



HF RFID Library Gate

User Manual

- ◆ Before you use this product, please carefully read this manual and properly keep it for future reference.
- ◆ As our products continue improving, they may be changed without advanced notice.
- ◆ The contents of this manual have been carefully checked. For any printing error or misunderstanding content, please contact us as soon as possible.

Version: V1.1

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1 Notice before Use

- There should not be strong mechanical driving equipment around the installation position of the RFID library gate, such as transformers and generators. These equipment can generate noise and affect the normal performance of the antenna.
- Determine the independence of each gate and do not allow other cables to touch the gate, such as power lines, power supply lines and signal lines of other systems.
- There must be no other equipment of the same frequency (13.56MHz) around the gate.
- When plugging and unplugging the connection wires of the gate, the gate must be powered off firstly, please do not plug and unplug the terminal on the gate with power to avoid damaging.
- Make sure that the gates are placed and wired correctly before powering on.

When installing the gates, pay attention to the orientation of the gate equipment box, all facing the same direction (the side with the status indicator should face the same direction and the inconsistent orientation is prohibited).

2 Applicable Models

This user manual applies to the operating instructions of LSG426 HF library gate:



LSG426

3 Overview

3.1 Product Introduction

LSG426 HF library gate is an anti-theft alarm device specially designed for domestic and foreign public and college libraries. This product can quickly detect electronic tags in three dimensions in the sensing area of the antenna. This product supports the electronic tags of multiple manufacturers that comply with the ISO15693 standard. It supports two modes of active alarm and passive alarm. In active alarm mode, it supports AFI, EAS and EAS + AFI alarm. This product can be widely used in the entrance / exit for anti-theft in libraries / archives and brand clothing stores, etc.

3.2 Product Features

- Novel design, more concise products.
- New system structure design, breaking the traditional system structure framework.
- Unique antenna design makes the tag reading faster, the reading rate higher and the reading distance longer.
- Independent control host, real-time communication with external equipment and gate equipment.
- Rich external communication interfaces (USB, serial port, Ethernet), support multiple modes access.
- Large-capacity data storage function.
- Ethernet supports TCP protocol and supports active notification mode.
- Use safe power design to achieve multidimensional safety.
- Rich I / O interface, software configuration can be linked with peripherals.

- New gates searching design makes system configuration more convenient.
- Support online upgrade function, easier maintenance.
- Connect the gate through mobile phone to set and check the status (the mobile phone and the gate are on the same network segment).
- Offline mode can reach a maximum distance at 140cm.
- EAS mode supports more types of tag detection, NXP ICODE series, ST, Fudan Microelectronic tags.
- Support noise detection and standing wave detection for each gate.
- Support external serial display, real-time to know human traffic information (optional).
- The new pedal design has compatibility with multiple aisle widths; it has the functions of anti-slip and anti-squeak; the installation and wiring of the gates is simpler.

3.3 Product Parameters

Table 1 Description for Technical Parameters

Technical Parameters	
Operating Frequency	13.56 MHz
Protocol	ISO 15693
Anti-theft Modes	AFI
	EAS
	EAS &AFI
Tags Type in EAS Alarm	NXP ICODE series, ST, Fudan Microelectronic tags
Alarm Function	Support
Alarm Modes	Active and passive modes

Alarm Method	Sound-light Alarm
Storage Capacity of Alarm Records	>100000 records
Storage Capacity of Daily People Counting Records	>3500 records
Noise Detection	Support
People Counting	Support
Display Screen	Support (optional)
Gate Searching Method	Automatic Searching
Aisle Width	90~140CM, suggest 90~120CM
Communication Interface	Ethernet
	RS232
	USB
Power Supply	AC 100~240V 50~60Hz
Maximum Power Consumption	25W
Housing Material	Acrylic, Aluminum and Sheet Metal
Waterproof	Not Support
Dimensions	External: 1660*567*120mm
	Base: 629*120*16mm

Note:

- ① Dimensions are approximate. For specific dimension, please refer to the real object;
- ② As our products continue improving, technical parameters may be changed without advanced Note.

3.4 Product Structure

Note: LSG426 HF library gates are divided into SC gate, M gate and S gate.
The internal structure is as follows:

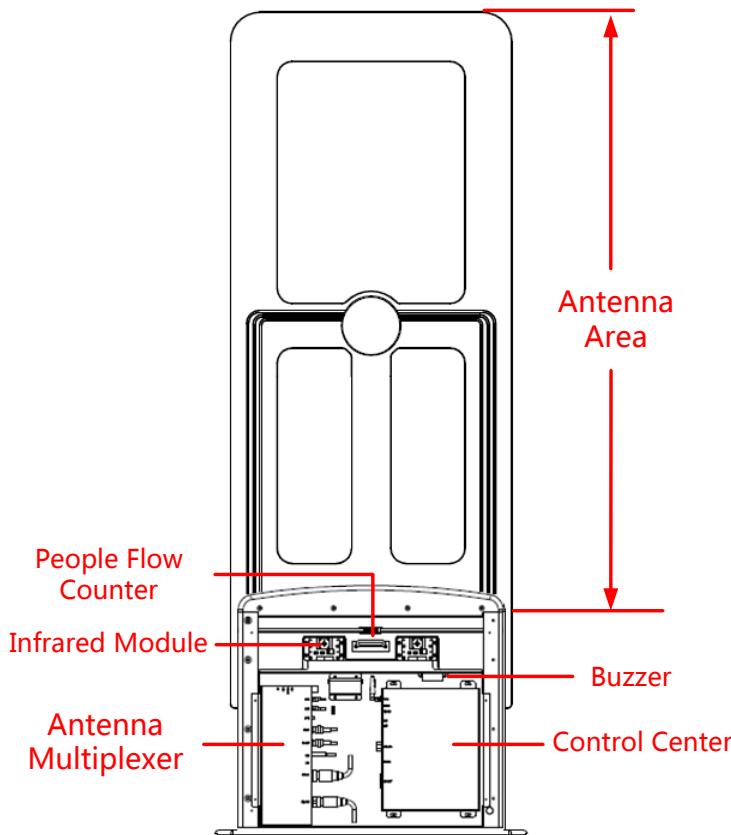


Figure 1 SC Gate Structure

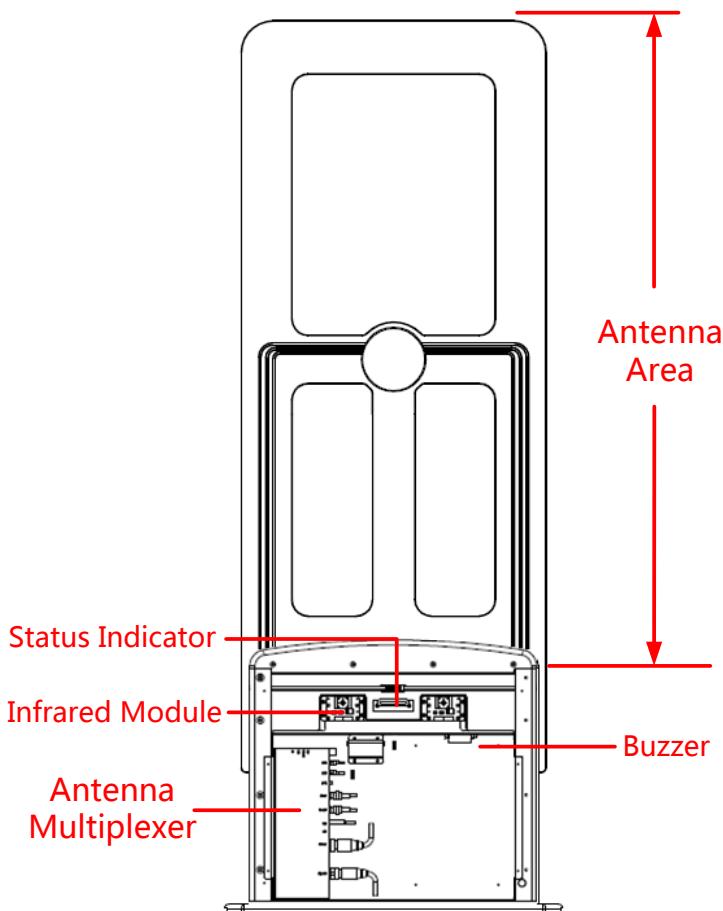


Figure 2 S Gate Structure

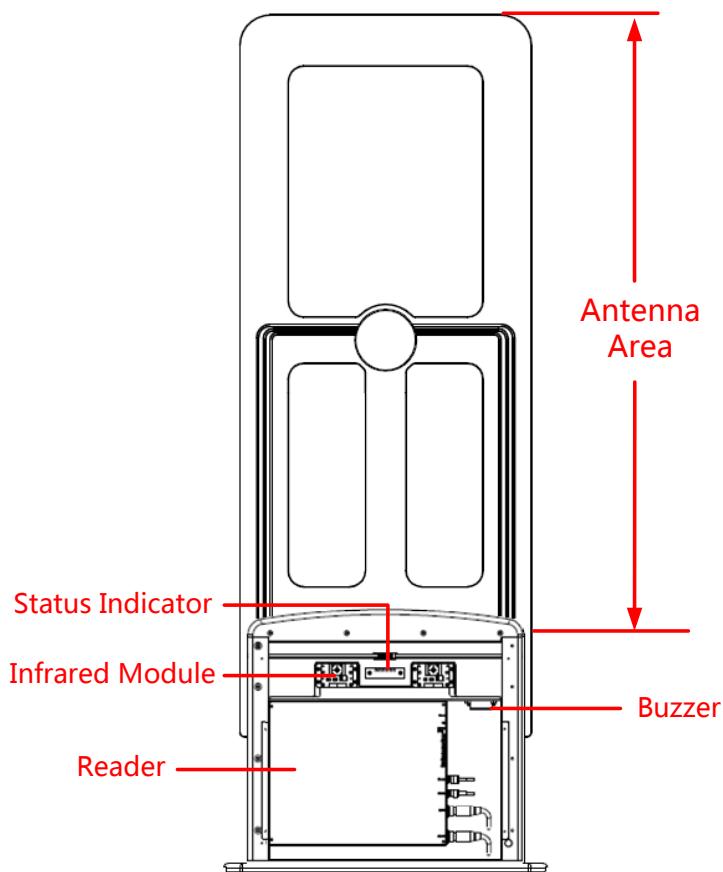


Figure 3 M Gate Structure

4 Indicator Description

- Status indicator

RFID library gate equipment boxes are equipped with status indicators, there are 6 indicators at M gate, SC gate / S gate only has work indicator and error indicator, as shown below:

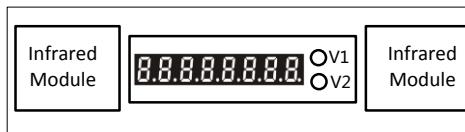


Figure 4 SC gate flow counter and indicator light

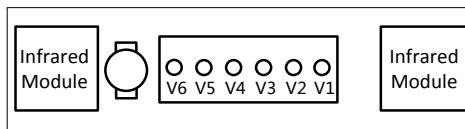


Figure 5 M gate /S gate indicator light (S gate only has V1 and V2 indicator lights)

Indicator description is as show below:

Table 2 Indicator Description

Indicator	Indicator Name	Function Description
V1	Work Indicator	The gate works normally, the light flashes blue . Abnormally, the light is off.
V2	Error Indicator	When there is an error in the operation of the internal program of the gate, the light is red , otherwise, the light is off
V3	Tag Detection Indicator	When a tag is detected, the light flashes orange, otherwise, the light is off.
V4	Infrared Indicator	If it is steady green , it means that the infrared module of the previous gate is aligned. If it is off or flashing, it means that it is not aligned. You need to adjust the position of the two gates slightly.
V5	Infrared Indicator	If it is steady green , it means that the infrared module of the next gate is aligned. If it is off or flashing, it means that it is not aligned. You need to adjust the position of the two gates slightly.

V6	Reserved	/
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Note: When aligning the infrared module, only the above two infrared indicators are green, and the blue light of the infrared receiving module on the M gate is always on, it could be determined that it is really aligned.

- Description of people flow counter display:

 - Flow of visitors (E. 0 0 0 0 0 0 0)

"E" means the number of people entering the library that day; the following seven digits indicate the number of people entering the library.

 - Cumulative visitor flow (F. 0 0 0 0 0 0 0)

"F" means the cumulative number of people entering the library; the following seven digits indicate the cumulative number of people.

5 Use PC Configuration Tool

5.1 Connecting control center of the gate with PC

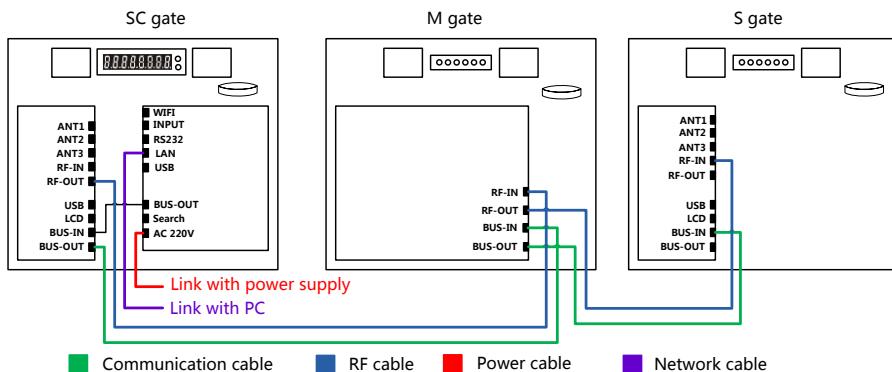


Figure 6 LAN port connect between PC and gate

This product supports Ethernet, USB and serial communication. The following description uses the network port connection as an example:

After connecting the gate and the debugging computer with a network cable (when directly connected, the debugging computer IP must be set to a static IP), open the R-TOOL configuration software → pop up the search devices interface → communication interface: select the network communication (if using USB or serial communication, then select the corresponding communication interface, and then click the search button to search for the device.) → Click the ellipsis button behind the IP address to enter the Ethernet IP discovery interface, as shown below:

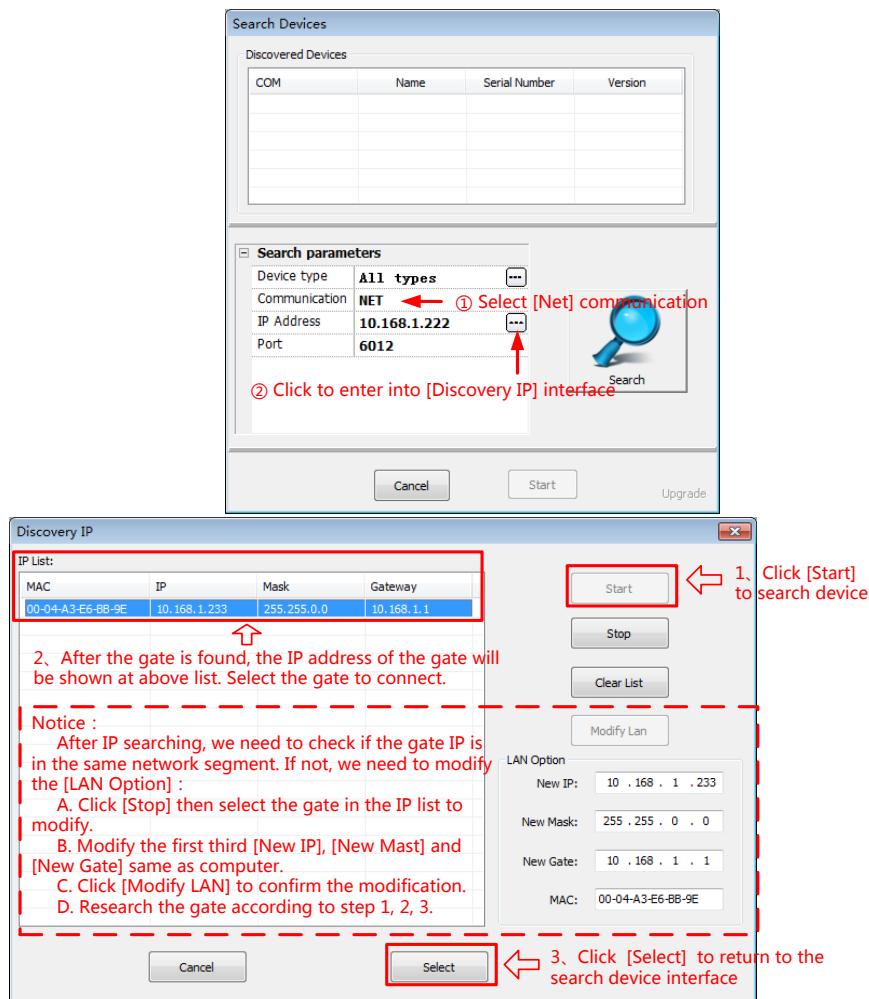


Figure 7 Software Interface Using LAN Port

Click [Start], the gate IP address and other information will be displayed in the IP list, select the IP address to connect (Set the sub-net mask, gateway and the first third IP of the gate as same as those on the computer, then search again.) Click [Select] to return to the [Search Devices], **select the port number as 6012** and click [Search]. After that, click the [Start] to enter the configuration interface:

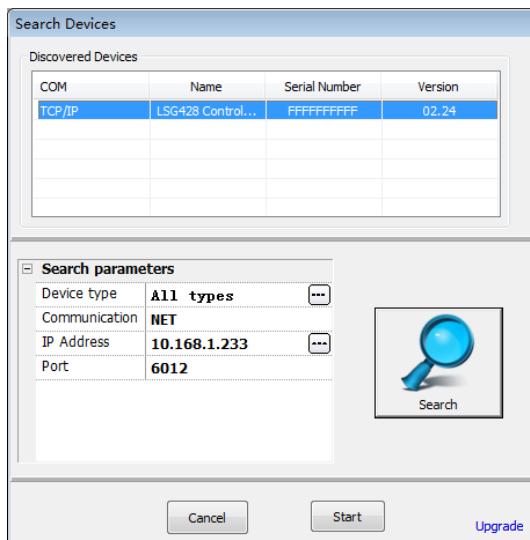


Figure 8 Interface for Successfully Searching for Devices

5.2 Search Gate

After the software and the device are successfully connected, enter the R-TOOL software setting interface, click [Search Gate] to search for the online gate, click [Save] after the searching is completed. Then you can perform synchronous configuration when configuring the gate parameters.

