

F96-Facial Recognition Terminal User Manual

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Declaration

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Document Revision History

No.	Version	Change Status*	Content	Date
1	1.0	A	Initial Version	2026-8-18

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



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1. Product Introduction

1.1. Purpose and Introduction

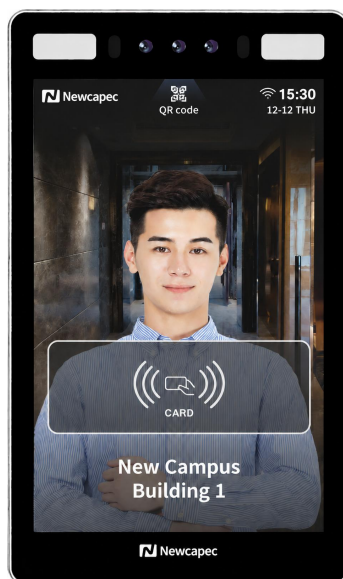
F96 Series Facial Recognition Tablet Terminal integrates multiple authentication methods, including facial authentication, screen card authentication, and QR code scanning via mobile APP (forward and reverse scanning).

The device consists of a metal housing, multi-core process or, storage 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 is equipped with various interfaces, such as USB, fire alarm input, door sensor, and relay interfaces.

Powered by the Android operating system and integrated 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: F961. The product dimensions are shown in Figure 1.



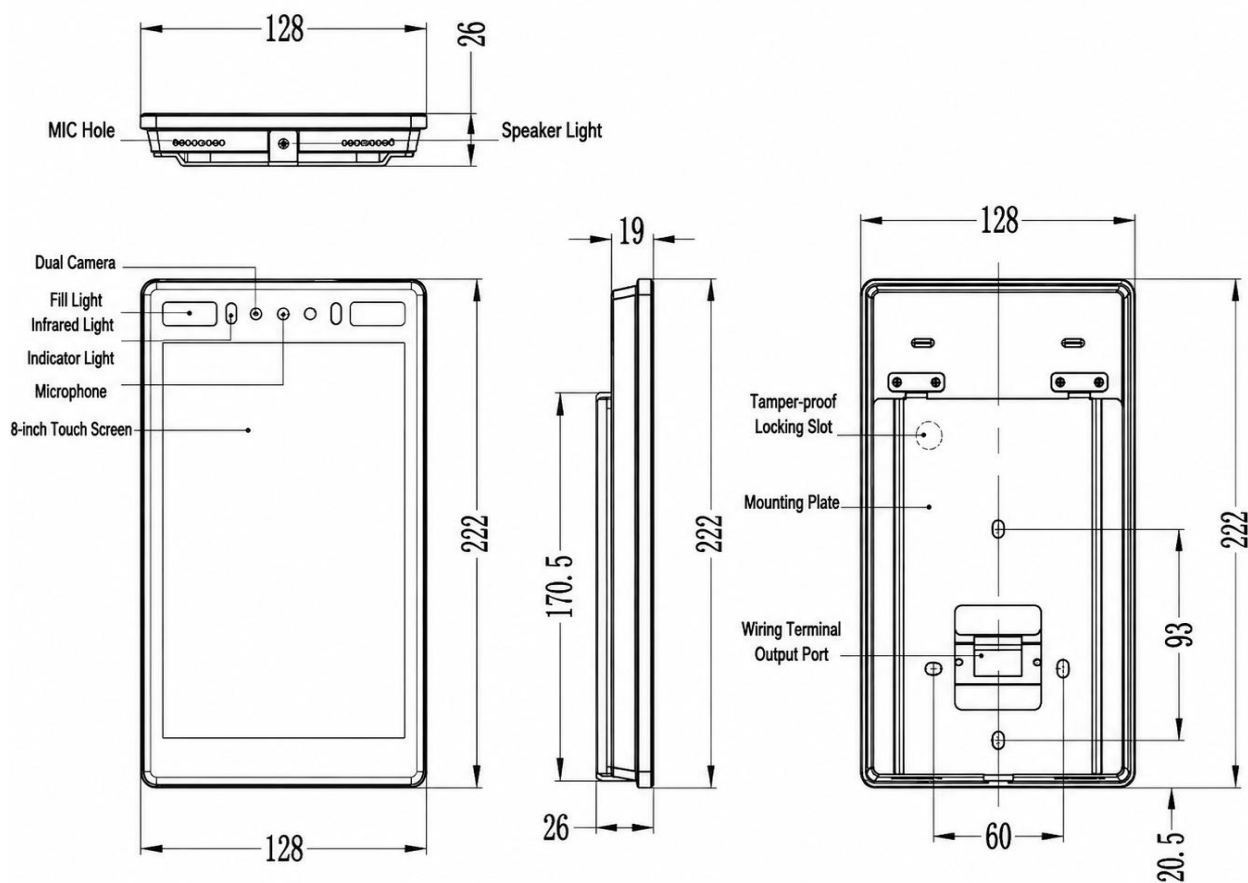
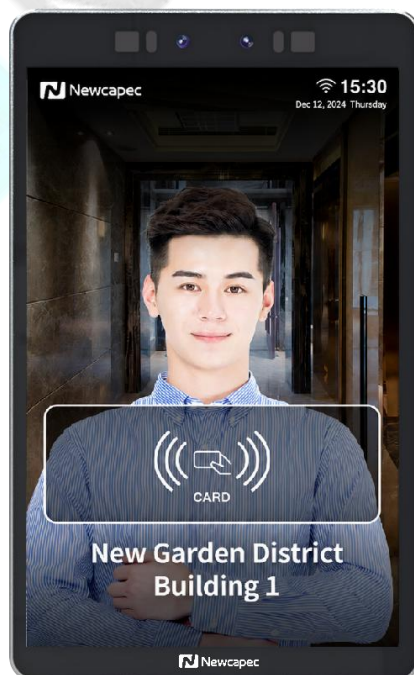


Figure 1: F961

Model: F962. The product dimensions are shown in Figure 2.



