

Walkthrough Metal Detector

model: MCD-9000C

operating manual

V1.00

catalogue

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1. Overview

Thank you for choosing our Intelligent Security Inspection Gate series products. These installation and operation instructions are provided for equipment setup and routine daily operations. In addition to these instructions, all local laws and regulations as well as relevant government requirements must be observed.

Prior to installation or use, operators must read and fully understand this manual. This document contains all necessary information regarding the device's structure, installation, and operation procedures. Following correct operational and maintenance procedures will ensure the equipment maintains reliable performance.

The Security Inspection Gate (hereinafter referred to as "the Gate") is a multi-zone universal detection device.

The electrical system consists of an electronic control unit and two detector groups. The electronic control unit contains a variable magnetic field generator, receiver, signal processor, and programmable controller. Both detector groups include transmitting and receiving antennas, pre-installed within the Gate's two side panels. These components are interconnected via cables (two cables extending from the electronic control unit connect to each detector respectively).

The gate structure comprises two side panels and one main chassis (or crossbeam). The side panels feature power interfaces at their base, while the main chassis serves to connect both panels forming an arch structure and houses the electronic control unit. Each side panel contains vertically aligned strip-shaped indicator lights

internally. During alarm activation:

The illuminated light position indicates the vertical location of detected metal objects

The length of illuminated lights approximates the vertical dimension of detected metal objects

1.1. Definition of Name

Here's the professional English translation with proper technical documentation formatting:

▲Sensitivity – A parameter defining the minimum size of metallic objects that will trigger an alarm. When sensitivity increases, smaller metallic objects can be detected.

▲Discrimination Capability – The ability of the security gate to distinguish mobile phones from other metallic objects. This capability is influenced by multiple factors, such as: sensitivity level, subject's physique, seasonal variations (climate temperature), etc.

▲Irrelevant Alarm – An alarm triggered by non-target items carried by individuals passing through the security gate.

▲False Alarm – An alarm triggered by factors other than metal objects (e.g., electronic interference) is not considered a false alarm. For security gates, alarms caused by metal objects (whether relevant or irrelevant) are not classified as false alarms.

▲Alarm Rate – The percentage of alarms triggered by metallic objects relative to the total number of individuals passing through the security gate. The alarm rate is influenced by the gate's discrimination capability. If discrimination is poor (e.g.,

frequent alarms caused by harmless metal items), the alarm rate will be higher.

Note! Alarms triggered by electronic interference or factors unrelated to items carried through the gate are not included in the alarm rate.

▲ Throughput Rate - The maximum number of individuals allowed to pass through the security gate per unit time without compromising its detection performance. The throughput rate reflects the gate's capability to return to standby state after each passage. In practical operations, due to constraints such as inspection procedures and maximum walking speed, the theoretical maximum throughput rate is generally unattainable.

▲ Velocity Response - The ability of the security gate to maintain consistent sensitivity levels when individuals pass through at varying speeds.

▲ Calibration - The process of configuring the security gate's parameters according to operational site requirements to achieve optimal performance.

▲ Side-by-Side Operation - When two or more security gates operate in parallel proximity, their electromagnetic fields may interfere with each other's performance. Utilizing staggered frequency channels can mitigate interference between adjacent gates.

▲ Operating Channel - The electromagnetic field frequency generated by the security gate. Typically, the security gate offers multiple distinct operating channels. During on-site calibration, select the operating channel with the lowest interference level.

Simultaneous operation of multiple security gates can be achieved by utilizing different operating channels without requiring synchronization cables.

1.2. Installation, use and safety precautions

Please carefully read the following instructions before installation

Disclaimer of Liability

The company shall not be held responsible for any direct or indirect damages to persons or property resulting from failure to comply with the following requirements.

Pre-Installation Requirements

Thoroughly review this manual before installation and operation.

Retain the manual in an accessible location for future reference.

Installation and configuration procedures are detailed in this manual. Damage caused by improper human operation will not be covered under warranty.

Operational Guidelines

Sensitivity settings and detection modes shall be selected by the end-user

Configuration must follow Section 3: "Power-On, Display Interface and Program Settings" procedures

Contact customer service for technical inquiries

Safety Compliance

When operational safety standards cannot be maintained:

Immediately decommission the equipment by relocating it to a

non-operational area

Display clear "OUT OF SERVICE" signage

Request authorized technical support

Conditions Constituting Substandard Safety Compliance:

The safety standards shall be deemed inadequate under the following circumstances:

Operational Anomalies

- Visible discrepancies in device indicator signals
- Failure to perform core detection functions as specified

Environmental Damage

- Prolonged storage in non-compliant conditions (temperature $<-20^{\circ}\text{C}$ or $>60^{\circ}\text{C}$, humidity $>90\%\text{RH}$)
- Evidence of mechanical stress during transit (e.g., housing deformation $>3\text{mm}$)

Physical Contamination

- Liquid ingress in internal compartments (IP54 rating compromised)
- Corrosion on circuit boards or connectors

Please carefully choose the installation location and do not place the device near a heat source. In addition, please avoid placing the device in areas that may generate vibration, dust, moisture, or temperatures that are too high or too low.

Installation must be carried out by personnel who have received specialized training. Sufficient space should be reserved during installation to facilitate the installation of the detector and

avoid harming third parties. At the same time, the work site should be kept clean.

Please position the device away from areas that may generate electromagnetic interference, such as transformers or motors.

In order to obtain the best performance, the main body of equipment shall be fixed on the ground after installation, and the connecting wires between all equipment and power supply or external facilities must be properly fixed and protected to avoid sudden accidents that hurt the passing personnel.

Before the equipment is powered on, please check whether the supply voltage is consistent with the voltage specification indicated on the equipment. Different main voltages may damage the equipment. The main power supply shall be switched on only after all required connections have been made.

The power line connected to the mobile phone detector must be equipped with a switch or any other device that can disconnect the power supply.

If the equipment is powered by an external auto-transformer to normal voltage, ensure that the common terminal of the auto-transformer is connected to the central socket of the power supply circuit and grounded.

Do not disconnect the ground wire without permission. If the equipment is not grounded, it may cause damage under special circumstances.

Unplug the plug when disconnecting the power supply, do not pull the wire.

