

Intelligent Face Recognition Terminal

FCV4905 Product Manual

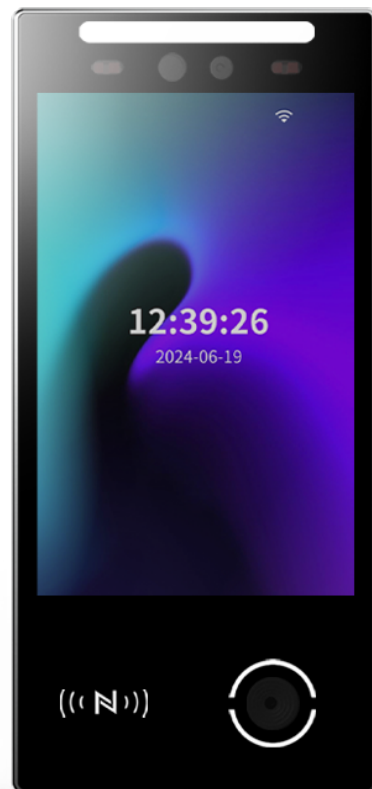


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Introduction

Thank you for using the FCV4905 face recognition all-in-one device. Carefully reading this document can help you understand the functions and features of this device, as well as quickly master the usage and installation methods of the device.

1.1. Product Introduction

FCV4905 adopts the ARM Cortex-A7 MP2 with a maximum frequency of 1GHz, and is configured with the Linux system, with 8GB of storage memory. It integrates functions such as face recognition (capable of storing 50,000 face templates), QR code reading, card-swiping, and access control.

The distinctive features of this product include an 8-inch touchscreen, voice broadcast, excellent interactivity and ease of use, and it can provide an SDK for secondary development. It can be used in industrial parks, office buildings, banks, schools and other places.

1.2. Product Features

- ARM Cortex A7 MP2 with a maximum frequency of 1GHz.
- Linux system configuration.
- 8-inch high-brightness LCD touchscreen, face recognition, and real-person voice broadcast prompts.
- The recognition accuracy rate is over 97% when the library is full.
- Recognition distance: 0.3~1.5m.
- Equipped with 2-megapixel dual cameras (RGB, IR).
- Built-in silent liveness detection, which can effectively block attacks using photos, videos, and masks.
- Two networking methods available: Wifi/Ethernet
- Provides SDK to support secondary development.
- Equipped with one RS485 interface, which can be connected to access control controllers.
- Built-in high-precision clock chip and RTC battery, which can keep time when power is off.
- ESD protection: contact 8KV, air 12KV.
- Supports logo customization, protocol customization, and OEM.
- Supports 86 - box installation.

1.3. Technical Parameters

Product Parameters		
System Parameters	Operating System: Linux	
	Storage Capacity: 8GB	
	Processor: ARM Cortex A7 MP2 1GHz	
Display Screen	Size: 8-inch LCD touch screen	
	Resolution: 800*1280	
Communication Methods	Wired: 1 channel 10/100M adaptive Ethernet port	
	Wireless: 2.4G WiFi Wi-Fi Connection Method:Use the network configuration option in the device settings. Enter the Wi-Fi SSID and password on the device screen to establish a successful connection.	
	1 channel RS485	
	1-channel Wiegand 26/Wiegand 34	
Physical Interface	Relay: 30V1A	
	2-channel Alarm Signal Input Interface	
Power Supply	Supply Voltage: 9~24V (DC) (12V recommended)	
	Max. 16W	
Camera	RGB Camera	Field of View: D=63° , H=56° , V=37°
		Aperture: 2.0
		Resolution: 1920*1080
		Focal Length: 4.35mm
	Infrared Camera	Field of View: D=68° , H=60° , V=40°
		Aperture: 2.2
		Resolution: 1616*1232
		Focal Length: 2.56mm
Speaker	Built-in one 4Ω 3W speakers	
Operating Temperature	-20℃~55℃	
Operating Humidity	10%~90% (no condensation)	
Protection Level	ESD Protection: Contact 8KV, Air 12KV	
	IP66	
Card Swiping Performance Parameters（NFC）		
Antenna Specification	13.56 MHz	
Antenna Size	48mm * 33mm	
Card Reading Distance	0-5cm (may vary with card types and specifications)	
Supported Card Types	S50,S70, FM1208, FM1216-137, MIFARE CLASSIC EV1 4K (S70), mifare desfire ev2 d42, UL, FM1208 1K+7K, NTAG216, ultralight c, UL EV1, DESFIRE EV2 d41, Ultralight EV1, Mifare Desfire ev2 d82.	
NFC Usage Instructions	NFC cards can be added through the device’s web server interface. Access the web server, navigate to the NFC management page, and register a new NFC card. Once the card has been successfully added, it can be used for authentication by tapping it on the NFC sensing area located below the device screen.	

