

F97-Facial Recognition Terminal User Manual

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Declaration

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*Change Status: A——Added; M——Modified; D——Deleted



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1. Product Introduction

1.1. Purpose and Introduction

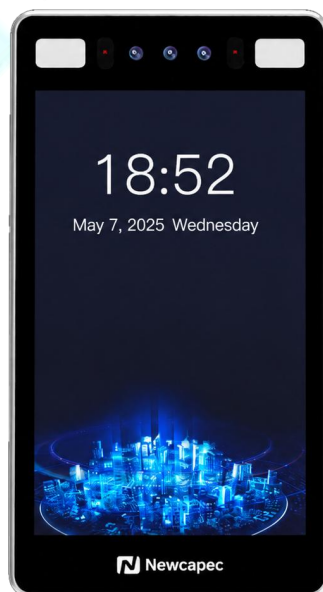
The F97 Series Facial Recognition Tablet Terminal integrates multiple authentication methods, including facial recognition authentication, screen card authentication, and QR code scanning via mobile APP (forward and reverse scanning).

The device consists of a metal housing, multi-core processor, memory chip, speaker module, touch display, binocular camera, and other components. It supports multiple communication methods, including TCP/IP, Wi-Fi, Bluetooth, RS232, RS485, and Wiegand. The device provides various interfaces, including USB, fire alarm input, door sensor input, and relay output.

Powered by the Linux operating system and equipped with an AI-based facial recognition algorithm, the terminal supports functions such as face detection, face image capture, and facial comparison. It can be used as an identity verification terminal for various application scenarios, including access control, attendance management, and check-in services.

1.2. Product Appearance

Model: F972. The product dimensions are shown in Figure 1.



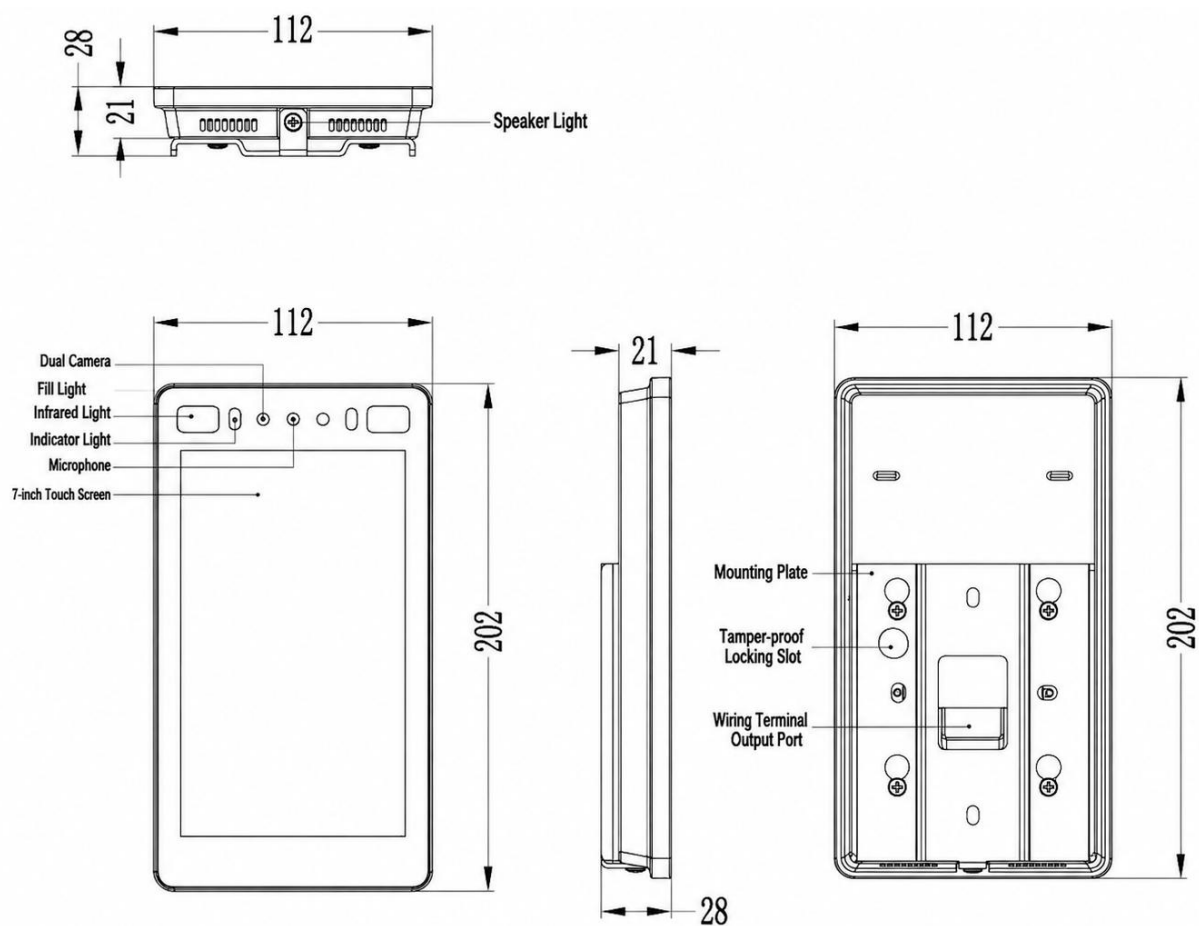
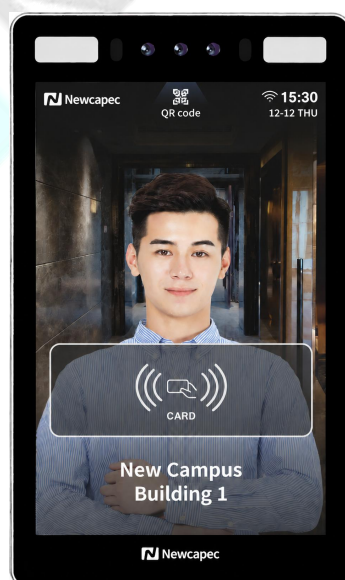


Figure 1: F972

Model: F973. The product dimensions are shown in Figure 2.



