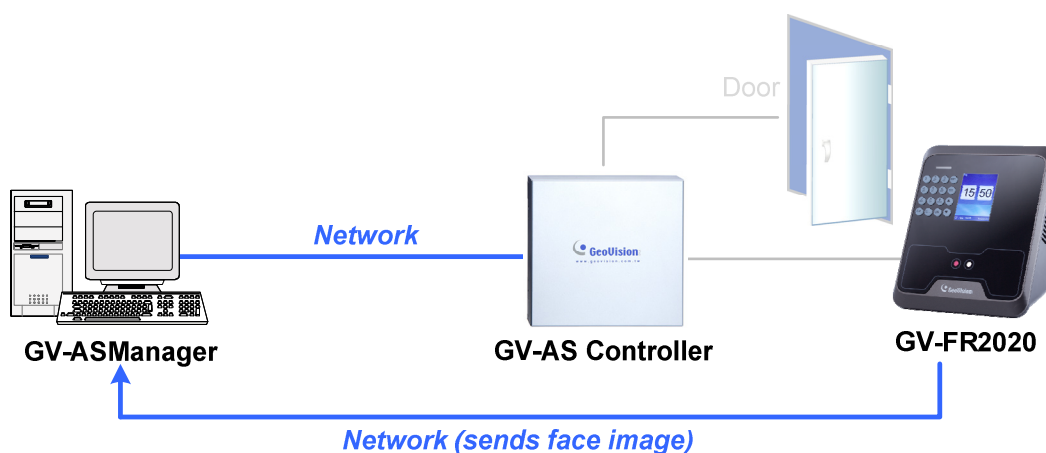


Figure 4-2



## 4.1 Connecting to GV-AS Controller

To connect GV-FR2020 and GV-AS Controller through the network, you need to provide the necessary network information, such as MAC address, IP address and port number, for your reader and GV-AS Controller to locate and connect with each other.

---

**IMPORTANT:** For GV-ASManager V4.4.3.0 or later, the GV-AS Controller's IP address will be automatically assigned to GV-FR2020 each time you connect. You can skip this section of Connecting to GV-AS Controller and start from section 4.2.

---



---

**Note:** The GV-AS Controller must be within the same LAN as the GV-FR2020 it is connecting to.

---

1. Type the GV-AS Controller's IP address on GV-FR2020.
  - a. In the Main Menu of GV-FR2020, select **Settings** and press **OK**, or press **2** to enter the Settings submenu.
  - b. Select **Network** and press **OK**, or press **4** to enter the network settings.
  - c. Select **AS-CON IP** or press **4**, and type the controller's IP address.

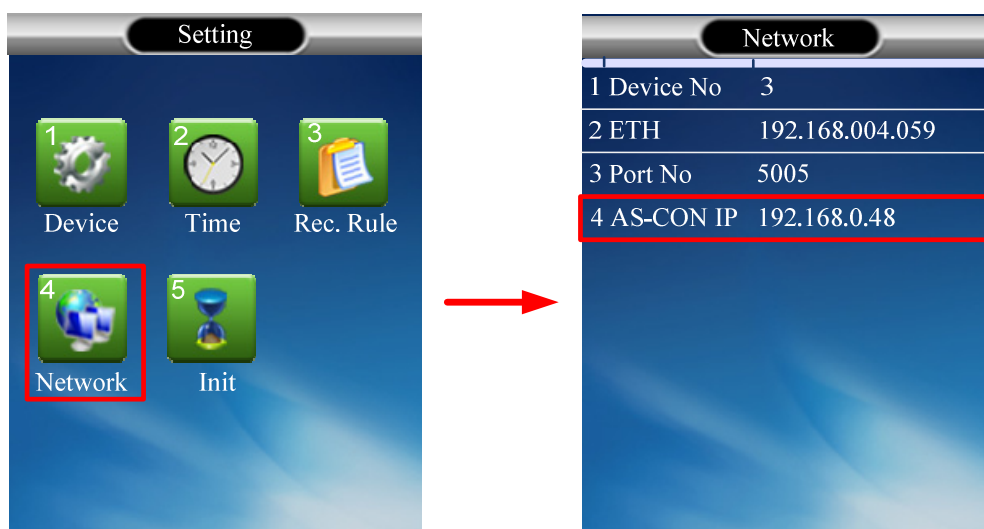


Figure 4-3

2. Log in the Web interface of GV-AS Controller.
3. In the left menu, click **Extended Reader Configuration** to define the face recognition reader connected to the controller. The Extended Reader Configuration page appears.

## 4 Access Control Configurations

4. Type the **MAC address** of your GV-FR2020 in the Serial Number column under **GV-Reader/CR420/GF1921/GF1922 Function** section. Do not select the RS-485 box. For details on how to look up the MAC address, see *1.3 MAC Address*.

**GeoVision**

**Basic Setting**

- Network Configuration
- Other Configuration
- Firmware Update
- Security Configuration

**Advanced Setting**

- Function Configuration
- Parameter Configuration Part1
- Parameter Configuration Part2
- Time Configuration
- Input Configuration
- Output Configuration
- Wiegand Configuration

**Extended Device**

- Extended Reader Configuration**
- Tailgating Configuration

### Extended Reader Configuration

GV-Reader/CR420/GF1921/GF1922 Function

RS485 Serial Number	Function	Connection Status
<input type="checkbox"/> ID 0 0013E2FF2362	Door/Gate 1 Entry ▼	●
<input type="checkbox"/> ID 1	No Function ▼	
<input type="checkbox"/> ID 2	No Function ▼	
<input type="checkbox"/> ID 3	No Function ▼	
<input type="checkbox"/> ID 4	No Function ▼	
<input type="checkbox"/> ID 5	No Function ▼	
<input type="checkbox"/> ID 6	No Function ▼	
<input type="checkbox"/> ID 7	No Function ▼	

Read Mode: Read UID ▼

GeoFinger Server IP Address: 192 . 168 . 4 . 129 : 5005 (from 1025 to 65535)

Figure 4-4

5. Use the **Function** dropdown list to select the door associated with your GV-FR2020.
6. Select **Read UID** as the **Read Mode**.
7. Click **Submit**. If the face recognition reader is detected, the **Connection Status field** should turn green.

## 4.2 Setting up GV-ASManager

Integration with GV-ASManager allows you to utilize full access control functions. This section covers the basic settings for adding GV-AS Controller and GV-FR2020 to GV-ASManager.

For more details on GV-ASManager functions, see [GV-ASManager User's Manual](#).