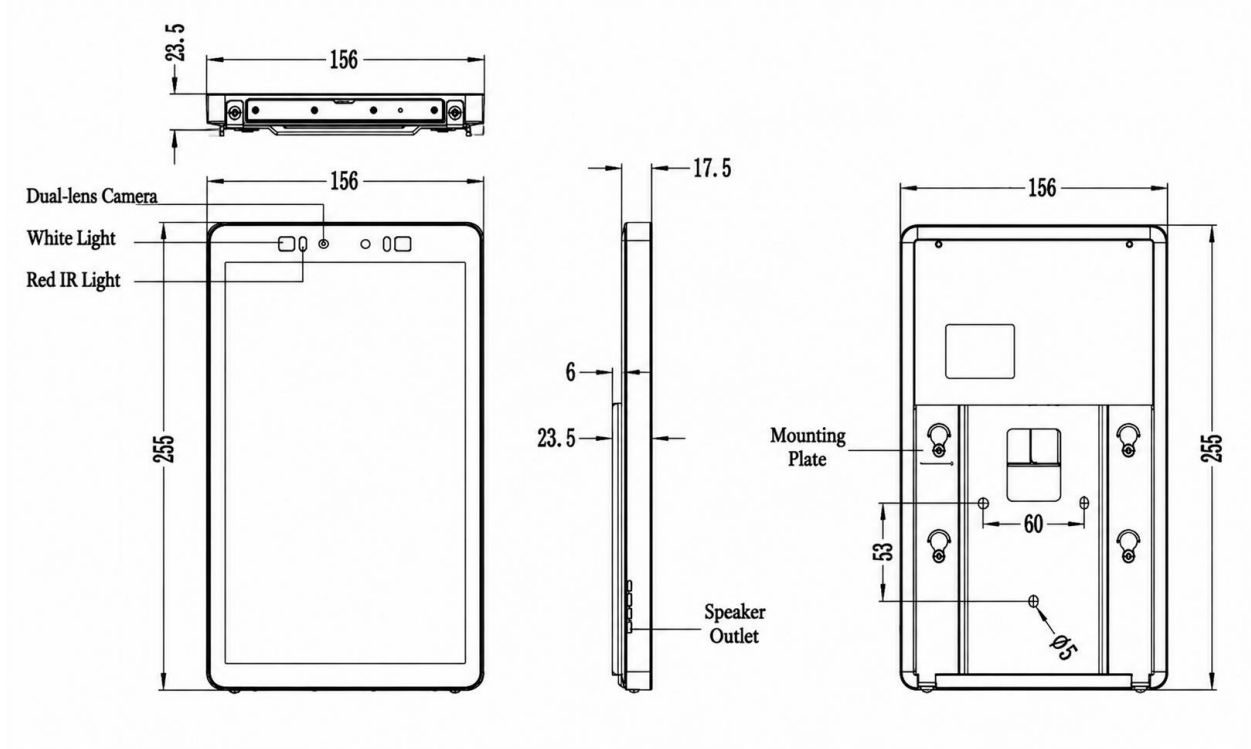


Figure 2: F962

1.3. Product Features

- Supports multiple unlocking methods, including facial recognition, card authentication (under-screen card reading), QR code scanning (both forward and reverse scanning), password authentication, exit button, and remote unlocking via APP.
- Supports offline 1: N facial recognition.
- Equipped with a binocular camera and supports liveness detection.
- Supports multiple communication methods, including TCP/IP, Wi-Fi, Bluetooth, and 4G full network communication (optional).
- Supports wall-mounted installation (wall brackets are included for corresponding models) or turnstile column installation (column brackets are included for corresponding models).
- Supports remote access permission configuration through the access control management platform. The authorization validity period can be set, and access permissions will automatically expire after the expiration date.
- Supports PSAM card insertion for high-security card authentication.

- When used as an access control terminal, the device can directly control the door lock through a dedicated access control power supply without requiring an additional access controller. It supports door sensors, exit buttons, tamper detection, and signal input.
- Supports automatic fill light adjustment, enabling effective facial recognition even in low-light environments.
- Supports real-time voice prompts.
- Equipped with RS485, RS232, Wiegand, and USB interfaces, allowing integration with third-party hardware devices.

1.4. Technical Specifications

Mode	F961	F962
Power Supply	DC12V / 20W Max	
Processor	Octa-core Processor	
Storage	2G RAM + 16G Flash	
Display	8 inches	10 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	Ethernet × 1, Relay × 1, USB × 1, RS485 × 1, Exit Button × 1, Door Sensor × 1, Wiegand × 1, Alarm Input × 1, Alarm Output × 1
Material	Tempered Glass Panel and Aluminum Alloy Housing	
Communication Methods	Ethernet, Wi-Fi, Bluetooth, 4G (Optional)	
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	128 × 222 × 19 mm (Excluding Mounting Bracket)	156 × 255 × 17 mm (Excluding Mounting Bracket)
Operating Environment	Operating Temperature: -10°C to 60°C	

Storage Temperature	-20°C to 70°C
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2. Installation Instructions