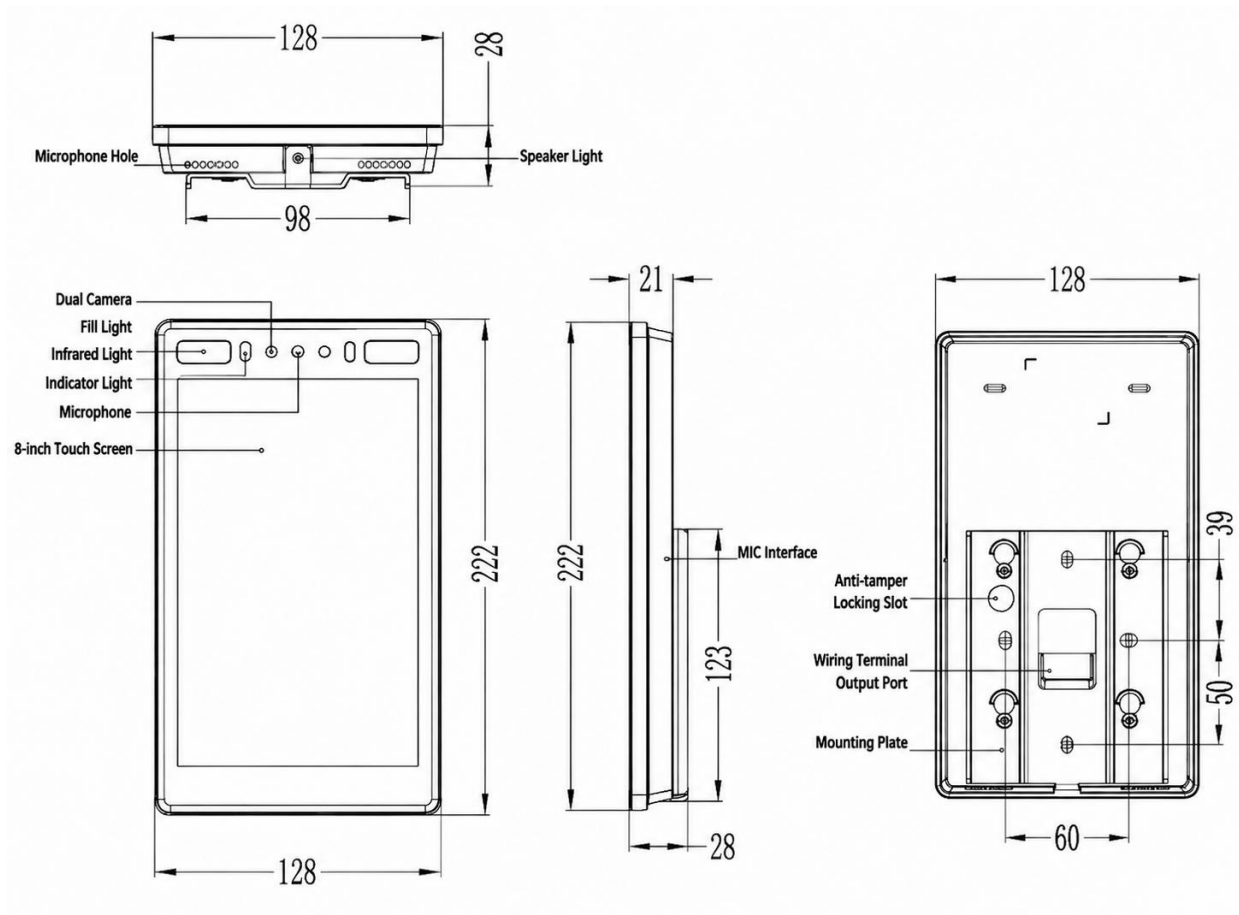


Figure 2: F973

1.3. Product Features

- The housing is made of aluminum alloy with an integrated design. It features a true-color display, supports capacitive touch, and provides IP66 protection.
- Supports multiple authentication methods, including facial recognition, card authentication (screen card reading), QR code scanning (forward and reverse scanning), and remote authentication via mobile APP.
- Supports a facial feature capacity of 50,000 users (1: N recognition).
- Supports offline authorization for up to 100,000 cards (including M1 cards, CPU cards, and mobile NFC), and stores up to 200,000 offline records.
- Equipped with a binocular camera and supports liveness detection, providing protection against various spoofing attacks, including photos, videos, electronic screens, and masks.
- Supports test mode, allowing access to be unlocked by face recognition or card authentication.

- Supports Standalone Mode, allowing user photos to be enrolled locally on the terminal for recognition.
- Supports multiple communication methods, including TCP/IP and Wi-Fi.
- Adopts an ESAM chip design and supports CPU card content reading.
- Supports automatic fill light adjustment, enabling effective facial recognition even in low-light environments.
- Provides RS485, RS232, Wiegand, and USB interfaces for integration with third-party hardware devices.

1.4. Technical Specifications

Mode	F972	F973
Power Supply	DC12V / 20W Max	
Processor	Quad-core Processor	
Storage	1G RAM + 8G Flash	
Display	7 inches	8 inches
Resolution	Capacitive Touch Screen, Resolution: 1280 × 800	
Camera	2MP Binocular Camera	
Fill Light	Infrared and White Fill Lights	
Audio	Voice Prompt	
QR Code Scanning Camera	Yes	
Interfaces	Ethernet ×1, Relay ×2, USB ×1, RS485 ×1, RS232 ×1, Exit Button ×1, Door Sensor ×1, Wiegand ×1, Alarm Input ×1	
Material	Tempered Glass Panel and Aluminum Alloy Housing	
Communication Methods	Ethernet, Wi-Fi, Bluetooth	
Card Reading	Supports card authentication through the integrated screen card reader, including M1 card and CPU card	
Facial Recognition	Supports offline 1: N facial recognition and prevents spoofing attacks using photos, videos, and other methods.	
Installation Method	Wall-mounted Installation (Access Control Model) Column-mounted Installation Support (Turnstile Model)	
Product Dimensions	112 × 202 × 21 mm (Excluding Mounting Bracket)	128 × 222 × 21 mm (Excluding Mounting Bracket)
Operating Environment	Operating Temperature: -10°C to 60°C	
Storage Temperature	-20°C to 70°C	