### 4.2.1 Adding GV-AS Controller

1. On the menu bar of GV-ASManager, click **Setup** and select **Devices**. The Device List dialog box appears.

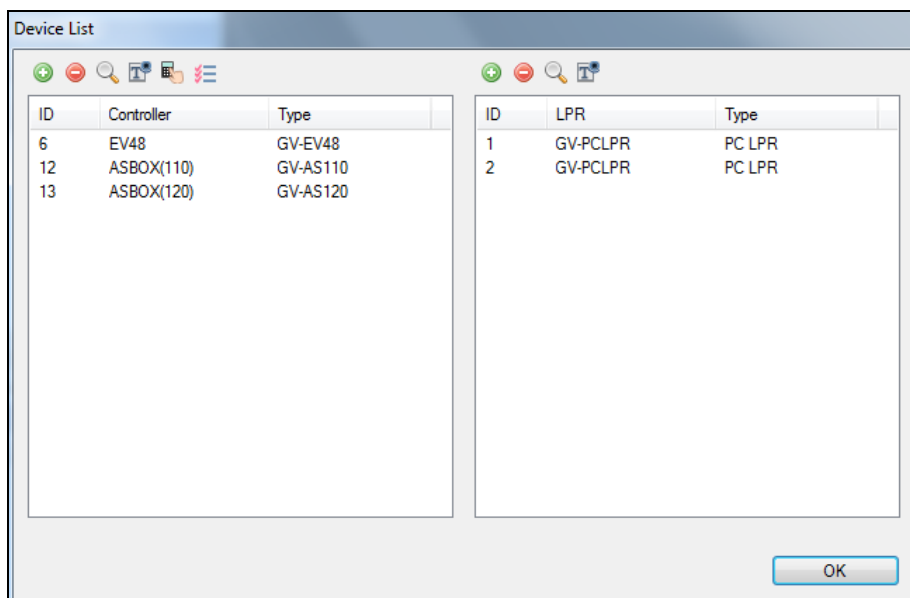


Figure 4-5

2. Click the **Add** icon  on the top left corner. This dialog box appears.

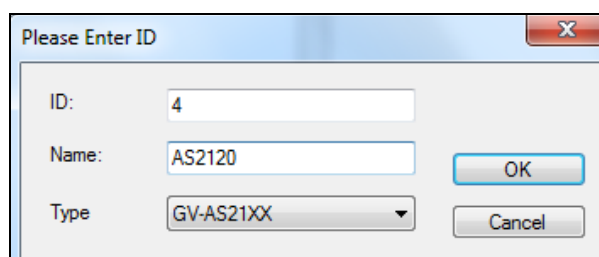
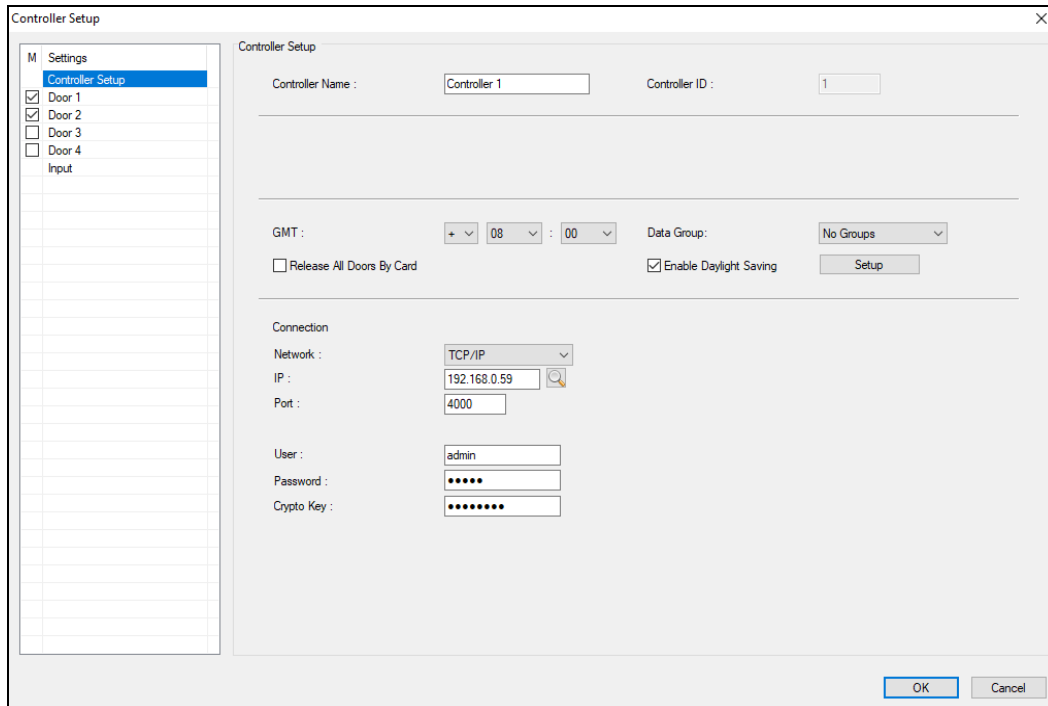



Figure 4-6

3. Type **ID** and **Name** of the Controller, select the **Type** of the Controller and click **OK**. This dialog box appears.




*Figure 4-7*

4. In the **Network** dropdown list under Connection, select **TCP/IP** as the communication mode between the GV-AS Controller and GV-ASManager.
5. Type the **IP address**, **port number**, **login user**, **password** and **Crypto key** (3DES code) of the GV-AS Controller. You can also click the **Search** button  to search for controllers in the same LAN.

---

**Note:** By default, GV-AS Controller has the port number **4000**, username **admin**; password **admin**; Crypto key (3DES code) **12345678**.

---

6. To check if the above connection settings are correct, you can click **OK** at this step and back to the main screen. The icon  appearing on the Device View window indicates that the connection is established.

## 4.2.2 Configuring a Door

1. On the menu bar of GV-ASManager, click **Setup** and select **Devices**.
2. Double-click the GV-AS Controller and select a **Door**. This dialog box appears.