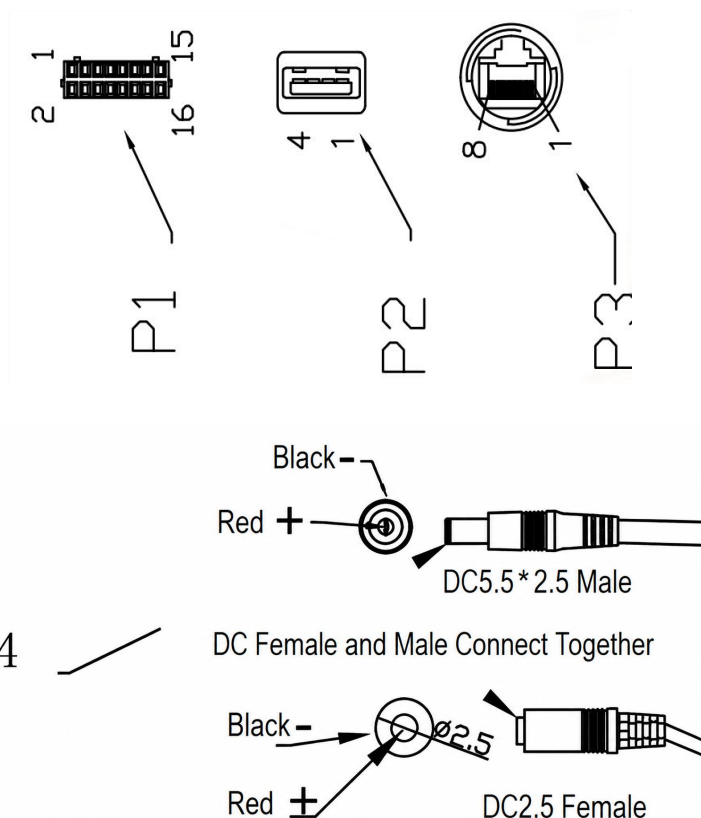
2.1. Package Contents

Product Type	Accessory Name	Unit	Quantity
Access Control Model (F961)	Facial Recognition Terminal	Unit	1
	Mounting Bracket	Piece	1
	Countersunk Self-tapping Screw M4×30	Piece	4
	Plastic Expansion Anchor M6×30	Piece	4
	Pan Head Knurled Screw M4×6	Piece	1
	User Manual	Copy	1
Access Control Model (F962)	Facial Recognition Terminal	Unit	1
	Mounting Bracket	Piece	1
	Countersunk Self-tapping Screw M4×30	Piece	4
	Plastic Expansion Anchor M6×30	Piece	4
	Stainless Steel T-shaped Large Flat Head Screw M3×6	Piece	4
	Phillips Pan Head Knurled Screw with Washer M3×6	Piece	2
Turnstile Model (F961/F962)	User Manual	Copy	1
	Facial Recognition Terminal	Unit	1
	Bracket Sealing Block	Piece	1
	Bracket Column	Piece	1
	Lower Bracket Section	Piece	1
	Sealing Gasket M36	Piece	1
	Round Slotted Nut M36	Piece	1
	Conical Set Screw M5	Piece	1
	Stainless Steel Hex Socket Cylindrical Head Screw M3×20	Piece	3
	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

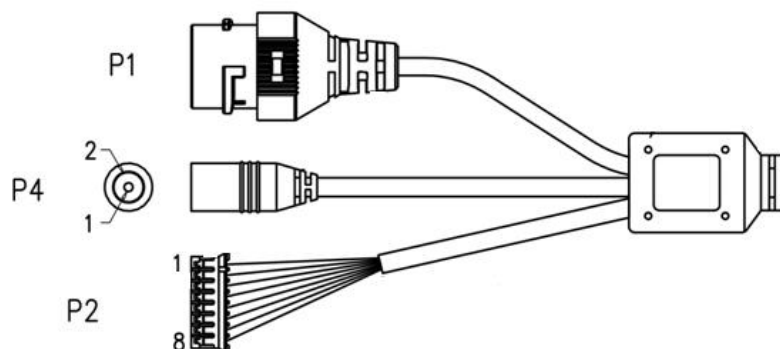
2.2.1. F961



Interface wiring sequence and function definition:

P1	1	White-Red	NO2 (Relay Dry Contact Output Control – Normally Open)
	3	White-Black	COM2 (Relay Dry Contact Output Control – Common)
	5	White-Yellow	NC2 (Relay Dry Contact Output Control – Normally Closed)
	7	White-Green	MC (Door Sensor Input)
	9	White-Blue	OPEN (Door Open Button)
	11	White-Brown	FIRE (Fire Alarm Input)
	13	White-Orange	485-A (RS-485 Positive)
	15	White-Purple	485-B (RS-485 Negative)
	2	Red	NO1 (Relay Dry Contact Output Control – Normally Open)
	4	Black	COM1 (Relay Dry Contact Output Control – Common)
	6	Yellow	NC1 (Relay Dry Contact Output Control – Normally Closed)
	8	Green	D0 (Wiegand D0)
	10	Blue	D1 (Wiegand D1)
	12	Brown	GND (Signal Ground)
	14	Orange	232-RX (RS-232 Signal – Receive)
	16	Purple	232-TX (RS-232 Signal – Transmit)
P2	/	/	USB Port
P3	/	/	Ethernet Port
P4	/	Red	12V Power Positive
	/	Black	12V Power Ground

2.2.2. F962



Interface wiring sequence and function definition:

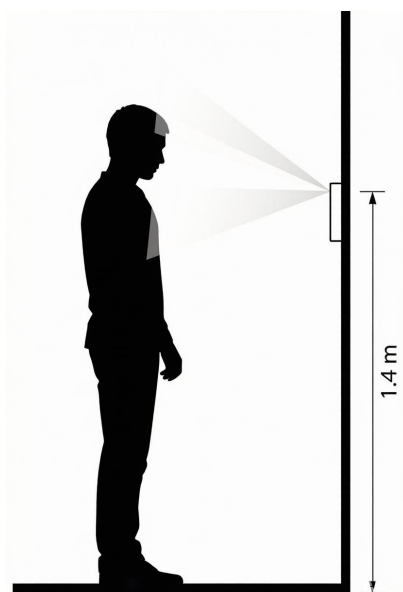
P2	1	White-Yellow	485-B (RS-485 Negative)
	2	Gray	485-A (RS-485 Positive)
	3	Orange	MC (Door Sensor Input)
	4	Brown	GND (Signal Ground)
	5	Purple	OPEN (Door Open Button)
	6	White-Brown	NO (Relay Dry Contact Output Control – Normally Open)
	7	White	COM (Relay Dry Contact Output Control – Common)
	8	Yellow	NC (Relay Dry Contact Output Control – Normally Closed)
P4	1	Red	12V Power Positive
	2	Black	12V Power Ground
P1	/	/	Ethernet Port

