



GSM Gate, Barrier, Shutter, Garage Door and Door opener  
Open gate or garage door with a FREE call from your mobile phone!  
Remote switching machines with a FREE call from your mobile phone!  
New version with a battery inside to **V2019 Support power failure alert**

# GSM Gate Opener Remote Relay Switch



v2017



v2019

## User Manual

For V2019 and V2017

**RTU5024 V2.1**

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This handbook has been designed as a guide to the installation and operation of V2017 / V2019 RTU5024 Gate Opener. Statements contained in the handbook are general guidelines only and in no way are designed to supersede the instructions contained with other products.

We recommend that the advice of a registered electrician be sought before any Installation work commences. Huobei Electronics & Technology Co.,LTD. its employees and distributors, accept no liability for any loss or damage including consequential damage due to reliance on any material contained in this handbook.

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# Caution!

**Please read this user manual carefully before install/operate the Gate**

**Opener,basic electronic acknowledges required.**

## **1. Product details**

The RTU5024 is an powerful remote relay controller, it is a very simple device which can be used for authorized door access, controlling gates, switching of remote equipments, car parking systems. Actually the RTU5024 can be used in places which require to turn ON/OFF your system, machines, equipments remotely with a FREE call from your mobile phone.

Just dial from Authorized User number at the specified time then the Barrier and doors are opened, or the machine are turn on or off by the RTU5024. There are no call costs, the RTU5024 rejects the call from authorized number then carries out the turn ON/OFF action.

Moreover, the user can be authorized at the specified time to operate it, after timeout, will automatically change to unauthorized type.

### **1.1 Features:**

#### **Advantages**

- Quad-band GSM or Optional 3G or 4G version can work in the worldwide mobile Networks;
- No call charges. the GSM GPRS Relay Switch rejects the call from authorized number then carries out the turn ON/OFF action on the first 'ring';
- Multiple applications. (gates, bollards, barriers, garage doors, shutters and access doors or machines);
- Secure - Using caller-ID for identification, unknown callers are ignored;
- Can be operated from anywhere, no distance limit;
- Add or remove users by SMS Text command;
- No need to provide a remote control or keys for different users;
- Up to 1000 authorized phone numbers can be configured at the specified time;
- One output with relay rating 3A/240VAC for connecting the switch of the door or machines;
- The relay action will return a SMS confirmation to the owner or authorized call-in number, this function is editable by user;
- The relay close or open time is programmable;
- Multiple applications. (gates, bollards, barriers, garage doors, shutters and access doors or machines);
- Support customized SMS command to control the relay output
- Optional inside rechargeable battery for normal power supply failure alarm (2019 version supported)
- V2019 can support the rechargeable battery inside for power failure alarm, but V2017 doesn't support this function

#### **Setting**

- SMS command and PC software
- Operate from anywhere anytime, no distance limitation;

## **1.2 Specifications**

GSM Frequency	Quad-band 850/900/1800/1900MHz
Digital Output	NC/NO dry contact, 3A/240VAC
DC Power supply	9~40VDC/2A
Power consumption	12V input Max. 50mA/Average 25mA
SIM Card	Supporting 3V SIM Card
Antenna	50Ω SMA Antenna interface
Temperature range	-20~+60 °C
Humidity range	Relative humidity 90%
Exterior dimension	W102mm*D76mm*H27mm
Net Weight	180 g

## **1.3 Dimensions**



## **1.4. Standard Packing List**

- ✓ Gate Opener Controller, Antenna, User Manual, Packing size: 17\*9.5\*4 cm, Gross Weight: 0.30kg

## 1.5 Applications:

- Remote open/close swing/sliding gates, doors, shutters, garage doors, locks with a free call!
- **Residential:** Door, gate, garage access control, electronic fan, microwave, air-conditioner control.
- **Industry:** Remote switch equipment, for example: street lights, solar power, motor, inverter, PLC, pumps, fans, etc.
- **Agriculture:** Remote control pumps, etc.
- **Business:** Remote control electronic boxes, bright billboards, LED signs, etc.

