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PN–602

WIFI&GSM&GPRS Dual Network Alarm System

Manual Instructions

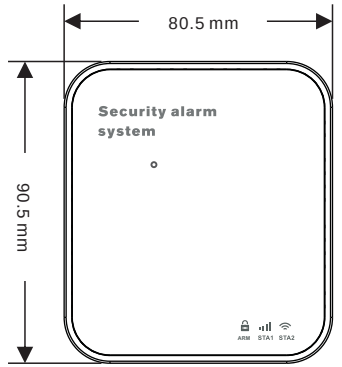
Content

1. Technical Parameters

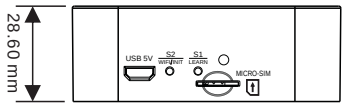
- Power input : DC 5V （micro USB standard interface power supply)
- working current: <120mA
- Wireless frequency: 433MHz
- Wireless coding: EV 1527
- GSM bands: 850/900/1800/1900MHZ
- Wi-Fi bands: IEEE802.11b/g/n RF standard
- Standby battery: 3.7V/280mAh lithium-ion
- Temperature range: 0℃ ~ 55℃
- Humidity range: < 80%RH (No freezing)

1.1 Dimension drawing

Host front



Host side



2. Features

- Built-in powerful performance CPU master based on 32-bit Cortex-M3 core
- Based on uCOS - III operating system multitasking design, with a great user operation experience.
- WIFI/GSM/GPRS network alarm system, and support APP push/SMS/voice monitoring/center network etc. multi-channel alarm ways, to ensure the alarm performance stable and reliable.
- Reserve remote GPRS TCP/UDP protocol channel, compatible with multi-alarm center network protocol, convenient for network alarm.
- Support APP/SMS/center remote control and parameter settings.
- Friendly APP operating experience and user interface, access to latest equipment working status.
- GPRS real-time on line to get device's newly working status, auto alarm in off-line state.
- Up to 100 storage locations for the learning of remotes and wireless detectors
- Support local button, APP remote learning of remote controllers and wireless detectors
- Support many defense zones name such as of the gate, SOS, bedroom, window, balcony, perimeter, smoke, gas, carbon monoxide, water leaking, etc.
- Support many defense zone types setting such as of entry/exit zone, indoor zone, perimeter zone, 24-hour zone, etc.
- Support external wireless siren.
- Up to 5 groups preset alarm phone numbers, SMS on/off and voice on/off can be set respectively.
- 3 groups of breathing lights display the Arm/Disarm/Alarm state of the device, GSM/WIFI working state, clear at first glance.
- Support timing arm and disarm
- Convenient external SIM slot design.

3. Daily Operation Nouns

- **ARM:** set security task (Anti-burglar), make the host into alert state, also known as Arming, Alert or Booting.
- **Stay Arm:** When users at home, only need to alert entrances or perimeter.
- **Disarm:** cancel the safety task (Anti-burglar), also known as removing alarm or shutdown.
- **Trigger:** In Arm state, detector detects someone or door is opened, it will trigger the detectors and make alarms.
- **Exit delay:** after setting the host to be ARM state, in order to avoid making alarms for the users leaving and passing the Arm zones, delay the alarm time.
- **Entry delay:** when users come back and pass the Arm zones, the host will not immediately make alarms, allow users to Disarm the host with some time; the host will make alarms if time out beyond the Disarm.

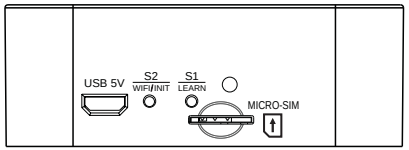
4. Panel Indicator Lights

3 groups of indicators display the Arm/Disarm/Alarm state, GSM signal state, WIFI state and working state.

	Arm&Disarm/ Alarm	STA1	STA2	NOTES
Exit delay	fast flash by turns			
Entry delay	Fast flash simultaneously			
Arm/Disarm operations	Slow flash simultaneously			
Learning state	Fast flash	Fast flash	Fast flash	
Away arm	ON			
Stay arm	Breathing LED			
Disarm	OFF			
Alarm	Slow flash			
GSM network registration		Slow flash		
GSM normal		Pulse flash		
GPRS on line		Breathing led		
GSM faults		OFF		
WIFI configuration mode			Fast flash	
WIFI binding mobile online			ON	
WIFI access to the cloud			Breathing led	
WIFI access router			Pulse flash	
WIFI standby			Slow flash	
WIFI failure			OFF	

NOTES
Fast flash: 0 .1s ON,0 .1s OFF;
Slow flash: 0 .5s ON,0 .5s OFF;
Pulse flash: flash every 5s for 0 .1s.