2.3. Installation Steps

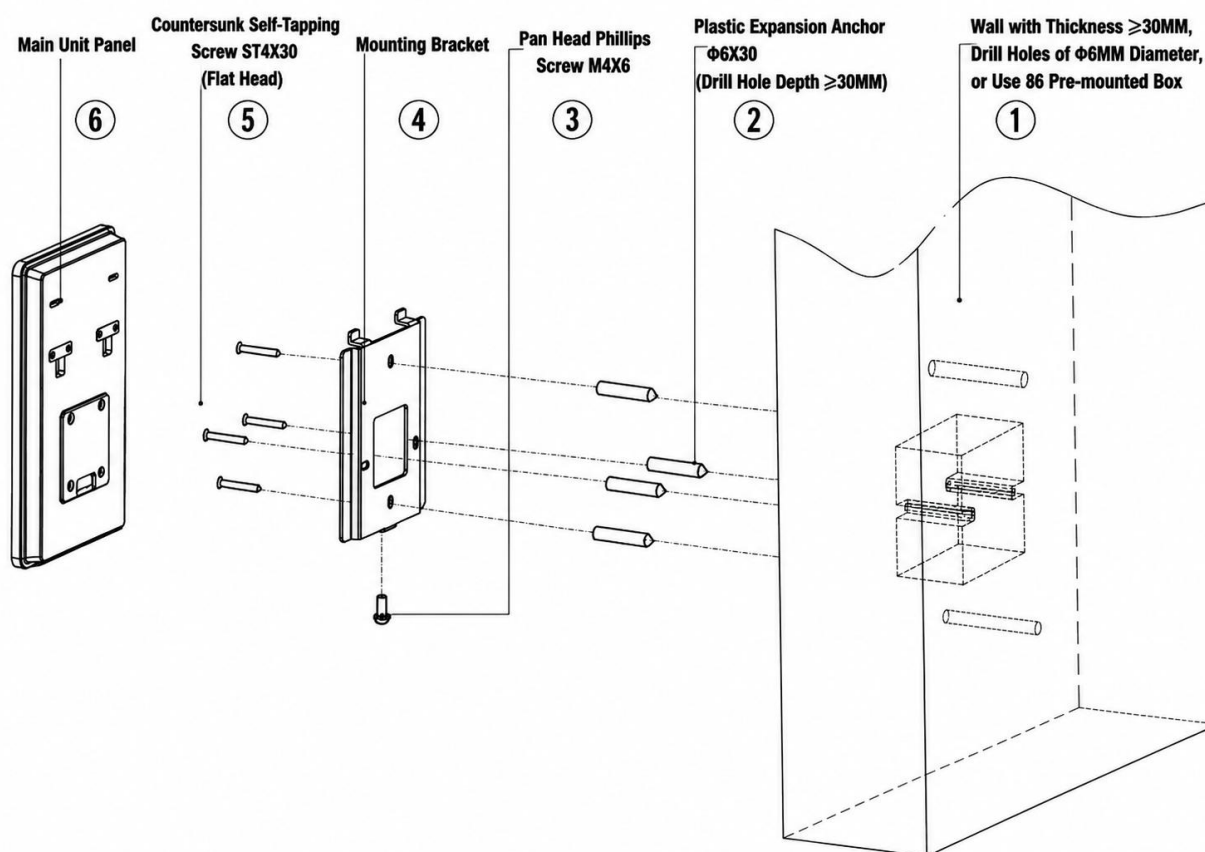
2.3.1. Access Control Version

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.



2.3.1.2.F961Wall-mounted Installation



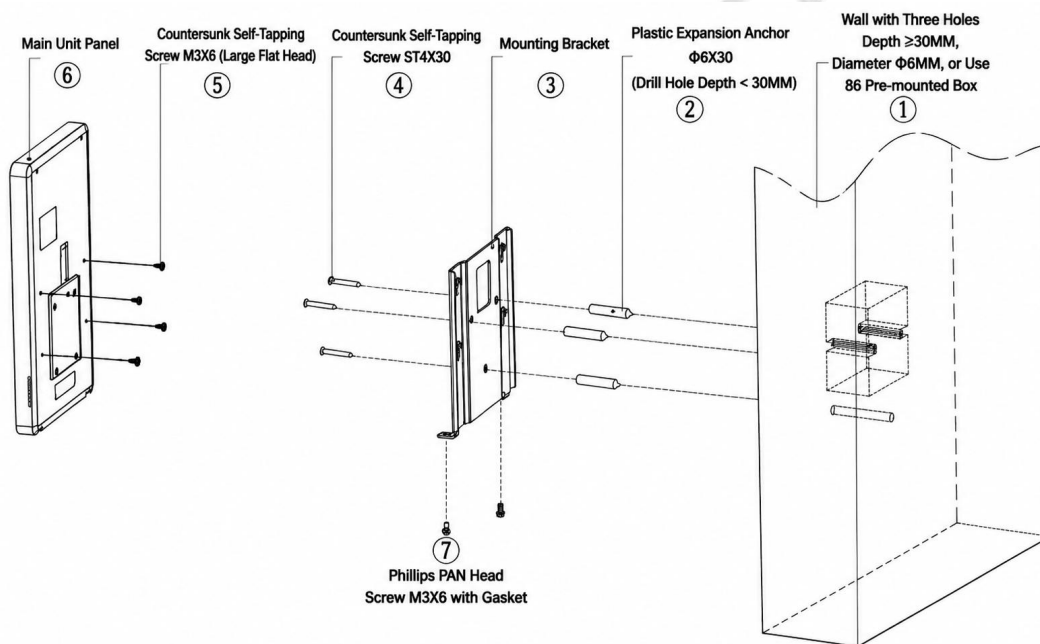
- Wall-mounted Installation: Use the four mounting holes on the wall mounting bracket to mark the drilling positions on the wall. Drill holes using an electric drill, then insert the supplied expansion anchors into the holes. Secure the wall

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.

2.3.1.3.F962 Wall-mounted Installation

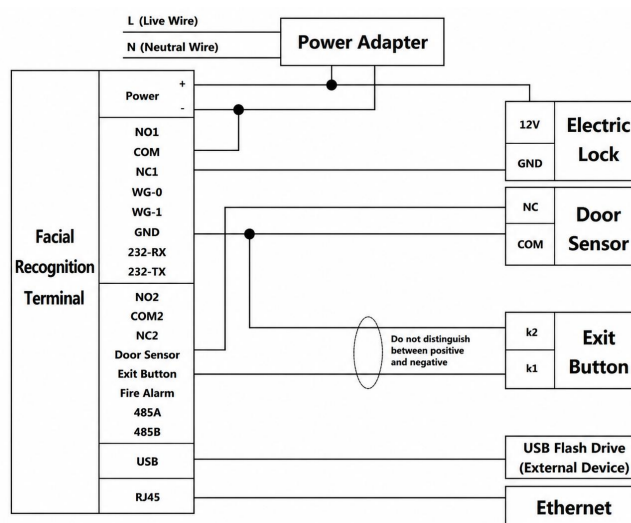


- Wall-mounted Installation: Use the four mounting holes on the wall mounting bracket to mark the drilling positions on the wall. Drill holes using an electric drill, then insert the supplied expansion anchors into the holes. Secure the wall mounting bracket to the wall using the supplied self-tapping 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.