Note: When each gate is used for the first time, or after the gate positions are changed, or added or reduced, a search operation is required to make the gate system for normal using. This system can also be configured before shipment according to the customer's needs which can be confirmed with our sales staff.

Steps: Click [Search Gate] → click [Search Again] → search interface displays all connected gates → click [Save] to complete the search of gates → click [Current Status], all gates are shown online for normal use.

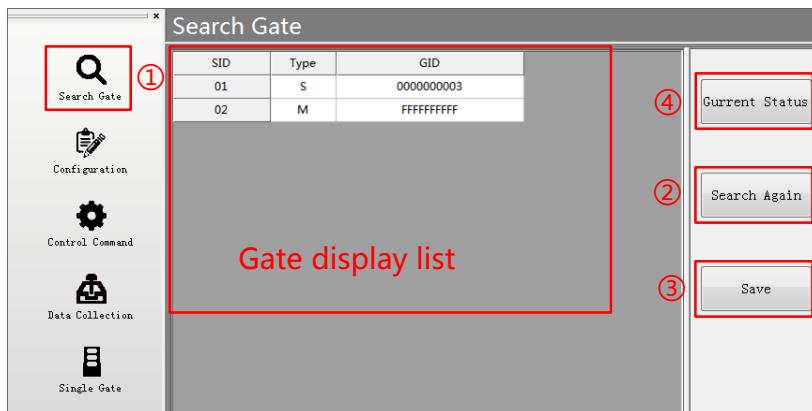


Figure 9 Search Interface for Online Gates

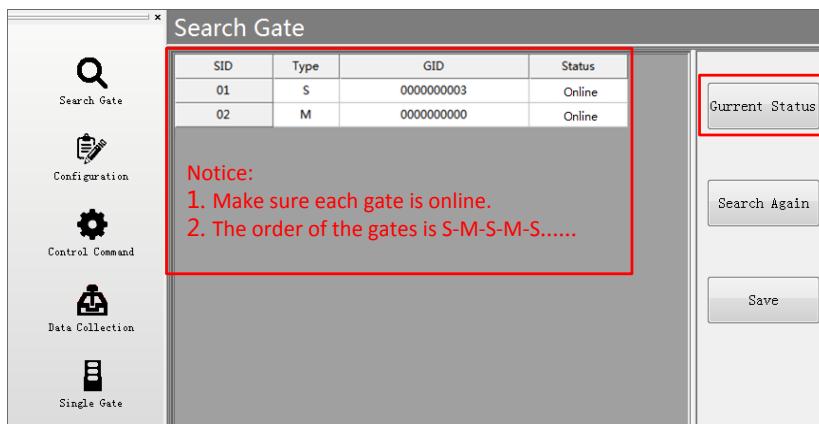


Figure 10 Interface for Getting Current Gate Status

5.3 Parameters Configuration

After searching the online gates, click [Configuration] to configure the gate's IP address, alarm mode, alarm conditions, RF power and other parameters. In this gate system, the parameter setting only needs to be set at the first use. After the setting is completed, all parameters can be configured synchronously:

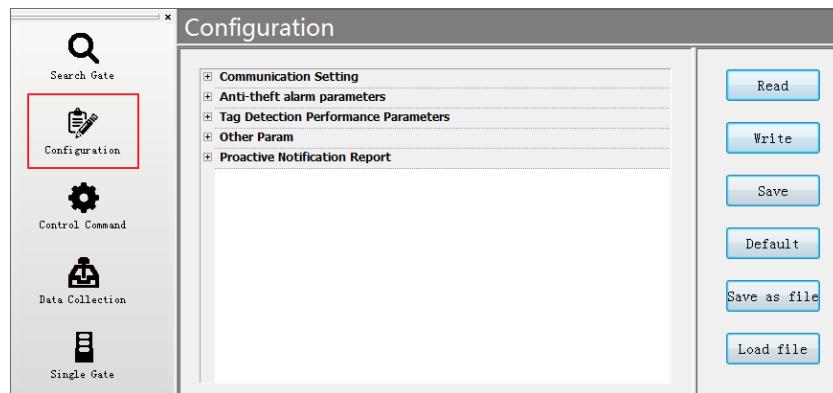


Figure 11 Interface for Configuration

Note: After changing configuration parameters, it is must to click [Write] then [Save] button, otherwise the setting is unsuccessful.

5.3.1 Communication Setting

Click [Communication], you can set the serial port communication parameters and network communication parameters of the device. After saving, it needs to restart the device to take effect.

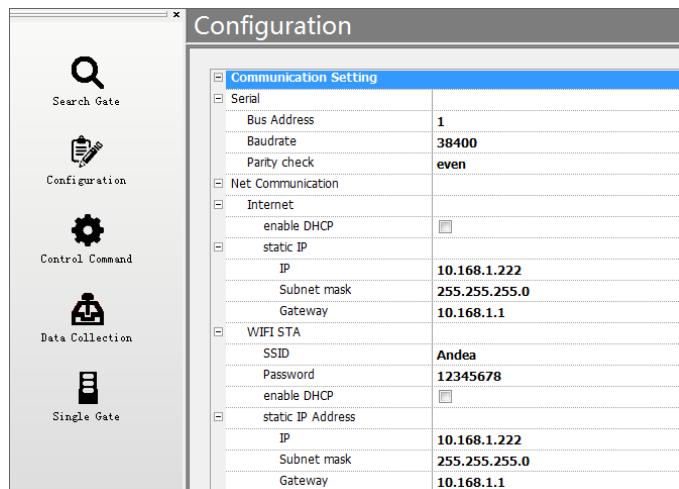


Figure 12 Setting Interface for Communication

Table 3 Description for Communication Setting

Setting Options		Description
Serial Port	Bus Address	Serial bus address, default: 1
	Baud Rate	Serial baud rate, default: 38400
	Frame	Serial port calibration mode, default: even parity
Network	Ethernet	<p>Enable DHCP. If checked, the IP address will be assigned automatically. Default: Disable</p> <p>Static address: IP address: Specify the static IP address of the control center. Default: 10.168.1.222</p> <p>Subnet mask: Specify the subnet mask of the control center. Default: 255.255.255.0</p> <p>Gateway: Specify the gateway of the control center. Default: 10.168.1.1</p>

5.3.2 Anti-theft Alarm Parameters

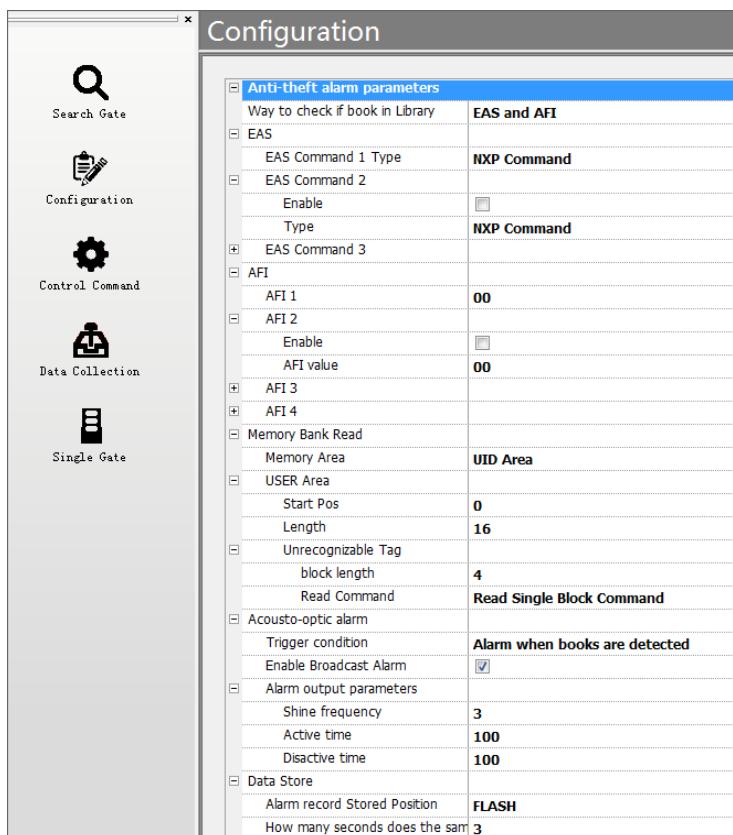


Figure 13 Setting Interface for Anti-theft Alarm Parameters

Table 4 Description for Anti-theft Alarm Parameters Setting

Setting Options		Description
Detection Method - Way to check if book in	Detect EAS bit	Detect the EAS status of the tag. When using the tag EAS function for alarm detection, you need to turn on the EAS function of the tag to indicate that it is an illegal tag. At this moment, the tag can be detected and alarmed through the gate.

