

# 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.

FR2020V10-A



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# Preface

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

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

Product	Version
GV-FR2020	V2.44

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# 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

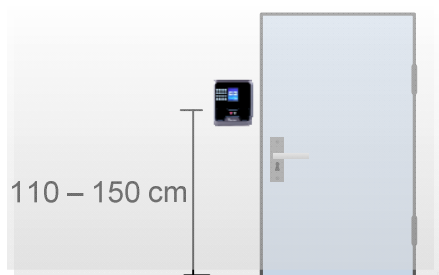
This product is subject to the Waste Electrical and Electronic Equipment (WEEE) Directive and made compliant with the WEEE requirements.

## Installation Considerations

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

### Installation Height:

- When placed at a building gate, GV-FR2020 should be about 1.1-1.4 meters above the ground.



### Face Recognition Limitations:

- GV-FR2020 may not be able to recognize the user's face wearing facial masks or sunglasses.

### Lighting Conditions:

- GV-FR2020 is designed only for indoor usage. Avoid exposing to direct sunlight for user enrollment.



# Firmware and Software Compatibility

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

	<b>GV-FR2020</b>
GV-ASManager	V4.4.2 or later
GV-AS210 / 2110 / 2120	V1.41 or later
GV-AS410 / 4110	
GV-AS810 / 8110	

# Chapter 1 Introduction

The face recognition reader can work with GV-AS Controller and GV-ASManager to create a complete access control system. Two types of operation modes are supported for the integration with GeoVision controller and software: Face Recognition Mode or Card Mode.

## Face Recognition Mode

The face templates are stored in the GV-FR2020. The user gains access by presenting his/her face. The reader compares the current face collected by the sensor with all the face data stored in the GV-FR2020. If the face is successfully authenticated, a signal is sent to momentarily activate the door relay of the controller.

The user data are distributed through GV-ASManager to the assigned face recognition readers installed on GV-AS Controllers for access control. Faces are enrolled in the GV-FR2020 and GV-ASManager will synchronize the face data using TCP/IP connection.

## Card Mode

You can enroll and manage users through ID cards. The user must first have an ID number enrolled using GV-ASManager connected with a GV-FR2020. This mode requires the users to present their assigned cards only to be granted access.

---

**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
- 2000 face capacity
- ≤ 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 Controller and GV-ASManager
- Can work as a standalone reader
- Two (2) access modes for the integration with GeoVision controller and software: Face Recognition mode or Card mode
- Anti-Passback (APB) support
- CE, FCC compliant

## 1.2 Packing List

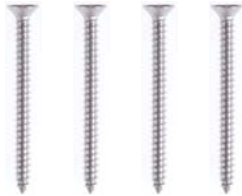
- Face Recognition Reader



- 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 Mode, the GV-AS ID Card / Tag is required. 13.56 MHz cards and tags are available.</p> 
<b>Power Adapter</b>	<p>Contact your sales representative for the countries and areas supported. Note this is only required for standalone mode.</p>
<b>GV-POE Switch</b>	<p>The GV-POE Switch is designed to provide power along with network connection for IP devices. The 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 type.</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

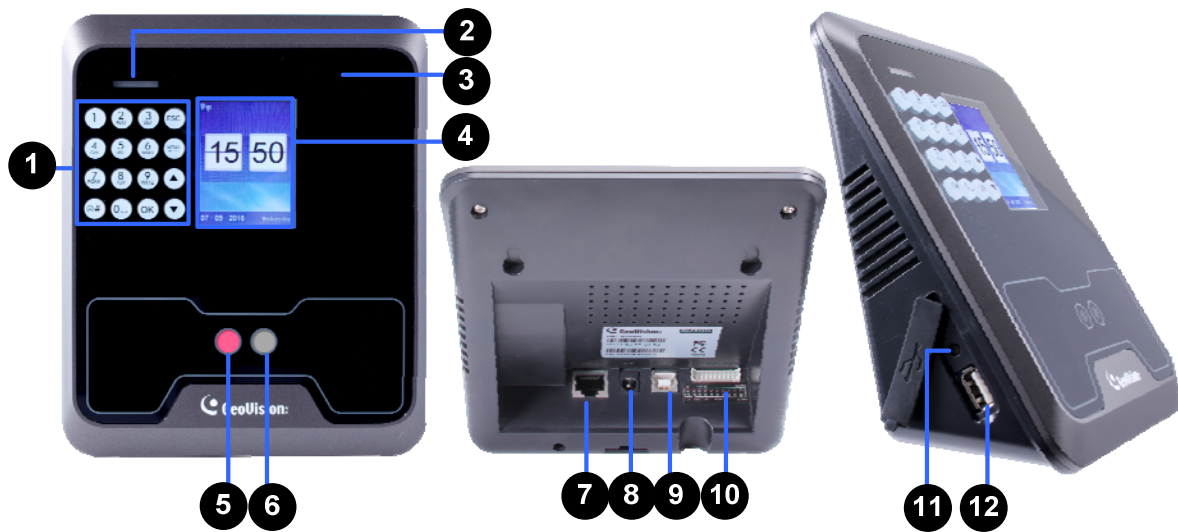


Figure 1-2

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 ID tags.
4	LCD Screen	Display the menu and images.
5	Lens	Capture images.
6	IR Sensor	Detect IR radiation.
7	Ethernet Port	Connect to network. See <i>1.7.1 PoE Connection</i> .
8	Power Jack	Connect to power supply.
9	USB Type-B Port	Not Functional.
10	Data Port	Connect to the data cable for the connection of power and a locking device. This function is only applicable for standalone operation. See <i>8.1 Wire Definitions</i> .
11	Reset Button	Perform the system reboot. See <i>9.2 Resetting</i> .
12	USB Port	Connect to a USB 2.0 device for user data backup and 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 during standby mode. The LED status under different conditions is listed below.

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



## 1.6 Installation

After the location of the face recognition reader is decided, follow the steps below to install the GV-FR2020 on the wall.

1. Place the mounting plate on the wall as illustrated below.



*Figure 1-3*

2. Mark the location of the 4 holes and rectangle as labeled above.
3. Drill the rectangle to create a space for running the cables and wires.
4. At the 4 dots, drill a hole slightly smaller than the plastic screw anchors provided.
5. Insert the 4 plastic screw anchors in the drilled holes.
6. Place the mounting plate on the wall and secure with the 4 standard screws provided.
7. Place the face recognition reader on the mounting plate and thread the cables through the rectangular hole.



*Figure 1-4*

8. Secure the supplied security screw on the bottom with the mounting plate.



*Figure 1-5*

## 1.7 Connecting the Reader

The face recognition reader and GV-AS Controller can be connected through the TCP/IP interface. Follow the instructions below to connect your devices to power and network.

---

### Note:

1. The GV-AS Controller must be under the same LAN with the GV-FR2020 you wish to connect.
  2. The GV-FR2020 can also work as a standalone device without connecting to a GV-AS Controller. For details, see [8. A Standalone Face Recognition Reader](#).
- 

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

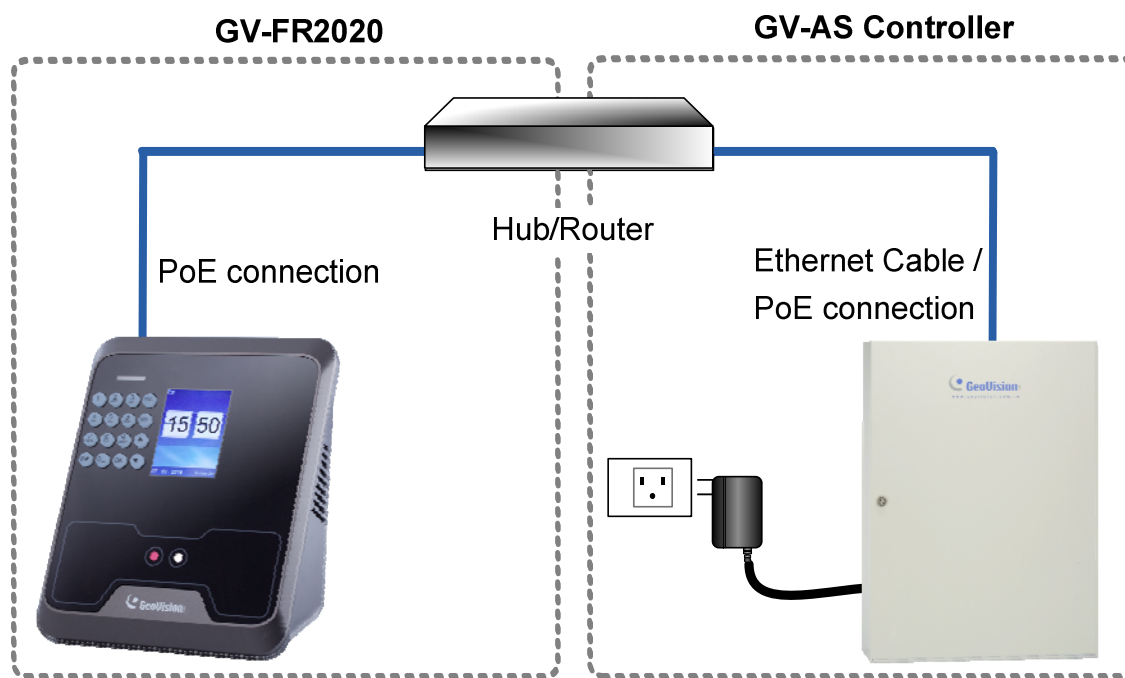



Figure 1-6

---

### Note:

1. Make sure your GV-AS Controller and GV-ASManager support the network connection with the face recognition reader. See [Firmware and Software Compatibility](#).
  2. The PoE function is only supported by GV-AS2120. For other models of GV-AS Controllers, you can purchase a power adapter for power connection.
-

- 
3. GV-FR2020 only works within mid-span power delivery. For details on which GV-POE Switch models are supported by GV-FR2020, see *Appendix A*.
  4. 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.