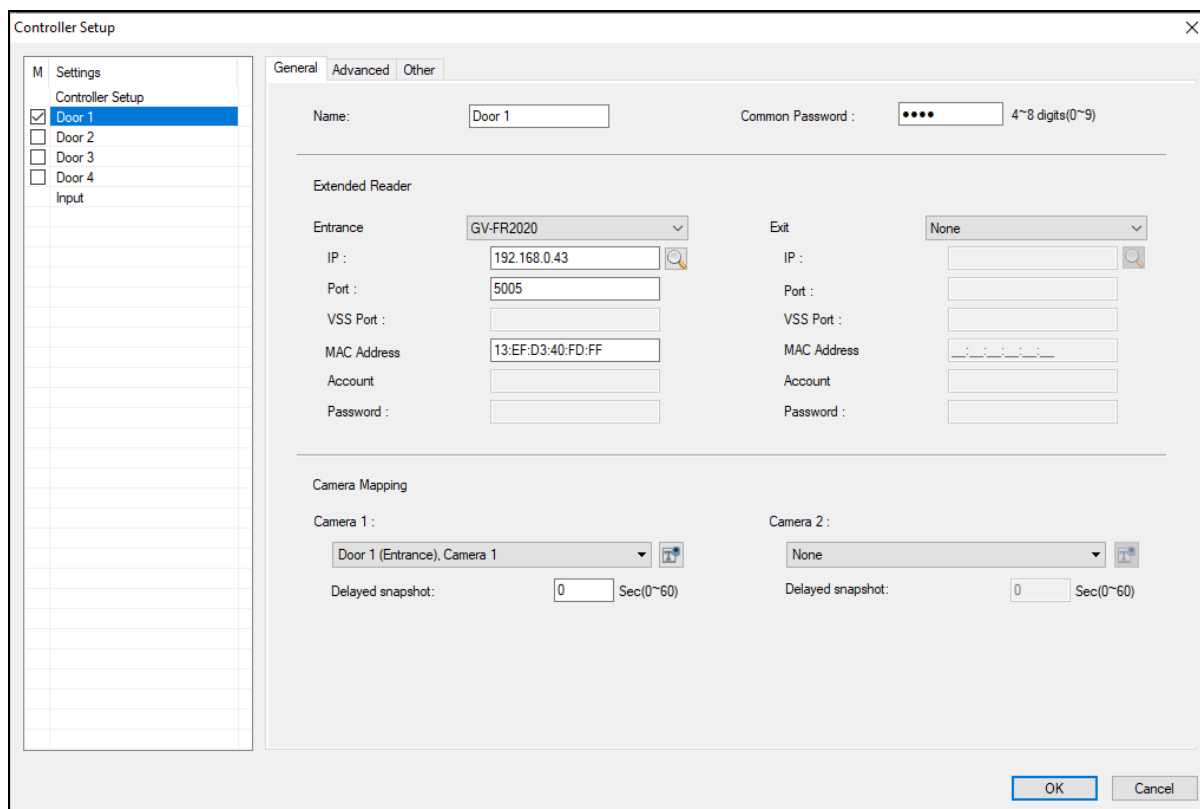


Figure 4-8

3. Select GV-FR2020 from the **Entrance** or **Ext** dropdown list, in accordance to your installation site.
4. Under the dropdown list selected from Step 3, type the face recognition reader's **IP address**, **Port number** and **MAC address**. For details on how to check the IP address, see *3 Getting Started*.

For details of the settings under the Door tab, see *4.2.2 Step 2: Configuring the Doors or Elevator Floors* in [GV-ASManager User's Manual](#).

## Chapter 5 User Management

Once you have set up access control related functions, you can begin to create and manage users on GV-ASManager and GV-FR2020. To create users for face recognition- and/or card-based access control by GV-FR2020, you must complete the following three configuration steps:

- **Step 1: Enabling the Facial Features on GV-ASManager**

Activate the Facial Features settings of the users on GV-ASManager, see *section 5.1*.

- **Step 2: Uploading to the Face Recognition Reader**

Upload user data from GV-ASManager to GV-FR2020, see *section 5.2*.

- **Step 3: Using the Face Recognition Reader**

Start using GV-FR2020 by *Card Mode*, or enroll face images for *Face Recognition Mode*, see *section 5.3*.

---

**Note:** You must first create users on GV-ASManager and then upload the user data to GV-FR2020 prior to face enrollment.

---

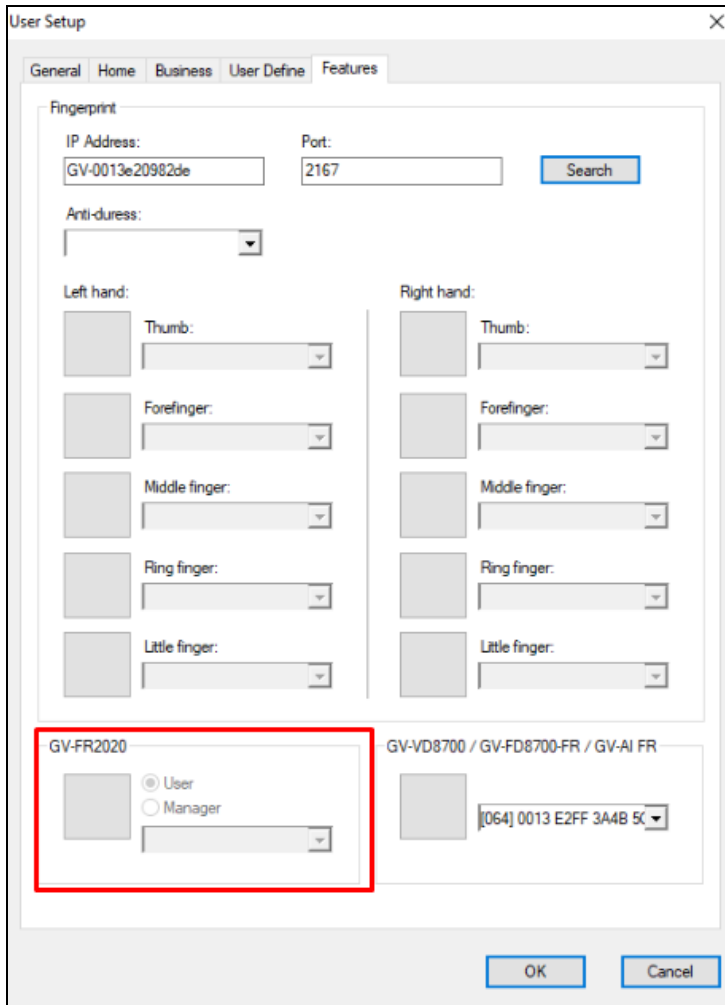
### 5.1 Step 1: Enabling the Facial Features on GV-ASManager

Before the user data can be submitted to a face recognition reader, you must activate the Facial Features settings of the users. Each user must also be assigned a card number. Make sure you have added cards, created user accounts and assigned cards to the users. See 4.3 *Setting Cards* and 4.6 *Setting User* in [GV-ASManager User's Manual](#).

Follow the steps below to enable the Facial Features:

1. On the menu bar of GV-ASManager, click **Personnel** and select **Users**. The User List window appears.
2. Select and double-click a User from the User List.

- Click the **Features** tab. This dialog box appears.




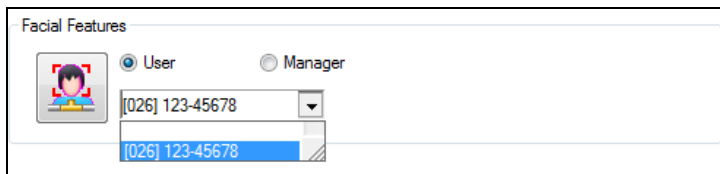
The 'User Setup' dialog box has five tabs: General, Home, Business, User Define, and Features. The 'Features' tab is active. It contains the following sections:

- Fingerprint:**
  - IP Address: GV-0013e20982de
  - Port: 2167
  - Search button
  - Anti-duress: dropdown menu
- Left hand:**
  - Thumb: dropdown menu
  - Forefinger: dropdown menu
  - Middle finger: dropdown menu
  - Ring finger: dropdown menu
  - Little finger: dropdown menu
- Right hand:**
  - Thumb: dropdown menu
  - Forefinger: dropdown menu
  - Middle finger: dropdown menu
  - Ring finger: dropdown menu
  - Little finger: dropdown menu
- GV-FR2020:** (highlighted with a red box)
  - Image icon
  - Radio buttons: ☒ User, ☐ Manager
  - Dropdown menu
- GV-VD8700 / GV-FD8700-FR / GV-AI FR:**
  - Image icon
  - Dropdown menu showing [064] 0013 E2FF 3A4B 5C

Buttons: OK, Cancel

Figure 5-1

- Click the square  within the **GV-FR2020** section.
- Select **User** or **Manager** as needed.
- Use the dropdown list to assign a card number to the user.



The 'Facial Features' dialog box contains the following elements:

- Radio buttons: ☒ User, ☐ Manager
- Image icon of a person's face
- Dropdown menu showing [026] 123-45678
- Dropdown menu showing [026] 123-45678 (highlighted in blue)

Figure 5-2

- Click **OK** to apply the settings.