The standard power adapter is not waterproof: please place it in a ventilated and waterproof place (such as rainwater, condensation and other liquids may splash). In case of water, there is danger of electric shock and equipment damage.

Electronic parts of equipment may cause fire. Please do not install it in explosive and flammable environment to avoid contact with explosive and flammable substances. In case of fire, do not use water or foam to put out the fire when the equipment is still connected to the power supply.

Do not use in explosive environment in thunderstorm weather. Avoid contact with explosive and flammable substances.

Generally, periodic maintenance can be performed on the equipment (refer to the chapter "Maintenance" for details). Do not clean the equipment with water, detergent or chemicals. Wipe with a slightly wet, non-abrasive cloth. Disconnect all power connections before maintenance, cleaning or moving the equipment. Please read the chapter "Maintenance" carefully. No matter what kind of problem is encountered, only authorized designated service personnel can carry out maintenance. Any parts to be replaced shall be replaced with original parts. Live working on the equipment shall be avoided as far as possible, and if necessary, it shall be carried out by professionals who know the dangers.

Electromagnetic effects on human body. The equipment is preset ex-factory according to the current national application regulations. The installer shall be solely responsible for the consequences caused by changing the default value. For further information, please consult the after-sales service department.

identification



When operating or maintaining the equipment, please pay attention to this identification and refer to the current manual guidance to avoid possible damage.



For safe and correct use of this equipment, warnings or particularly important instructions in this manual are indicated by this mark.



Notes and tips are provided in this manual to optimize equipment performance.

Principles of warranty

The warranty principle applies to all products provided by the original factory under normal and specific sales terms. The Company reserves the right to make changes to the product itself (including programming), accessories and options, prices and terms of sale at any time and without notice.

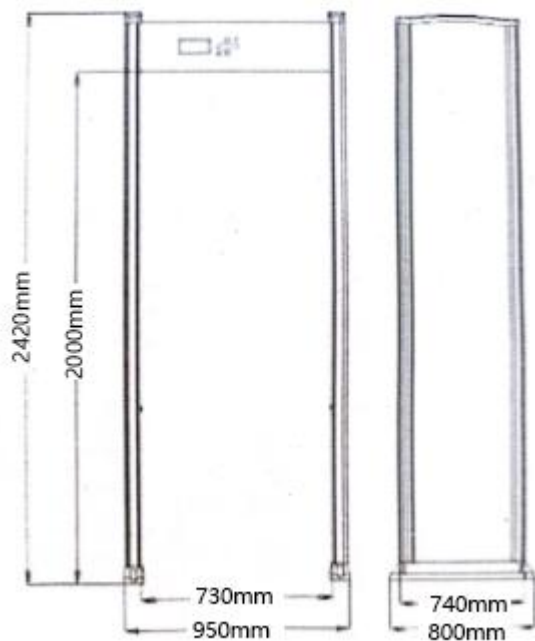
Please read the following precautions carefully before opening the package. If the equipment is not installed according to the operating procedures, our company will not be responsible for any failure of the equipment!

1.3. Electronic control unit

Compact and simple design, directly fixed on two side plates during installation.

1.4. Side plate

It is made of special synthetic material and equipped with specially designed transmitting and receiving coils inside to ensure uniform magnetic field distribution and high sensitivity detection.



1.5. technical parameter

Display	29-inch LCD Screen
Operating Environment	-20℃~50℃
Relative Humidity	0 - 95% (Non-Condensing)
Detection Channels	12 Channels
Zone Display	8/16 Zones
Power Supply	AC 100 - 240V, 50/60Hz
Passage Dimensions	2000mm (H) × 730mm (W) × 740mm (D)
Overall Dimensions	2420mm (H) × 950mm (W) × 800mm (D)

Power Consumption $\leq 50\text{W}$

Operating Frequency $4\sim 7\text{KHz}$

Weight $\leq 150\text{kg}$

Others: the outer body is made of waterproof and fireproof multi-layer plywood materials, and the bottom is provided with waterproof, moisture-proof and shockproof fasteners.

2. Installation

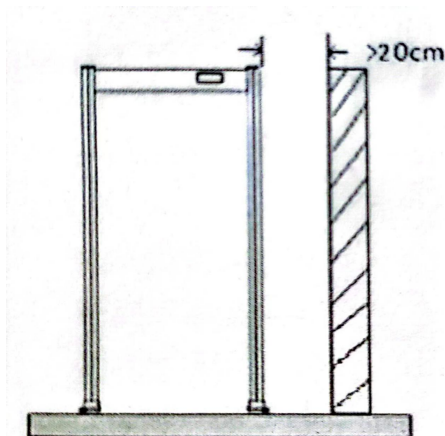
2.1. Precautions for installation

2.1.1. Selection of installation site

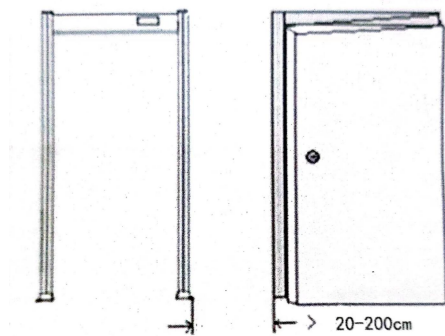
When planning to install a security gate, there are several important considerations. Only when these factors are taken into consideration, can the security gate be ensured to be in the optimal operation state and the maximum flow of people passing through the detection point, so as to minimize the role of different interference sources caused by the security gate during normal operation. Therefore, the following recommendations should be considered when selecting the installation site:

Fixed or immovable large metal objects shall be at least 20cm away from the security gate, which has little impact on the sensitivity, but may make the security gate more susceptible to vibration.

