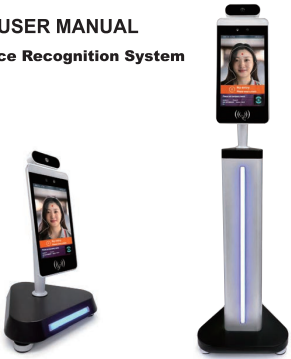




USER MANUAL

Face Recognition System



Adopting the high-performance hardware platform of RSM micro rk3288 / rk3399 / Qualcomm mm8953, equipped with industrial grade binocular camera and human face recognition technology, as well as infrared thermal imaging module. It supports mask recognition, ID card reader, fingerprint instrument and other peripheral extensions. It can be applied to gate channel and access control attendance to achieve safe and efficient access control of personnel. Recognition System can reduce face-to-face contact between people, reduce attendance of manual inspections, protect against high fever groups, and ensure people's safety.

8-inch IPS full view LCD display.

Industrial appearance, waterproof and dustproof design, Stable and reliable. Support 3W face database. Extremely high face recognition rate. The speed of face recognition is less than 1 second.

Supporting the accurate face recognition and comparison when people wear masks.

The industrial class wide dynamic binocular camera, infrared and led dual compensation at night are adopted.

Strong performance. Four core rk3288 processor, six core rk3399 processor and eight core Qualcomm mm8953 processor are available for option.

MDU Innovations

Support@Mduinnovations.com

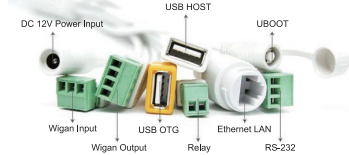
Website: mduinnovations.com

Support: 800-266-9170

Composition Diagram



Interface Instruction



DC12V: External power adapter, 12V 3A, power adapter interface specification is 5.1/2.1mm, and the shipping product is equipped with appropriate power adapter for direct use.

USB OTG: USB OTG is the abbreviation of USB on the go, which is mainly applied to the connection between different devices or mobile devices for data exchange. You can connect USB flash disk, mouse, computer brush, upload, download and so on.

USB HOST: USB devices are divided into host (master device) and slave (slave device). Data transmission can only be realized when a host is connected to a slave device. USB host cable can support the connection of mouse, keyboard, hard disk, U disk, MP3, USB game handle, USB hub, USB network card, USB printer, USB SIM card reader and other devices.

UBOOT: Used to update device system firmware.

Relay: Relay is a kind of electrical control device. When the change of the input quantity reaches the specified requirements, it makes the controlled quantity change in the electrical output circuit in a predetermined step.

Wigan Input & Wigan Output: This interface can be connected to the external gate card swiping control board. When the Wigan input is connected to the external card swiping control board, the Wigan input is not available and has no effect.

Wigan is a kind of communication protocol, from card reader to access controller. Wiegand 26 is a kind of communication protocol, like 485, 232, TCP / IP and so on. Wiegand interface usually consists of three lines: Data0, data1 and GND. These three lines are responsible for

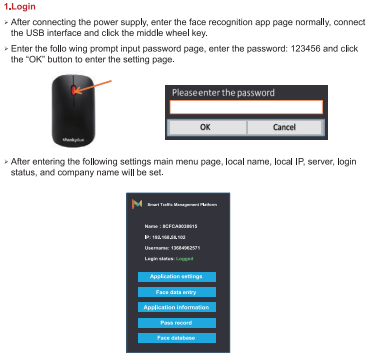
transmitting Wiegand signals. D0 and D1 keep + 5V high level when there is no data output. If the output is 0, D0 will be pulled down for a period of time; if the output is 1, D1 will be pulled down for a period of time. The minimum interval between the two electronic kangen outputs is 0.25 seconds.

Ethernet LAN: Ethernet is the most common computer network in the real world. This port is connected to the external network crystal head.

RS-232: RS-232 standard interface (also known as EIA RS-232) is one of the commonly used serial communication interface standards. Its full name is "technical standard for serial binary data exchange interface between data terminal equipment (DTE) and data communication equipment (DCE)".

This 232 serial interface is reserved for other serial port application equipment.

Software Operation Guide



2.Application settings

Click the main menu key (application settings) to open the following page.



Device name setting

By default, the device name is the MAC address of the device, which can be manually modified.