## 5.2 Step 2: Uploading to the Face Recognition Reader

The data can be sent directly from GV-ASManager to GV-FR2020 through TCP/IP. To upload the user data from GV-ASManager to the face recognition reader, follow the instruction below.

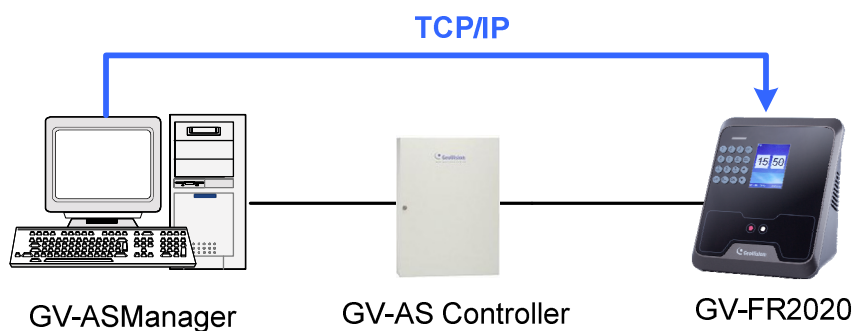


Figure 5-3

1. On the menu bar of GV-ASManager, click **Setup** and select **Feature Access**. This dialog box appears.

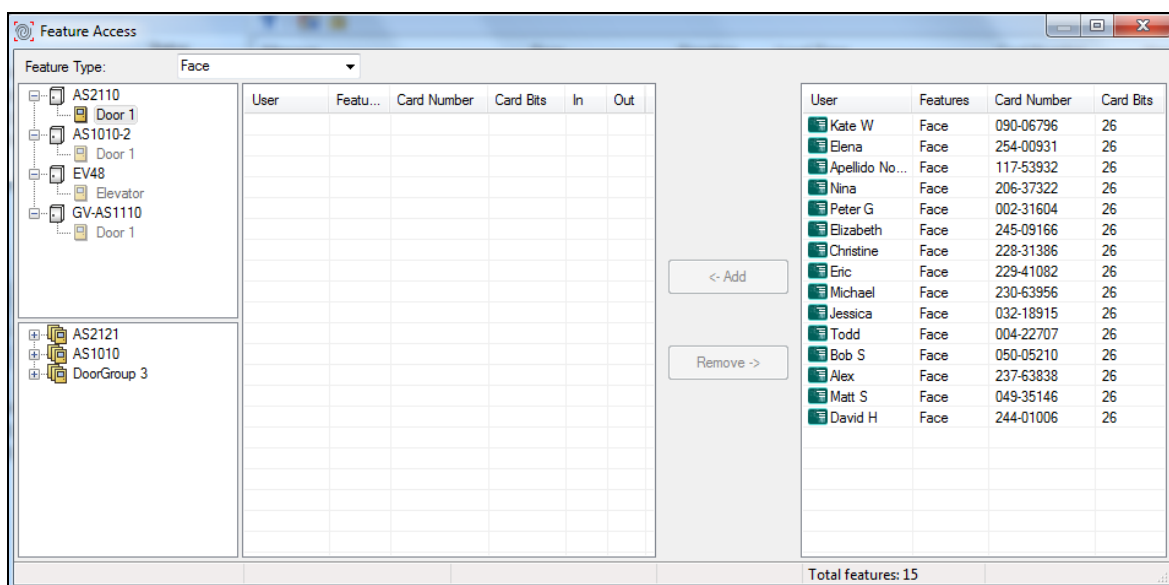


Figure 5-4

2. To upload to a door or a controller, select the desired Door/Gate or controller in the top-left panel.
3. Select the desired user data on the right side. The **Add** button becomes available.



- Click the **Add** button to add the selected user data to the selected Door/Gate. The resulting window after adding may look like this:

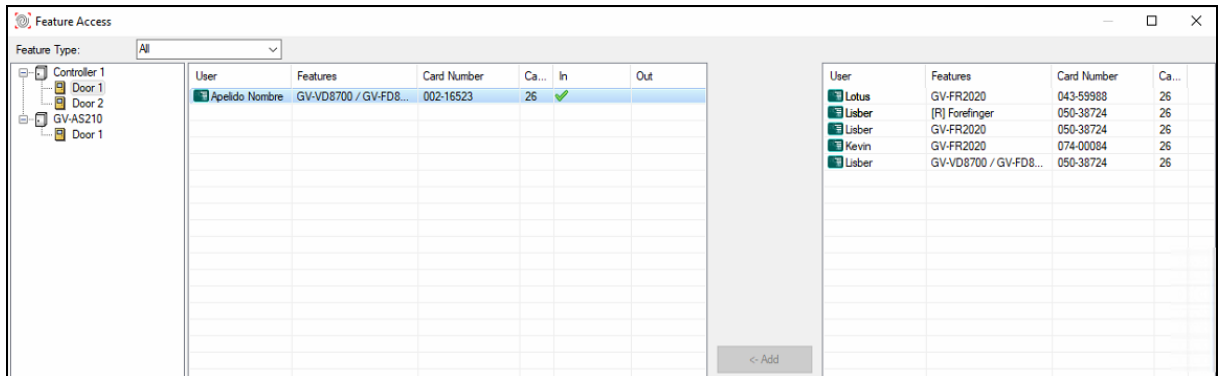



Figure 5-5

---

**Note:** Each face recognition reader can store up to 2,000 user accounts.

---

- Click the 'x' icon  to close the window of Feature Access.
- If you want to overwrite the entire User database of your GV-FR2020, optionally right-click the Door/Gate in the Device View on the main screen, select **Sync GV-FR2020** and click **Yes**.

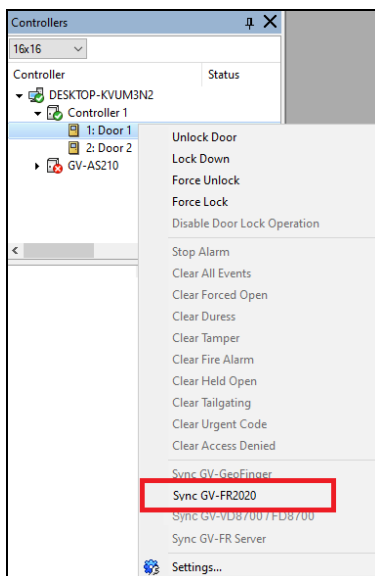


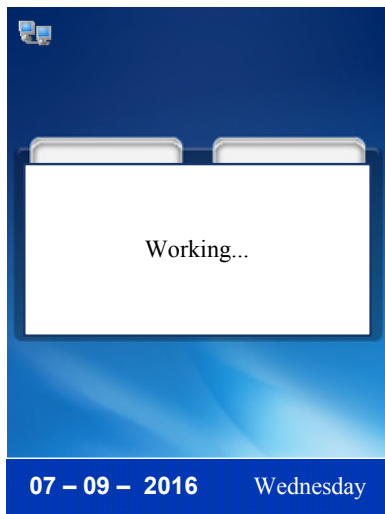
Figure 5-6

---

**IMPORTANT:** Each time you select **Sync GV-FR2020**, the existing user data on GV-FR2020 will be overwritten by the selected user data on GV-ASManager.