2. Installation Instructions

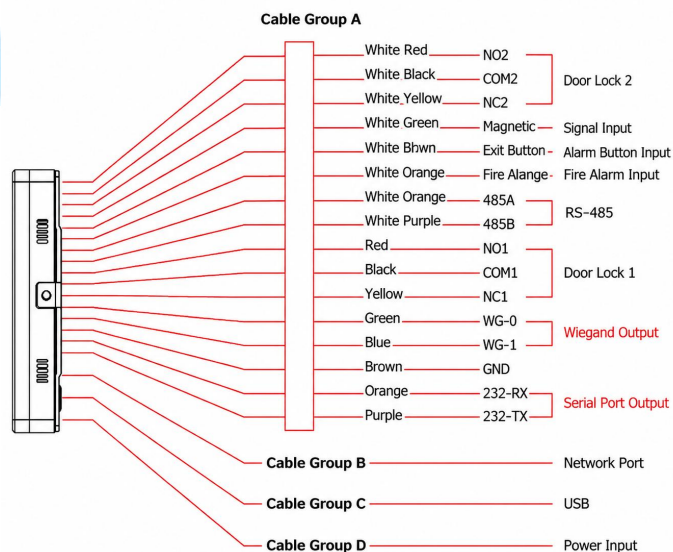
2.1. Package Contents

Product Type	Accessory Name	Unit	Quantity
Access Control Model (F972/F973)	Facial Recognition Tablet Terminal	Unit	1
	Stainless Steel Hanging Bracket Screw	Piece	2
	Countersunk Galvanized Self-tapping Screw ST4×30	Piece	4
	Plastic Expansion Anchor M6×30	Piece	4
	Pan Head Knurled Screw M4×6	Piece	1
	Tamper-proof Magnet with Adhesive Backing	Piece	1
	Mounting Plate	Piece	1
	User Manual	Copy	1
Turnstile Model (F972/F973)	Facial Recognition Tablet Terminal	Unit	1
	Turnstile Mounting Bracket	Piece	1
	Stainless Steel Countersunk Screw M4×8	Piece	4
	Stainless Steel Pan Head Screw M3×6	Piece	4
	Sealing Gasket M36	Piece	1
	Round Slotted Nut M32	Piece	1
	User Manual	Copy	1

Note: Due to different safety standards and regulatory requirements in different countries and regions, the power adapter is not included and must be purchased separately from Newcapec.

2.2. Interface Description

2.2.1. F972/F973



Interface wiring sequence and function definition:

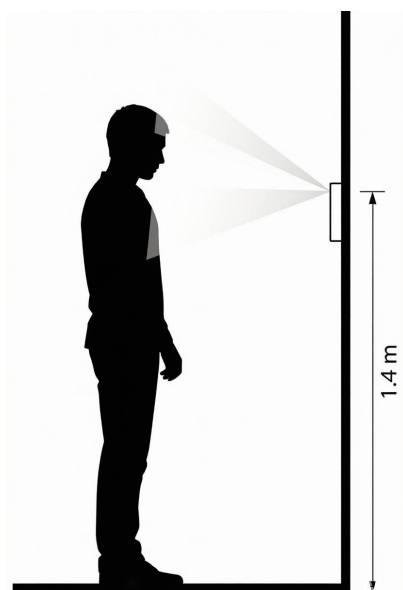
Cable Group A	White/Blue	Exit Button	Connects to the exit button signal line for manual door opening control.
	White/Green	Door Sensor	Connects to the door sensor switch to detect door status.
	White/Brown	Fire Alarm	Connects to the fire alarm signal line for fire alarm input.
	Yellow	NC1	Relay dry contact output control - Normally Closed terminal (for lock control).
	Black	COM1	Relay dry contact output control - Common terminal (for lock control).
	Red	NO1	Relay dry contact output control - Normally Open terminal (for lock control).
	White/Yellow	NC2	Relay dry contact output control - Normally Closed terminal (for lock control).
	White/Black	COM2	Relay dry contact output control - Common terminal (for lock control).
	White/Red	NO2	Relay dry contact output control - Normally Open terminal (for lock control).
	Orange	232-RX	RS232 signal, receiving.
	Purple	232-TX	RS232 signal, transmitting.
	Black	GND	Connects to common ground.
	Green	WG_0	Wiegand signal, D1.
	Blue	WG_1	Wiegand signal, D0.
	White/Orange	485A	RS485 signal, A/+.
	White/Purple	485B	RS485 signal, B/-.
Cable Group B	/	/	Ethernet Port
Cable Group C	/	/	USB
Cable Group D	/	/	12V Power Positive
	/	/	12V Power Ground