library	Detect AFI value	Detect and match the AFI value of the tag. If the AFI value of the tag is the same as the AFI value set by the gate, an alarm is issued. Default: Use this. Note: When the gate detection AFI value is set to 00, all tags will alarm and 00 means no tags will be filtered.
	Detect EAS and AFI	Detect both EAS and AFI.
EAS	EAS Command 1	EAS command type. It is used to detect the EAS status. You must select the correct EAS command according to different tag types to correctly detect the EAS status. It is enabled by default. Default type: NXP Command, also optional: FM or ST type
	EAS Command 2	Disabled by default, default type: NXP Command, also optional: FM or ST type
	EAS Command 3	Disabled by default, default type: NXP Command, also optional: FM or ST type
AFI	AFI 1	Enabled by default, default AFI value: 00
	AFI 2	Enabled: Disabled by default
	... AFI 4	Default AFI value: 00
Memory Bank Option	Memory area	None: Do not read data from UID and USER area UID area: only read tag UID area (default setting) USER area: only read tag USER area UID and USER area: read UID and USER area
	Start Pos	Offset byte of the barcode data in the data block, the default value is 0x00
	Length	The length of the barcode data, the default value is 16
	User Area Unrecognizable Tag	Data block length: the number of bytes in each block, NXPICODE SLI series chips are 4 bytes per block. Read command: For unrecognized tags, we do not know whether it supports read single block and read multiple block instructions. If both are supported, then select read multiple blocks.
Acousto-optic Alarm	Trigger condition	Can be set to trigger an alarm under the following conditions: 1. None - No sound and light alarm is triggered, and the alarm is triggered by an external command. 2. Alarm when books are detected - Alarm when a book is

		detected (default setting) 3. Alarm when reading UID and barcode - Read the UID and barcode data before alarming
	Enable broadcast alarm	Tick for broadcast, all gates alarm when a book is detected. Untick, only the specific detecting gate alarms. Default broadcast.
	Alarm parameters output	Flashing frequency: 3 times by default Activation time: unit ms, default 100 Invalid time: unit ms, default 100
	Closer buzzer	Tick to turn off the buzzer. Default: untick
Data Store	Alarm record stored position	By default FLASH , the alarm record is saved in flash and it will not disappear at any time. It can be read at any time. Optional RAM, the alarm record is saved in RAM. It will disappear after power failure, and the old record will be overwritten after overflow. So, it needs to read in real time.
	How many seconds does the same tag saved only one record	The same UID alarm filtering interval. The default is 3S. If the alarm is the same tag within 3S, only one alarm record is generated.

5.3.3 Tag Detection Performance Parameters

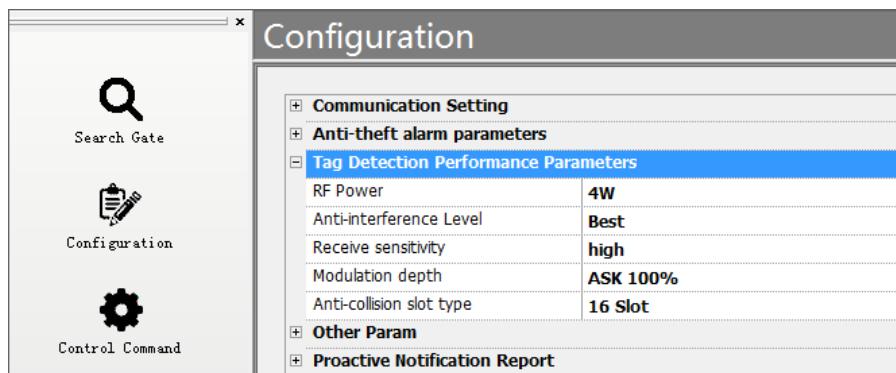


Figure 14 Setting Interface for Parameters of Tag Detection Performance

Table 5 Description for Parameters Setting of Tag Detection Performance

Setting Options	Description
RF Power	Set the RF power of the gate. Default: 4W
Anti-interference Level	Default: best performance
Receive Sensitivity	Default: High
Modulation Depth	Default: ASK 100%
Anti-collision Slot Type	Default: 16 Slot

5.3.4 Other Parameters

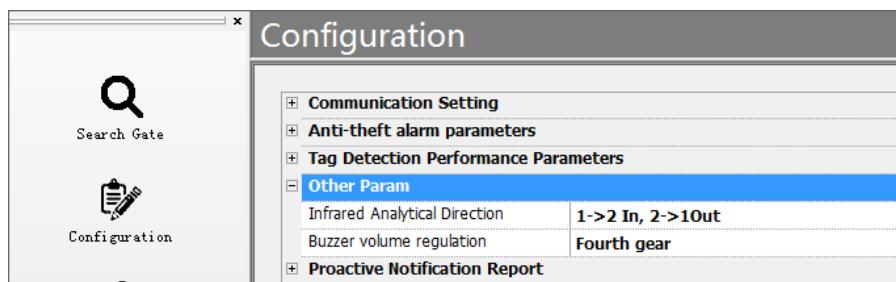


Figure 15 Setting Interface for Other Parameters

Table 6 Description for Other Parameters Setting

Setting Options	Description
Infrared Analytical Direction	There are two infrared sensors on the gate. The direction of the entrance and exit of the aisle is set by the shielding sequence of the two infrared sensors. Take "1-> 2 in, 2-> 1 out" as an example, that is, the first infrared sensor is blocked. Then, when the No. 2 sensor is blocked, it is determined that the flow direction is the IN direction. On the other hand, the sensor No. 2 is blocked first and the sensor No. 1 is blocked later. Default 1-> 2 in, 2-> 1 out.

Buzzer volume regulation	Set the sound level of the buzzer in the alarm state. The default is level-4 with the loudest sound.
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5.3.5 Proactive Notification Configuration

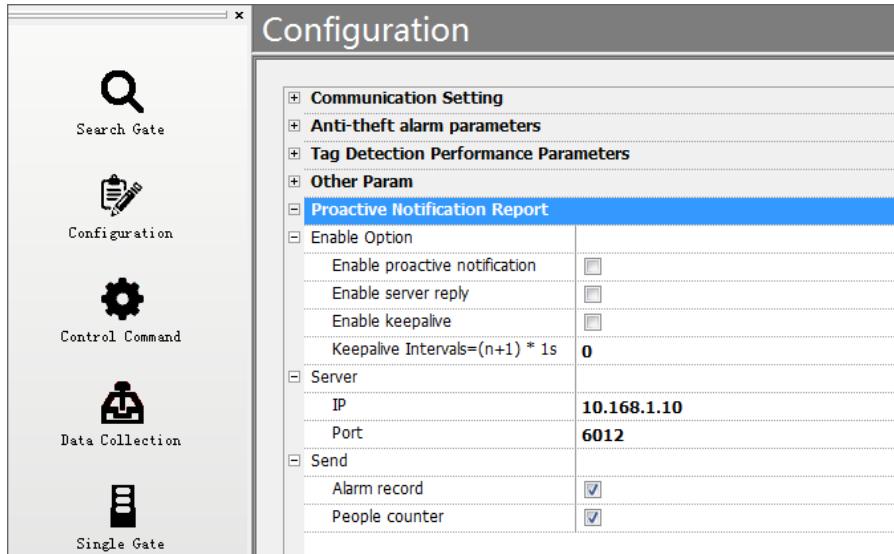


Figure 16 Interface for Proactive Notification Configuration

Table 7 Description Configuration of Proactive Notification

Setting Options		Description
Enable option	Enable proactive notification	Enable active notifications. Disabled by default.
	Enable server reply	After uploading the message, whether to get answer. Default: no answer.
	Enable keepalive	Enabling heartbeat packets between communications to detect the presence of the server, disabled by default.
	Keepalive intervals = (n+1)	Interval for sending heartbeat packets.

	* 1s	
Server	IP	Destination server IP address to be notified.
	Port	Destination server port to be notified.
Send data	Alarm record	Uploaded carry information, ticked by default to enable uploading of alarm records.
	People counter	Uploaded carry information, ticked by default to enable uploading of total traffic records.

5.4 Control Command

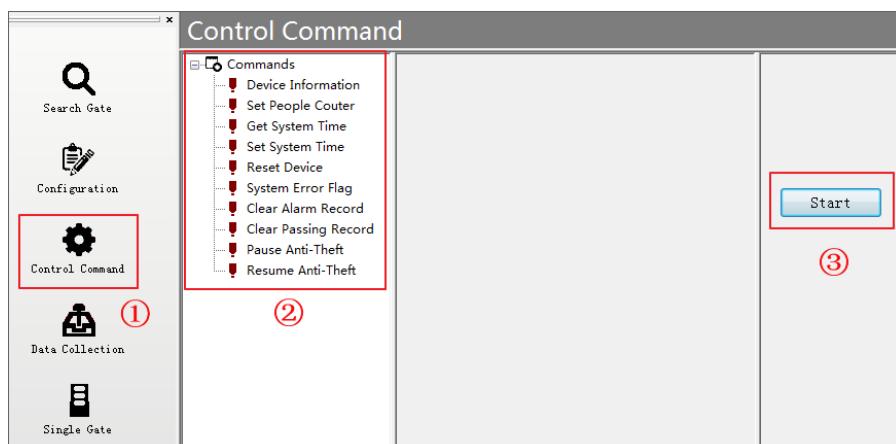


Figure 17 Operation Interface for Control Command

Select the specific command item under the control command menu and click [Start] to control the operation of the device. The details are as follows:

Table 8 Description for Control Command

Commands	Description
Device Information	Obtain the hardware and firmware version and serial number of the control center.