---

During the process of uploading the user data from GV-ASManager, you will receive the below message on your GV-FR2020.



*Figure 5-7*

## 5.3 Step 3: Using the Face Recognition Reader

After uploading the user data from GV-ASManager to GV-FR2020, you can start enrolling the users' face images for access control at the site of the face recognition reader. With the Card mode, the users must present a card before access is granted.

---

### Note:

1. A user account must be established on the connected GV-ASManager before the face recognition enrollment can take place.
  2. The enrolled face images will be saved both on the face recognition reader and the GV-ASManager.
- 

### 5.3.1 Face Recognition Mode

The Face Recognition mode must work with the GV-ASManager software and the GV-FR2020 reader to enroll faces. To gain access, the user's face must match the enrolled face image.

Follow the steps below to enroll a user for access:

1. In the Main Menu of GV-FR2020, select **Users** and press **OK**, or press **1** to enter the User submenu.
2. Select **Modify** and press **OK**, or press **2** to modify the users uploaded to GV-FR2020.
3. Select a user profile and press **OK**.
4. Select **Face** and press **OK**, or press **7** to enter the sunlight test screen where the GV-FR2020 automatically detects and assesses the current lighting conditions prior to face enrollment.

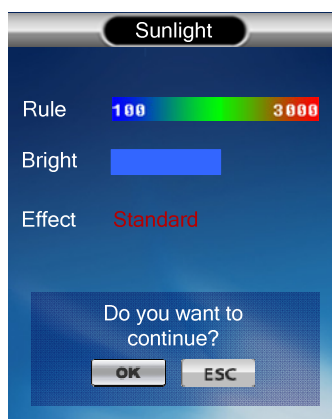


Figure 5-8

- After assessing the lighting conditions, press **OK** to proceed and enroll your face by following the audio instructions.

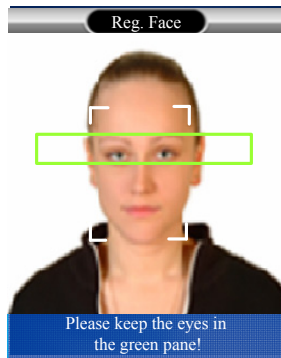


Figure 5-9

- If the data is enrolled successfully, GV-FR2020 will prompt “enrollment completed” and return to the user account details. The user’s image, if enrolled, will be displayed on the interface as shown below.




Figure 5-10

---

**Note:** If you want to enroll multiple faces, you must return to the main menu after every face enrollment for data synchronization to GV-ASManager, where a “Processing” message is displayed, before enrolling another.

---

To verify the faces are enrolled to GV-ASManager successfully, on the menu bar of GV-ASManager, click **Personnel > Users**, and double-click a user listed in the User List window and select the **Features** tab. Once the face image taken by GV-FR2020 has been successfully uploaded, an FR image  is displayed under **GV-FR2020**.

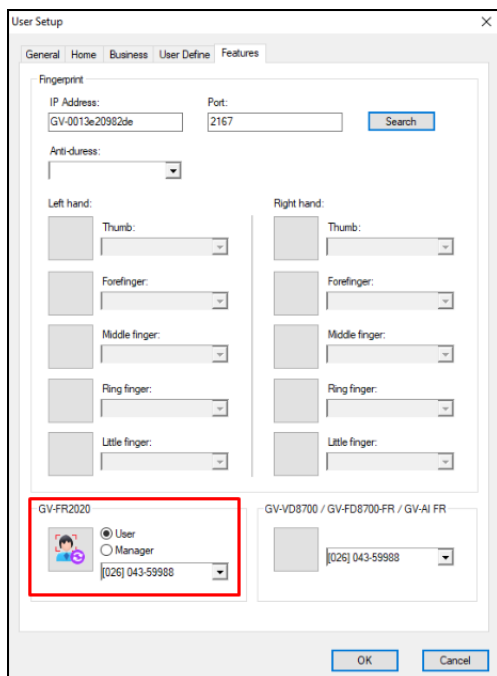


Figure 5-11

Upon the completion of the face recognition enrollment, the user can scan his or her face to gain access.

1. If the presented face matches any record in the face recognition reader, the confirmation screen will appear as shown in Figure 5-13. Access signal will be passed to the controller. The access will be granted.

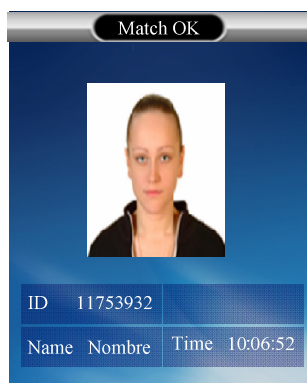


Figure 5-12

On the Access Monitor Window of GV-ASManager, you can click the “Access Granted” message and its associated face image will appear.

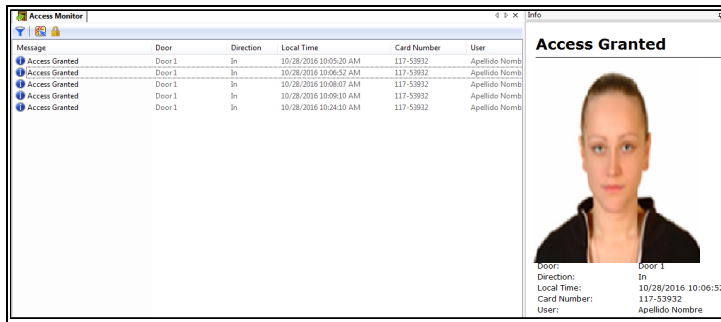


Figure 5-13

**Note:** The Access Granted photo, enrolled from GV-ASManager for identification, may be different from the one enrolled by GV-FR2020 for face recognition.

2. If the presented face does NOT match the record in the face recognition reader, the failure screen will appear as shown in Figure 5-15. No access signal will be sent to the controller and the access will be denied.

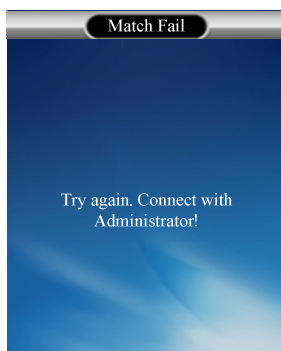


Figure 5-14

### 5.3.2 Card Mode

The Card mode allows the users to gain access with a card. Each user must have a card number assigned by GV-ASManager.

After the GV-FR2020 has synchronized the user data with that of GV-ASManager, the user can present the card he or she enrolled.

1. If the card is detected as an enrolled card, the access signal will be passed to the controller and the access will be granted.
2. If the card does not match any of the enrolled cards, the access will be denied.

## 5.4 Downloading and Uploading the Data

### 5.4.1 Downloading the Data

You can back up the current user data on GV-FR2020 and save them to your USB device. In the Users submenu, select **Download** and press **OK**, or press **3** to download the user data stored on GV-FR2020.

### 5.4.2 Uploading the Data

The user data can be exported to GV-FR2020 via a USB drive. In the Users submenu, select **Upload** and press **OK**, or press **4** to upload the user data.

## Chapter 6 Settings

The Manager can access system configuration of GV-FR2020. In the Main Menu, select **Settings** and press **OK**, or press **2** to enter the Settings submenu.