## 2. Safety Directions



### Safe Startup

Do not use Gate Opener when using GSM equipment is prohibited or might bring disturbance or danger.



### Interference

All wireless equipment might interfere network signals of Gate Opener and influence its performance.



### Avoid Use at Gas Station

Do not use Gate Opener at a gas station. Power off Gate Opener when it near fuels or chemicals.



### Power it off near Blasting Places

Please follow relevant restrictive regulations. Avoid using the device in blasting places.



### Reasonable Use

Please install the product at suitable places as described in the product documentation. Avoid signal shielded by covering the mainframe.



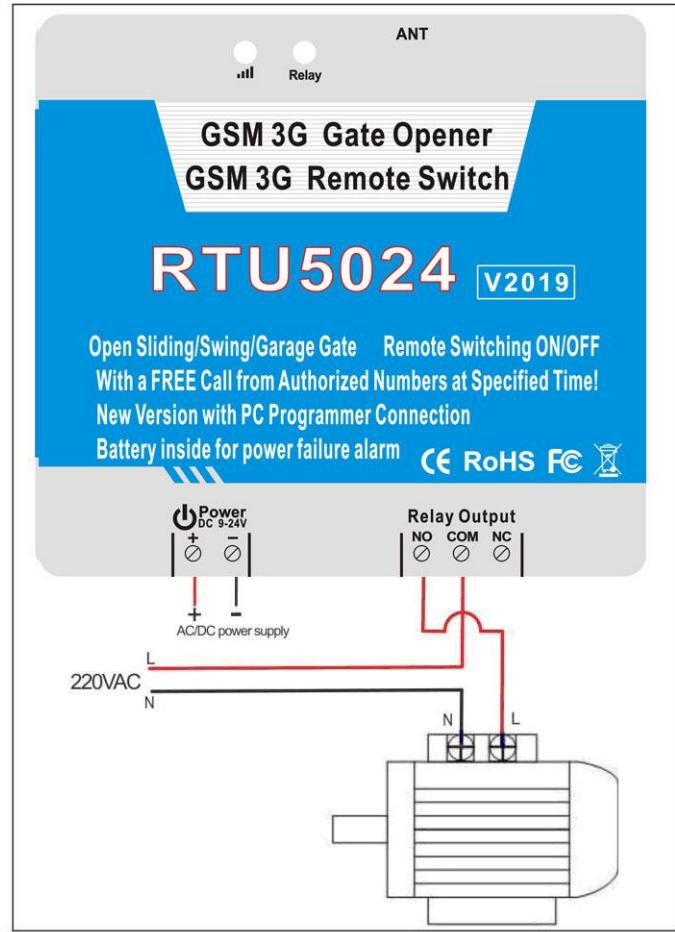
### Use Qualified Maintenance Service

Maintenance can be carried out only by qualified maintainer.

### 3. Diagram

INDICATORS		
Relay	<b>ON:</b> Relay closed(ON). <b>OFF:</b> Relay open(OFF)	
■■■	<b>Flash per 0.8 second(quickly):</b> registering to cellular network. <b>Flash per 2 seconds:</b> Normal status. <b>OFF:</b> can't connect to SIM card or unregistered to the cellular network	
Connection Terminals		
Power	+	Power supply input,Positive wire(Red).
	-	Power supply input,Negative wire(Black).
Relay Output	NO	Normally Open port
	COM	Common port
	NC	Normally Close port
ANT	Connect to GSM antenna.	

### 4. Typical wiring connection:



#### 1. RTU5024 for Gate opener:

Power up the RTU5024 and electronic lock by same DC source, the lock switched ON/OFF by phone call.

#### 2. RTU5024 for remote switch:

The pump switched ON/OFF by phone call. Pump power up by the grid/electricity, and RTU5024 power up by AC/DC adaptor.