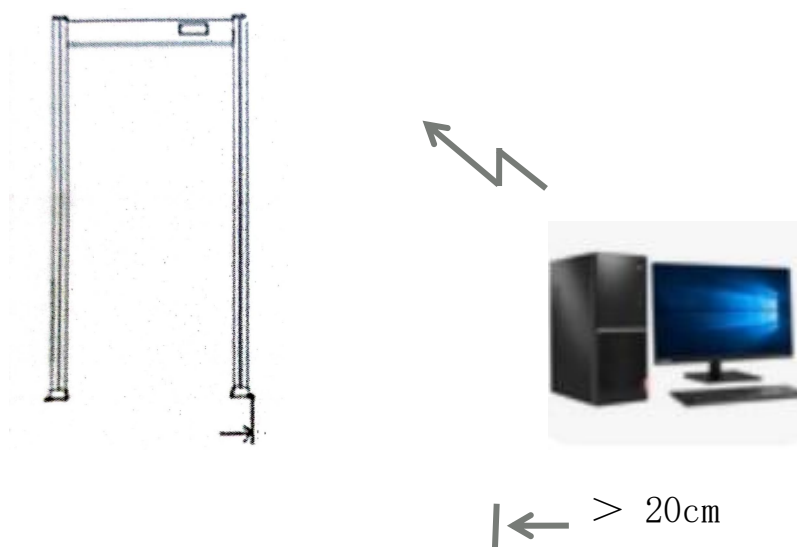
The ground shall be flat and firmly supported to prevent vibration. Especially when there is a vibrating metal machine structure under the ground, people may cause unnecessary alarm when passing through the security door.



Large metal objects moving outside the security door shall be kept 20~200cm away from the security door to avoid false alarm. Depending on the size of the metal object, the distance between the required moving metal object and the security door may vary.。



The distance between the electronic interference source and the detector shall be the maximum. The recommended minimum distance is 20 to 400 cm. However, the actual distance depends on the situation. For example, the location of the security gate and the interference source can be moved mutually until the best location is found. Disturbance may be caused by electronic control panels, radios and computers, image displays, high-power motors and transformers, AC wiring, thyristor control circuits, flash fluorescent tubes, arc welding equipment, etc.



Connect the power cord to a line that is not connected to other large loads (such as high-power motors). They may cause significant power or stamping impact in the circuit.。

2.1.2. Checkpoint layout

In order to achieve maximum pedestrian flow, the layout of security checkpoints should be carefully deployed before installing equipment. In addition to considering mechanical and electronic interference factors at the security checkpoint (refer to 2.1.1), effective security checks should be organized appropriately. The functionality of checkpoints is largely influenced by the following factors:

Arrange a waiting queue for entering the security checkpoint, so that only one person is inside the checkpoint at a time;

The search for detected metal objects should not interfere with the normal inspection operation of the security checkpoint;

Hand luggage should be checked to avoid false alarms;

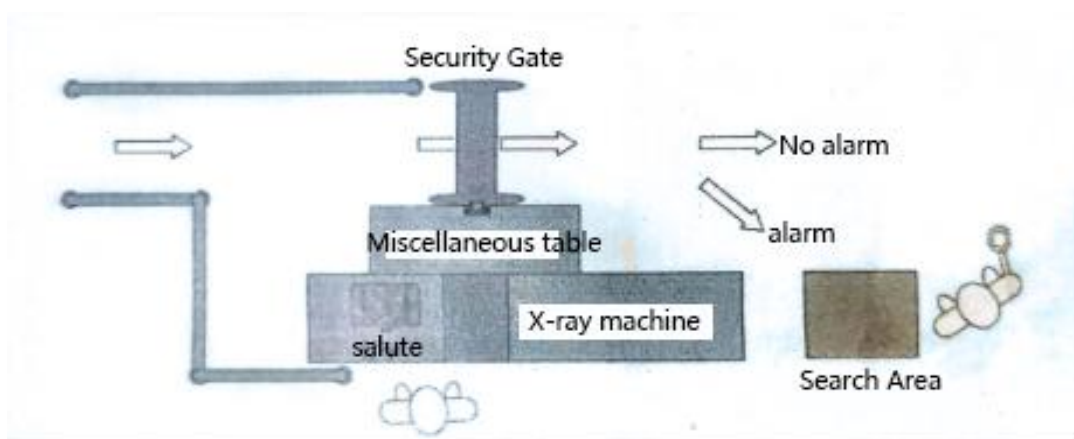


Image: Example of Security Checkpoint Layout

If there is no X-ray machine, the luggage should be checked manually;

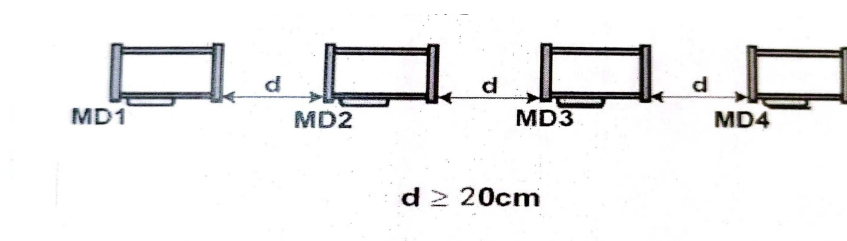
Alternatively, if it is not possible or necessary to arrange for inspection (such as in offices, banks, etc.), items can be placed in the storage cabinet in front of the security checkpoint.

2.2. Installation requirements for using two or more security gates simultaneously

When two or more security gates are used simultaneously within a 10cm range, in order to avoid mutual interference, the channel selection function in the program must be used to reasonably set the transmission frequency of the security gates.

When two or more security gates are used side by side, the distance between adjacent gates is shown in the following figure. In the picture, MD represents the security checkpoint, and the numbers following represent their serial numbers.

When multiple doors are arranged side by side, the minimum distance between two security gates is 20 centimeters (depending on sensitivity requirements and frequency interactions)



2.3. Installation of security checkpoint

- When opening the packaging, all items inside the box should be handled with care. The accessories (screws, wrenches, etc.) required for the installation of the security checkpoint are included with the equipment, please make sure to count them.
- Choose a reasonable installation location based on the flow and