2.3. Installation Steps

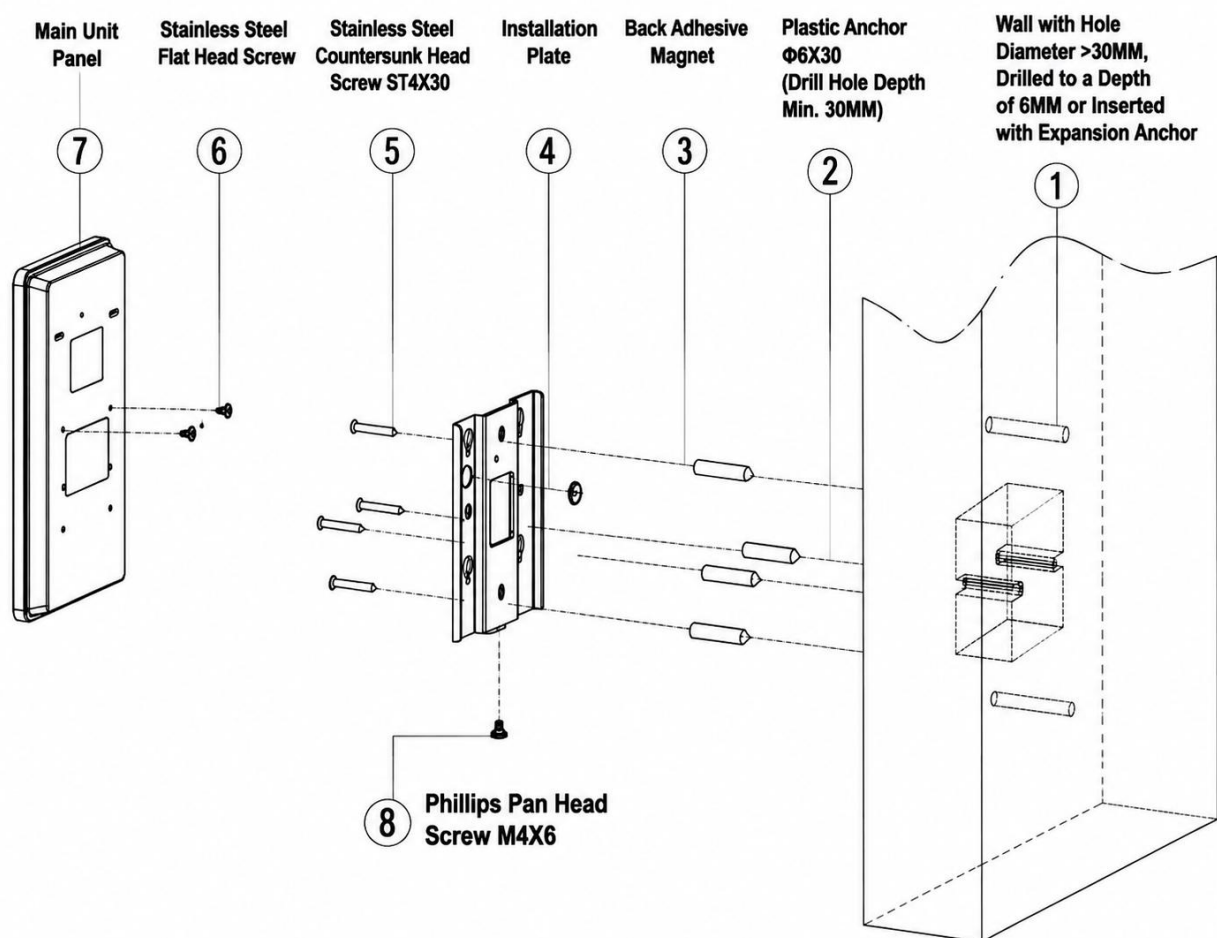
2.3.1. Access Control Version

2.3.1.1. Installation Requirements

- Height: The tablet camera should be installed 1.4 meters above the ground, with the camera positioned directly toward the user's face.
- Environment: Avoid direct sunlight and strong backlight conditions. A rain cover is required for outdoor installations exposed to direct rain (optional accessory).
- Wall: Solid brick walls or concrete walls are recommended. For hollow walls, use extended expansion anchors.



2.3.2. F972/F973 Wall-mounted Installation



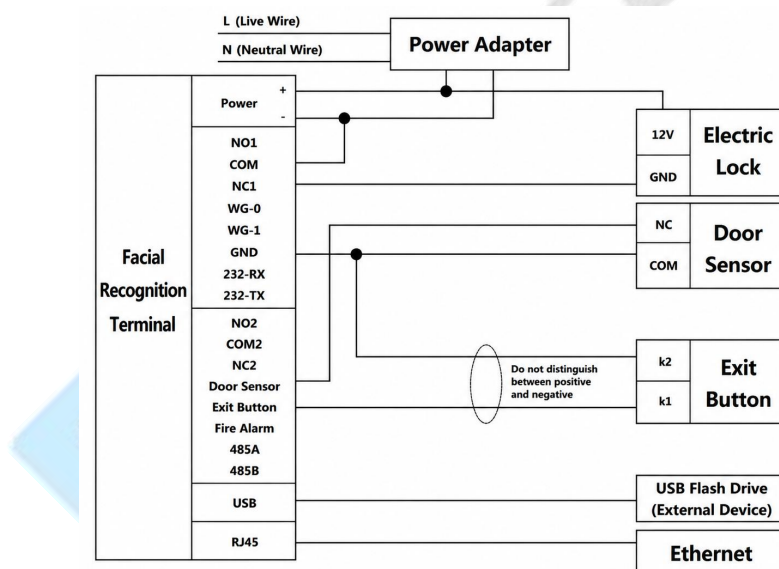
- Wall-mounted Installation: Use the four mounting holes on the wall mounting

bracket to mark the drilling positions on the wall. Drill holes using an electric drill, then insert the supplied expansion anchors into the holes. Secure the wall mounting bracket to the wall using the supplied self-tapping screws. Follow the installation sequence and instructions shown in the figures for detailed installation and fixation.

- **86 Box Installation:** Use M4×40 countersunk machine screws (not included) to secure the wall mounting bracket to the reserved 86-type electrical box on the wall. Follow the installation sequence and instructions shown in the figures for detailed installation and fixation.

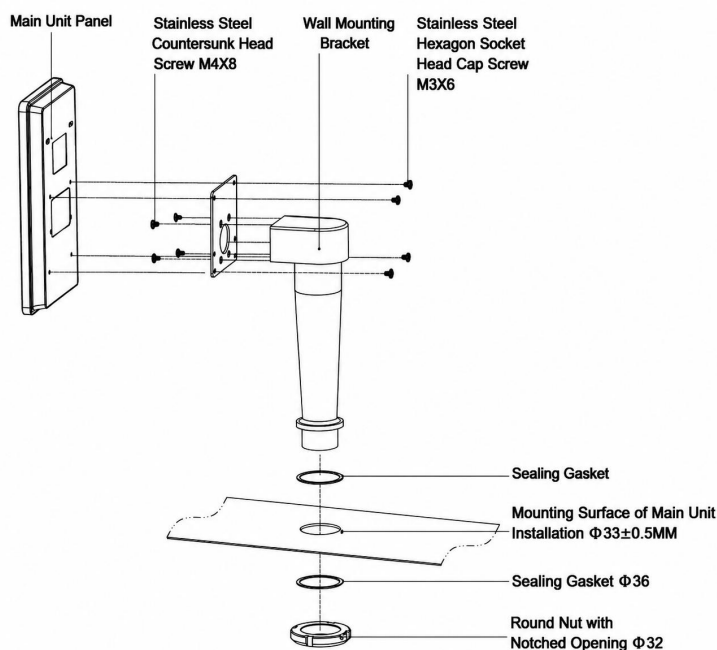
Note: During installation, the device should be positioned to avoid backlighting, direct sunlight, and low-light environments as much as possible. If necessary, install shading equipment or provide additional external lighting compensation.