Set People Counter	Initialize total incoming and outgoing traffic separately.
Get System Time	Get the system time and date of the device.
Set System Time	Synchronize the system time and date of the gate with the local PC.
Reset Device	Restart the control center.
System Error Flag	System error flag for detecting system errors detected by the control center.
Clear Alarm Record	Clear all stored alarm records.
Clearing Passing Record	Clear daily traffic alarm records.
Pause Anti-theft	Disable the anti-theft function.
Resume Anti-theft	Restore the anti-theft function.

Note:

(1) Set People Counter: Initialize the total flow of people in and out separately, the historical flow of people data has no effect.

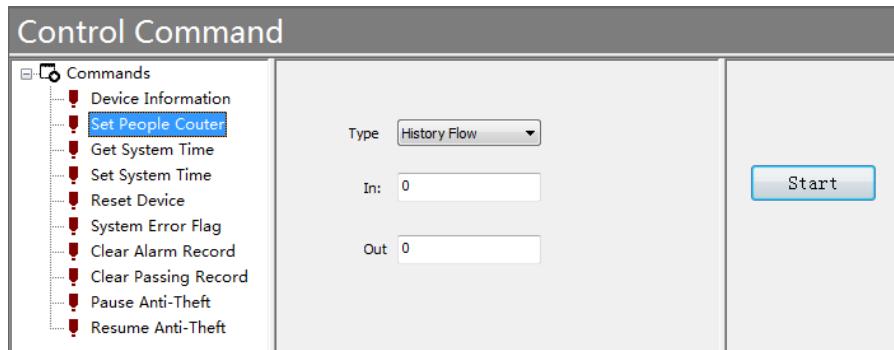


Figure 18 Interface for Set People Counter

(2) System Error Flag: When a device fails, you can test the device and find the cause of the failure based on the error identification. The error ID of the control center is shown as follows:

Control Command			
Commands	No.	Error Flag	Status
Device Information	0	Client offline error	False
Set People Counter	1	Manual Suspend to Read Card	False
Get System Time	2	Data Store Error	False
Set System Time	3	System Clock Error	False
Reset Device	4	MAC Address Error	False
System Error Flag			
Clear Alarm Record			
Clear Passing Record			
Pause Anti-Theft			
Resume Anti-Theft			

Figure 19 Interface for System Error Flag

Table 9 Description for System Error Flag

No.	Error Flag	Description
0	Client offline error	The gate is disconnected. Check whether the gate connection line is loose or disconnected.
1	Manual suspend to read card	The anti-theft detection function is suspended. Click "Resume Anti-theft" in the control command.
2	Data store error	Alarm records and people flow cannot be saved in the control center and the generated records will be lost.
3	System clock error	The control center system clock stops, which will result in incorrect time stamps for the resulting records.
4	MAC address error	Failed to read the MAC address of the Ethernet. If both devices have this fault, the MAC addresses of the two devices in the same LAN will conflict and cannot communicate.

5.5 Data Collection

Data collection, can obtain **the historical records of the daily flow of in and out traffic (records before the current day)** and the UID number, date and designated tag data block content recorded after the alarm is triggered. Click the "Start" button to extract the data. "Clear list" only means to clear the table data on

the interface.

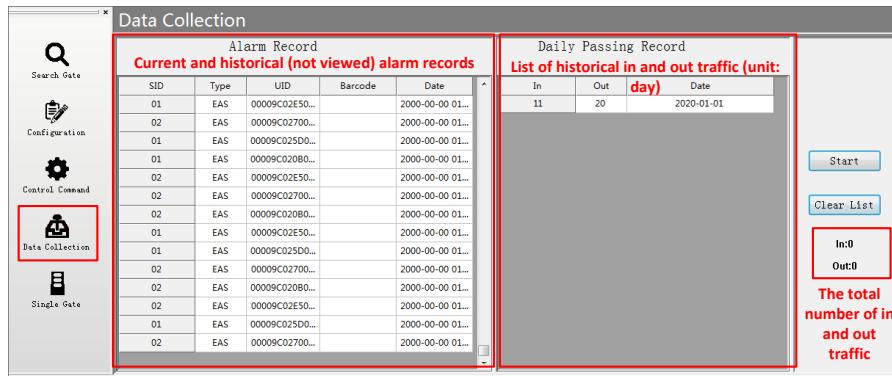


Figure 20 Interface for Data Collection

Note: If you want to clear the data stored in the hardware, please use the [Clear Alarm Record] and [Clear Passing Record] in the control command.

5.6 Single Gate Operation

You can set a single gate: click [Single Gate] → select the gate to execute the command on the gate list (if the gate list is not displayed, please right-click to refresh in the blank space of the gate list) → select controls commands on the command list.

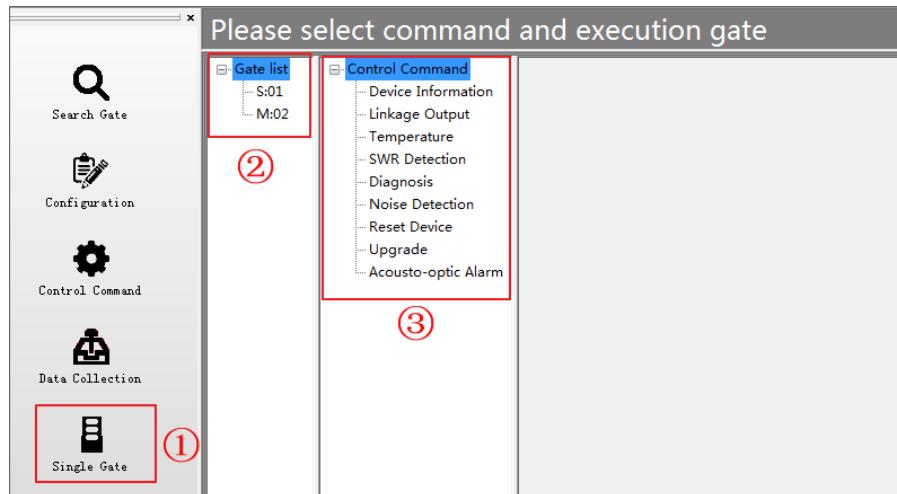


Figure 21 Setting Interface for Single Gate Operation Control Command

5.6.1 Device Information

Obtain device information such as the serial number of the single gate.

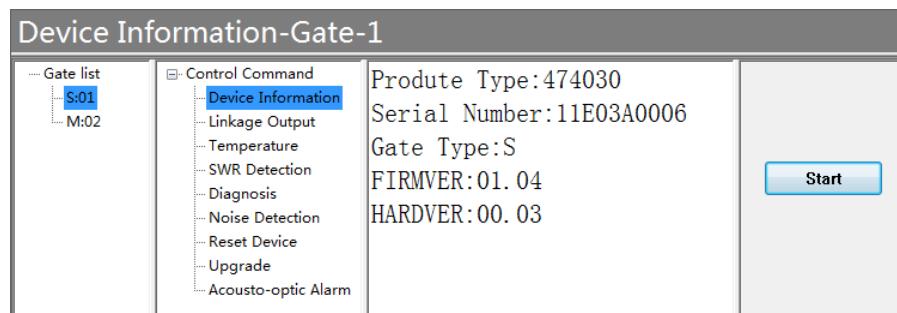


Figure 22 Acquisition Diagram of S-gate Device Information

Device Information-Gate-2

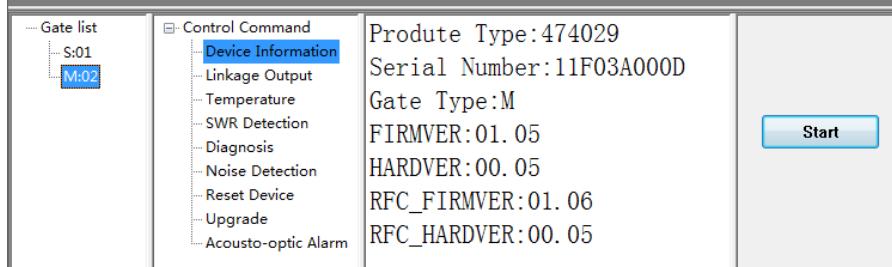


Figure 23 Acquisition Diagram of M-gate Device Information

5.6.2 Linkage Output

Note: The linkage output configuration is valid only in the M-gate configuration!