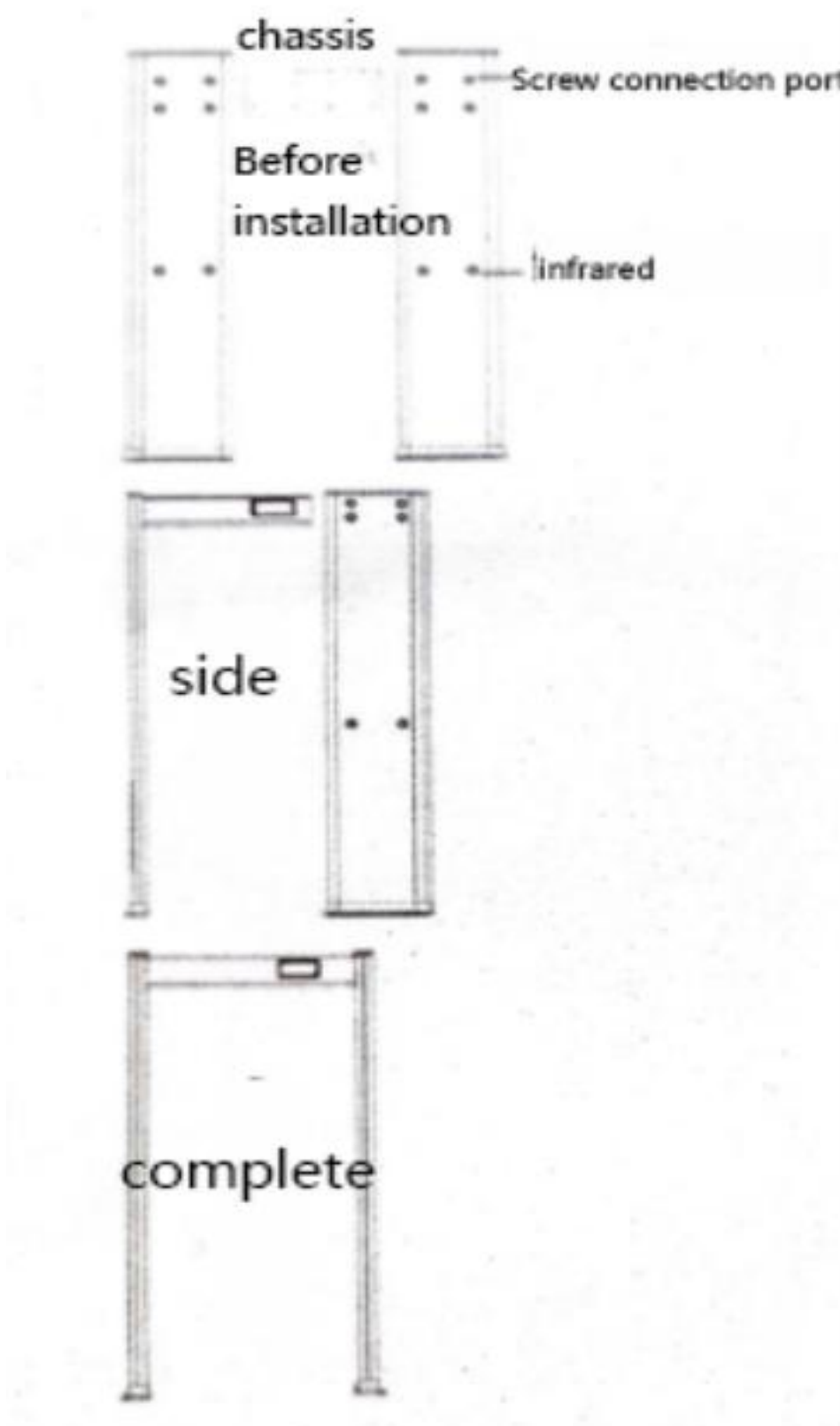
direction of the detected object.

- When assembling the security check door, attention should be paid to the fastening between each component. After the security check door is erected, it should be checked whether the two door panels are perpendicular to the ground and whether the distance between the upper and lower parts of the two door panels is equal.
- The security checkpoint entering the work position must be kept stable. There should be no vibration or movement of metal structures near the security checkpoint.
- Strictly prohibit drilling holes or inserting screws in any part of the security checkpoint.
- Before connecting the power supply, it is necessary to check whether the local power supply voltage matches the input voltage indicated on the security door power adapter.
- Warning: Using the wrong power supply voltage may cause damage to the security checkpoint.
- Avoid the movement of metal objects within 70 centimeters of the detector.
- Avoid wires passing through within 50 centimeters of the detector.
- Note: The above distances are only recommended values, and the specific interference situation needs to be evaluated during installation

install:

- 1、Connect the main chassis to the door side panel with screws and tighten them with a special wrench.

- 2、Connect the electronic control unit cable to the door side panel.
- Attention: The cable plugs connecting the two side panels of the door are the same, be sure not to plug them in incorrectly



➤ Assembly diagram

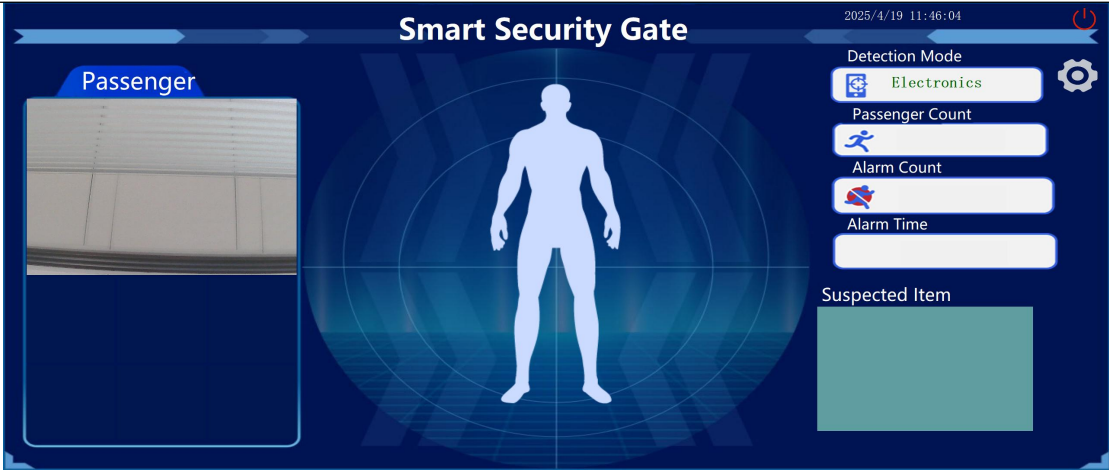
3.Startup, screen display, and program settings