5. For standalone operation, you can prepare your own 12V power adaptor to connect the reader to power
-

## Chapter 2 Accessing the Reader

There are different access rights granted to two types of users: **Manager** and **User** on the GV-FR2020. While the Manager has unrestricted access to the main menu for all system configurations, users are only granted the rights of facial or card verification.

### 2.1 Using the Keypad



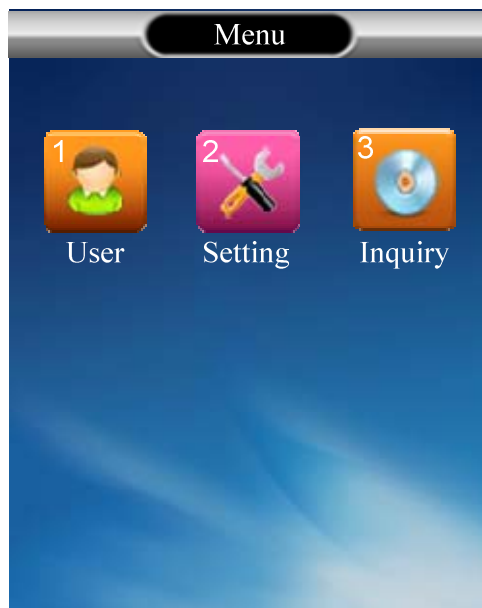
Figure 2-1

No.	Name	Function
1	Alphanumeric Keys	Press to input letters, numbers and special characters.
2	Special Characters	Switch the input method to capital letters or 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	Confirm the setting.

**Note:** 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 the option, simply press the **ESC** key.

## 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.

- **User:** The user data, including the faces and cards, is stored through this submenu. It allows the manager to add, modify or delete a user.
- **Setting:** Contains network configurations and system-related parameters.
- **Inquiry:** Displays the general information, including user registration, device information and simple instructions.

## Chapter 3 Getting Started

You need the IP address of your GV-FR2020 so that the device can be found on the network. This chapter shows how you can find or configure the IP address.

### 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 Setting](#).

---

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

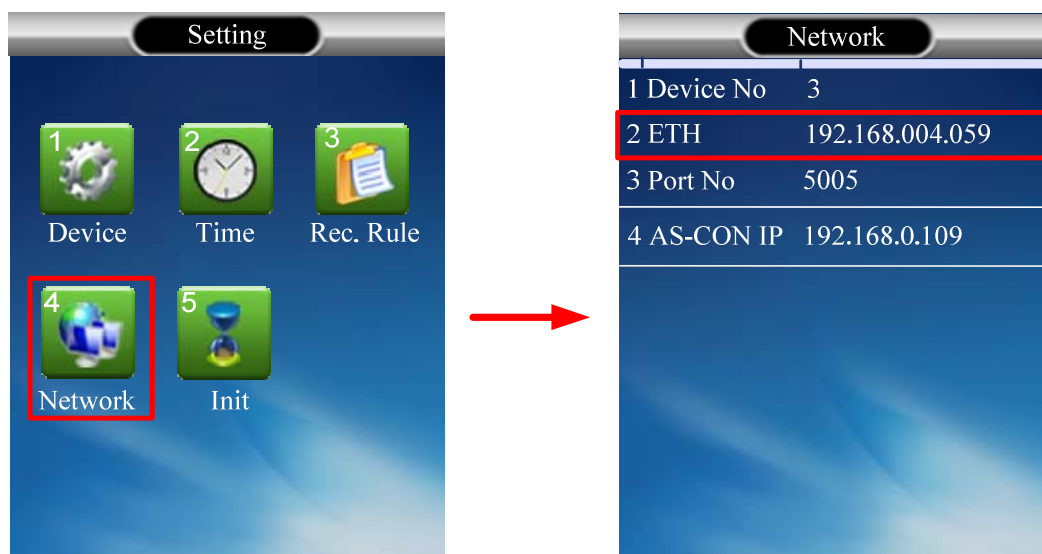


Figure 3-1

## 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 on the same LAN.

Follow the steps below to assign a new IP address:

1. Press the **Menu** button (No. 3, Figure 2-1). The Main Menu appears.
2. Select **Setting** and press **OK**, or press **2** to enter the Setting submenu.
3. In the Setting submenu, select **Network** and press **OK**, or press **4** to enter the network setting.
4. Select **Eth** to enter the Ethernet setting.
5. Select **DHCP** and select **No** to disable the DHCP function.

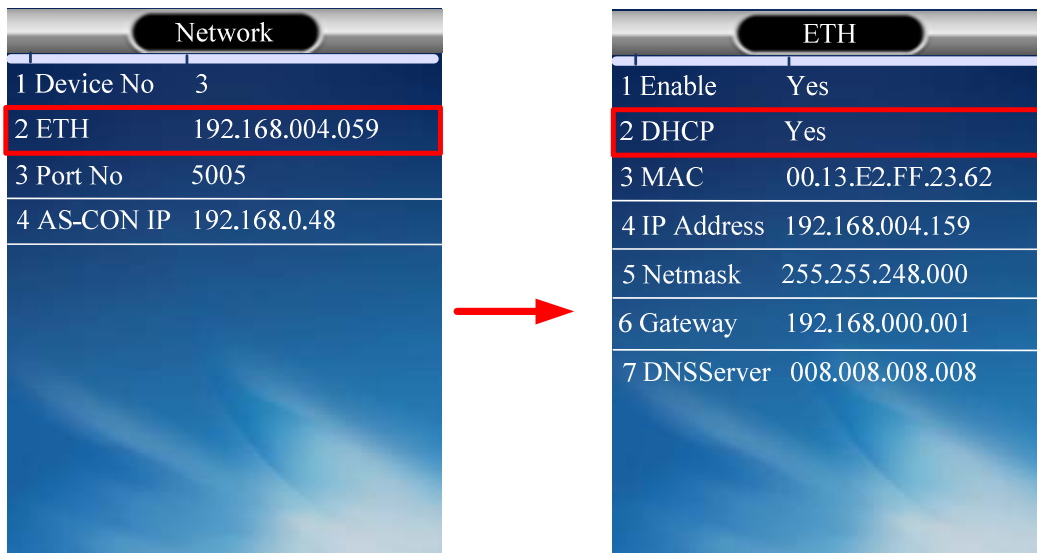


Figure 3-2

6. Press **OK** to confirm your setting.
7. Type the **IP** address, **Netmask**, the **Gateway** address, the **DNSServer** address of your network provider.
8. Press **OK** to confirm your setting.



### 3.3 Setup Flowchart

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

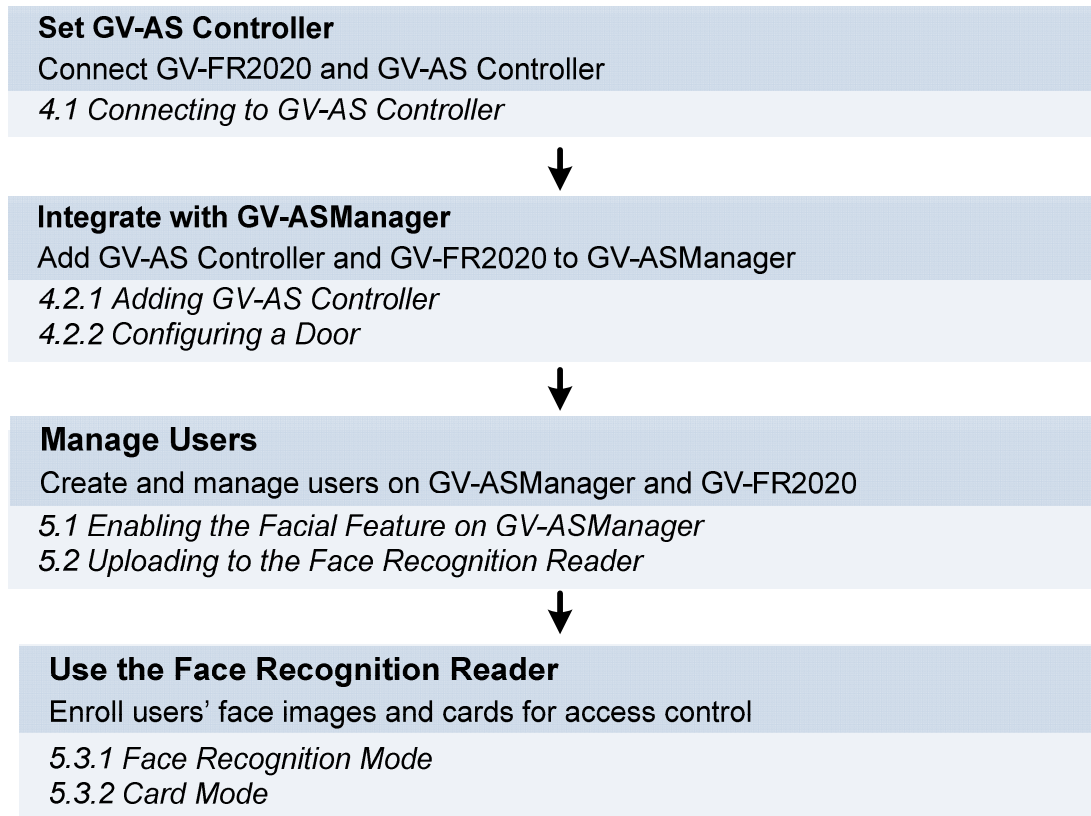


Figure 3-3

---

**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

This section explains how to connect GV-FR2020 to GV-AS Controller and define the associated door.