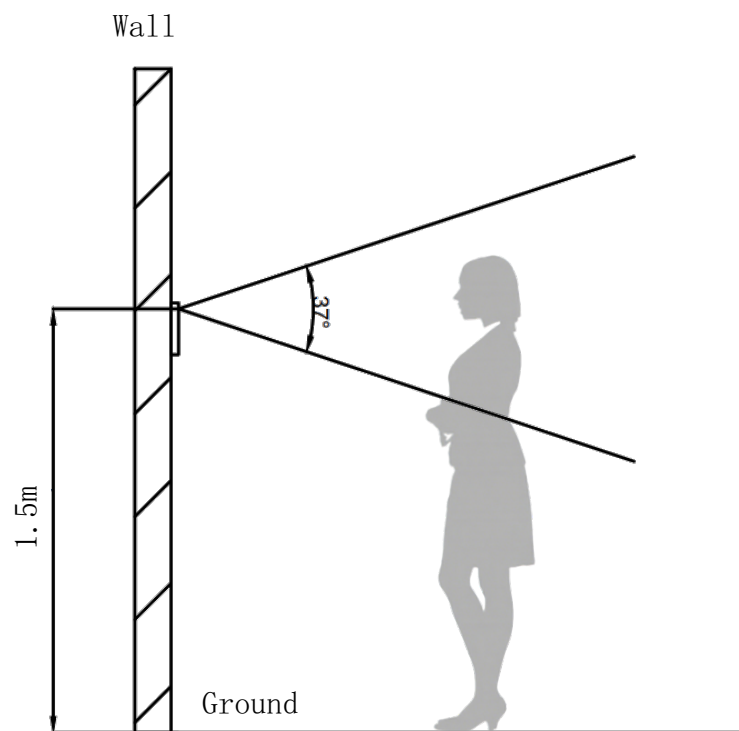
QR Code Scanning Performance Parameters	
Supported Code Types	2D Codes (QR CODE, PDF417, etc.)
Supported Scanning Devices	Mobile Phone Screens / Paper
Image Sensor	640*480
Reading Direction	Tilt: $\pm 40^\circ$, Rotation: $\pm 360^\circ$, Deflection: $\pm 30^\circ$
Field of View	Horizontal: 73.5° , Vertical: 55.3°
Reading Precision	$\geq 7\text{mil}$
Reading Distance	0~10cm
Scanning Feedback	Voice Prompt
Ambient Illumination	0~80000Lux(No Direct Sunlight)
Face Recognition Performance Parameters	
Supports mask detection	
1:N algorithm dynamic face detection (anti-photo, anti-video attack)	
Hardware infrared liveness detection (anti-photo, anti-video attack)	
Portrait Capacity: 50000 images	
Recognition Distance: 0.3-1.5M	
Pass Rate: $\geq 97\%$ (when capacity reaches 50000 images)	
False Recognition Rate: $\leq 0.01\%$ (when capacity reaches 50000 images)	
Recognition time < 0.3s	