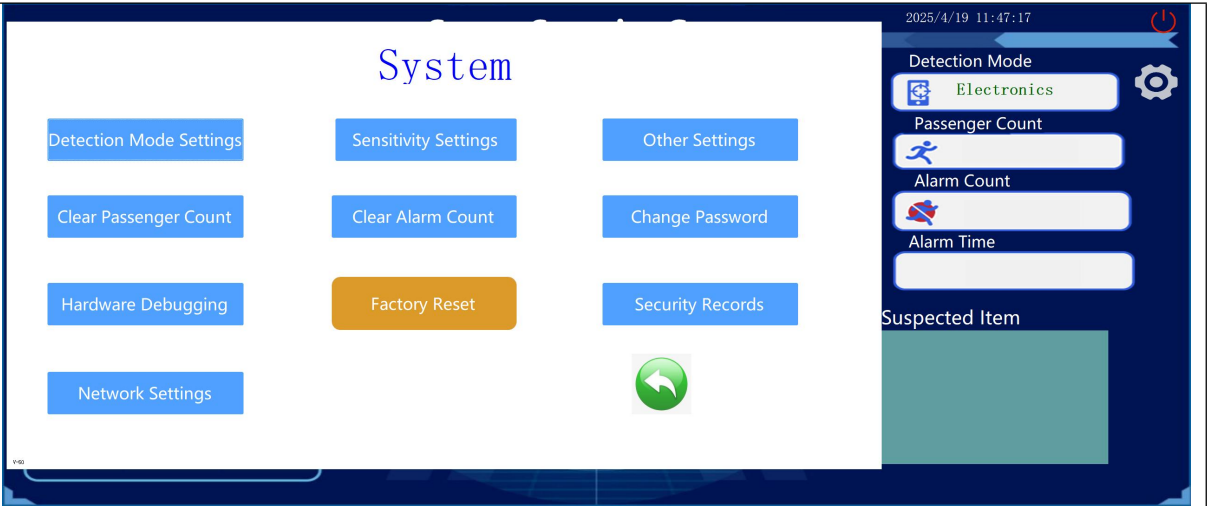
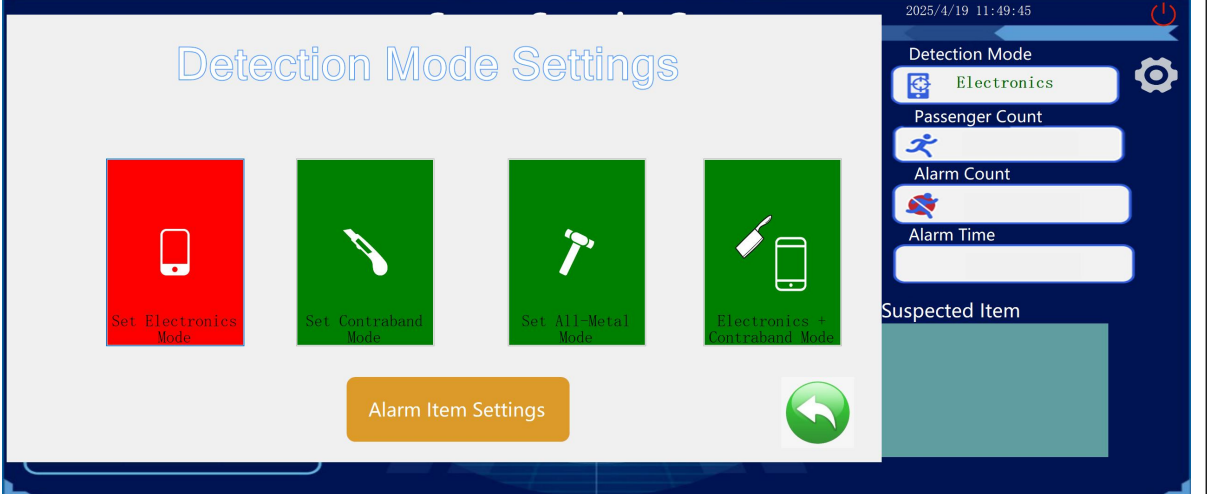
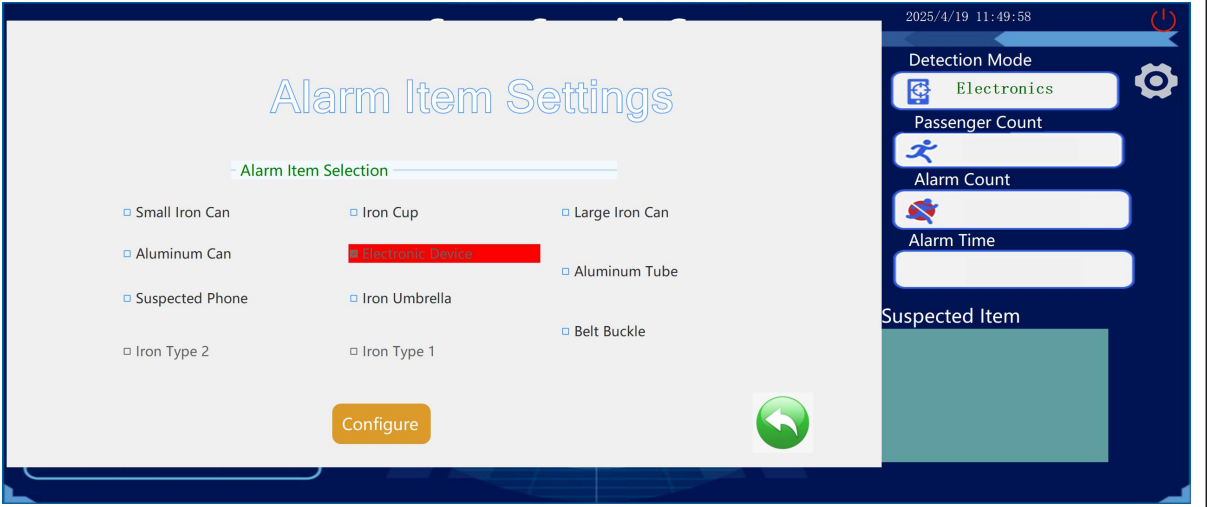
3.1. Power on the security checkpoint and turn it on