## 5. Installation and Settings

### Notice:

1. The default Password is **1234**.
2. You can program the RTU5024 with SMS commands using your phone. It is safe to do so because in addition to the fact that other people may not know the number of the SIM inserted in it, we also use a Password that makes it impossible for others who doesn't know it, to access the system by chance, and all the action will be recorded.
3. The relay output will change the close or open status by every call in, please note it. Means the first time call it, it will close the relay to switch on the lock, if the second call in is in the setting time, then the unit will ignore the setting time, and open the relay, to switch off the lock.
4. Remember that commands must be **CAPITAL LETTERS**. It is AA not aa, EE not Ee etc. Don't add spaces or any other character on the SMS commands.
5. The **pwd** in the command means the password, like 1234 or 5678 if you have changed.
6. If the RTU5024 used for gate access only, all you need to do is to change the default password and add the authorized numbers.
7. If you cannot call to control the RTU5024 or cannot send or receive any SMS message from it, please try to add 00 with your country code in front of the phone numbers:

#### For example:

In China, the country code is **0086** The user cell phone number is **13570810212** and has been assigned as the SMS Alert number, the simcard number in the panel is **13512345678**.

**Problem 1:** Alarm but the user hasn't received the SMS Alert.

Solution: Please plus the country code while you setup the 13570810254 as SMS Alert number, means setup **008613570810212** instead of the **13570810212**.

**Problem 2:** The user number can receive the SMS Alert message from alarm panel, but the alarm panel can not receive the commands from the user number.

Solution: Please add country code to the simcard number in the alarm panel. Means send sms commands to **008613512345678** instead of **13512345678**.

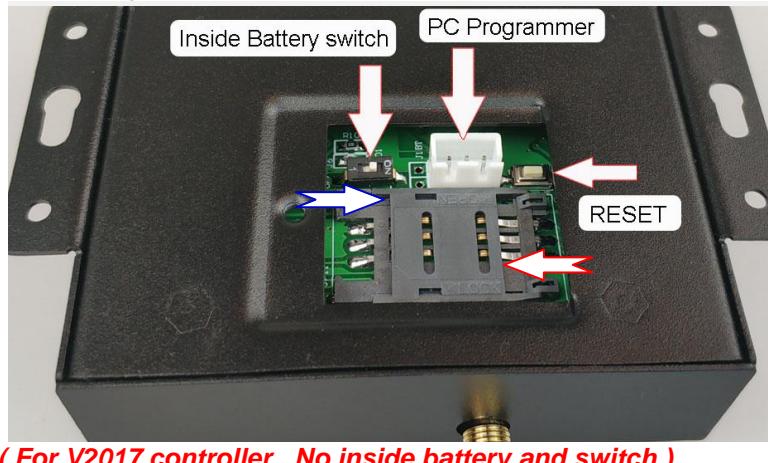
**Solution 3:** Use mobile phone A to call mobile phone B, the number displayed on B is which you should set as the dial number; Use mobile phone A send SMS to mobile phone B, the number displayed on B is which you should set as the SMS alert number; sometimes you may need to use the 00 to replace the + or use the + to replace the 00 on front of the country code.

8. **Fo security purpose, the RTU5024 will NOT return any SMS if command error,** so please make sure and check the SMS Commands, or add the country code before the telephone number or check the input is in ENGLISH INPUT METHOD and CAPS LOCK.
9. For RTU5024 V2019, If you want to receive the power failure alert SMS, must setup the 1<sup>st</sup> authorized number, that is the only number that can receive the alarm SMS.
10. The relay switch is only a switch, no voltage output and also no current output, just a switch.
11. The SMS commands that you will certainly use in the RTU5024 are the following:

**Installation:** Open the SIM card cover on the back side of RTU5024, insert your SIM Card.

**Reset the password:** Press and hold the RESET button(closed to the SIM card holder), then power ON, after 3 seconds later, MCU LED will start to flash 5 times, the RTU5024 will only reset password to 1234. This operation will reset the password to default 1234 and other parameters, but the authorized users numbers will remain on the memory.

And if still hold the button for more than 10 seconds until the LED start to flash again and then release the button, that will reset device working parameters and delete all authorized numbers and TEL number.



(For V2017 controller. No inside battery and switch )

## 5.0 Auto clock adjust with received SMS

(This is necessary if need to use the time-authorization enablement number):

Send **pwdTELphone number of the RTU5024#** to the RTU5024 for adjust the device clock.