Body temperature setting

Body temperature test

- Control the temperature detection function, you can choose to turn on or off, the default is on;
- On: When people pass recognition, the interface normally displays and broadcasts the body temperature value after the face is recognized;
- Close: When the person passes through the recognition, the face contour line in the interface is automatically hidden, and the interface will not detect the body temperature after the face is recognized.

Compensation temperature

- When the ambient temperature may affect the detected body temperature, the compensation temperature can be set to automatically adjust;
- The default compensation temperature value is 0.3, and the setting range is 0 ~ 1, and at most one decimal place can be retained; "Compensation +" is selected by default;
- Example: compensation +0.3 degrees, the temperature is 36.1 during recognition, then 36.4 is displayed.

Alarm threshold

- Set an alarm threshold for controlling body temperature detection. When the body temperature alarm is turned on, the identified body temperature passes the threshold and an alarm is issued. The default is 37.3. Only numbers between 30.0 and 45.0 can be entered, and a maximum of one decimal place can be retained;

Body temperature alarm

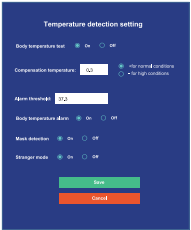
- Control the temperature alarm function, you can choose to open or close, the default is on;
- On: When the detected body temperature is higher than the threshold, the body temperature and an alarm sound is issued; when the body temperature is lower than the threshold, no alarm is issued;
- Off: No alarm will be given regardless of body temperature;

Mask detection

- Control the mask detection function, you can choose to open or close, the default is off;
- On: if not wear a mask for identification. After recognition, the display style is a red background. It is forbidden to pass. Please wear a mask. The voice broadcast "Please wear a mask", wearing a mask can be recognized normally;
- Close: Does not detect whether to wear a mask during recognition;

Stranger mode

- Enable stranger pass mode, default is off;
- On: As long as the temperature of the stranger is lower than the alarm threshold, it can pass normally. Mask detection and temperature detection must be turned on to enable the stranger mode.
- Close: Strangers cannot pass;



Identification parameter setting

Test threshold

- It is used when checking pictures into the library. The higher the threshold is, the lower quality of the picture requirements are. It needs to be set reasonably. The default value is 17; Identification times;
- The number of times to identify whether a person is a VIP. The default value is 3; this function normally only use for Chinese version.

Living body

- Whether to enable biometric detection when identifying personnel, you can set on or off, the default value is off;

Volume setting

This function is for terminal volume adjustment.



Start up settings

Auto start

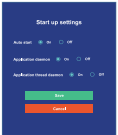
- The application will start automatically when it is turned on, and it will not start when it is turned off;

Application daemon

- The application will automatically return to the playback interface within 30s after exiting the application page when it is opened, and it will not automatically jump back when it is closed;

Application thread daemon

- When the camera is abnormal, the application will restart;



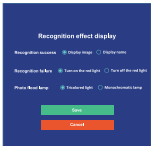
Application information setting

After setting, will show or hide the bottom information bar in full screen display. Default: Show, you can set to show or hide;



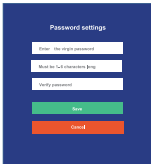
Recognition effect display

- Recognition results display, including when the recognition is successful (the default value displays the image) / when the recognition fails (the default value turns on the red light), and the fill light display (the default value is the three-color light).



Password setting

- Enter the login management, enter the application settings after login, and need to enter the set device password before exiting the application. Initial password: 123456;
- Enter the original password, new password, and confirm the new password. You can modify the password after saving. The password length is limited to 1-6 digits and cannot be left blank.



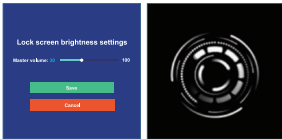
Camera resolution preview settings

- Set the resolution of the camera during face recognition.
- The default value is 1280 * 720.



Lock screen brightness settings

- When there is no face recognition, a screen saver is required. After the face is recognized, it will jump to the homepage;
- The app starts to display the homepage. There is a face recognition homepage within 30s, and no face recognition display guarantee within 30s;
- Adjust the brightness value of the screen saver, drag the set value, and save it.