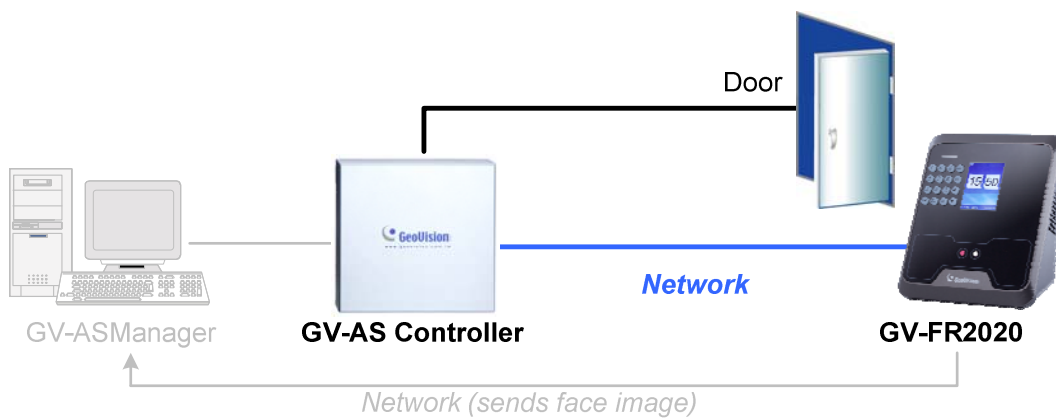


Figure 4-1

## 2. Setting up GV-ASManager

This section explains how to add GV-AS Controller to GV-ASManager and configuring a door for GV-FR2020.

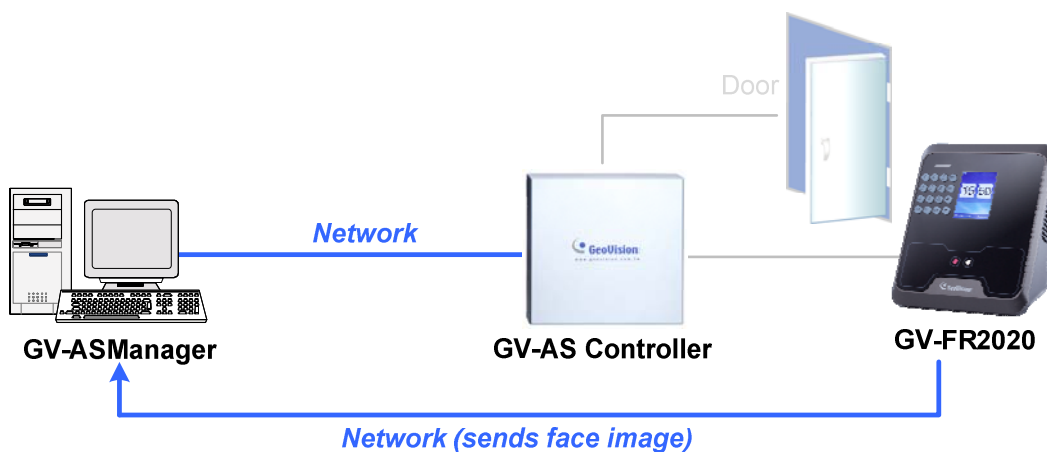


Figure 4-2

## 4.1 Connecting to GV-AS Controller

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

---

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

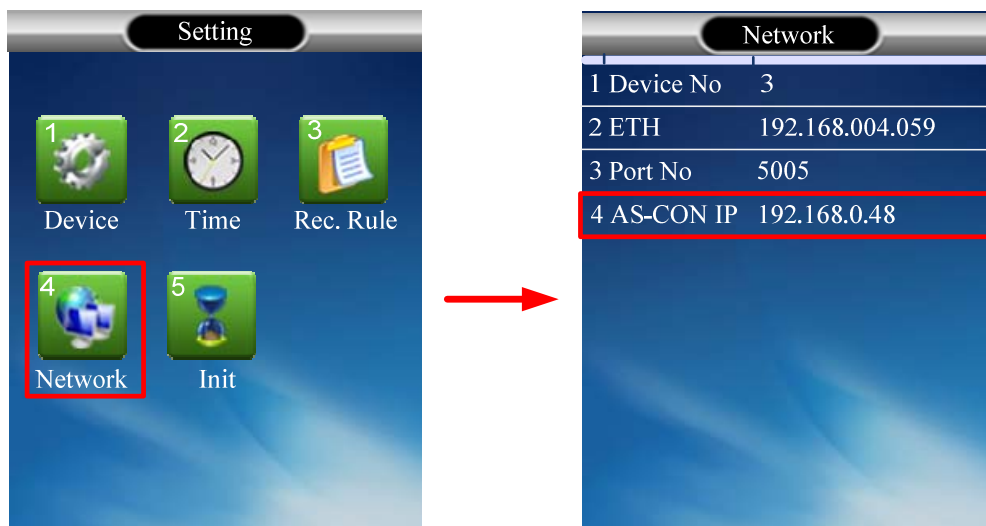
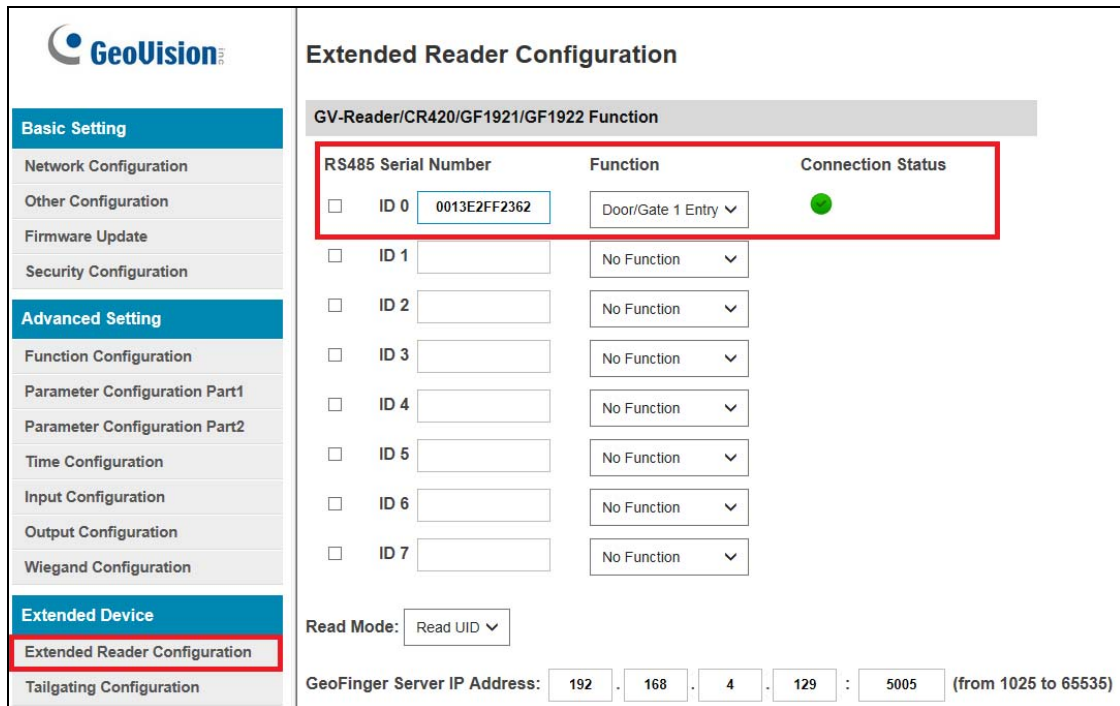


Figure 4-3

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. 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*.



**Extended Reader Configuration**

GV-Reader/CR420/GF1921/GF1922 Function

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

Read Mode:  ▾

GeoFinger Server IP Address:  .  .  .  :  (from 1025 to 65535)

Figure 4-4

5. Use the **Function** drop-down 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 basic settings on how to add 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 Controller List dialog box appears.