2.3.2.1. Access Control Wiring



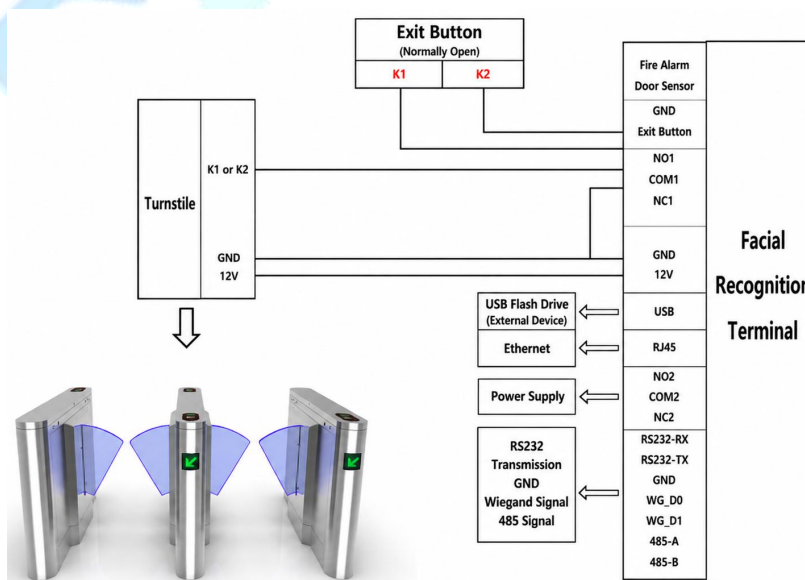
2.3.3. Turnstile Model

The installation method and wiring of the F972 and F973 turnstile models are the same. The following figure uses the F972 as an example.



The turnstile model column supports a mounting hole diameter of 33–37 mm (allowable tolerance: ± 0.5 mm). Install the device into the turnstile hole according to the installation sequence shown in the figure, and tighten the M32 nut. Adjust the angle of the access control terminal as required, then tighten the hex socket screws on the side of the bracket. Complete the wiring according to the wiring instructions.

2.3.3.1. Access Control Wiring



2.4. Installation Precautions

1) Safety Operation

- Keep the packaging materials properly stored in a place inaccessible to children to prevent accidental injury.
- Before drilling, ensure that there are no hidden electrical wires or water pipes inside the wall.
- Disconnect the power supply before installation to avoid the risk of electric shock.
- It is recommended to use the power adapter models specified by Newcapec. If a third-party power adapter is used, it must be confirmed and approved by Newcapec before use.

2) Device Maintenance

- Keep the device surface clean and tidy. Perform regular cleaning and maintenance, especially for the camera, fill light, and sensor areas.
- Avoid installing the product in extreme environments, such as prolonged exposure to sunlight, rain, dust, or vibration.
- Do not disassemble the device housing without authorization. Only professional personnel designated by Newcapec are allowed to perform disassembly.
- If any malfunction occurs during use, please refer to the troubleshooting section or contact us for assistance.
- Do not use acidic, alkaline, or organic solvents to clean the camera lens and display window, as they may damage the device.
- Avoid frequently powering the device on and off within a short period of time.

3. Operation Instructions

3.1. Device Startup

After completing the device installation according to Section 2.3, connect the device to the power adapter. The device will automatically power on and start up.

3.2. Application Introduction(Linux)

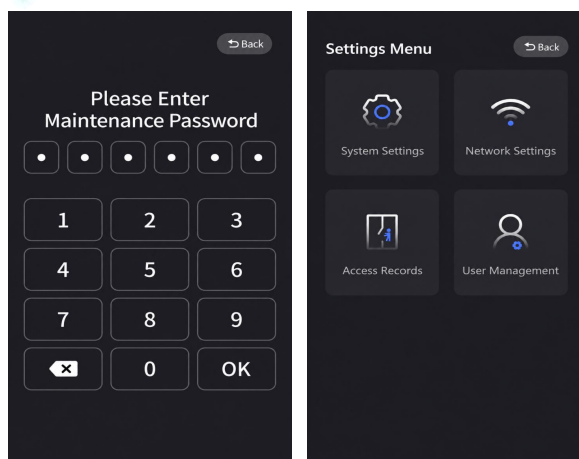
3.2.1. Application Home Page

After the device is powered on, the system interface is shown as below.



3.2.2. Application Settings Menu

Tap the upper-left corner five times continuously. Enter the administrator password "888999" to access the settings menu interface, as shown below.

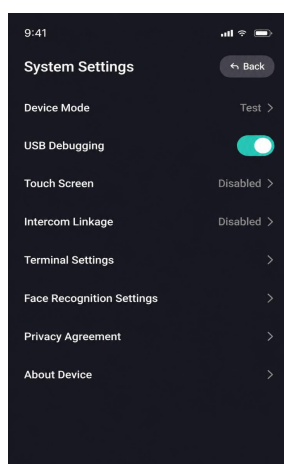


Parameter	Description
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System Settings	Allows users to configure device mode (detailed in the following sections), terminal settings, facial recognition settings, and other functions.
Network Settings	Allows configuration of Wi-Fi connection, Bluetooth settings, local network connection, and other network-related functions.
Access Records	Allows users to view recent access records.
Personnel Management	Allows users to view enrolled user information stored on the device.

3.2.2.1.Application System Settings

Tap **"Settings"** to enter the settings interface



The device runs on a Linux operating system. This list only displays the functions that are commonly used during actual operation.