E.g.: **1234TEL00861351015#** if the SIM card number inside the RTU5024 is 00861351015.

RTU5024 Reply: TEL IS 00861351015

Then later every time after powered on, device will send an SMS to it self to adjust the clock

## 5.1 Change Password

**1234Pnew password**

E.g.: **1234P6666** for change the new password to 6666.

RTU5024 return: "Password changed to "new password", please remember it carefully." if sucessfully.

## 5.2 Authorized number management

### 5.2.0 Add authorized number:

**pwdAserial number#authorized number#start time#end time#**

**A:** command code.

**serial number:** the authorized number's position, from 001~200.

**start time:** yy(year)mm(month)dd(day)hh(hour)mm(minute). the start time of this number can call in to control.

**end time:** yy(year)mm(month)dd(day)hh(hour)mm(minute). the end time of this number can call in to control.

**Without start time and end time means: Always can call in to control.**

E.g.: **1234A003#123456#** to set the phone no.123456 at the 3<sup>rd</sup> position and always can call in to control.

E.g.: **1234A016#123456#1502050800#1502051000#** to set the phone number 123456 at the 16<sup>th</sup> position, this number can call in to control during Feb 5<sup>th</sup> 8:00a.m.(1502050800) to Feb 5<sup>th</sup> 10:00a.m.(1502051000).

- Note:**
1. The authorized number means the one who can dial the RTU5024 to control the relay.
  2. The Serial Number is the position to store the authorized users, from 001~1000.

### 5.2.1 Inquiry the Authorized number's position(serial):

**pwdAserial number#**

E.g.: **1234A002#** to check the number on the 2<sup>nd</sup> position(serial number2).

### 5.2.2 Inquiry batch users number

**pwdALserial number start#serial number end#**

E.g.: **1234AL002#050#** to inquiry the authorized numbers from the 2<sup>nd</sup> to the 50<sup>th</sup>,RTU5024 return serval SMS with the numbers list(10 numbers on each SMS).

### 5.2.3 Delete the Authorized Number(or you can overwrite this postion with another number).

**pwdAserial number##**

E.g.: **1234A002##** to delete the 2<sup>nd</sup> authorized number.

## 5.3 Relay Control setting

### 5.3.1 Allow all numbers can call in to control:

**pwdALL#**

### 5.3.2 Allow only the authorized numbers can call in to control(Caller-ID for security,default):

**pwdAUT#**

### 5.3.3 How long time the relay keep close(ON) after phone call in (unit: second)

**pwdGOTclose time#**

close time=000~2000. Unit:Second

close time=000: (Relay as Latch, relay will always keep close(ON) after call in untill the next call in.).

close time=1000: Relay will always keep close for 1000 seconds and then Open after call in

Eg: **1234GOT030#** to set relay close 30 seconds(ON) and then open(OFF) after call in.

### 5.3.4 Who will receive the confirmation SMS when the relay is ON/OFF

**pwdGONab#content#**

for relay ON,

**pwdGOFFab#content#**

for relay OFF.

**ab:** the ID code of the 1<sup>st</sup> number(a) and the caller number(b), =0 means disable, =1 means enable.

**content:** confirmation SMS content.

ID code		RTU5024 send notify SMS to	
a	b	The 1 <sup>st</sup> number	Caller number
0	0		
0	1		✓
1	0	✓	
1	1	✓	✓

Eg: **1234GON11#Door Open#**

The 1<sup>st</sup> number & the caller number receive confirmation SMS when relay is ON(door opened).

Eg: **1234GOFF00#Door Close#**

The 1<sup>st</sup> number & the caller number will not receive confirmation SMS when relay is OFF(door closed)..