### 6.1 Device Settings

Select **Device** and press **OK**, or press **1** to enter the Device Settings.

To configure a particular setting for the device, use the **Arrow** keys to select that item and press **OK**, or input a corresponding numeric key.



Figure 6-1

- **Language:** Change the language of GV-FR2020, from English as default, to Traditional Chinese or Hebrew.
- **Volume:** Input a volume value from 0 to 10, with 5 as default. The larger the value, the louder the volume.
- **Verify Mode:** Select one of the following verification modes for access management:
  - ⊙ **FC/P/C:** By default, GV-FR2020 can manage and grant access by face recognition, passwords and/or access cards.
  - ⊙ **P+FC:** Select for GV-FR2020 to require both a password and face recognition for granting access.
  - ⊙ **C+FC:** Select for GV-FR2020 to require both an access card and face recognition for granting access.



- **Verified Screen:** Input the time interval, from 1 to 30 seconds, in which the verified access screen appears for, upon granting access, before returning to the main menu.
- **Screen Saver:** Input an idle time, between 0 to 1440 seconds, before the screensaver activates.
- **Sleep Time:** Input a period from 0 to 60 minutes after which the device goes to sleep mode.
- **Lock Delay:** Input the duration, from 0 to 200 seconds, for GV-FR2020 to unlock the electronic locks for. This function is only applicable for standalone operation.
- **Wiegand Format:** Only when physically connecting to GV-AS Controller via Wiegand, select the type of Wiegand format used, from Wiegand 26 or Wiegand 34.

---

**Note:**

1. To assign passwords to users, tap **Users > Modify** from the main menu of GV-FR2020 and select a user.
  2. Any user can access the **Settings** submenu, if there are no manager accounts on the reader. After a manager account is created, the manager can press **Menu** to perform face / card / password verification before granting access to the **Settings** submenu.
-

## 6.2 Time Settings

In the Settings menu, select **Time** and then press **OK**, or press **2** to enter the time settings. You can press the **Arrow** keys to select a setting item and input numbers to define the date and time for your GV-FR2020.



Figure 6-2

---

**Note:** The date format is shown as DD/MM/YYYY.

---

## 6.3 Record Rule

In the Settings menu, select **Rec. Rule** and then press **OK**, or press **3** to enter the record setting.



*Figure 6-3*

- **Punch Interval:** Input a face and card re-verification time from 0 to 10 minutes.

## 6.4 Network Settings

In the Settings menu, select **Network** and press **OK**, or press **4** to enter the Network settings.



Figure 6-4

- **Device No:** Display the reader's device number.
- **ETH:** Select **ETH** and press **OK**, or press **2** to specify an IP address for the device. For details, see *Chapter 3 Getting Started*.

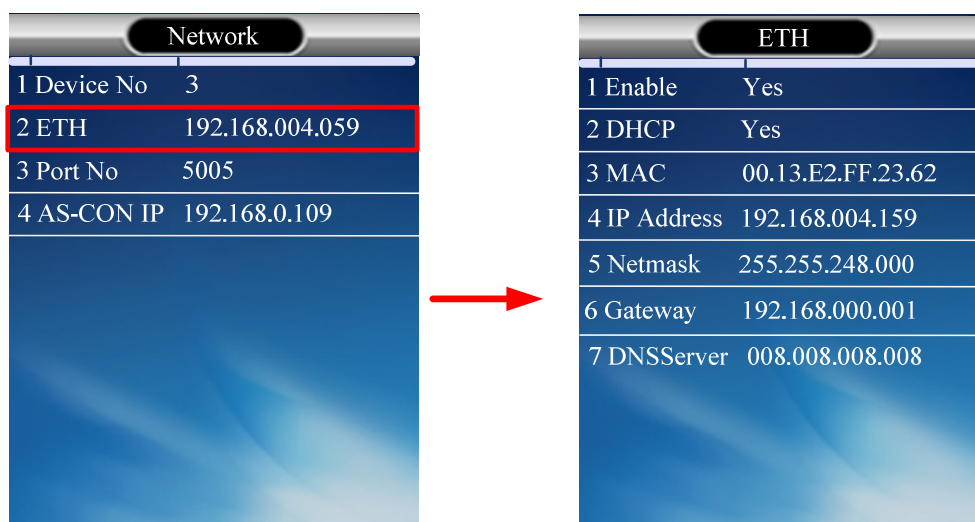


Figure 6-5

- ⊙ **Enable:** Select **Yes** or **No** to enable or disable network connection. By default, the network connection is enabled.
- ⊙ **DHCP:** Select **Yes** or **No** to enable or disable the DHCP function. By default, the DHCP function is enabled.

- ⊙ **MAC:** Display the MAC address of the reader.
- ⊙ **IP Address:** Display the IP address configured for the reader.
- ⊙ **Netmask:** Display the netmask address configured for the reader.
- ⊙ **Gateway:** Display the gateway address configured for the reader.
- ⊙ **DNS Server:** Display the DNS Server address configured for the reader.
- **Port No:** Input the port number of the reader or keep the default value 5005.
- **AS-CON IP:** Display the server IP address configured for the GV-AS Controller.

## 6.5 Initial Settings

You can perform a factory default reset, delete all the records and upgrade the device firmware through the Initial Settings.

In the Settings menu, select **Init** and press **OK**, or press **5** to enter the Initial settings.

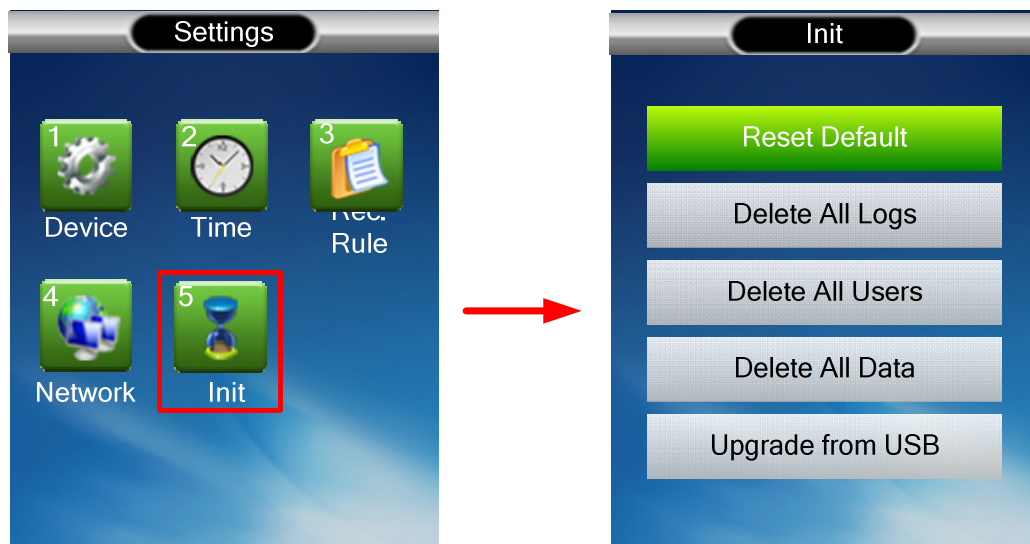


Figure 6-6

- **Reset Default:** Restores all configurations to factory default settings.
- **Delete All Logs:** Removes all log information stored on the reader.
- **Delete All Users:** Removes all users accounts stored on the reader.
- **Delete All Data:** Removes all data stored on the reader.
- **Update from USB:** Upgrade the firmware of the reader via a USB device. For details, see *9.1 Upgrading System Firmware*.