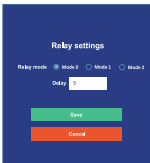


Restart timing settings

- Set the equipment restart time point: hour minute (default value 03:00), 24-hour system. If restart is selected, the equipment will restart automatically at the selected restart time point. If no restart is selected, the equipment will not restart. The default value is restart.

Relay settings

- 0: Indicates the non-automatic closing mode, that is, the relay will not automatically close after opening, the default value;
- 1: Indicates the auto close mode (high effective - default low level, then high level x seconds, last low level), that is, the delay x seconds after opening the relay will automatically close;
- 2: Indicates auto close mode (low effective - default low level, then high level for x seconds, then low level), that is, delay x seconds after opening the relay will automatically close;
- Delay time: the default value is 5 seconds, and the maximum value is 63;



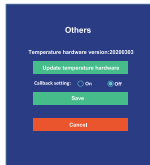
Others

Update temperature hardware

- The firmware of the temperature measurement module can be upgraded manually through the application settings. First, insert the U disk, and then enter the upgrade function of the temperature measurement module of the application settings to select the firmware that can be upgraded for manual upgrade. After the upgrade, you can view the version number of the new firmware of the temperature measurement module. (the firmware file needs to be placed in the root directory of the U disk, and the file name must be "updateTemp.bin")

Callback setting

- Including opening and closing;
- To enable, you need to enter a callback address, which is implemented according to the callback interface document provided by us;
- Close, the callback function is off, and the identification record does not callback.



Application initialization

- Note: The application initialization function will clear all the data in the application and restore it to the initial state, including the user login information, the entered face information, the traffic record, and the settings in the application settings;

3.Face collection

- You can input personnel information locally, collect faces, input employee ID, name and gender, and save them; after face collection, you can perform picture verification and display the verification results;



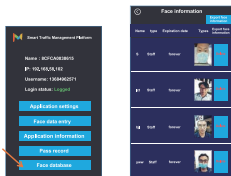
4.Pass record

- The current day's traffic record is displayed by default, and the data of the traffic record can be queried and exported by day (the current day's data is displayed by default, and the exported record needs to be inserted into the U disk); the field displays the name, identity, traffic time, temperature and traffic snapshot picture.



5.Face database

- The face database page can view the face database information of the current device, and list the name, identity, validity period, type and picture. Records can be deleted and local people can be uploaded to the background.



Unusual Warning



Temperature detection. When the body temperature alarm is turned on, the identified body temperature passes the threshold and an alarm is issued.

status	Measuring range(10℃~42℃)	System alert
Normal body temperature	30℃~37.0℃	NO
Body temperature rise	37.3℃~45℃	YES

- When the detected body temperature is higher than the threshold, the body temperature and an alarm sound is issued.
- When the body temperature is lower than the threshold, no alarm is issued.
- Control the temperature alarm function, the default is on.

Temperature Detection Distance



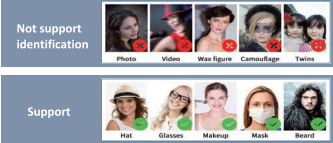
Temperature detection. When the body temperature alarm is turned on, the identified body temperature passes the threshold and an alarm is issued.

Image Acquisition

1.Clear face recognition

- 24Mega Pixel Camera
- Super large aperture, wide dynamic image sensor, clear collection of every detail. (World-class face recognition algorithm-Blindness algorithm Dynamic tracking detection based on video stream, with android quad-core system Millisecond-level accurate recognition the system runs more smoothly)
- Large-capacity face database
- Support 30000 face comparison library and 1000000 face recognition records
- Auto matic Fill light
- Industrial class wide dynamic binocular camera, infrared and led dual compensation,at night are adopted.

2.Face recognition considerations



Application Scenario

3D noise reduction strong light suppression. Supports fog through, electronic image stabilization, and has multiple white balance modes, suitable for various fields. Visitor Management / Kindergartens / attendance / Hotel winetrip / School / Subway station / Office building / Supermarket / Airport / Exhibition / Company/ Factory.



Main Components List

No.	Goods Description	Specification	Quantity	Remark
1	Face Recognition System	MUL-1080	1 unit	
2	Adapter	110~240VAC 1P/DC 3A	1 pc	
3	User Manual		1 pc	
4	Stand	□ Desk □ Post 60cm □ Post 120cm □ Wall Mounted		