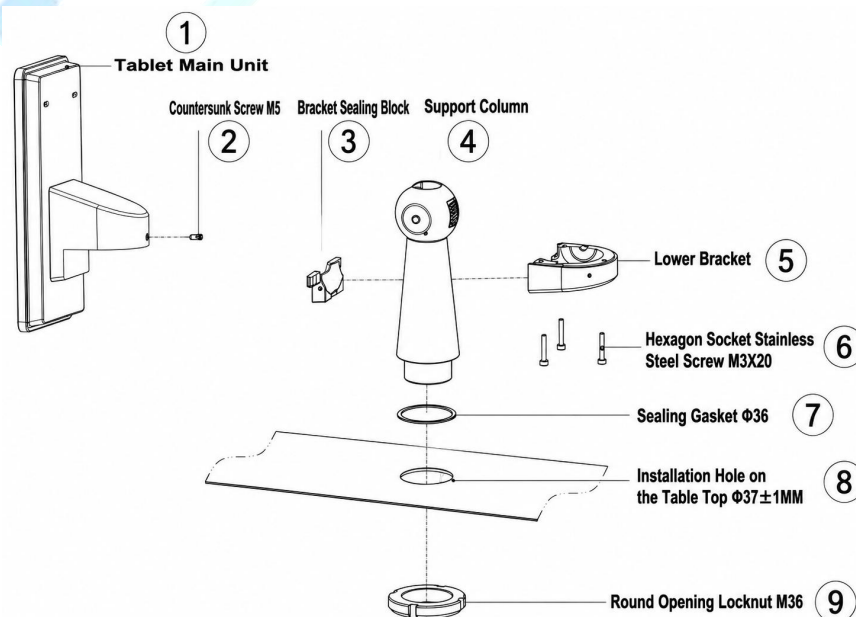
Note: During installation, the device should be positioned to avoid backlighting, direct sunlight, and low-light environments as much as possible. If necessary, install shading equipment or provide additional external lighting compensation.

2.3.1.4. Access Control Wiring



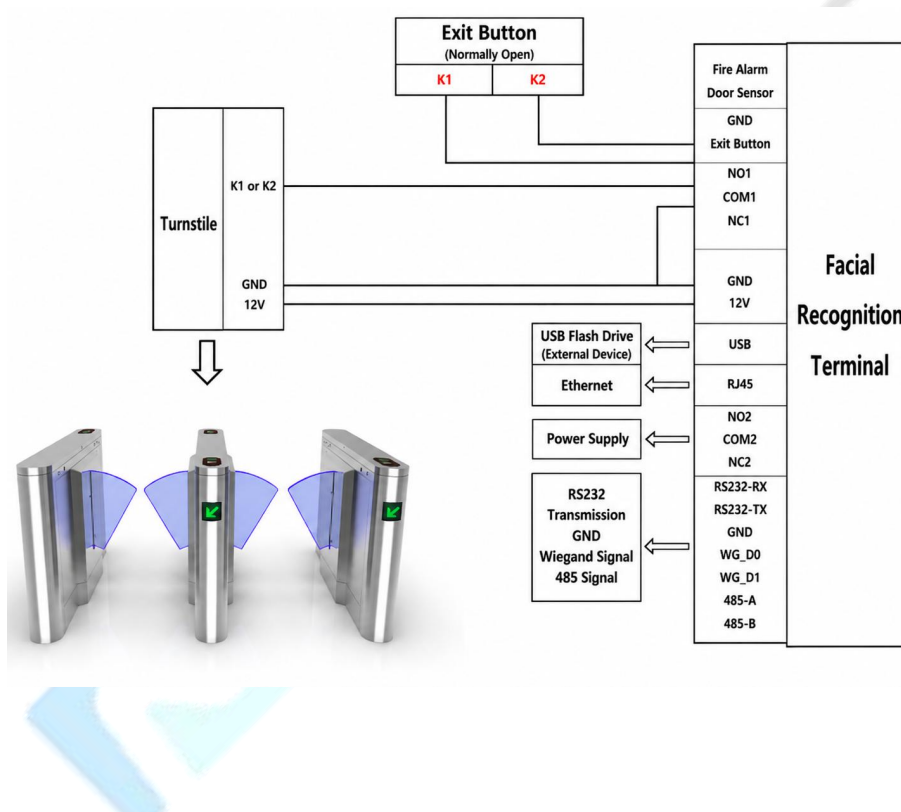
2.3.2. Turnstile Model

The installation method and wiring of the F961 and F962 turnstile models are the same. The following figure uses the F961 as an example.



Before installation, drill a Ø37 mm circular hole on the turnstile channel (with a tolerance of ±1 mm). For manual drilling, an M36 stainless steel hole saw can be used. Install the device into the turnstile mounting hole according to the sequence shown in the figure, and tighten the M36 nut. Then adjust the angle of the access control terminal as required, tighten the set screw shown as ② in the figure above, and complete the wiring according to the wiring instructions provided in the following section.

2.3.2.1. 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

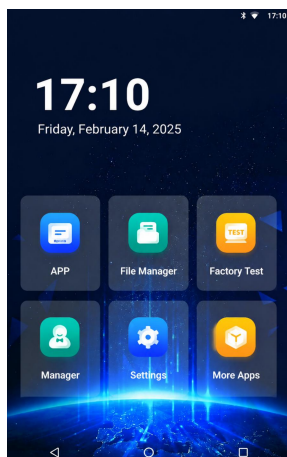
3.1. Device Startup

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. System Introduction (Android)

3.2.1. System Home Screen

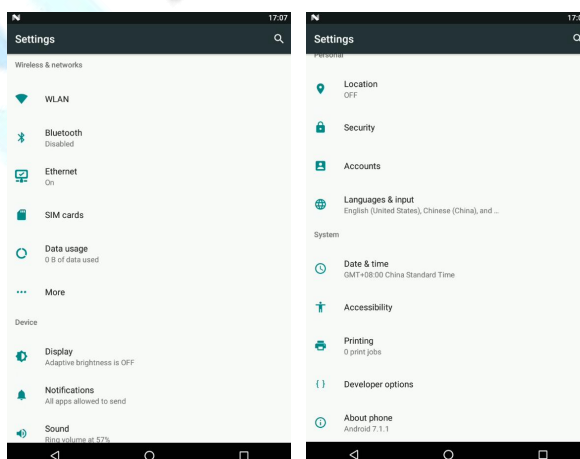
After the device is powered on, the system interface is shown below.



Parameter	Description
Application	Facial recognition access control and attendance application.
File Manager	Used to view device system files.
Factory Test	Used for device hardware testing. It can test functions such as the display, touch screen, camera, card reading, QR code scanning, Wi-Fi, Ethernet, and other hardware functions.
Manager	Used together with the Access Control Management System for application management and firmware upgrades.
Settings	System settings, including network configuration, volume adjustment, display brightness, developer mode, and other functions.
More Applications	Collection of other device functions, including camera, photos, and other applications.