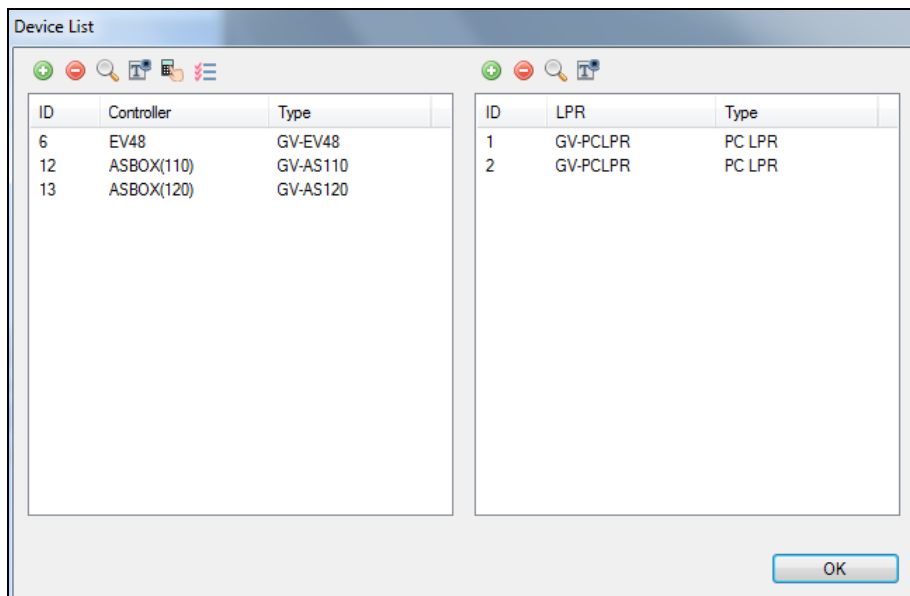


Figure 4-5

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

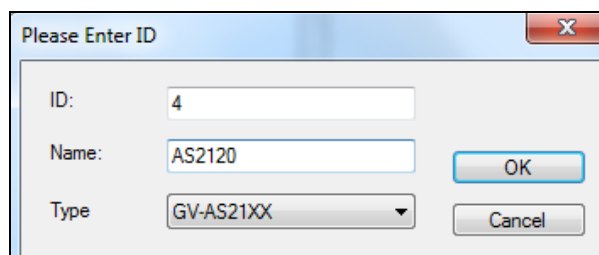


Figure 4-6

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

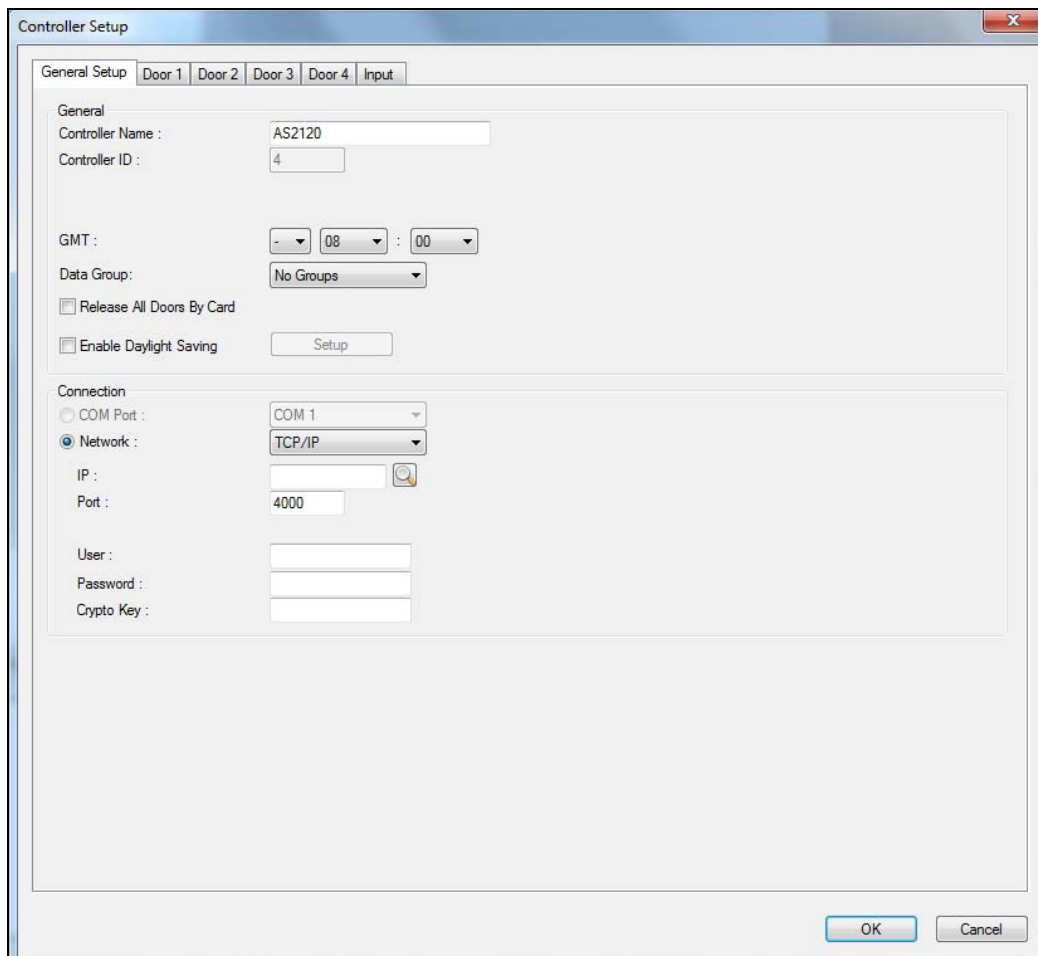




Figure 4-7

4. In the Connection section, select **Network** and 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 click the **Door** tab. This dialog box appears.

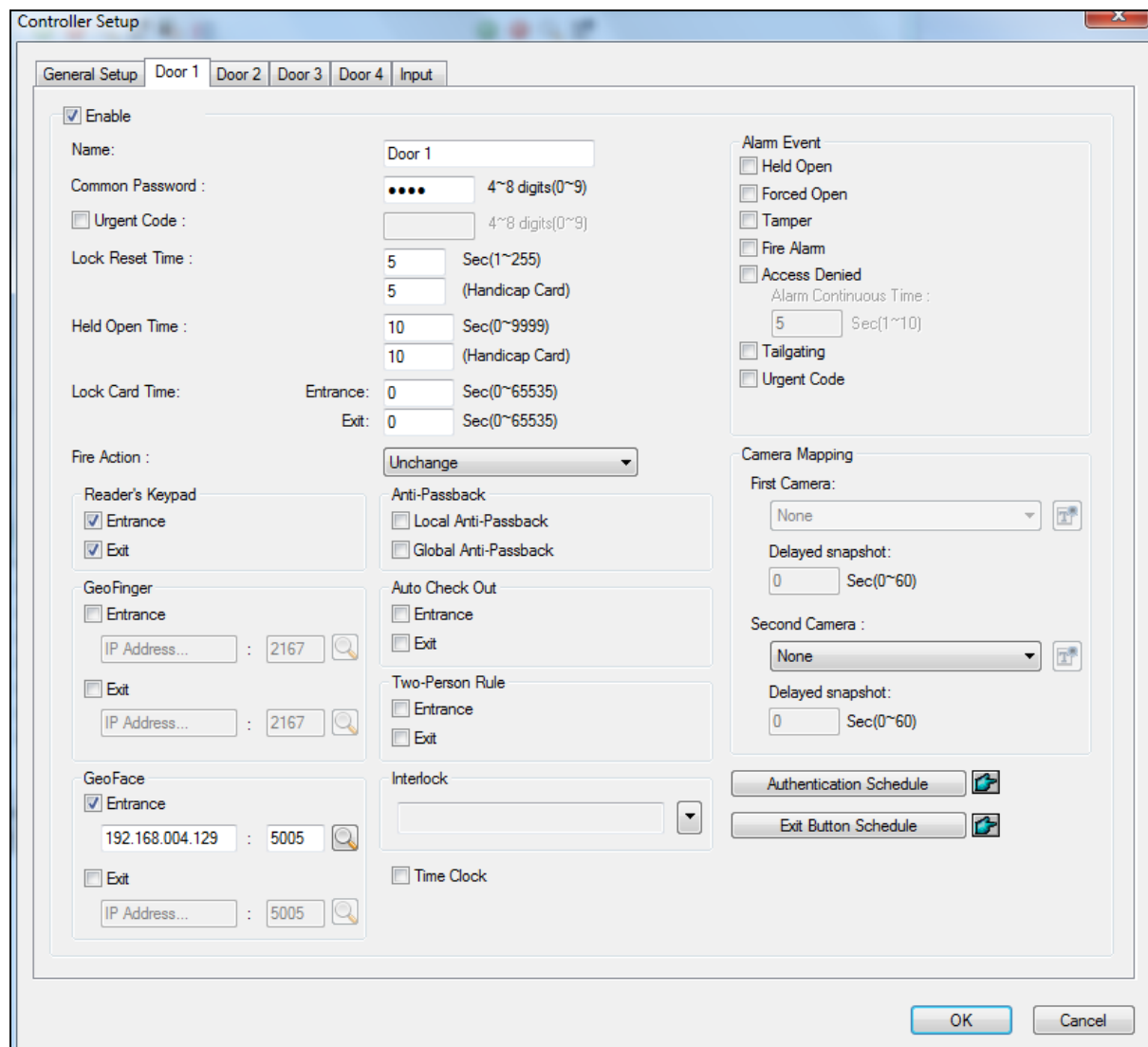


Figure 4-8

3. In the General section, select **Enable** to define the general settings for the door.
4. Under the GeoFace section, select **Entrance** or **Exit** and type the face recognition reader's **IP address** and **port number**. 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.