---

**Note:**

1. The firmware update will not erase the user accounts stored on the reader.
  2. A USB 2.0 flash drive with a maximum capacity of 16 GB is required for the firmware update.
-

## Chapter 7 Viewing Info

You can check the enrollment statistics, device information as well as instructions for using GV-FR2020 through the View Info submenu. In the Main Menu, select **View Info** and press **OK**, or press **3** to enter the View Info submenu.

### 7.1 Registration Information

To see the enrollment data in the View Info submenu, select **Reg. Info** and press **OK**, or press **1** to enter the registration information interface.



Figure 7-1

- **Users:** Indicate the number of users enrolled on the reader.
- **Faces:** Indicate the number of faces enrolled on the reader.
- **Cards:** Indicate the number of cards enrolled on the reader.
- **Passwords:** Indicate the number of passwords enrolled on the reader.

## 7.2 Device Information

In the View Info submenu, select **Dev. Info** and press **OK**, or press **2** to see the device information.

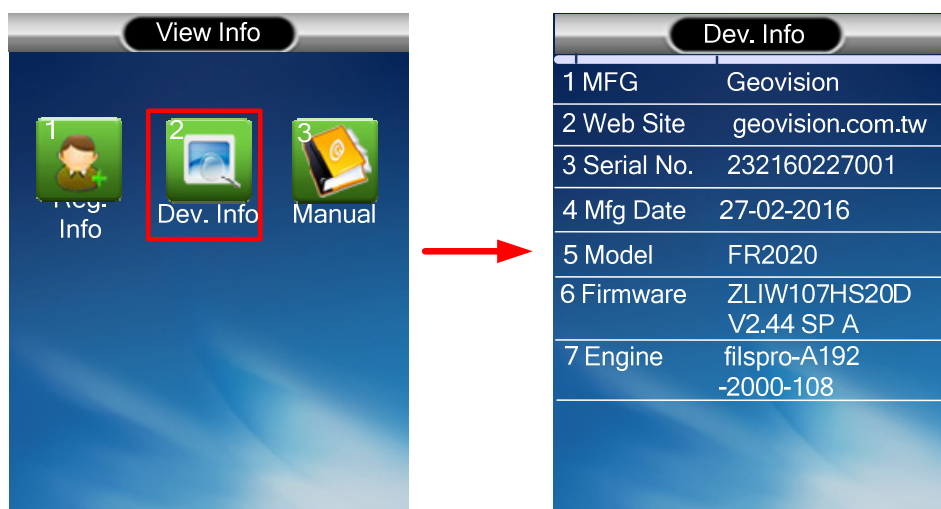


Figure 7-2

- **MFG:** Display the manufacturer of the reader.
- **Web Site:** Display the website of the manufacturer of the reader.
- **Serial No:** Display the serial number of the reader.
- **Mfg Date:** Display the manufactured date of the reader.
- **Model:** Display the model number of the reader.
- **Firmware:** Display the current firmware version of the reader.
- **Engine:** Display the engine version of the reader.



## 7.3 Manual Information

In the View Info submenu, select **Manual** and press **OK**, or press **3** to see simplified instructions for using the GV-FR2020.

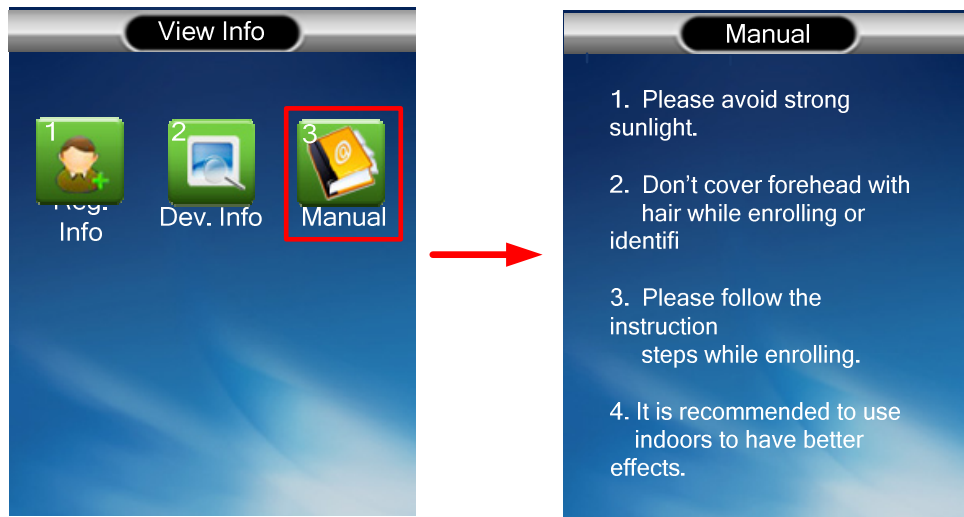


Figure 7-3

# Chapter 8 A Standalone Face Recognition Reader

## Reader

GV-FR2020 can also work on its own without connecting to GV-AS Controller and GV-AS Manager.

### 8.1 Wire Definition

On the back of the GV-FR2020, there is a data port (No 10, Figure 1-2). You can use the supplied data cable to connect your face recognition reader to power and a locking device.

**Note:** You can purchase a12V DC power adapter for applying power adapter connection.

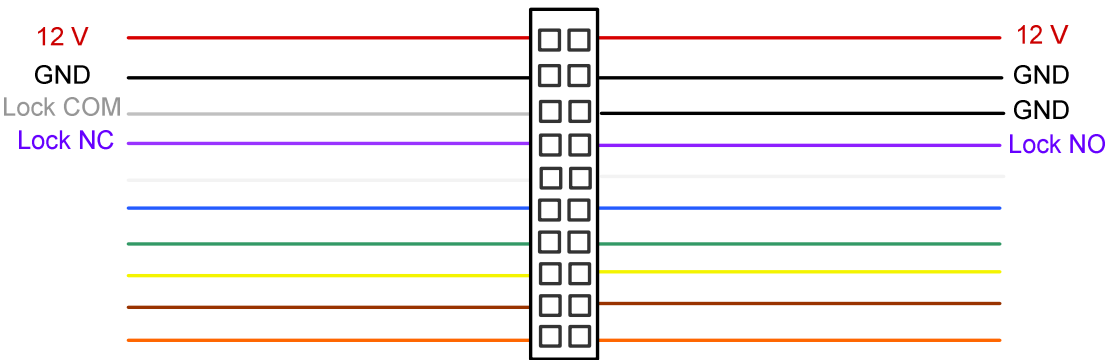


Figure 8-1

Wire Color	Definition
Red	12V DC
Black	GND
Grey	Lock COM
Purple (left)	Lock NC
Purple (right)	Lock NO

## 8.2 Adding a User

After you have connected your GV-FR2020 to power and a locking device, you are ready to enroll users. The standalone face recognition reader supports three operation modes: **Face**, **Card** or **Password**.