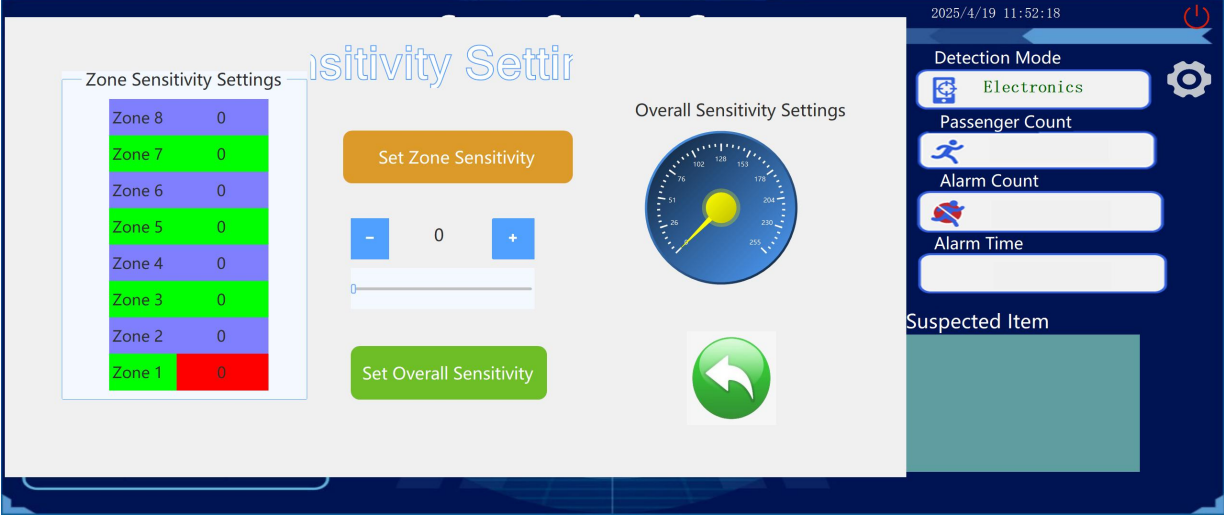
Please refer to the attached image for the power interface section. After connecting the power, the security checkpoint will emit a detection alarm sound for a few seconds and display the following content on the LCD screen:

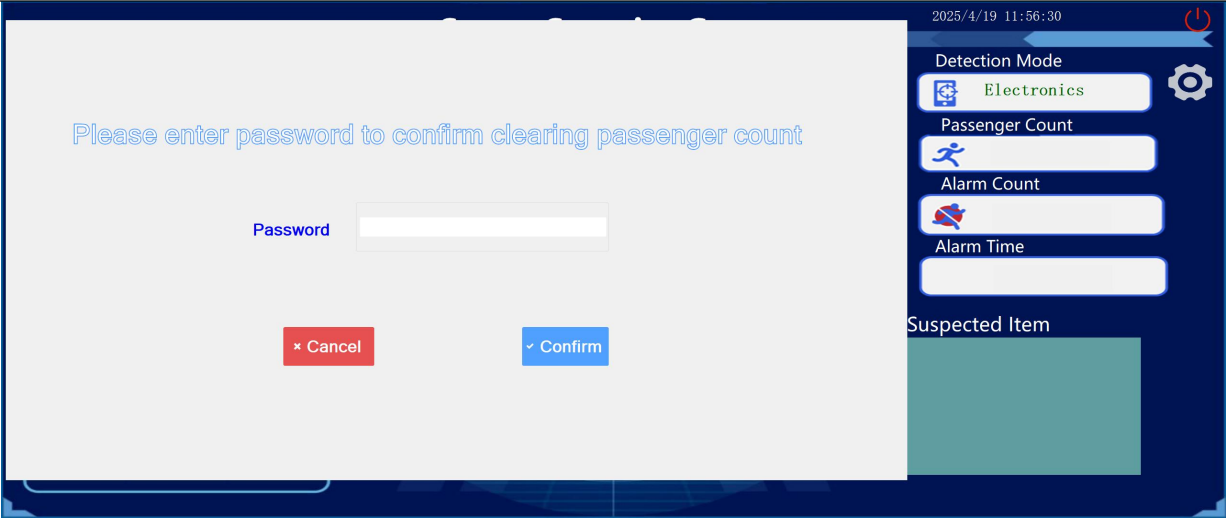
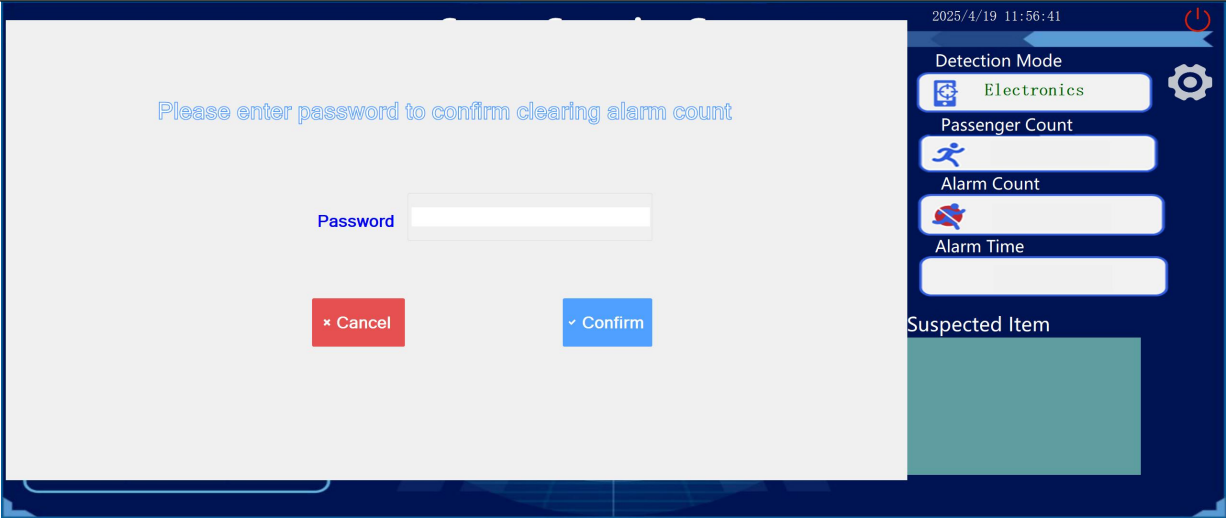
	Power input interface: Voltage: AC176~240V Frequency: 50-60Hz Note: Reserved power socket on the left side panel
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3.2. Screen display information and program setting
operation instructions