---


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

---

### 5.1 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. Click the **New** button  on the toolbar.



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

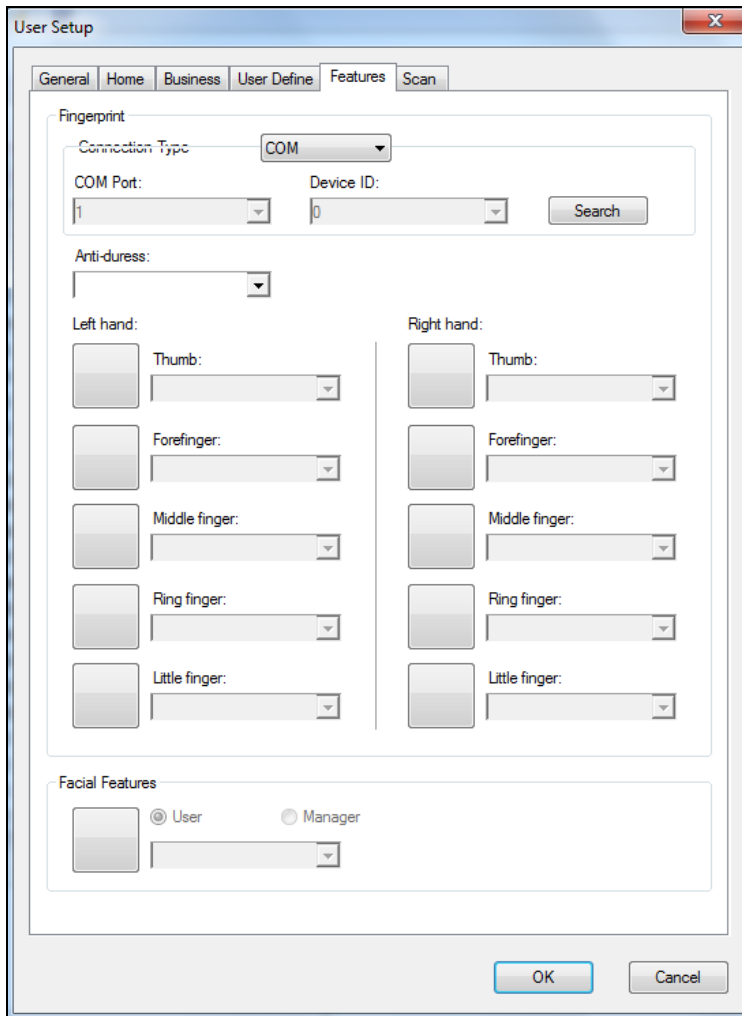



Figure 5-1

- Click the square  in the **Facial Features** section.
- Select **User** or **Manager** as needed.
- Use the drop-down list to assign a card number to the user.

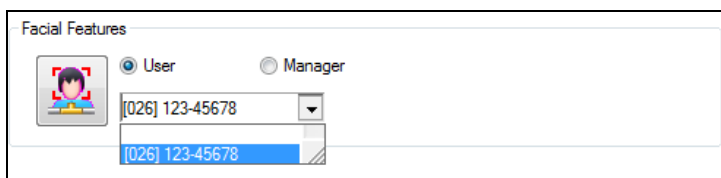


Figure 5-2

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

## 5.2 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.

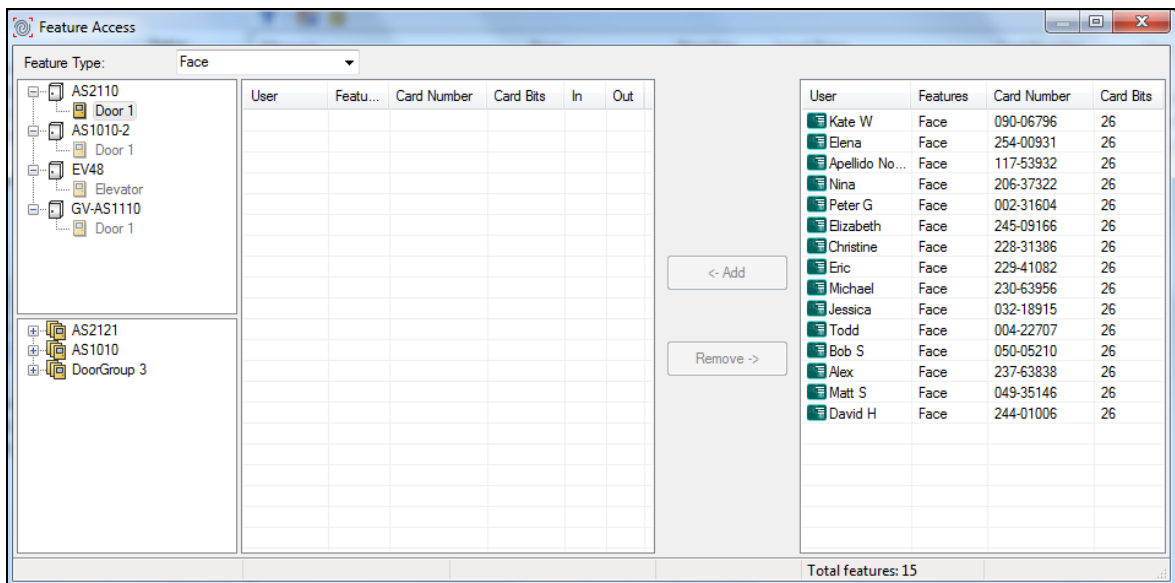


Figure 5-4

2. To upload to a door or a controller, select the desired Door/Gate or controller in the top-left panel.
3. Select **Face** in the **Feature Type** drop-down list.
4. 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:

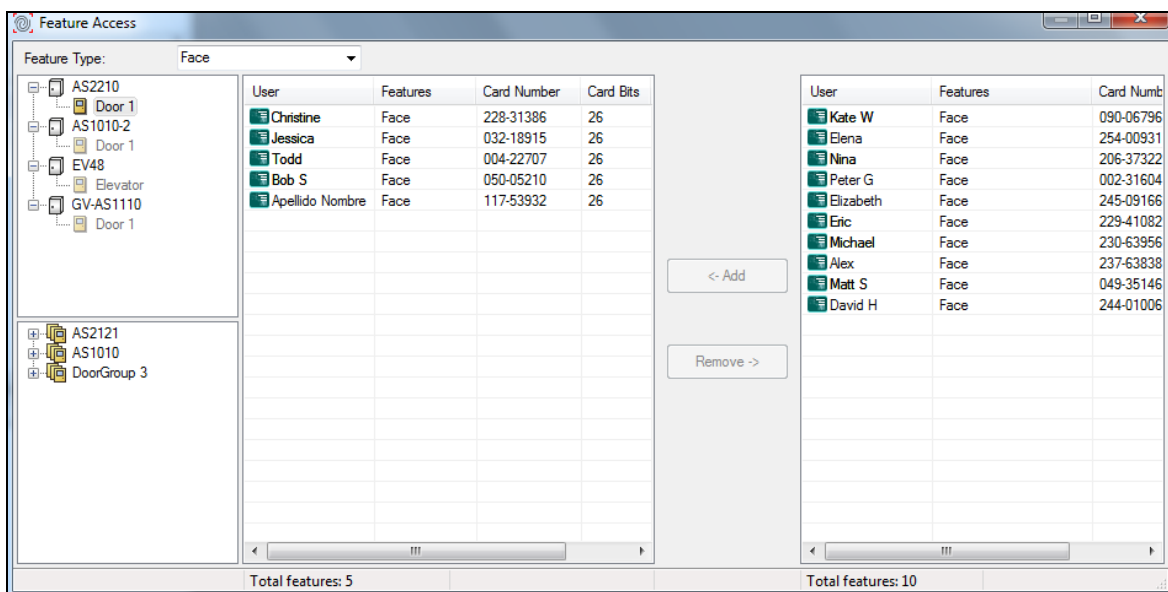



Figure 5-5

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

- Click the 'x' icon  to close the window of Feature Access.
- Right-click the Door/Gate in the Device View on the main screen, and select **Sync GeoFace** to upload all the selected user data to GV-FR2020.

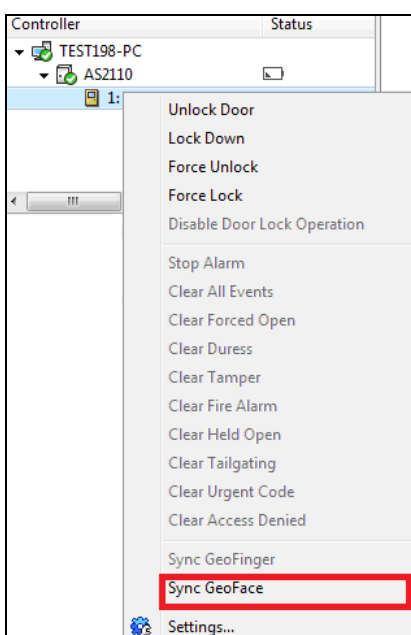


Figure 5-6

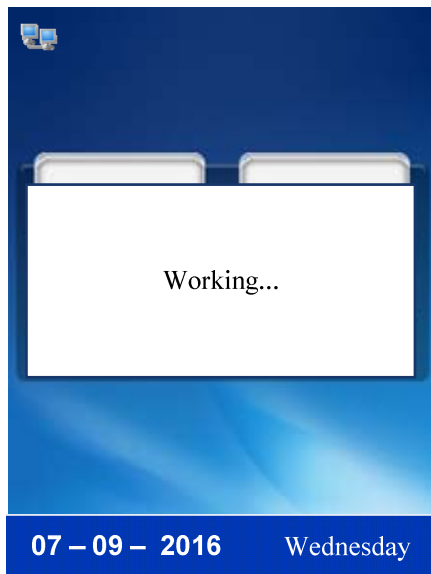
8. Click **Yes** to start uploading the selected user data.