Parameter	Description
Device Mode	Tap to select one of the three device modes: 1. Standard Mode: Network mode, requiring integration with the Newcapec Access Control Management Platform. 2. Standalone Mode: User information can be enrolled locally on the device. 3. Test Mode: Used to verify whether the overall installation and operation process works properly after device installation.
USB Debug	Tap to enable or disable USB debugging. This function is used for device development and debugging.
Touch Wake	Enables or disables the touch-to-wake screen function.
Turnstile Link	Enables or disables the turnstile linkage function (requires integration with Newcapec turnstiles).
Terminal Settings	Allows configuration of device volume, brightness, door opening duration, and maintenance password.
Face Recognition Setup	Allows configuration of facial recognition parameters, including recognition distance, recognition interval, threshold, and other settings.
About Device	Provides functions such as time settings, factory testing, and storage capacity information.

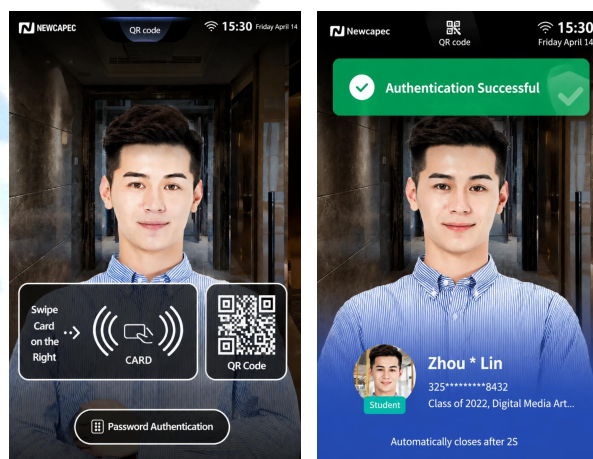
3.3. Standard Mode (Network Mode)

In Network Mode, the Facial Recognition Tablet Terminal needs to be connected to the "Access Control Management System" (hereinafter referred to as the "Platform") for operation. In this mode, the authorized user list on the terminal is issued by the Platform. The Platform manages access permissions, and authentication methods such as card, QR code, and facial recognition can be customized.

For detailed system installation and commissioning instructions, please refer to the "Access Control Management System Commissioning Manual".



Access Control Management System Home Page

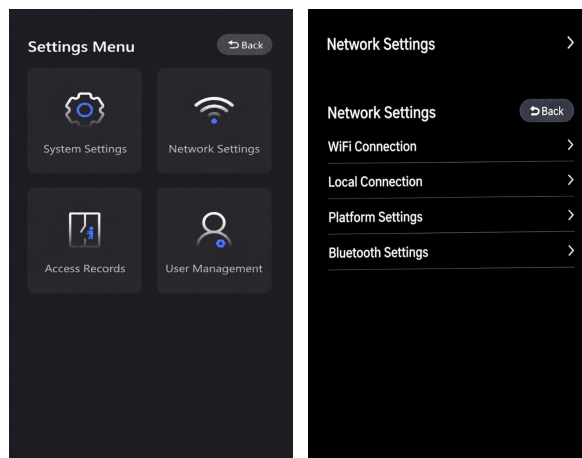


Application Home Page & Authentication Success Interface

3.3.1. Network Settings

Network Settings allows users to configure Wi-Fi connection, local network connection, platform settings, Bluetooth settings, and other related functions.

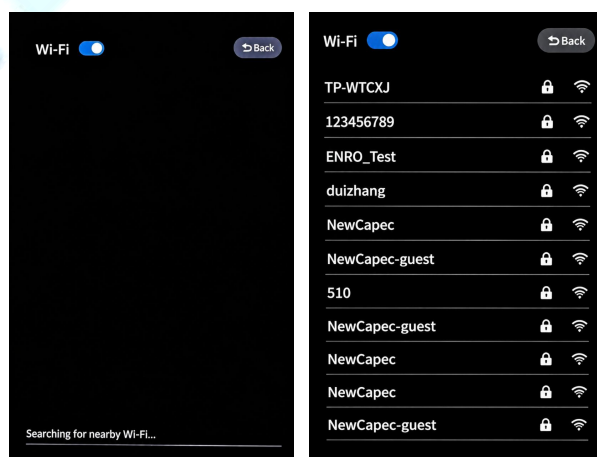
Tap "Network" on the Settings Menu page to enter the network settings interface.



Parameter	Description
Wi-Fi Connection	Connects the device to a Wi-Fi network.
Local Connection	Connects the device to an Ethernet network.
Platform Settings	Configures the connection between the device and the Access Control Management System.
Bluetooth Settings	Configures Bluetooth connection settings for the device.

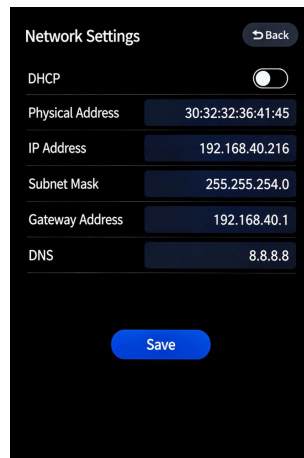
3.3.1.1.Wi-Fi Connection

- Tap the button in the upper-left corner to enable or disable the Wi-Fi function.
- When Wi-Fi is enabled, the device automatically searches for nearby Wi-Fi networks. After the search is complete, the available Wi-Fi list will be displayed.
- Select the Wi-Fi network to connect to, enter the password, and tap "Connect" to establish the connection.



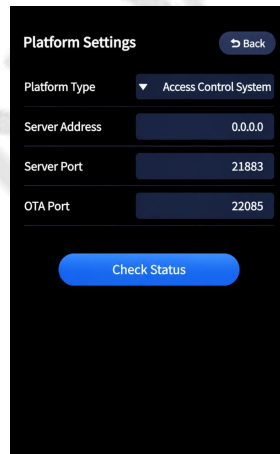
3.3.1.2.Local Connection

- After entering the interface, users can configure the device IP settings.
- Enter the required parameters and tap "Save" to establish the local network connection.