### 5.3.5 Need or No need confirmation SMS when the relay is ON/OFF.

pwdGON##

pwdGOFF##

### 5.3.6 Control the relay ON/OFF by SMS command

pwdCC

Return SMS: Relay Toggled for 02 seconds (or the SMS content which you modified before)

pwdCD

Return SMS: Relay ON (or the SMS confirmation content which you modified before)

pwdDD

Return SMS: Relay OFF (or the SMS confirmation content which you modified before)

The relay close timer according to the before setting 6.3.3:

pwdGOTclose time#

### 5.3.7 Control the relay ON/OFF by Customized SMS command

pwdON-TEXT=wsd1on

After defined, wsd1on can be send directly to control the relay to ON

pwdOFF-TEXT=wsd1off

After defined, wsd1off can be send directly to control the relay to OFF

pwdTOG-TEXT=wsd1gg

After defined, wsd1gg can be send directly to toggle the relay

User can change the above text "wsd1on", "wsd1off", "wsd1gg" to their own text that is easy remembered

(Custom command make it easy to authorize people who don't need to know the password to use the device.)

pwdQUE-TEST?

This is used to read back the customized SMS command setting

## 5.4 About the battery for power failure alarm (**Only V2019 has this function**)

When main power supply failure, Device will send the alarm SMS to the 1<sup>st</sup> number

Battery is only for power failure alert, not for relay working.

(Firstly slide the "battery switch" to ON position to check if already has the battery mounted inside box )

## 5.5 Alarm input: **(Only V2019 has this function)**

### 5.5.1 Alarm input

pwdMx

x=0, 1, 2

M0: Alarm input disarmed

M1: Alarm input armed (When IN1 is shorted will send the alarm SMS)

M2: Alarm input armed (When IN1 status is changed, will send the alarm SMS)

### Inquiry the IN1 status

pwdEE#

### 5.5.2 Setup the customized SMS for IN1 alarm

pwdTEXT1O:aaaaaaa#

and

pwdTEXT1C:bbbbbbb#

aaaaaaa is the TEXT for IN1 opened alarm bbbbbbb is the TEXT for IN1 closed alarm

After this configuration, At M1 mode, only when IN1 is shorted, will send the alarm SMS: bbbbbbb

At M2 mode, when IN1 is shorted will send the SMS: bbbbbbb and when IN1 is disconnected, will send the alarm SMS : aaaaaaa

## 5.6 Others:

### 5.6.1 Self-check auto report SMS to the 1<sup>st</sup> number. (unit:hour)

**pwdT#xxx#**

xxx=000~999

xxx=000, default,no self-check auto report. Auto report SMS including:

Relay status;  
GSM signal value(full is 31,cellular signal weak if lower than 14)