3.2.2. System Settings

Tap "Settings" to enter the Settings interface

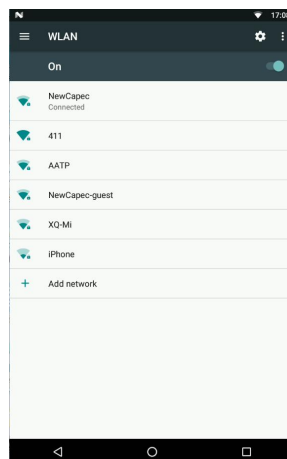


This section only describes the functions commonly used during actual operation.

Parameter	Description
WLAN	Used to connect the device to a Wi-Fi network.
Bluetooth	Used to configure Bluetooth connections.
Ethernet	Used to connect the device to an Ethernet network.

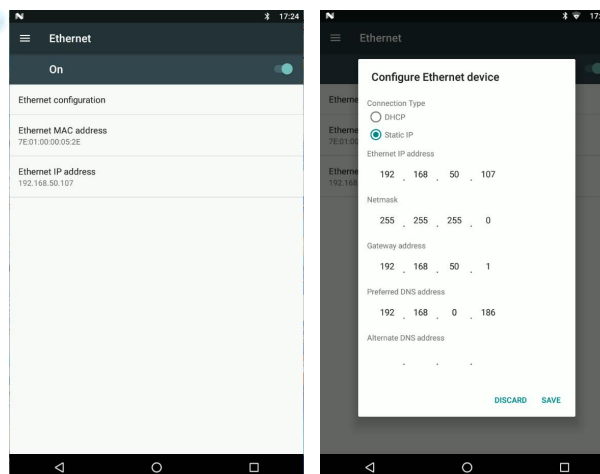
SIM Cards	If the device supports 4G communication, used to configure the mobile network.
Data Usage	If the device supports 4G communication, used to view mobile data usage.
Display	Used to adjust the display brightness.
Sound	Used to adjust the device volume.
Languages & Input	Used to set the default display language.
Date & Time	Used to set the system date and time.
Developer Options	Developer mode for software development and debugging.
About Phone	Displays the device system version information.

3.2.2.1.WLAN Settings



Parameter	Description
ON/OFF	Turn Wi-Fi on or off.
Settings Button	View the IP address of the connected Wi-Fi network.
Wi-Fi Connection	Select the Wi-Fi network to connect to and enter the password to establish the connection.

3.2.2.2.Ethernet Settings



Parameter	Description
ON/OFF	Turn Ethernet on or off.
Ethernet Configuration	Refresh the Ethernet network list.
Ethernet MAC Address	View the device MAC address.
Ethernet IP Address	Supports two network modes: DHCP and Static IP. ● DHCP: Dynamic IP, automatically obtains an IP address. ● Static IP: Static IP, manually configure the network communication IP address.

3.3. Application Modes

Newcapec provides four application modes to meet the requirements of different users.

- **Network Mode:**

Newcapec facial recognition embedded application, which requires integration with the **Access Control Management System**.

- **Standalone Mode:**

Newcapec facial recognition embedded application that allows personnel information to be registered directly on the device.

- **Software Development Kit (SDK):**

Newcapec provides open hardware capabilities, allowing third parties to develop customized application APPs and achieve seamless integration between Newcapec devices and third-party software.

- **Application Programming Interface (API):**

Newcapec provides open API services, allowing third parties to integrate their own platforms and achieve business communication between Newcapec devices and third-party platforms.

3.3.1. 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



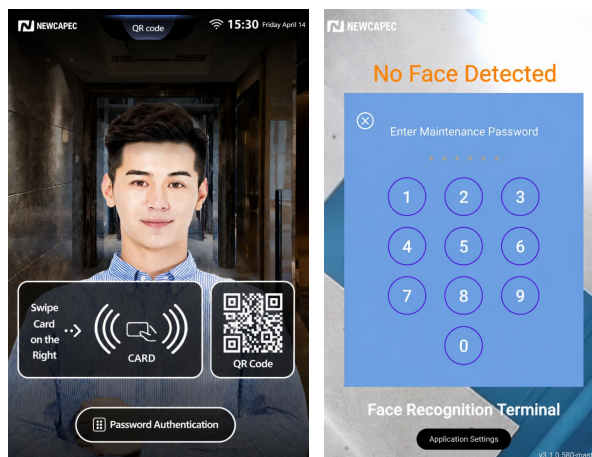
Application Home Page & Authentication Success Interface

3.3.2. Standalone Mode

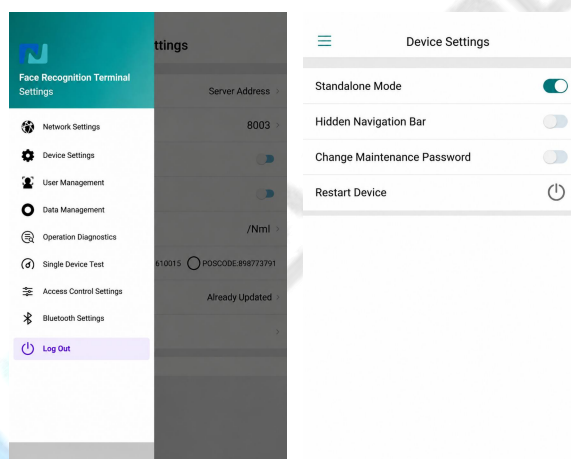
Applicable Scenarios: Suitable for scenarios without network connection and remote management requirements, such as independent offices, attendance management, etc.

- 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**.
- The default setting password is "**888999**".
- After the door lock is connected to the network, the standalone mode will be automatically disabled, and all personnel information stored in standalone mode will be cleared.

3.3.2.1.Enable Standalone Mode

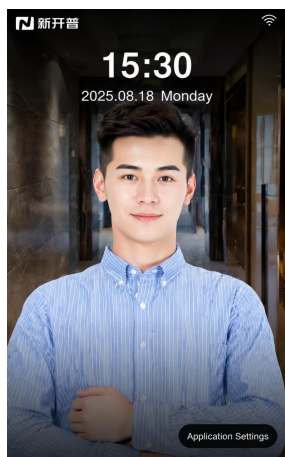


On the Application Home Page, tap the upper-left corner five consecutive times. A password input window will appear. Enter the setup password "888999" to enter the application settings interface. Tap the list button in the upper-left corner of the interface, select "Tablet Settings", then turn on the Standalone Mode switch.



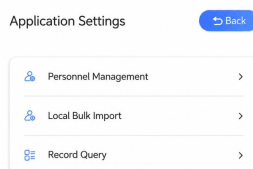
Parameter	Description
Standalone Mode	Enable or disable standalone mode.
Hide Navigation Bar	Enable or disable the bottom navigation bar.
Change Maintenance Password	Change the password for entering the settings interface. The default password is "888999".Note: This password is important. If it is forgotten and needs to be reset, please contact after-sales support.
Restart Device	Restart the device.