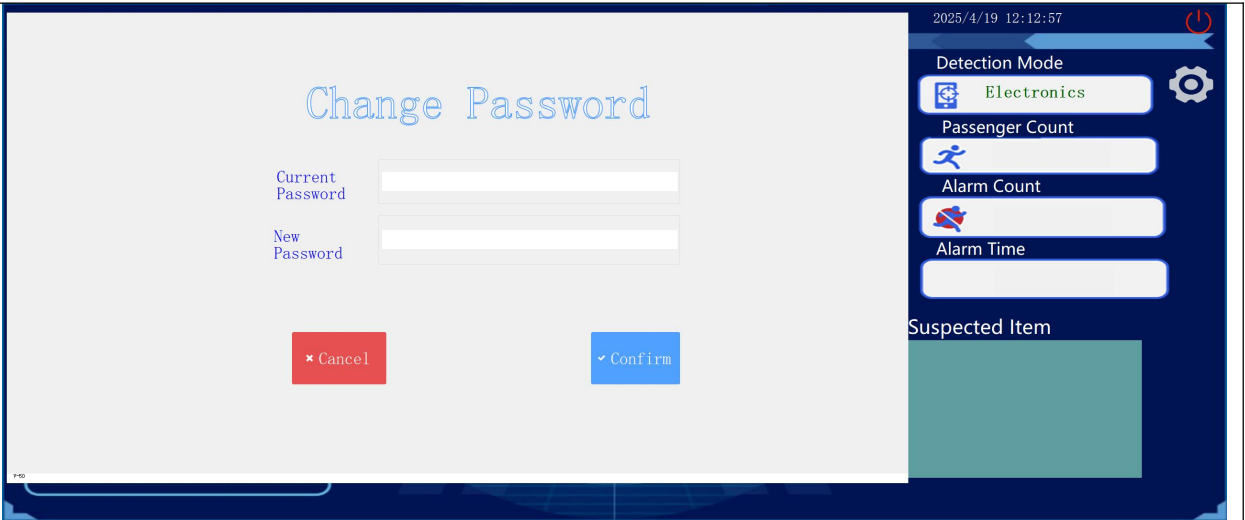
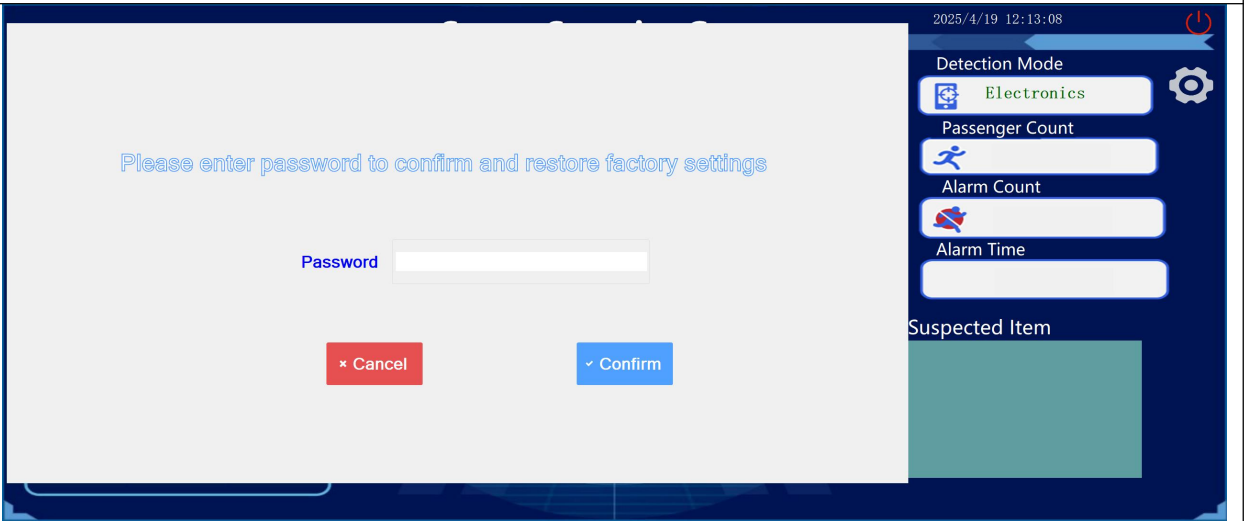
main interface	
describe	Operation control interface: 【Passenger Count】 : The number of people passing through the security checkpoint, including those who passed normally and those who reported to the police; 【Alarm Count】 : The number of people who reported to the police when passing through the security checkpoint; 【Alarm Time】 : The time when the last alarm passed; 【Detection Mode】: Adapt to various scenarios with adjustable modes; 【Passenger】 : Facial image of the alarm when passing through the security checkpoint and saving it locally; 【System settings】 : Click on Settings to enter System Settings.

System settings	
describe	Set functional parameters.
Detection Mode Settings	 
describe	Application scenarios:

	1、Multiple work scenarios can be set according to usage needs; 2、Click to select the desired work scenario; 3、Select the alarm item, check it to indicate that the alarm is selected, and if it is not checked, no alarm will be triggered; 4、click  Exit program settings.
Sensitivity Settings	
describe	Overall Sensitivity Settings: Total sensitivity setting - Set the sensitivity of all defense zones. When changing the overall sensitivity parameter, the detection sensitivity of all defense zones will change accordingly; The total sensitivity parameter setting range is 0-255, with higher values indicating higher sensitivity. When set to 0, the sensitivity of all areas of the security checkpoint will be closed. After the setting is completed, confirm the saved parameters and the total sensitivity will become the current set value.
describe	Zone Sensitivity Settings: Sensitivity settings can be made for each independent defense zone. Setting this parameter only changes the sensitivity of the current

	selected area, and does not affect the sensitivity of other independent defense zones. Sensitivity value range: 0–255, the larger the value, the higher the sensitivity. When set to 0, it means the sensitivity of the area is turned off. After the setting is completed, confirm by saving the parameters and the sensitivity will change to the current set value.
Clear Passenger Count	
describe	Operation steps: 1、Select to clear the number of detection personnel; 2、Enter the confirmation password (default initial password is 000000).
Clear Alarm Count	

describe	Operation steps: 1、 Select to clear the number of alarm personnel; 2、 Enter the confirmation password (default initial password is 000000).
Other Settings	
describe	Operation steps: 1、 Channel: After directly clicking on the channel to be set (1-12), press save channel; 2、 Volume: Choose the appropriate volume (1-100); 3、 Tone: Choose the appropriate tone (1-10); 4、 Brightness: Choose the appropriate screen brightness (1-100); 5、 Door Header Indicator:Color of standby state light.