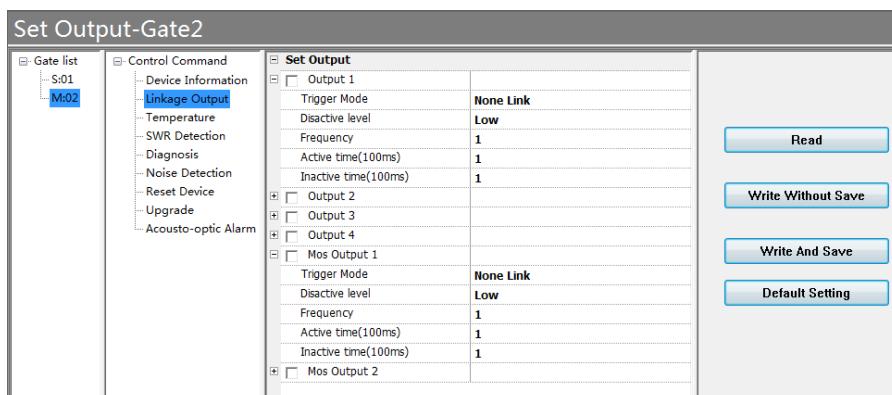


Figure 24 Linkage Output Configuration

Table 10 Description of Linkage Output Configuration

Setting Option		Description
Relay Output	Trigger Mode	<p>No linkage: no trigger output</p> <p>Alarm event linkage, the local unit generates an alarm or the alarm command issued by the host: When an alarm event such as an illegal tag is</p>

		detected, or an alarm event broadcast by another gate is received, or an alarm command issued by the host is received, the linkage triggers. Left-side infrared trigger linkage: trigger the linkage output when the left infrared is blocked. Right-side infrared trigger linkage: trigger the linkage output when the right infrared is blocked.
	Disactive Level	Level when inactive
	Frequency	Number of pulses consisting of active and inactive states, used to repeatedly activate the output
	Active Time (100ms)	Active state time
	Inactive Time (100ms)	Inactive state time
MOS Output	Trigger Mode	Refer to Relay Output
	Disactive Level	Refer to Relay Output
	Frequency	Refer to Relay Output
	Active Time (100ms)	Refer to Relay Output
	Inactive Time (100ms)	Refer to Relay Output

5.6.3 Temperature Measurement

Excessive temperature during the operation of the equipment will affect the operation of the equipment. When the performance of the equipment is unstable, you can check the temperature of the equipment to see if it is caused by excessive temperature. Note: Only M gate has temperature detection function!

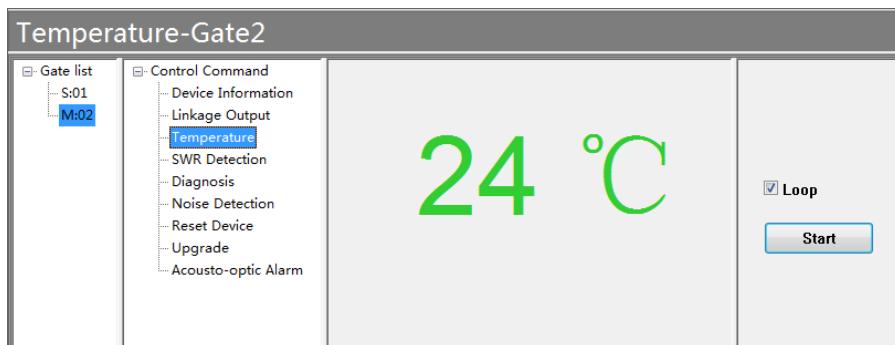


Figure 25 Temperature Measurement

5.6.4 SWR Detection

When the device reads the label unsteadily, you can check the standing wave ratio of the gate antenna to see if the value is normal.

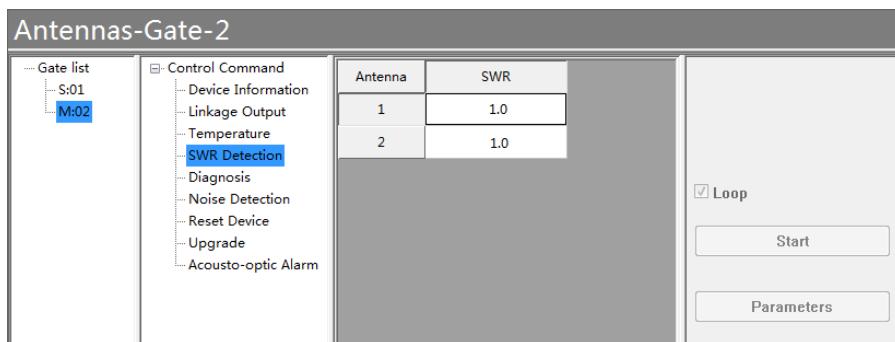


Figure 26 SWR Detection

5.6.5 Equipment Diagnosis

When the equipment fails, a single gate can be detected and the cause of the failure can be found out according to the error identification.

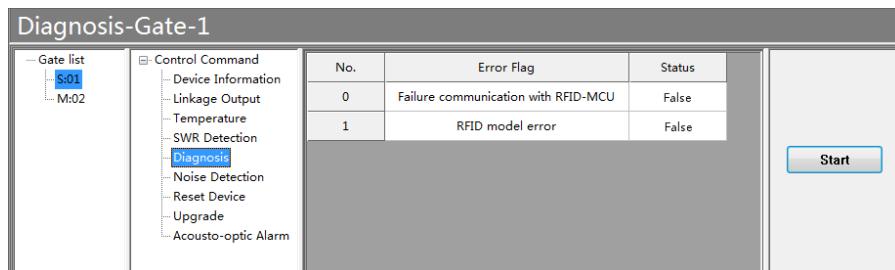


Figure 27 Equipment Diagnosis

Table 11 Description for Gate Error Identification

No.	Error Flag	Description
0	Failure communication with RFID-MCU	When the error is prompted, check whether the antenna interface of the gate is loose or detached, otherwise the circuit failure should be considered.
1	RFID model error	When the error is prompted, check whether the antenna interface of the gate is loose or detached, otherwise the circuit failure should be considered.

5.6.6 Noise Detection

Noise detection can be performed on site through the "Noise Detection" function, as shown below:

1. The noise waveform is a normal waveform, indicating that there is no interference signal or the interference signal is small in the environment;
2. When the noise waveform has a large square or parabola shape, it means that the environment has an interference signal and the source of the interference needs to be eliminated.

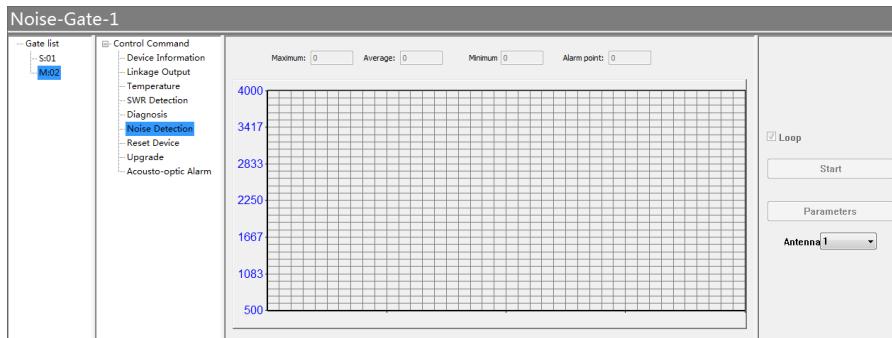


Figure 28 Noise Detection

The parameter settings are described as follows:

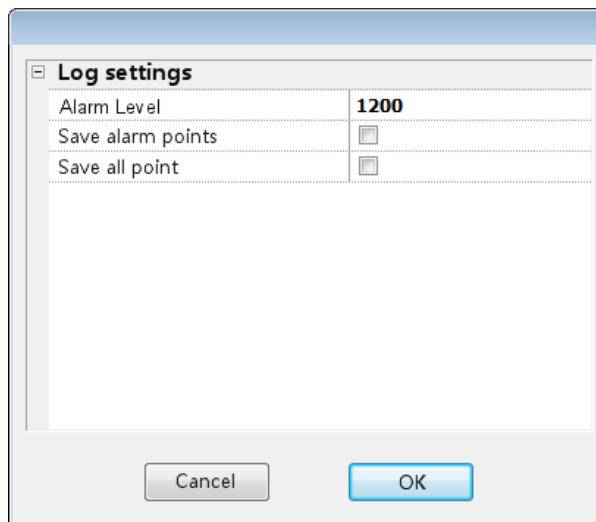


Figure 29 Parameters Setting for Noise Detection

Table 12 Description for Noise Detection Parameters Setting

Setting Option		Description
Log Setting	Alarm level	Set alarm alert value
	Save alarm points	Check to save alarm value points
	Save all points	Check to save all recorded points

5.6.7 Reset Device

Have the specified gate restart the hardware once.

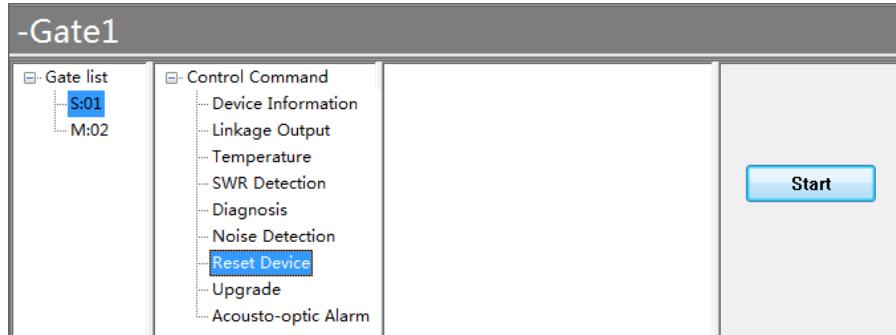


Figure 30 Reset Device

5.6.8 Upgrade Firmware

The gate system provides the function of online firmware upgrade, the steps are as follows:

- ① Click on the gate list and select the gate to be upgraded;
- ② Select “firmware upgrade” for the control command;
- ③ Select the firmware file to be upgraded;
- ④ Select the firmware type corresponding to the firmware file;
- ⑤ Click the "Download" button to upgrade the firmware;
- ⑥ The message "Program flash successfully!" is displayed when the upgrade is completed successfully.