---

**IMPORTANT:** Each time you select **Sync GeoFace**, 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 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 face:

1. In the Main Menu of GV-FR2020, select **User** and press **OK**, or press **1** to enter the User submenu.
2. Select **Modify** and press **OK**, or press **2** to access the user list.
3. Use the **Arrow** keys to select a user account in the list.



View User	
422707	Todd
4935146	Matt S
11753932	Apellido Nombre
25400931	Elena

Figure 5-8

- Press **OK** to enter the user account details. This interface appears.

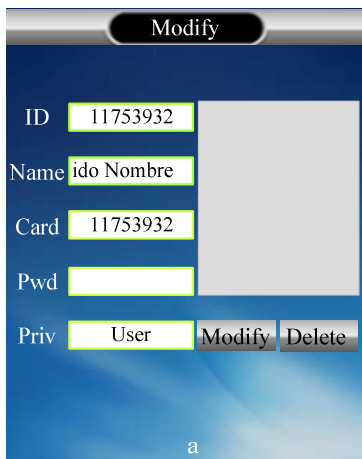


Figure 5-9

- Select **Modify** and press **OK** to enter the sunshine's test screen. GV-FR2020 will automatically detect the current lighting conditions.

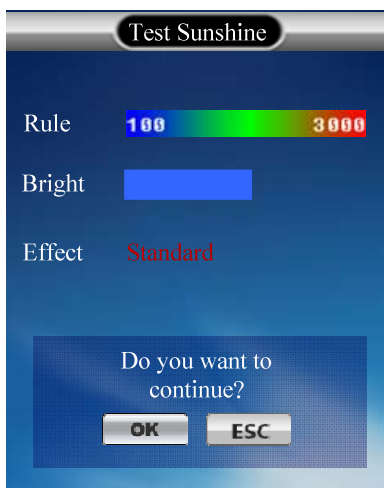


Figure 5-10

- Press **OK** and the face recognition interface will be shown on the screen.

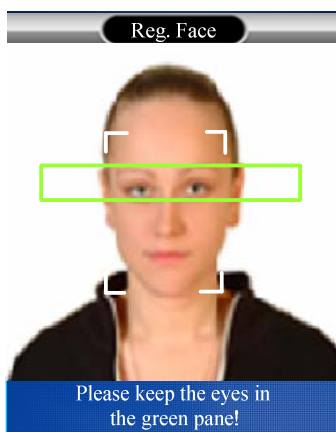


Figure 5-11

7. Follow the voice prompts to enroll the user's face.
8. If the face is enrolled successfully, GV-FR2020 will prompt "enrollment completed" and return to the user account details. The user's image will be displayed on the interface as shown below.

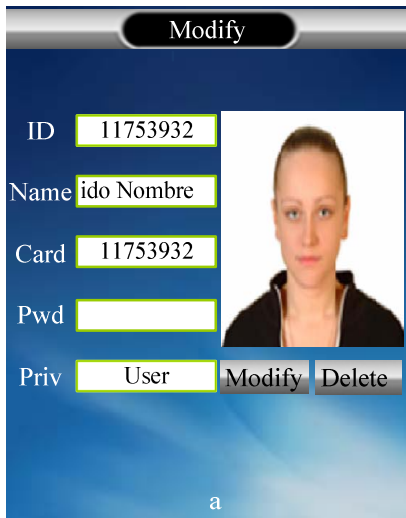


Figure 5-12

9. On the menu bar of GV-ASManager, click **Personnel** and select **Users**. The User List window appears.

The 'User List' window displays a table with the following columns: User, Employee ID, Department, Job Title, ext, Mobile, Birthday, Hire Date, and Photo. The row for 'Apellido Nombre' is highlighted.

User	Employee ID	Department	Job Title	ext	Mobile	Birthday	Hire Date	Photo
Eric	100005					12/2/1915	6/30/2005	
Alex	100004					7/25/1915	2/15/2005	
Elizabeth	100003					7/11/1905	11/21/2006	
Jessica	100002					11/24/1995	5/31/2006	
Christine	100001					8/23/1990	11/22/2006	
Michael	0000010					3/18/1984	5/30/2002	
Todd	0000009					11/22/1984	10/29/2002	
Elena	0000008					7/19/1964	2/12/2002	
Nina	0000007					5/31/2001	6/30/2001	
Peter G	0000006					3/12/1914	7/1/1954	
Bob S	0000005					3/14/1940	2/3/1994	
Apellido Nombre	0000003					3/19/1993	5/30/2001	✓
Kate W	0000001					7/13/1999	6/15/2000	
David H	120003					2/7/1999	6/29/2005	
Matt S	120002					1/2/1900	6/17/2004	

Figure 5-13

10. Double-click the user listed in the window. The User Setup dialog box appears. The image taken by GV-FR2020 is displayed as shown below.

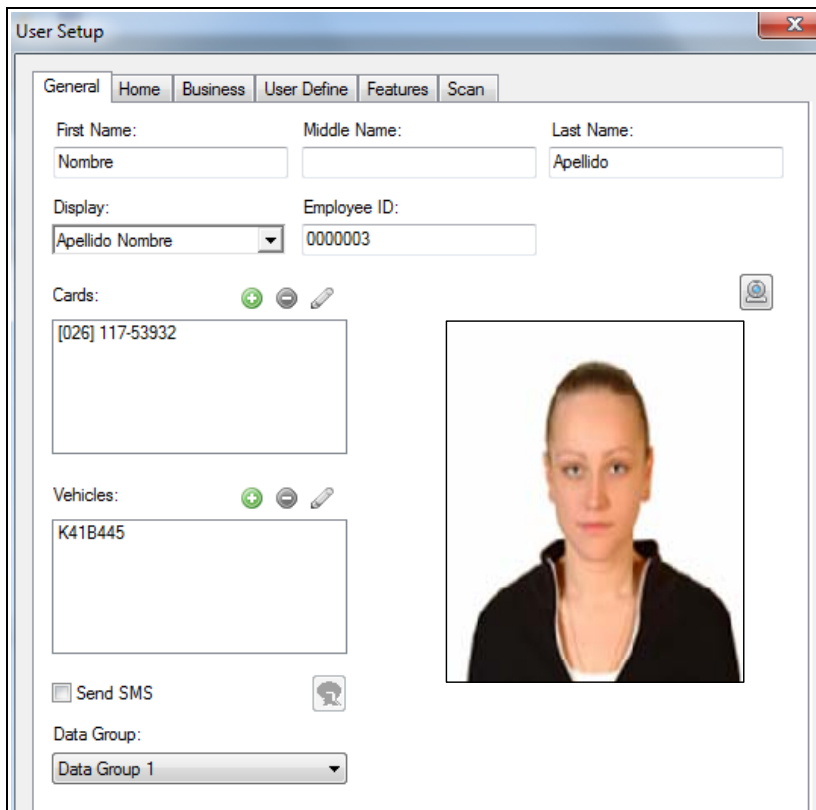


Figure 5-14

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.

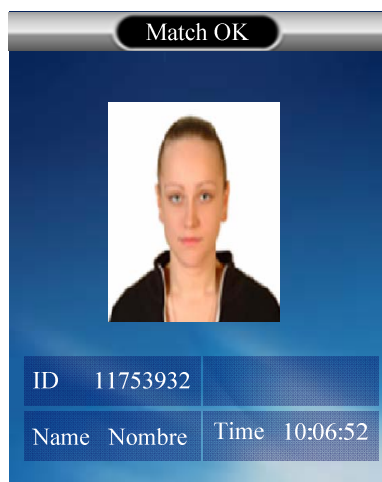


Figure 5-15



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

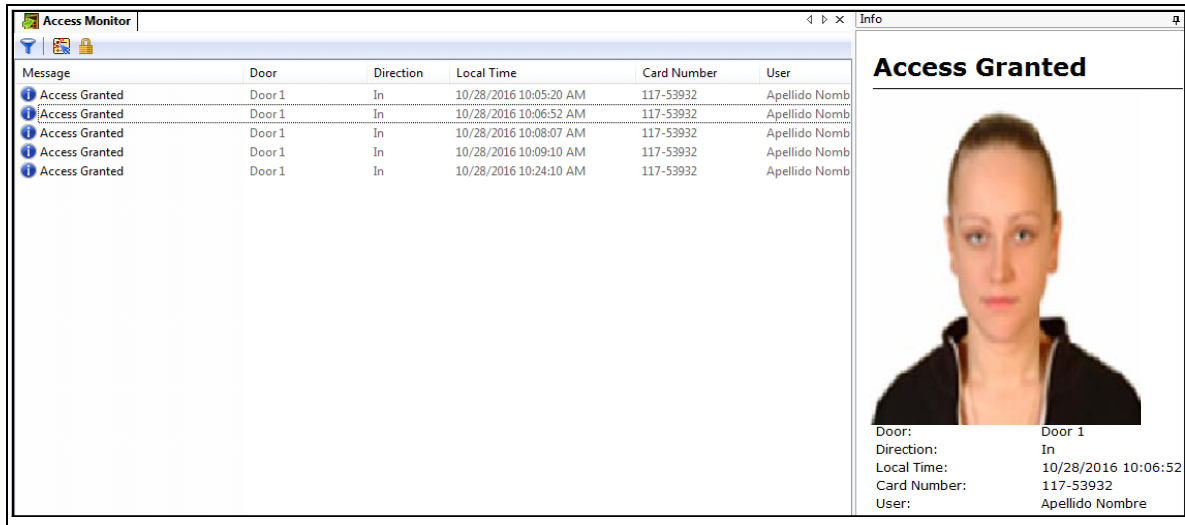


Figure 5-16

- 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 access will be sent to the controller and the access will be denied.