3.3.1.3.Platform Settings

- Tap "Platform Settings" to enter the configuration interface. Tap "Access System" to select the platform type: Access System or Access Control System.
- The interface displays and allows users to configure the server address, service port, OTA port, and other related parameters.



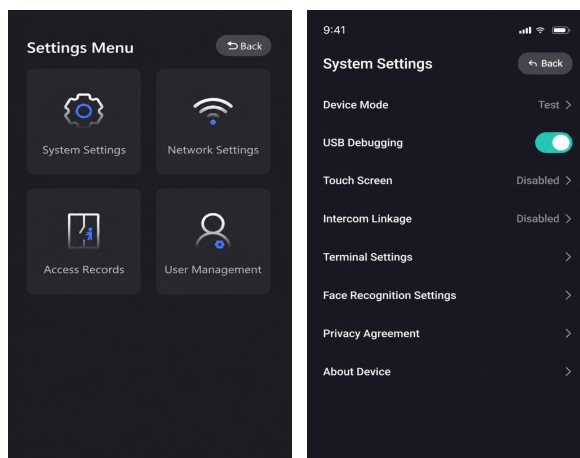
3.4.Standalone Mode

Applicable Scenarios: Suitable for scenarios without network connection and remote management requirements, such as independent offices, attendance management, etc.

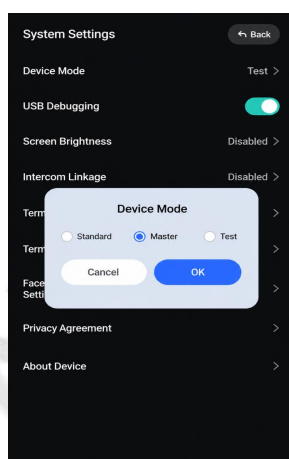
- In standalone mode, users can manually add personnel information. Currently, only facial recognition authentication is supported.
- Supports two methods for personnel registration: file import and on-site registration.

3.4.1. Enable Standalone Mode

- Tap the "System Settings" button at the bottom to enter the settings page.

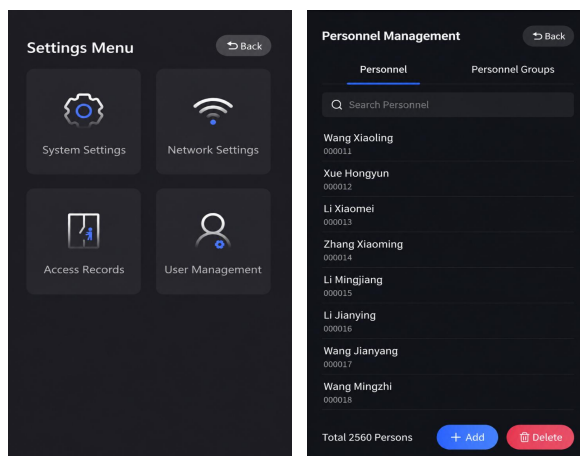


- Tap "Device Mode", select "Standalone Mode", and enter Standalone Mode.



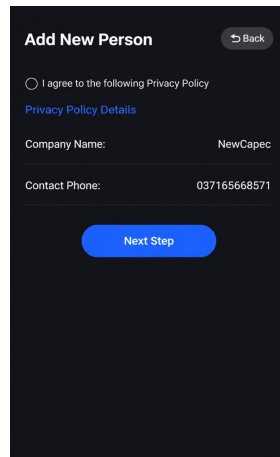
3.4.2. Local Enrollment

- On the Settings Menu interface, tap "Personnel Management".

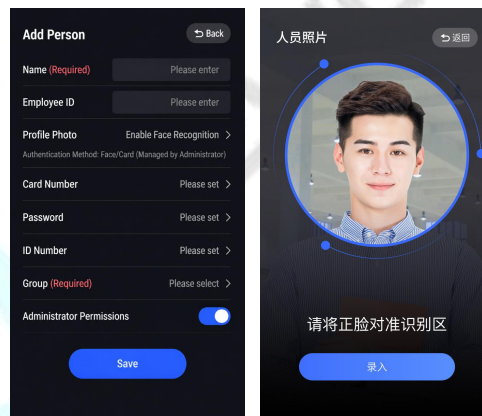


- After entering the interface, tap "Add" in the lower-right corner. A privacy policy

pop-up will appear. Please read it carefully and tap "Agree" to continue.



- Enter the Add Personnel interface. Input the required information, including Personnel Name, Personnel ID, Card Number, Personnel Group, and other details. Tap "Enable Facial Recognition" next to the personnel photo to enter the face enrollment interface. Align the face with the recognition area and tap "Enroll" to complete face enrollment. Finally, tap "Save" to complete local personnel enrollment.

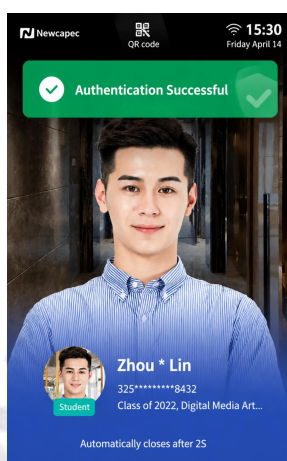


3.4.3. Facial Recognition

- After local personnel enrollment is completed, users can perform identity verification through the application interface.

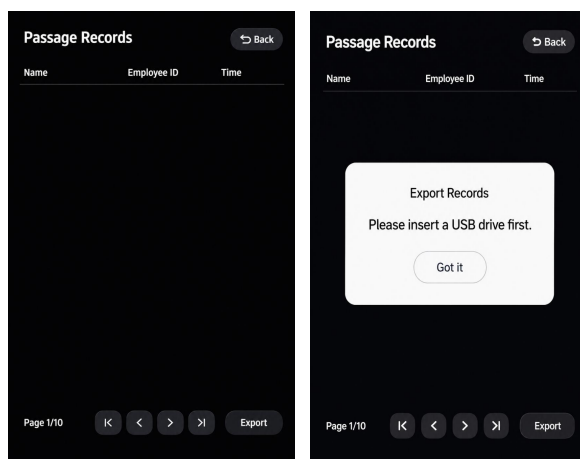


- If the face is successfully detected and the user is included in the enrolled user list, the text "Recognition Successful" will be displayed at the top of the screen, accompanied by the voice prompt "Authentication Successful". The user's photo, name, and ID number will be displayed at the bottom of the screen.