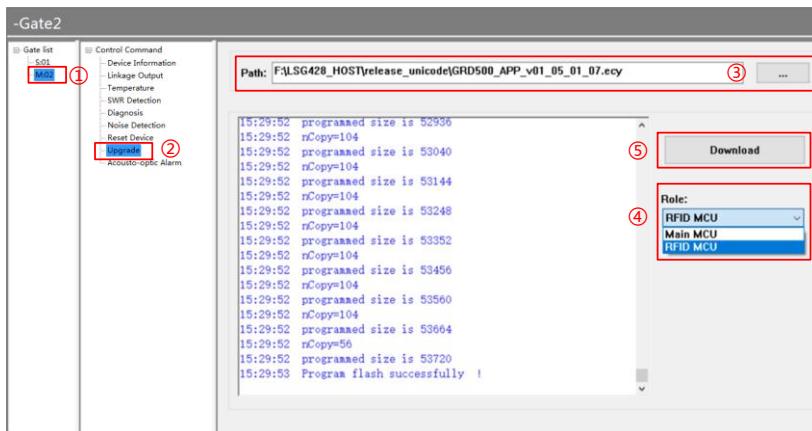


Figure 31 Firmware Upgrade

5.6.9 Acousto-optic Alarm

Manually trigger one time sound and light alarm for the gate.

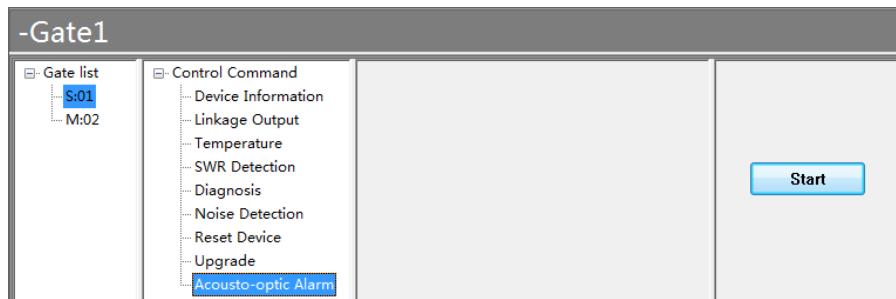


Figure 32 Acousto-optic Alarm

6 Test

6.1 Alarm Performance Test

1. Set the [Detection method - Way to check if book in Library] to "EAS", select the corresponding detection type according to the type of tag, and set [Trigger method] to "Alarm when detection":

During the detection, the EAS function of the book tag needs to be activated to indicate it is an illegal tag. In this way, when the book passes the gate aisle, the gate alarms.

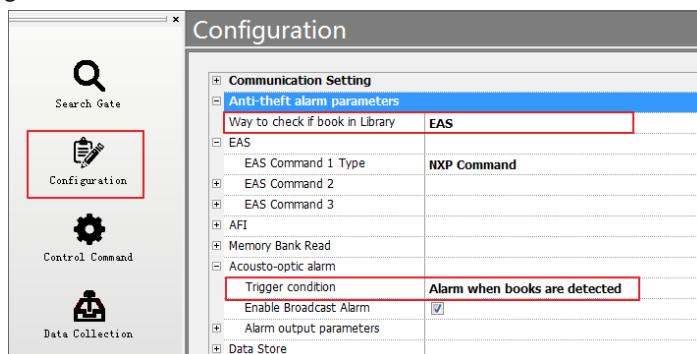


Figure 33 Alarm Condition Setting Using EAS

2. Set the [Detection method - Way to check if book in Library] to "AFI", set the matching AFI value in the AFI configuration parameters (for example: AFI value is set to 07) and [Trigger alarm condition] is set to "Alarm when books are detected":

When testing, when the tag with AFI value set to 07 passes through the gates, the gate will alarm. Others will not alarm.

Note: When the gate detection AFI value is set to 00, all tags will alarm and 00 means no tags will be filtered.

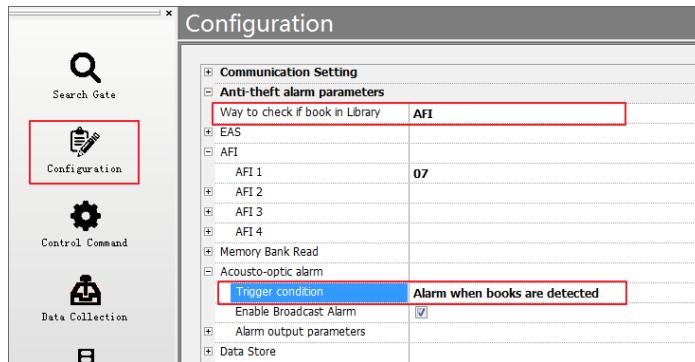


Figure 34 Alarm Condition Setting Using AFI

Set the [Detection method - Way to check if book in Library] to "EAS and AFI", set the EAS and AFI detection parameters, and [Trigger alarm conditions] set to "Alarm when books are detected":

This setting item realizes double detection of EAS and AFI functions. For the test method, please refer to the description of points 1 and 2 above.

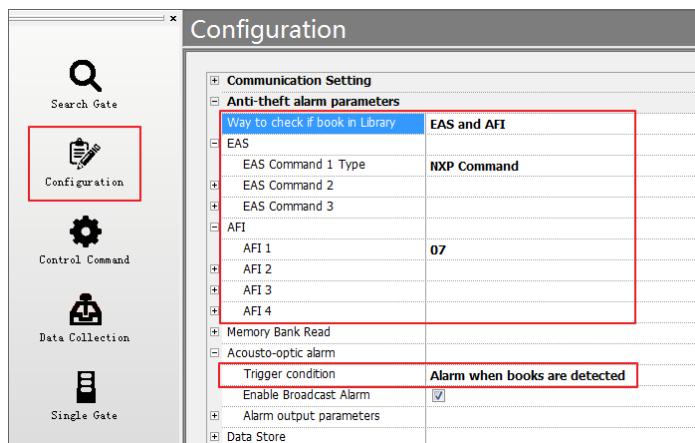


Figure 35 Alarm Condition Setting Using EAS and AFI

6.2 Card Reading Range Test

Set the alarm condition detection content to "EAS", and place the book with

the tag in a direction perpendicular to the middle of the gate. When it is detected normally, the vertical distance between the book and the external connection line of the S and M gate antenna is about 60CM while the distance of the book parallel to the gate is about 100CM, as shown below:

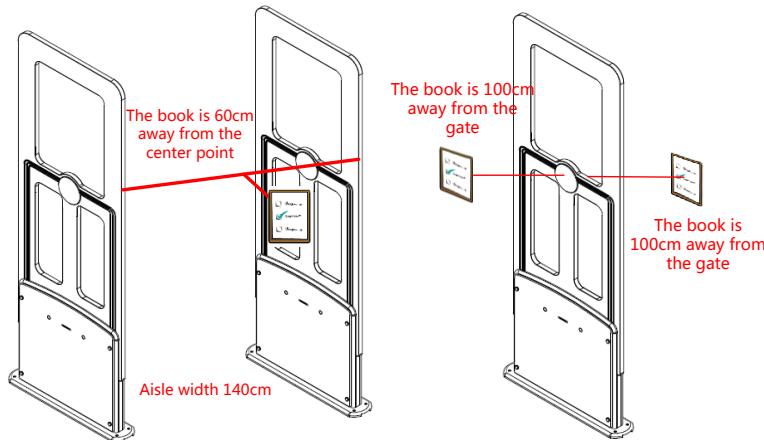


Figure 36 Explanation for Card Reading Range Test

7 Attention

- (1) Do not connect unused gates to the gate system.
- (2) Please do not change the position of the gate at will. After you increase / decrease / replace the gate, you need to search for the gate again for normal use. See section [5.2 Search Gate](#).
- (3) As for the configuration of the gate, as long as the control center sets the configuration parameters, whether it is to increase / decrease / replace the gate, it is not necessary to configure the parameters after searching for the gate again.

8 Troubleshooting

Under normal use, gates can generally work normally for a long period of time and there are few system failures due to component failure. Most of the failures are caused by improper use, poor contact of power sockets, excessive AC voltage fluctuations, loose connection connectors, interference from surrounding electrical equipment and certain radio waves, and interference from equipment such as wires, coils, and metal frames. It needs to carefully analyze the cause of the failure then eliminate them one by one. Until the cause of the failure is found, the system settings and parameters cannot be changed at will, because the index of the equipment are already debugged in a better state when the device is shipped from the factory. In the absence of relevant instruments, the random debugging leads to difficult judgement and elimination of the failure.