After completing the settings, tap **"Exit"** to return to the Application Home Page. The home page is displayed as shown below.



3.3.2.2.Register User Information

The device supports two user enrollment methods: local enrollment and Local Bulk Import. Users can select the appropriate method according to actual application requirements.



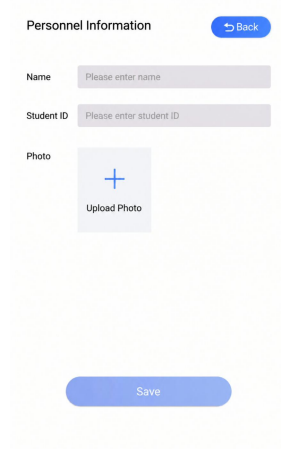
Parameter	Description
Personnel Management	Used for local user information enrollment and user list display.
Local Bulk Import	Import user information using a spreadsheet format.
Record Query	Export user identification records.

3.3.2.2.1. Local Enrollment

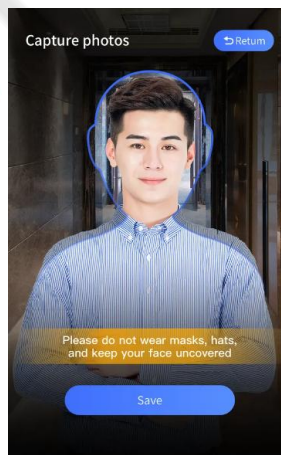
- In **Standalone Mode**, select **"Application Settings"** → **"Personnel Management"** → **"+" (Add)** on the facial recognition main interface.



- Enter the **name** and **ID number**, then tap "**Capture Photo**".



- The person being enrolled should face the screen and keep their face within the face frame. Then tap "Save" to complete the face enrollment.



- Return to the user information enrollment interface and tap "Save". The user information will be displayed in the enrolled user list.

Personnel Information
Back

List of personnel
Return

NameTom

Student ID0001

Photo

Re-collection

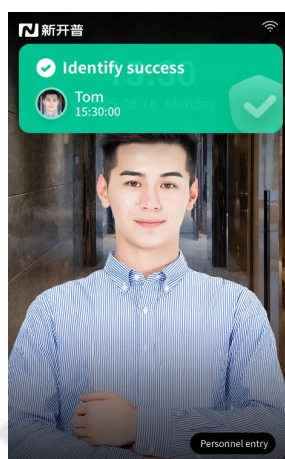
Save

1 people

+ New

Delete

- After completing enrollment, return to the home page to perform facial recognition authentication.



3.3.2.2.2. Local Bulk Import

In Standalone Mode, select "Application Settings" → "Local Bulk Import" on the facial recognition main interface and follow the prompts to import user information. Exported records can be found in the Android system "File Manager" according to the instructions.

Import Personnel
Back

Warm Reminder

Please strictly follow the steps below to import personnel information:

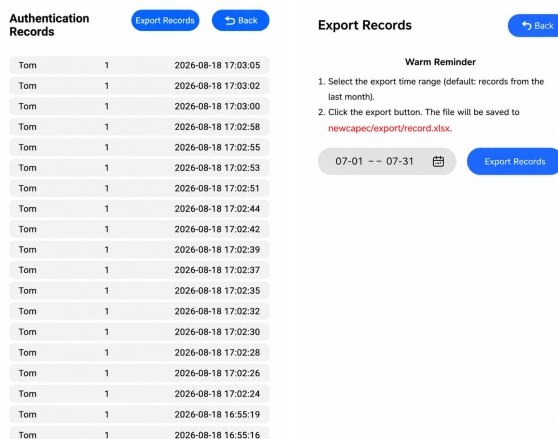
- Obtain the import template. Click the "Export Template" button to download the template file named `newcapec/import/namelist (template).xlsx`.
- Fill in the personnel information according to the example in the template, and save the modified file as `namelist.xlsx` to the directory `newcapec/import/namelist.xlsx`.
- Rename the personnel photo (recent clear front-facing photo, no hat) as the student ID number with the extensions `.png/.jpg` (e.g., `123.png/123.jpg`), and place them all in the directory `newcapec/import/photo`.
- Click the import button to complete the import.

Export Template

Import Personnel

3.3.2.3.View and Export Identification Records

In Standalone Mode, select "Application Settings" → "Record Query" from the facial recognition main interface to view user identification records. The records can also be exported. Exported records can be found in the Android system "File Manager" according to the instructions.



3.3.3. Software Development Kit (SDK)

Open SDK Support for Flexible Device Integration

Newcapec provides an open SDK to enable developers and system integrators to access device functions and develop customized applications. The SDK offers standardized development interfaces, communication protocols, and technical resources, allowing seamless integration with customer applications and third-party platforms. For detailed development documentation, please contact Newcapec.

3.3.4. Application Programming Interface (API)

Open API Interfaces for System Connectivity

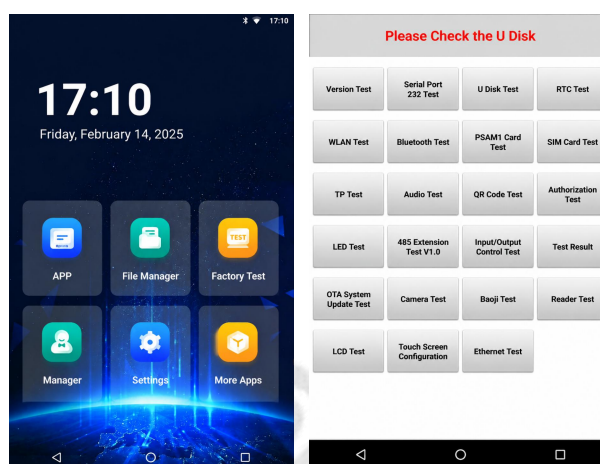
Newcapec provides open API interfaces for seamless data exchange and system integration between devices, platforms, and third-party applications. Through secure and standardized API services, customers can easily integrate device data and business functions into their existing management systems.

For detailed development documentation, please contact Newcapec.

4. Hardware Test

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

Tap **"Factory Test"** on the system home screen to enter the Hardware Test application.