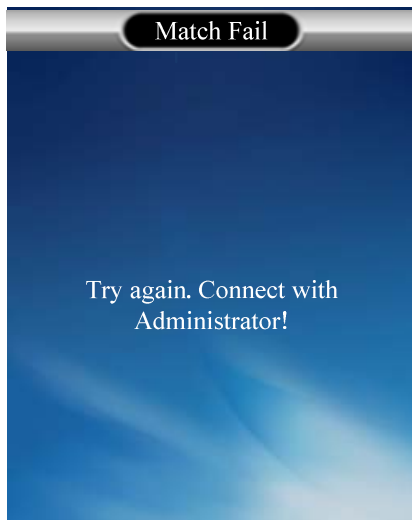


Figure 5-17

### 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 User submenu, select **Download** and press **OK**, or press **3** to download the user data stored on GV-FR2020.

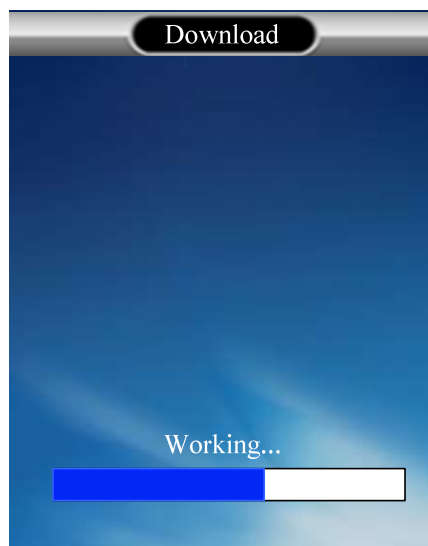


Figure 5-18

### 5.4.2 Uploading the Data

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

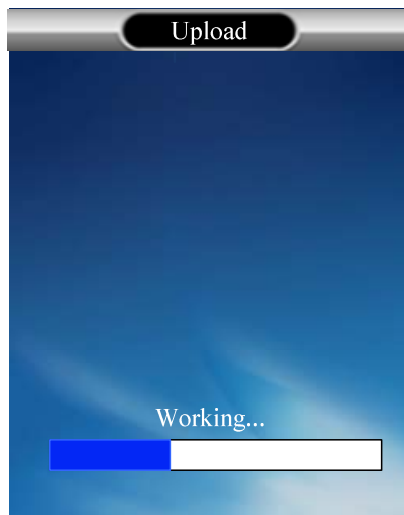


Figure 5-19

## Chapter 6 Setting

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

### 6.1 Device Setting

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

- **Volume:** Input a volume value from 0 to 10, with 5 as default. The larger the value, the louder the volume.
- **Verify Mode:** Select a verification mode. The default interface is the face, card or password verification mode.
- **Result Time:** Input the screen return time from 1 to 30 seconds after which the verification is successful.
- **Protect Screen:** 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 open the electronic locks. This function is only applicable for standalone operation.

---

**Note:** Any user can access the **Setting** 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 **Setting** submenu.

---

## 6.2 Time Setting

In the Setting menu, select **Time** and then press **OK**, or press **2** to enter the time setting. 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 Setting menu, select **Rec. Rule** and then press **OK**, or press **3** to enter the record setting.

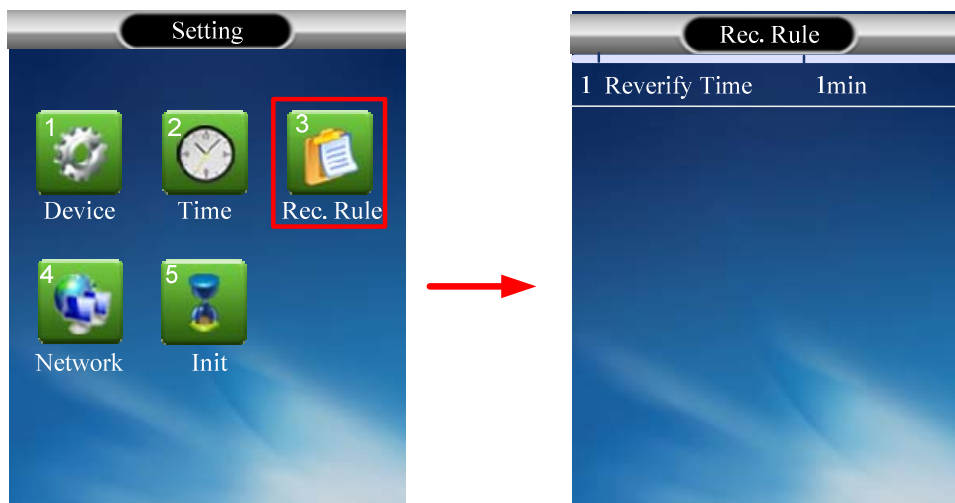


Figure 6-3

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

## 6.4 Network Setting

In the Setting menu, select **Network** and press **OK**, or press **4** to enter the Network setting.



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*.

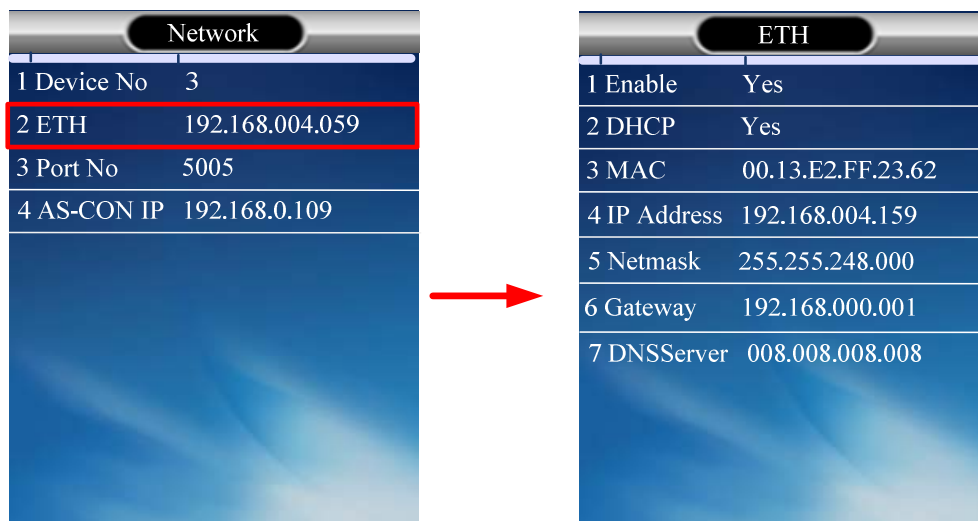


Figure 6-5

- ⊙ **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.
- ⊙ **DNSServer:** 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 Setting

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

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

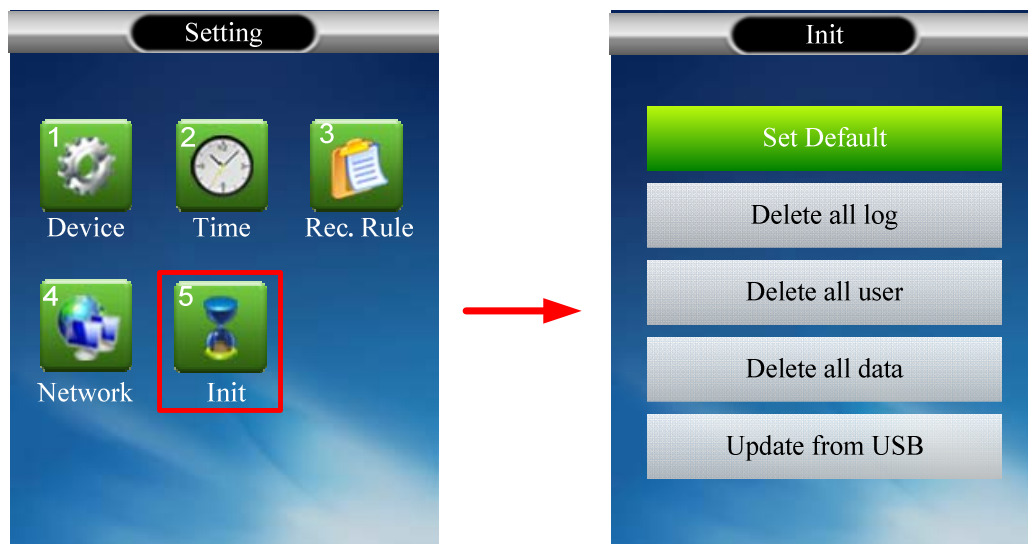


Figure 6-6

- **Set Default:** Restores all configurations to default factory settings.
- **Delete all log:** Removes all the log information stored on the reader.
- **Delete all user:** Removes all the users accounts stored on the reader.
- **Delete all data:** Removes all the stored data 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 Inquiry

You can check the enrolment, the device information as well as the simple usage instructions of GV-FR2020 through the Inquiry submenu. In the Main Menu, select **Inquiry** and press **OK**, or press **3** to enter the Inquiry submenu.