Product Appearance

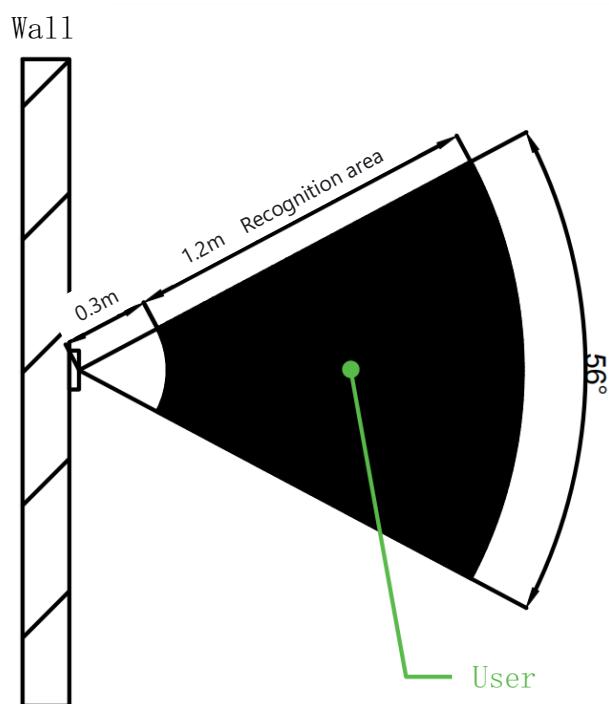
2.1. Appearance Diagram



2.2. Diagram of Reading Area



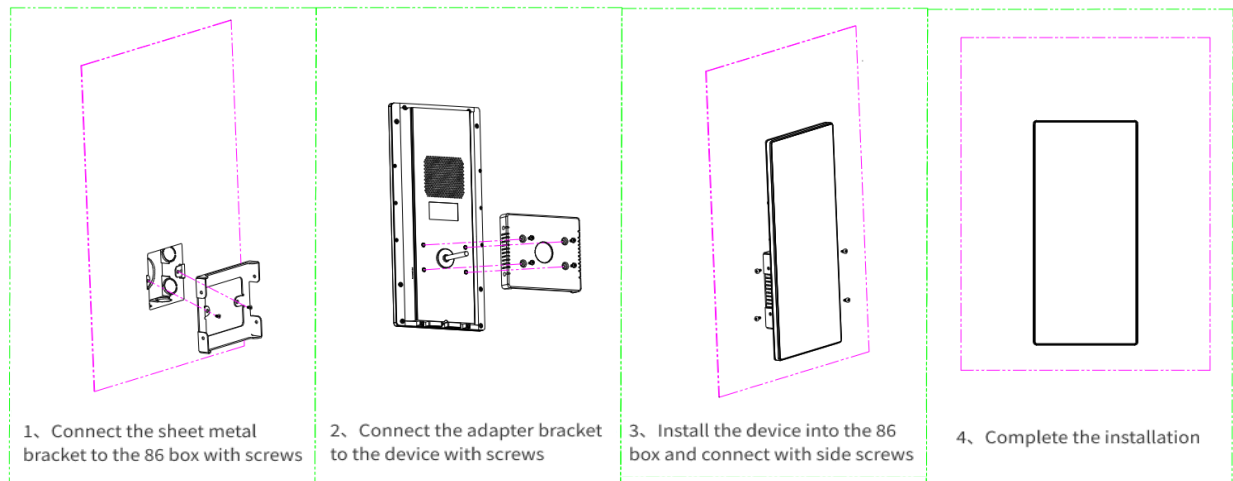
Side View