4.1. Version Test

- Tap **"Version Test"**. The interface displays the device information, including the **serial number, product ID, hardware version, firmware version, MAC address, MCU APP, MCU IAP, main screen ID, secondary screen ID**, and other related information. The test results for all items are displayed. If the test result shows **"Fail"**, it indicates that the corresponding item is abnormal. Please contact Newcapec after-sales support.
- The following four functions—**MCU APP Upgrade, MCU IAP Upgrade, Reset & Restart, and Force Enter IAP**—are used for MCU upgrade operations. These functions are intended for professional use only. Unauthorized operation by non-professional personnel is not recommended.

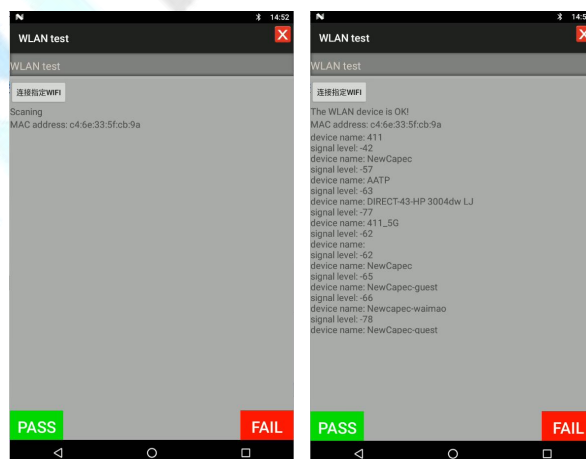


PASS: The function test is successful. Tap this button to return to the main menu.

FAIL: The function test has failed. Tap this button to return to the main menu.

4.2. WLAN Test

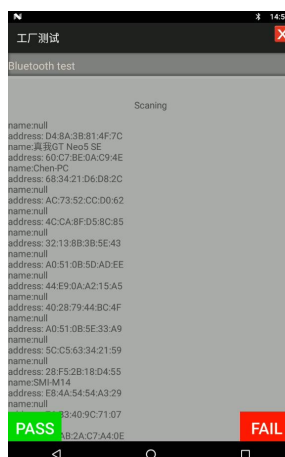
- Tap "**WLAN Test**" to enter the test interface. The interface displays the WLAN connection status.
- Tap the "**Connect to Specified Wi-Fi**" button. The interface will display the connection status: "**WLAN is working properly!**"
- If no Wi-Fi list is displayed and it is confirmed that a **2.4 GHz Wi-Fi** network is available in the product installation area, the device Wi-Fi hardware may be faulty. Please contact Newcapec after-sales support.



4.3. Bluetooth Test

- Tap "Bluetooth Test" to enter the test interface. The interface will start searching for Bluetooth devices.

- The interface will display the Bluetooth devices that have been detected.
- If no Bluetooth device list is displayed and it is confirmed that there are connectable Bluetooth devices available in the product installation area, the device Bluetooth hardware may be faulty. Please contact Newcapec after-sales support.



4.4. PSAM Card Test

- Insert the PSAM card into the PSAM card slot of the device.
- Tap **"PSAM Card Test"** to enter the test interface. The device will automatically start testing and display the number of successful and failed PSAM card read attempts.
- If all attempts fail or the number of failures is high, please contact Newcapec after-sales support.

4.5. SIM Card Test

- This function is only supported by devices with 4G capability.
- A valid and functional SIM card must be inserted before testing.
- Tap **"SIM Card Test"** to enter the test interface. The interface displays the **SIM1 test result** and SIM card status.
- If no SIM card is detected, please contact Newcapec after-sales support.

4.6. Touch Screen Test

- Tap **"Touch Screen Test"** to enter the test interface. The device will play music.
- 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.



4.7. Audio Recording Test

- Tap "**Audio Recording Test**" to enter the test interface. The interface displays "**Start Recording**" and "**Play Recording**".
- Tap "**Start Recording**" to record audio.
- Tap "**Play Recording**" to play the recorded audio.
- If the speaker is working properly but the recorded audio cannot be played back after recording, the **microphone (MIC)** may be faulty. Please contact Newcapec after-sales support.

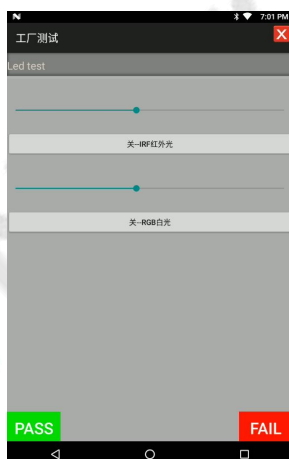
4.8. QR Code Scanning Test

- Tap "**QR Code Scanning Test**" to enter the test interface. The interface displays "**Please align the QR code with the scanner.**"
- Point the QR code below at the scanner. The scan result should be displayed as: **123456**.
- If the QR code cannot be recognized, please contact Newcapec after-sales support.



4.9. Fill Light Test

- Tap "Fill Light Test" to enter the test interface. The two fill lights located at the upper left and right sides of the screen will turn on.
- Tap the "Turn Off - IRF Infrared Light" button to turn off the infrared light. Tap it again to turn it on.
- Tap the "Turn Off - RGB White Light" button to turn off the white fill light. Tap it again to turn it on.
- If the fill light test fails, please contact Newcapec after-sales support.



4.10. Input/Output Control Test

- Tap the button to enter the test interface. The device will automatically perform the test and display: **"Timer parameter written successfully! Digital output: Relay opened successfully!"**
- Tap **"Relay"** to manually test whether the relay is operating properly. If any abnormality occurs, please contact Newcapec after-sales support.
- Other functions on this interface are not currently available to users. Please do not operate them.

4.11. OTA System Update Test

- This function is used to update the device firmware. Please contact Newcapec to obtain the upgrade package.
- The device supports two upgrade methods: **USB flash drive upgrade** and **SD card upgrade**.
- Follow the on-screen instructions. Insert the USB flash drive containing the upgrade file named "**update.zip**" into the device USB port, then tap the "**USB Update**" button. The device will start the firmware upgrade process.



4.12. Camera Test

- Tap "**Camera Test**" to enter the test interface. Two square test areas are displayed at the top of the interface. The stream-on time, stream-off time, and stress test count can be configured.
- After completing the settings, tap the "**Start**" button to begin the camera test. The left square area displays the camera black-and-white image, and the right square area displays the camera color image.
- If no camera image is displayed, please contact Newcapec after-sales support.



4.13. Test Results

- Tap **"Test Results"** to enter the test interface. The device displays the recently performed test items and their test results.
- If any item shows **"Fail"**, please contact Newcapec after-sales support.



4.14. 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.