### 7.1 Registration Information

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



Figure 7-1

- **User quantity:** Indicate the number of users enrolled on the reader.
- **Face quantity:** Indicate the number of faces enrolled on the reader.
- **Card quantity:** Indicate the number of cards enrolled on the reader.
- **Password quantity:** Indicate the number of passwords enrolled on the reader.

## 7.2 Device Information

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

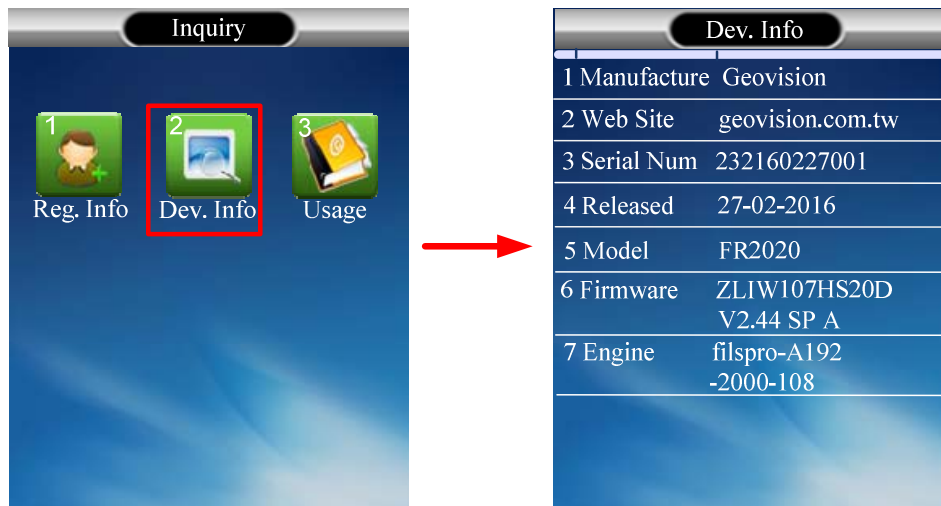


Figure 7-2

- **Manufacture:** Display the manufacturer of the reader.
- **Web Site:** Display the website of the manufacturer of the reader.
- **Serial Num:** Display the serial number of the reader.
- **Released:** Display the released 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 Usage Information

In the Inquiry submenu, select **Usage** and press **OK**, or press **3** to find out the usage information. There are some simple instructions as to how to use your reader.

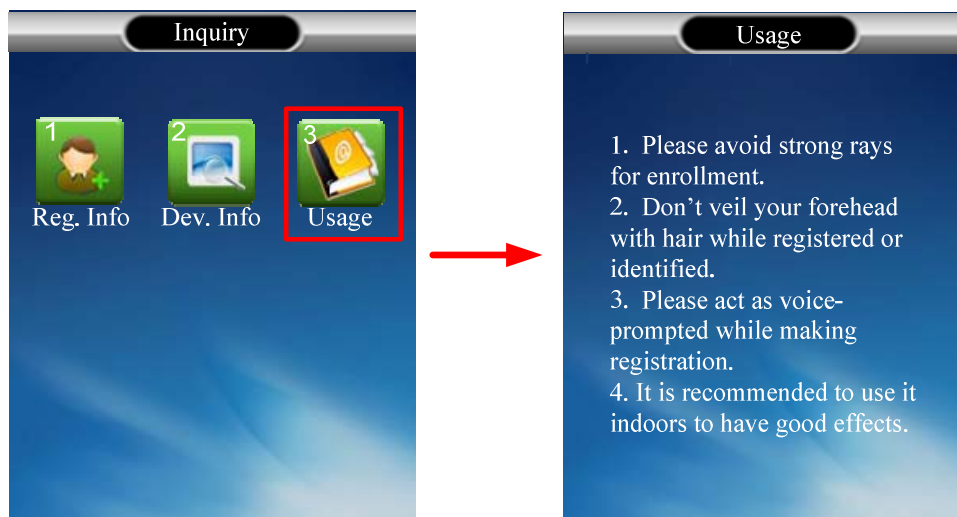


Figure 7-3

# Chapter 8 A Standalone Face Recognition

## 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 a 12V DC power adapter for applying power adapter connection.

---

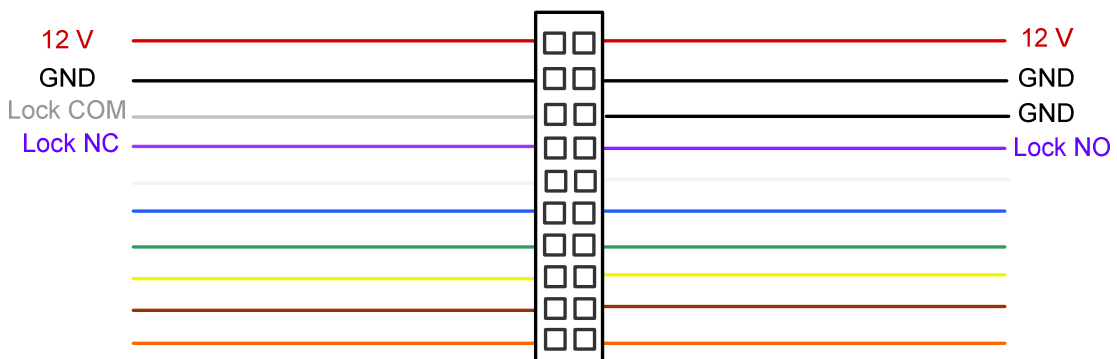


Figure 8-1

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.

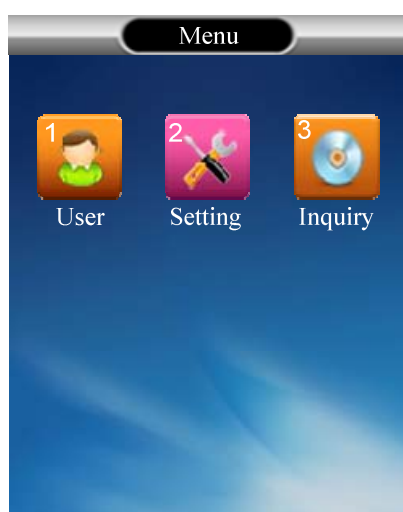


Figure 8-2

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. By default, GV-FR2020 supports one-to-nine digit number.
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.

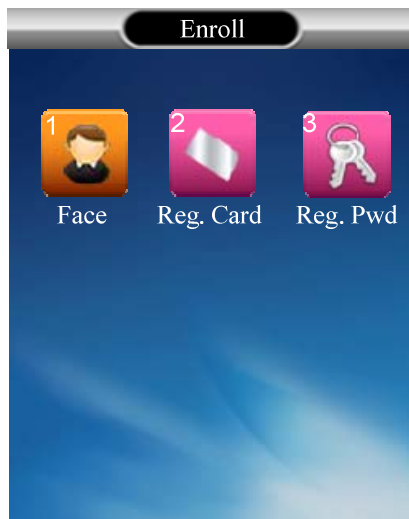


Figure 8-4

## 8.3 Enrolment modes

The standalone GV-FR2020 supports the **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 **Reg Card** and press **OK**, or press **2** for card enrollment.
2. Place the ID 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 **Reg 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 1 to 9 character-length passwords.
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 resetting 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 firmware update on it into the USB port (No. 12, Figure 1-2).
2. In the Main Menu of GV-FR2020, select **Setting** and press **OK**, or select **2** to enter the Setting submenu.
3. Select **Init** and press **OK**, or press **5** to enter the Initial setting.
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.

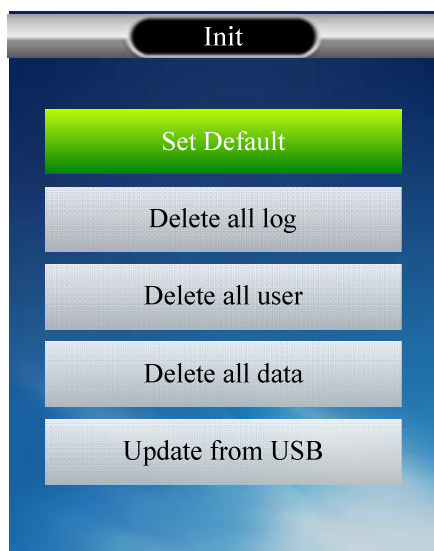


Figure 9-1

---

#### 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>Model</b>	<b>GV-FR2020</b>
<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>	0-50000 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)
<b>Operation Mode</b>	Face Recognition, Card or Password (Password is for standalone operation only)
<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 mode, Card mode, Password mode)
<b>General</b>	
<b>Language</b>	English
<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 and GV-ASManager V.4.4.2 or later.
2. All specifications are subject to change without prior notice.

## Appendix

### A. GV-POE Switch Power Supply Types

	Model	Mode
GV-POE	POE0800 / 1601 / 2401	End-Span
	POE1611/2411	
	POE0400/0801	Mid-Span
	POE0811/0812	
	POE0810	End-Span 2, 4, 6, 8 ports
		Mid-Span 1, 3, 5, 7 ports
	POE0410-E	End-Span 2, 4 ports
		Mid-Span 1, 3 ports