Change Password	
describe	Operation steps: 1、 Enter original password; 2、 Enter new password; 3、 Enter confirmation;
Factory Reset	
describe	Operation steps: 1、 Input password(000000) ;

3.3. Location display

The characteristic of the security checkpoint is that it can display the relative height of metal items passing through the security checkpoint through the LED installed on the door panel. When an alarm is triggered, one or more sets of light-emitting diodes that make up the alarm indicator will light up to indicate the location of the detected metal object.

In the absence of an alarm, a set of power indicator lights can be seen at the top of the alarm indicator – the indicator lights remain on continuously, and both door panels have alarm indicators.



Image: Display mode of alarm for a single metal item, display mode of alarm for two metal items, and power light.

In the multi fixed location display mode, the alarm threshold for each location can be set separately by the "location sensitivity" parameter.



When a metal object is detected in the 8-zone display mode, the indicator light for one of the four zones with a fixed position and height will light up.

3.4. Energy saving mode and standby mode

The security checkpoint can be powered off through program instructions without using a power switch, which puts the equipment in a "standby state" where power consumption is minimal.

If no one passes through the security checkpoint within 5 minutes in normal working mode, it will automatically enter energy-saving mode. When someone passes through, it will automatically return to normal working mode. In the multi fixed location display mode, the alarm threshold for each location can be set separately by the sensitivity parameters of each defense zone. Location display method: When a metal object is detected, one or several location and height fixed location indicator lights will light up in the location.

4. Maintenance, upkeep, and after-sales service

The through type security checkpoint is a high-tech electrical device. Therefore, users not only need to understand the technical performance, structural principles, and operating procedures of the machine, but also need to be good at daily maintenance and upkeep work in order to fully utilize its efficiency, extend its service life, and ensure the safety of equipment and personnel

4.1. Daily maintenance and upkeep

- (1) To ensure that the actual working condition of the equipment is consistent with the technical specifications in the manual, the equipment should be regularly inspected and adjusted accordingly. Maintenance work must be carried out by personnel who have received relevant training and are recognized by our company.
- (2) During the hardware maintenance process of the equipment, it must be carried out only after the power is turned off. Specific daily maintenance and upkeep tasks.
- (3) The equipment should be installed in a well ventilated, dust-free, and dry environment, avoiding high temperatures, humidity, and direct sunlight exposure.
- (4) During maintenance, first remove dust from the equipment and use a brush, vacuum cleaner, and soft cloth to clean the dust thoroughly.
- (5) If any loose parts or connectors are found, they should be tightened immediately.

- (6) If any component is damaged, the cause should be identified, the fault should be eliminated, and then a new component should be replaced. After replacing the components, the relevant parameters need to be adjusted before they can be used normally.
- (7) During maintenance, foreign objects or liquids should not be allowed to enter the equipment to prevent electrical leakage or accidents.

4.2. Repair and maintenance safety precautions

(1) During the maintenance and repair process, no foreign objects or liquids should enter the equipment to avoid causing damage or safety accidents.

(2) Equipment maintenance must be carried out during power outages. If live operation is required, it must be carried out by personnel who have received relevant training, and measures must be taken to prevent electric shock.

(3) There are a large number of precision electronic components in the equipment, and preparations should be made to prevent static electricity from damaging the components before maintenance.

(4) Before powering on the equipment, it should be carefully checked again to confirm that the wiring is correct and there are no misconnections or short circuits.

4.3. Storage conditions, storage period, and precautions

1. The equipment should be stored in a ventilated, clean, and dry place, as overheating and excessive humidity can damage system components. If the equipment is not used for a long time, it should be stored in its original packaging box.

2. The storage environment conditions of the equipment must be able to be stored for less than 15 weeks under environmental conditions that do not exceed the following range during transportation or storage packaging.
3. Storage temperature: -20°C ~ $+60^{\circ}\text{C}$ (non condensing) Humidity: 20%~95%
4. Equipment that needs to be stored for a long time should have good storage conditions. The warehouse should be clean, dry, well ventilated, and free of corrosive gases. The relative humidity should not exceed 80%. The equipment should be placed inside the packaging box.
5. When using the security checkpoint, do not touch or hit the door post to avoid false alarms or damage.
6. If there is dust, it can be gently wiped with a damp cloth or alcohol, and cannot be directly cleaned with water or other chemical solvents.

4.4. After sales service matters

Thank you very much for choosing our company's equipment. Our company will provide you with high-quality after-sales service.

1、You can enjoy the following services:

Immediate response: 24/7 hotline support (13823268812), reply within 4 hours, arrive within 24-48 hours.

Lifetime service: Our company's joint guarantee agency can provide long-term technical consultation, training, product technology upgrades, etc. for users.

2、The following situations are not covered by the warranty, but paid repair services can be provided:

(1) The trademark nameplate or serial number of the equipment or accessory is removed or modified.

(2) Damage caused by improper use, maintenance, and storage by the user.

(3) Damage caused by force majeure.

(4) Non designated maintenance unit or unauthorized disassembly and repair.

(5) Combining or assembling equipment not provided by our company, unless expressly approved in writing by our company.

(6) Technical indicators may change without prior notice due to continuous product improvement.

packing list

Item	Unit	Qty	Item	Unit	Qty
Transmitter Panel	Unit	1	Receiver Panel	Unit	1
Main Chassis	Unit	1	1.5m Power Cable	Pc	1
Assembly Screws	Pc	8	Network Camera	Unit	1
mouse	Pc	1	M6×80 Expansion Bolts	Pc	4
User Manual	Copy	1	Warranty Card	Copy	1

Disclaimers

Accuracy Limitation

While every effort has been made to ensure the accuracy and completeness of this manual, the company cannot guarantee the absence of omissions or interpretive errors.

Modification Rights

The company reserves the right to modify product hardware and software without prior notice or documentation updates.

Interpretation Authority

All final interpretations of this manual's content remain exclusively with the company.

FCC Statement

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.

Note: 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 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.