Each user must have a user account with a unique ID number before enrolling a face, card or password. Follow the steps below to add a user to your GV-FR2020:

1. Press the **Menu** button (No. 3, Figure 2-1). The Main Menu appears.

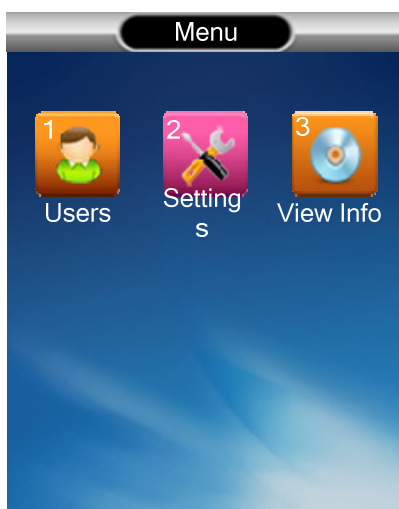


Figure 8-2

2. Select **User** and press **OK**, or press **1** to enter the User submenu.
3. Select **Enroll** and press **OK**, or press **1** to add a user. The enrollment interface appears.



Figure 8-3

4. Input a user ID. GV-FR2020 supports numerical digits only.
5. Press **OK** or the **Down** arrow key to save the user ID.
6. Input a user name. The text field can accept up to 14 characters.
7. Press **OK** to save the user name.
8. Select an enrollment mode.

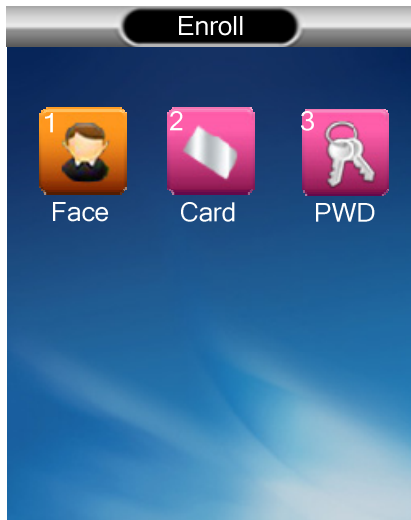


Figure 8-4

## 8.3 Enrollment modes

The standalone GV-FR2020 supports **Face Recognition mode**, **Card mode** and **Password mode**.

### 8.3.1 Face Recognition Mode

To enroll a face, select **Face** and press **OK**, or press **1**. After the current light conditions have been detected, follow the voice prompts to complete the enrollment.

Press **ESC** back to the Main Menu to test the face recognition. After the enrollment, the user can set a card or password as another verification method by modifying the user account.

### 8.3.2 Card Mode

To enroll a card,

1. Select **Card** and press **OK**, or press **2** for card enrollment.
2. Place the access card on the reader.
3. Press **OK** to complete the enrollment.

Press **ESC** back to the Main Menu to test the card.

### 8.3.3 Password Mode

To enroll a password,

1. Select **PWD** and press **OK**, or press **3** to enroll a password.
2. Input the new password in **PWD** and re-input the password in **Confirm**. GV-FR2020 supports passwords that are 1-9 characters in length.
3. Press **OK** to save the password in the reader.

Press **ESC** back to the Main Menu and press any number key to input ID and password.

## Chapter 9 Upgrading and Resetting

You can upgrade or reset your face recognition reader.

### 9.1 Upgrading System Firmware

The new firmware can be loaded into GV-FR2020 using a USB device.

1. Insert a USB device with the latest firmware on it into the USB port (No. 12, Figure 1-2).
2. In the Main Menu of GV-FR2020, select **Settings** and press **OK**, or select **2** to enter the Settings submenu.
3. Select **Init** and press **OK**, or press **5** to enter the Initial settings.
4. Select **Update from USB** to update your GV-FR2020's firmware to the new version.
5. If the firmware update is successful, select **Set Default** to restore the reader to its default settings.

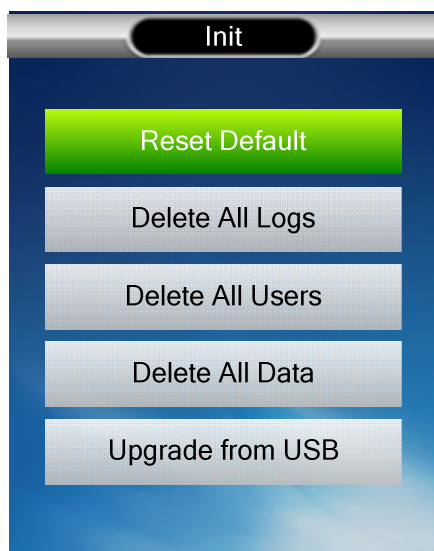


Figure 9-1

---

**Note:**

1. The firmware update will not erase the user accounts, log information and other data stored on the reader.
  2. A USB 2.0 flash drive with a maximum capacity of 16 GB is required for the firmware update.
-

## 9.2 Resetting the Reader

You can reboot your GV-FR2020 directly on the reader.

1. Keep the power connected to the reader.
2. Press and hold the **reset** button (No. 11, Figure 1-2) for a few seconds.
3. The reader reboots automatically.

# Specifications

<b>Hardware</b>	
<b>Application</b>	Indoor use only
<b>LCD Display</b>	2.4" TFT color screen, 320 x 240 pixel
<b>CPU</b>	1G MHz
<b>Ambient Light</b>	0-5000 lux
<b>Image Sensor</b>	Special Stereo Dual Sensors (Lens and IR sensor)
<b>Function</b>	
<b>Detection Range</b>	Up to 80 cm (31.50 in)
<b>Communication Interface</b>	TCP/IP (LAN) and Wiegand 26/34
<b>Operation Modes</b>	Face Recognition, Card, Password, Face Recognition + Card or Face Recognition + Password
<b>Firmware Upgrade</b>	USB 2.0 with a maximum capacity of 16 GB
<b>Voice Instruction</b>	16-bit Hi-Fi Voice and Sound Indication
<b>RFID Card Supported</b>	13.56 MHz, 26-bit Wiegand card formats (UID only) ISO14443A (MIFARE DESFire, MIFARE Plus and MIFARE Classic)
<b>Number of Faces Stored</b>	2,000 (for Face Recognition mode)
<b>Standalone Function</b>	Yes (for Face Recognition, Card and Password modes)
<b>General</b>	
<b>Language</b>	English, Hebrew, Traditional Chinese
<b>Humidity</b>	20% ~ 80%
<b>Operating Temperature</b>	0 ~ 40° C (32 ~ 104° F)
<b>Power</b>	12V DC, 2 A (only for standalone) / PoE+ (IEEE 802.3at)
<b>PoE Power Supply Type</b>	Mid-span
<b>Digital I/O</b>	1 relay output (30V DC, 3A) for standalone operation only
<b>Dimensions (H x W x D)</b>	147 x 175 x 62 mm (5.79 x 6.89 x 2.44 in)
<b>Weight</b>	0.33 kg (0.73 lb)
<b>Certification</b>	CE, FCC

## Note:

1. The data synchronization with GV-AS Controller and GV-ASManager through LAN is only supported with GV-AS21/41/81 series controller firmware V1.41 or later, GV-AS1620 / CS1320 controller V1.0 or later and GV-ASManager V.4.4.2 or later.
2. All specifications are subject to change without prior notice.