When the equipment does not work normally, such as the detection sensitivity is reduced, no alarm or frequent false alarms, etc. Generally it should be checked according to the following instructions:

1. Check if the power supply is working properly

When you find that the system is not working properly, you should check whether the system power is normal or not:

- Whether the working indicator on the device is blinking;
- Whether the input power voltage is correct;
- Whether the power wiring is open or short;
- Whether the power socket is firmly connected; whether the input voltage fluctuates too much.

2. System detection sensitivity is reduced

In general, most of the faults that cause the detection sensitivity of the system to decrease are caused by mutual interference and suppression between the systems,

and interference caused by metal objects or electrical equipment near the detection antenna. Take measures to remove metal objects and electrical equipment near the device, and keep them away from the equipment as far as possible. For the test method, see section [5.6.6 Noise Detection](#). If you cannot get the device away from the interference source, you need to put a magnetic ring on the interference source until the device works normally.

3. Not able to search out all gates

Check that all gates are wired correctly and the input and output terminals are reversed.

4. The system does not alarm

When detecting the label, if the alarm light is not flashing or there is no alarm sound, the following operations can be performed for troubleshooting:

- Check if the antenna wiring port is loose or detached.
- Check whether the alarm light and buzzer are well connected and whether the alarm light and buzzer are damaged. Acousto-optic alarm detection can be carried out for the non-alarm gate separately. For the test method, see section [5.6.9 Acousto-optic Alarm](#).

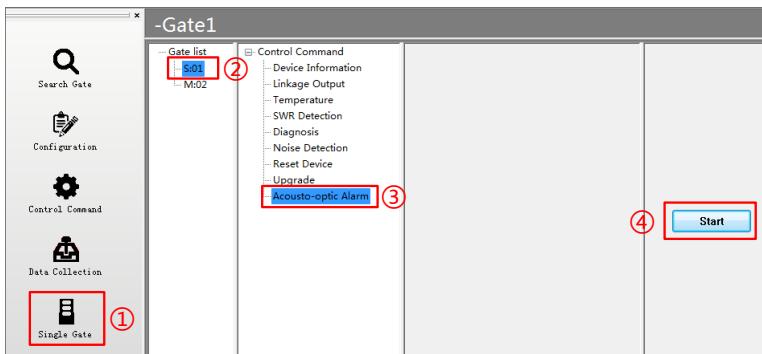


Figure 37 Acousto-optic Alarm for Single Gate

- Check the tag detection indicator in the status indicator:
 - (1) The tag detection indicator "On" indicates that the system reads a tag

that meets the alarm conditions, but there is no alarm output. Check whether the sound and light alarm setting is set to "Do not trigger sound and light alarm" or to turn off the buzzer. Section [5.3.2 Anti-theft Alarm Parameters](#), otherwise some circuit failures (component failure or damage) should be considered.

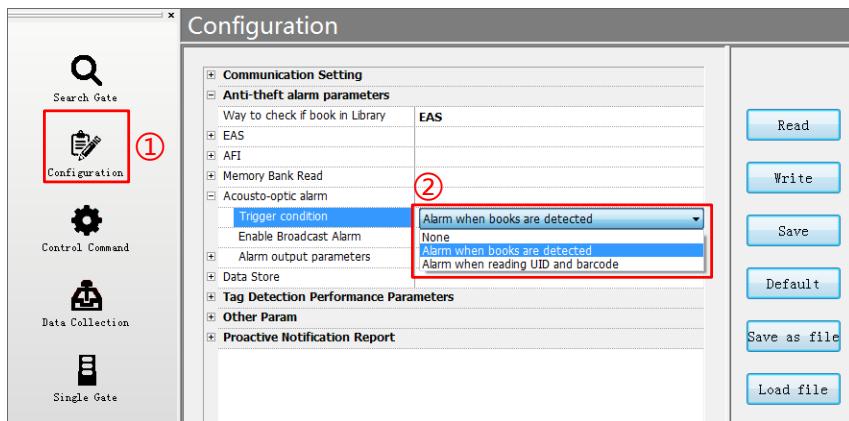


Figure 38 Check Alarm Parameters

(2) The tag detection indicator does not light, you need to check whether the gate is offline or the system is set to the anti-theft detection hanging. Solution:

① Check whether the error indicator of the **control center** is red. If it is red, check the "**System Error Flag**" under the control command function to see what kind of failure occurs and set to "**Resume Anti-theft**", see section [5.4 Control Command](#);

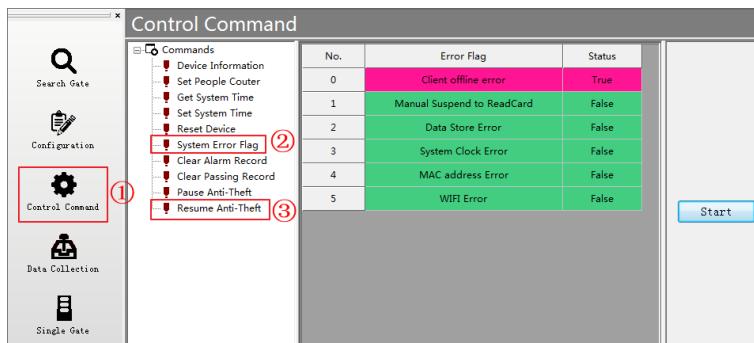


Figure 39 Check System Error Flag in Control Command

② Under the “Search Gate” function, click [Current Status] to see if the gate is offline, see section [5.2 Search Gate](#); at the same time, perform device detection on the gate in problem, see section [5.6.5 Equipment Diagnosis](#).

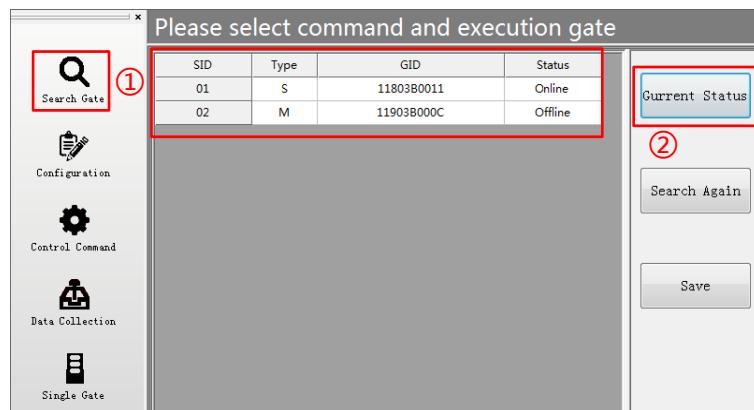


Figure 40 Check if the gate is offline

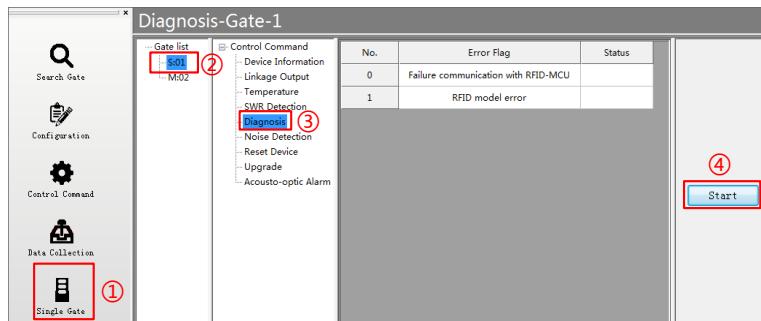


Figure 41 Check Gate Error Flag

- Check if there are tags in the book or try a few more books.

5. Always keep alarming when booting

Check whether there are tagged books around the gates, such as on the surrounding workbench, workbench drawers, cabinets, trolleys for carrying books and surrounding bookshelves.

It can be tested by moving the gates away from the above objects. If the gates works normally after removing, you need to check the above links.

6. System false alarm

Check whether there are electronic tags or books containing electronic tags, large metal objects, etc. within 100CM around the equipment, also, check the partition walls.

- Is there a book within 5 meters of the 220V power line?
- It is difficult to determine the cross detection of the network cable. Take the network cable away and keep it 1 meter away from the gate.

Another common cause of device false alarm is the tags within the detection range of the device. It is recommended not to put tags within 1.5 meters of the equipment. In particular, there must be no tags near the equipment power cord.

7. Infrared counter does not count

- The infrared holes of the aisle are not aligned.
 - ① Observe the two infrared indicators in the status indicator. If the green light is on, it indicates that the infrared data modules of the front and rear gates are aligned. If it blinks, it indicates that they are not aligned. You need to adjust the positions of the two gates slightly. If it is off, it means there is occlusion.
 - ② Observe the two infrared receiving module indicators on the M gate. If the blue light is on, it indicates that the infrared data modules of the front and rear gates are aligned. If it flashes, it indicates that the infrared data modules are not aligned. If it is off, it means there is occlusion.

Only the two infrared indicators in the above status indicators are steady green, and the two infrared receiver module indicators of the M-gate are solidly blue to indicate that the infrared is aligned.

- Because there may be optical interference, you can turn off the lights above and around the gates to try it out, because the infrared counting function uses infrared data transmission. If there is optical interference, the receiving circuit will not be able to decode correctly and not count.

When the above problems still cannot be solved according to our solution, please contact our technicians.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



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