3.4.4. Viewing and Exporting Recognition Records

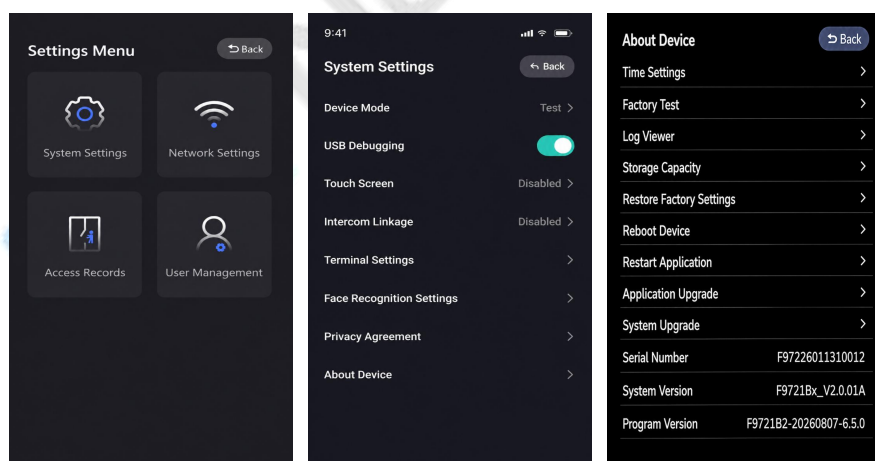
- Enter the Access Records function to view recent access records, including personnel name, personnel ID, and access time.
- Tap the "Export" button in the lower-right corner, insert a USB flash drive, and select the folder for exporting the records.



4. Hardware Test

The Hardware Test function can be used to assist technicians in checking whether the device hardware is operating properly when an abnormality occurs. For example, if no image is displayed during facial recognition, the camera hardware can be checked through Factory Test → Camera Test.

On the System Settings page, tap "About Device", then tap "Factory Test" to enter the hardware test application.



4.1. Camera Test

- Tap "Camera Test" to enter the test interface. The camera preview image will be displayed.

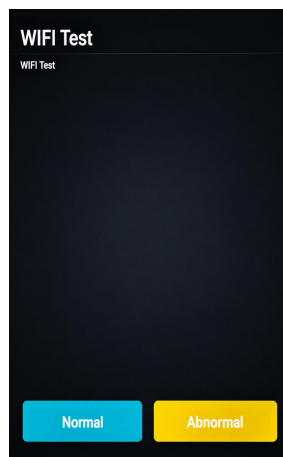
4.2. Relay and LED Test

- Tap "Relay Test" to enter the test interface. The device will produce the relay switching sound.
- During the LED Test, the two fill lights located at the upper left and right sides of the screen will turn on.
- If the Relay Test or LED Test fails, please contact Newcapec after-sales support.



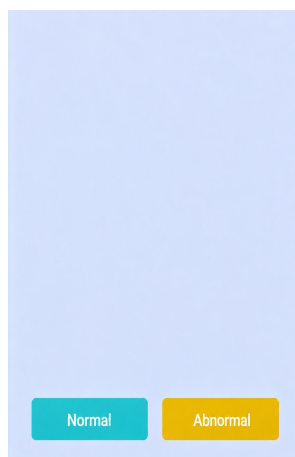
4.3. Wi-Fi Test

- Tap "Wi-Fi Test" to enter the Wi-Fi test interface.
- If the device is already connected to Wi-Fi, the interface will automatically return to the Factory Test interface.
- If no Wi-Fi list is displayed and it is confirmed that a 2.4 GHz Wi-Fi network is available in the installation area, the device Wi-Fi hardware may be faulty. Please contact Newcapec after-sales support.



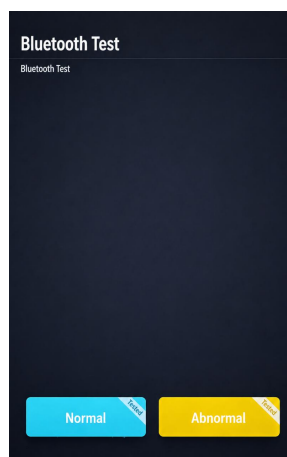
4.4. Touch Screen Test

- Tap "Touch Screen Test" to enter the test interface.
- Perform touch operations on the screen. The interface will display the touch trajectory to verify whether the touch function is working properly.
- If issues such as random touch points, no touch traces, or inconsistency between the touch points and displayed touch trajectories occur, please contact Newcapec after-sales support.



4.5. Bluetooth Test

- Tap "Bluetooth Test" to enter the test interface. The interface will start searching for Bluetooth devices.
- The detected Bluetooth devices will be displayed on the interface.
- If no Bluetooth device list is displayed and it is confirmed that there are connectable Bluetooth devices available in the installation area, the device Bluetooth hardware may be faulty. Please contact Newcapec after-sales support.



4.6. Display Test

- Tap "Display Test" to enter the test interface.
- The screen will cyclically display and flash three colors: red, green, and blue.
- If no colors are displayed or any color is missing, please contact Newcapec after-sales support.

4.7. Others

Any factory test items not described in detail in this section are reserved functions and are not currently available for operation. Please do not operate them.

5. Precautions / Daily Maintenance

- Avoid exposure to rain and direct sunlight. The device must not be exposed to rain. Perform regular waterproof and dustproof maintenance, and clean the device regularly.
- Keep the device surface clean and tidy. Perform regular cleaning and maintenance, especially around the camera, fill light, and sensor areas.
- Avoid installing the product in extreme environments, such as prolonged exposure to sunlight, rain, dust, or vibration.
- If any malfunction occurs during use, please refer to the user manual or contact Newcapec for assistance.
- Do not use acidic, alkaline, or organic solvents to clean the camera glass surface and display window, as they may damage the device.
- Avoid frequently powering the device on and off within a short period of time.