### Inquiry the self-check and auto-report time

**pwdT#**

### 5.6.2 Inquiry current status

**pwdEE**

### 5.6.3 Inquiry the GSM modules' IMEI code and firmware version

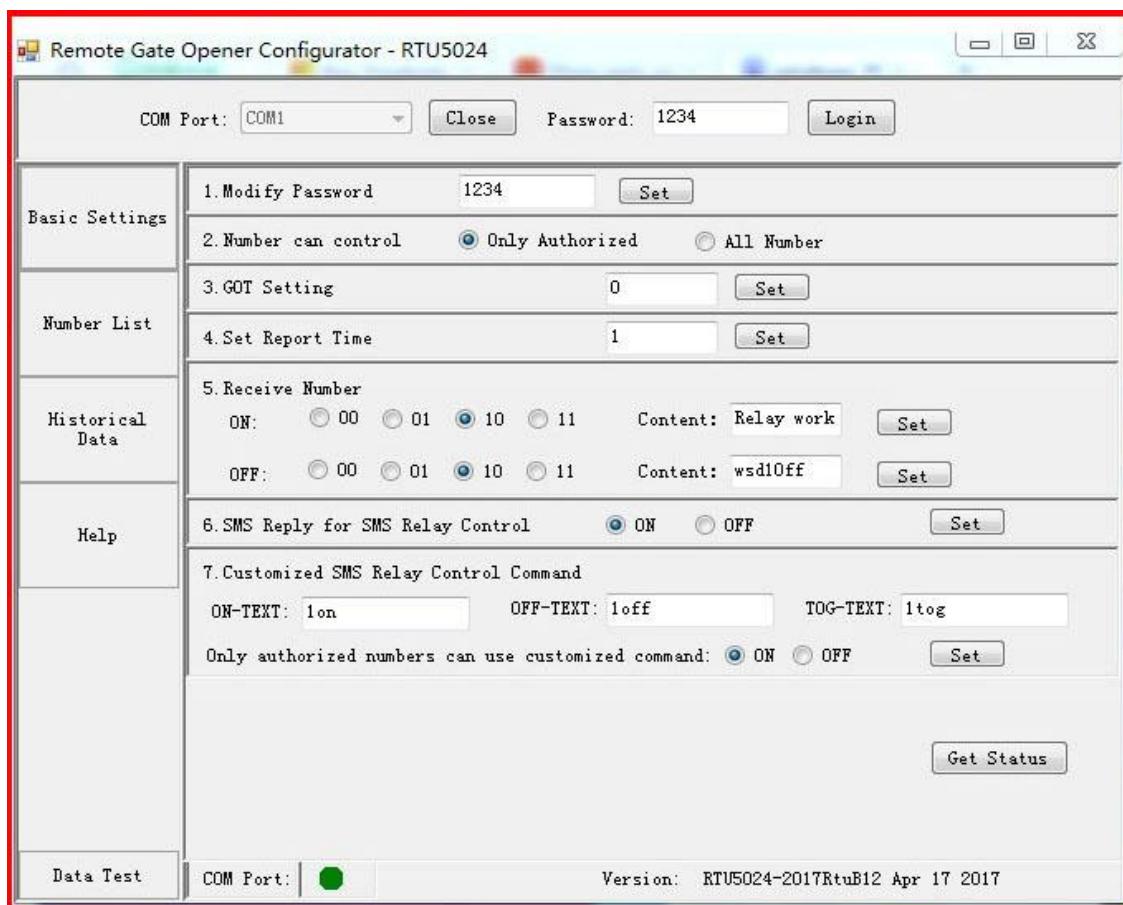
**pwdIMEI#**

## 5.7 About the PC software:

1. Download the software from our website QA page: <http://www.waferlife.com/en/QA-RTU5024.html>
2. Download the USB driver from the QA page: <http://www.waferlife.com/en/QA-RTU5024.html>
3. Connect the USB programmer to PC and plug another end to RTU5024 three pin connector
4. Check the Virtual COM Number which is created in the PC Windows "Device Manager "
5. Then Run the RTU5024 PC software and press the "open" to open the right com port.
6. Input the right password and Press the next "Login" button to connect to the RTU5024  
(Device default password is : 1234)



Software :



## **6. Important information**

- 1) Please read the User Manual carefully before you install and control the RTU5024.
- 2) Install the RTU5024 in a hidden place.
- 3) Avoid getting water into the RTU5024.
- 4) Have a secure connection to the main power supply.

## **7. Maintenance**

- 1) In case of failure, please contact the distributor or manufacturer.
- 2) If the RTU5024 works but fail to send SMS texts, switch the power off and on again after one minute. Test it after few minutes later, or ensure and check the settings are correct and the cellular signal strong enough.
- 3) If the RTU5024 works well with sensors but cannot send SMS texts, please change a SIM Card from another Mobile Operator's, and then testing again.
- 4) When first time start to use, should power on with normal power supply for more than 20 minutes and then can test the battery with power failure alert SMS
- 5) Please contact the distributor or manufacturer if the problem can't solved.

## **8. Warranty**

- 1) Device has been carefully checked and are in perfect working condition before shipping. And it is also warranted for a period of one year from the date of purchase..
- 2) The warranty covers any malfunction in materials and workmanship during the warranty period of your device. Your device will be repaired free of charge with the presentation of the warranty certificate or your order link. Any damage resulting from inappropriate use is excluded from the warranty.
- 3) Whenever shipping your device across any international border, you must indicate "returning product to manufacturer for repair & return only. Value for customs purposes only. No commercial value." You are responsible for all duties, taxes, freight or other fees associated with shipping your device to our Service Centers and the return cost from Service Centers. Failure to do so may result in refusal of the package.

The End!

Any questions please help to contact us feel free.