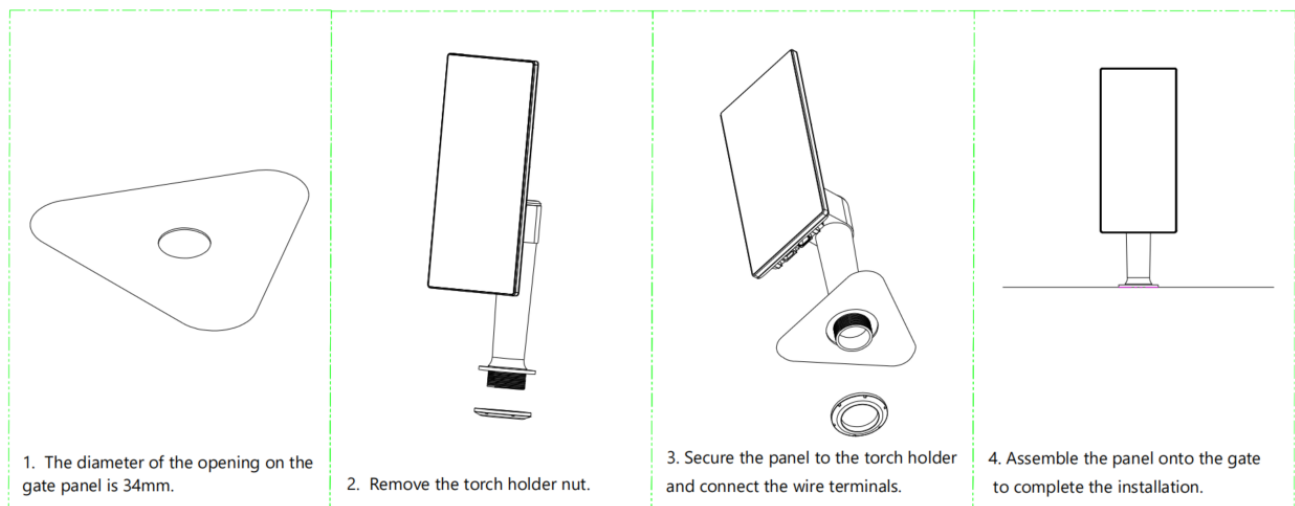
Top View

2.3. Installation Method

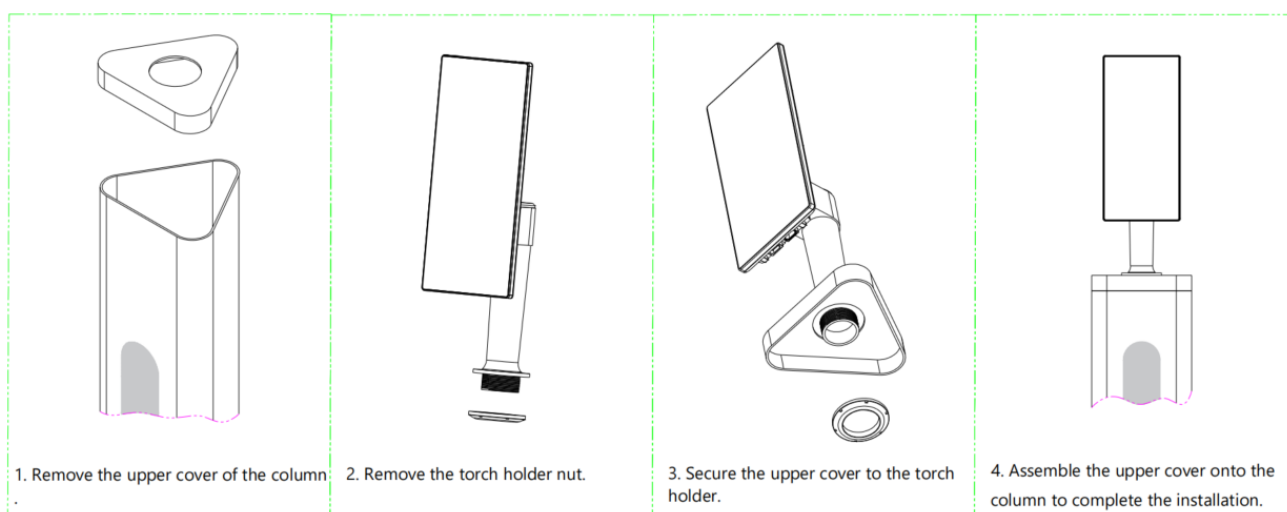
For 86-Box Installation Scenarios



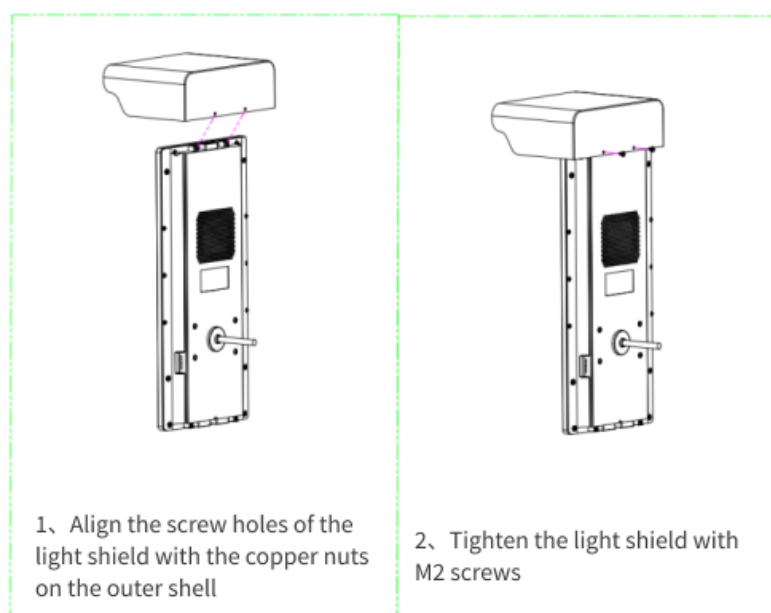
For Gate Installation Scenarios



For Column Installation Scenarios

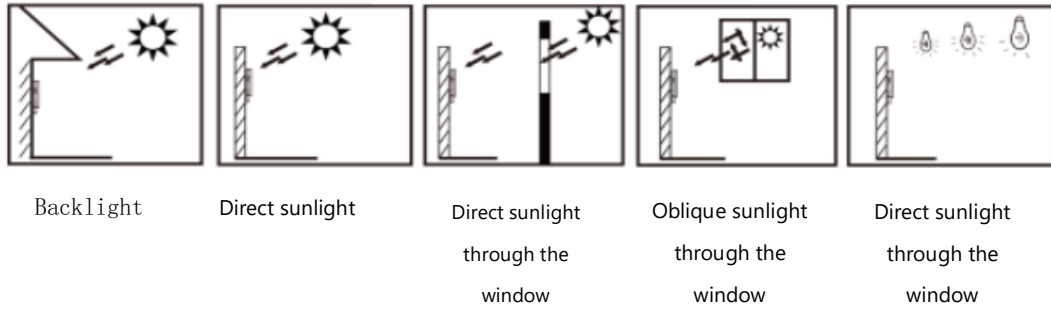


Installation Method of Light Shield



Installation Precautions:

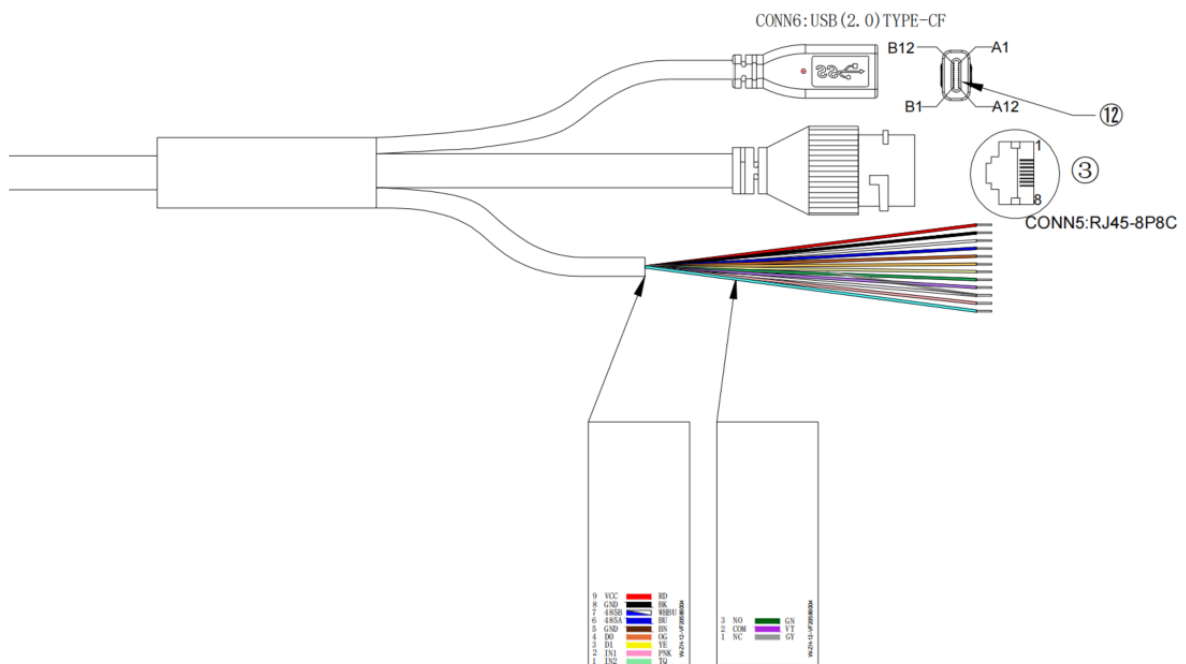
Avoid backlighting, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting.



2.4. Device Wiring

Port Description

The face recognition device has three terminal blocks. Please wire according to the definition marked on the terminal blocks.



Port Name	Specification/Pin Number	Pin Definition
USB (2.0)	TYPE-CF	Data Transmission
Network Interface	RJ45	Connect Network Cable
Power Supply	9	VCC (Power Supply Positive Terminal)

	8	GND (Power Supply Negative Terminal/Ground)
RS485	7	485B (RS485 Communication Signal Line B)
	6	485A (RS485 Communication Signal Line A)
	5	GND (Ground)
Wiegand	4	D0 (Wiegand Signal Line 0)
	3	D1 (Wiegand Signal Line 1)
Door Contact Input	2	IN1 (Door Contact Signal Input Terminal 1)
	1	IN2 (Door Contact Signal Input Terminal 2)
Relay	3	NO : Normally Open Terminal (Relay)
	2	COM : Common Terminal (Relay)
	1	NC : Normally Closed Terminal (Relay)

Notes

Unused pins must be insulated!

If the device is damaged due to a short circuit caused by failure to insulate unused pins, the user shall bear full responsibility

FCC Warning Statement

FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- - Reorient or relocate the receiving antenna.
- - Increase the separation between the equipment and receiver.
- - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- - Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm the radiator your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Precautions

Requirements for Face Registration Photos

Face pixels: Minimum 80, maximum 512

Image size: 50 - 300K

Image dimensions: Width 512 - 800, height 640 - 1024

Image format: JPG

Background requirements: Should be a daily life photo; no beauty filters, heavy makeup, or obstructions such as sunglasses, scarves, or masks.

Requirements for Face-swiping Registration

During face-swiping registration, the face must be within the registration frame, preferably filling the entire frame. Maintain eye contact with the registration frame for 2 - 3 seconds and wait for the device to complete registration.

Wiring Requirements

Unused pins must be insulated!

If device damage occurs due to short circuits caused by failure to insulate unused pins, the user shall bear full responsibility.