5. Side Panel Jacks and Function keys



Jacks and function keys	Use	Function description
USB 5V jack	Insert micro USB 5V-1000mA power supply	Main power supply port
S2 WIFI/INIT button	Click 10 times	Parameter initialization
	Keep long press	WIFI distribution network with host
	Click 5 times	WIFI removing binding
S1 LEARN button	Keep clicking to the times needed then loosen	Choose the objects to be learnt
	Keep long press	Turn off under the working state
	Click on	Turn on under the shutdown state
Micro-SIM jack	Insert as diagram shows	SIM card insert slot
MIC jack	MIC jack(can be scalable)	Microphone tone entering hole

6. Buzzer

	Buzzer ringing way	Notes
Away arm	long ringing twice	
Stay arm	short ringing twice	
Disarm	Long ringing once	
Alarm	Alarm sound	
Learn OK	Long singing twice	
Learn already	Short singing twice	
Learn failure	Short singing five times	

NOTES
Long ringing: 0.5s sound, 0.5s mute；
Short ringing: 50ms sound, 50ms mute；
Alarm sound: keep alarm 50ms, 50ms mute.

7.Use Beginning

- **Inset SIM card:** insert standard MICRO SIM card at slot according to the diagrams (should be trimmed with big SIM card); Card inserting is OK when there is a 'tick' sound.
- **Power on:** inert the main power supply at USB 5V jack to power the host.
- **Booting:** at shutdown state, click S1 button then loosen, 3 indicator lights on at the same time, booting OK.
- **Shutdown:** at working state, long press S1 until 3 indicators flash at the same time, then off in 0.1s, shutdown.

8. Parameter Initialization

Keep pressing S2 button above 10 times, until the three LEDs turn on at the same time, it means initialization successful, the host cold starts. After initialization, all the parameters set already would be back to the factory defaults, and eliminate all the remote controllers and detectors learnt as well as network IP. Host would be stay at off-line state; If need to be online again and recover central network state, you should send out SMS and re-set IP.

The users take cautions using such function, generally you can apply if the host parameter was set in a mess or some unknown remotes or detector were learned.

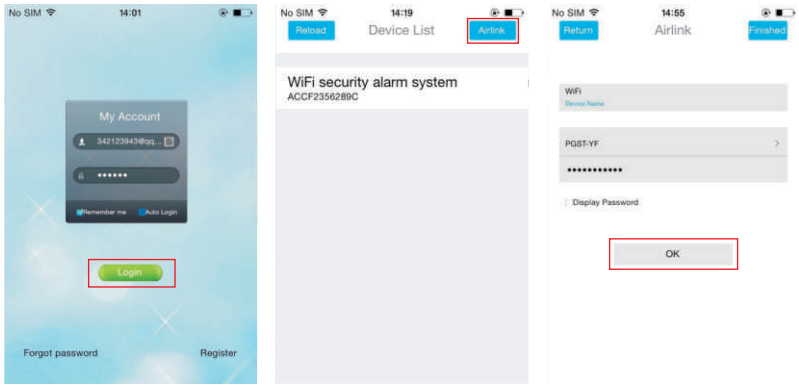
9. Mobile APP Distribution Network/ Unbinding with Alarm Host

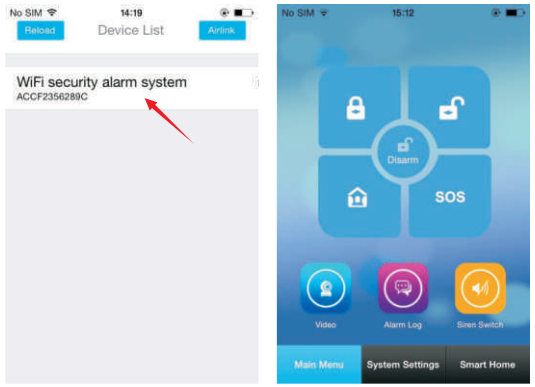
Notes: The following operations are based on iOS APP; There would be some different description with Android APP.

9.1 Mobile APP distribution network with host

- Ensure the host and mobile phones in the same WIFI network.
- Run mobile APP software, login the registered account at the user login interface (new users need to register account number).
- In the device list interface, press the top right corner "Airlink" button, enter the intelligent configuration interface.
- Press down S2 button of the host until the WIFI light flashes fast, then release, the host enters into configuration state.
- Enter the WIFI password, press the "OK" button, WIFI indicator light of the host stops flashing; Configuration is OK.
- After configuration's OK, in equipment list interface, the APP will show the MAC address of the host in the list box , a mobile phone can be configured with multiple alarm hosts; select the corresponding MAC address to the host, and you can control the different hosts

As shown in the figures below:





9.2 Mobile APP unbinding with host

Keep pressing S2 button of the host five times then release, the WIFI light fast flashes 1 second, the host automatically terminates WIFI binding. In about 10~20s, WIFI light flashes slowly which means unbinding is successful. After removing the binding, APP needs distribution network again to match the alarm host.

10.Add or Delete Remotes and Detectors

10.1 How to add

- Control host enters into the learning state: Host can enter the learning state by three ways: S1 button of the host, SMS, and mobile phone APP(More details please check the three points behind).
- Please trigger the corresponding wireless devices within 20 seconds or press any key of the remotes.
- Learning results indicate as follows:
  - ▲ Learning successful: three indicator lights flash 5 times together, buzzer makes 2 long sounds.
  - ▲ Already learnt: three indicator lights flash 2 times together, buzzer makes 2 short sounds.
  - ▲ No storage location or timeout (learn failure): 3 indicator lights flash once together, buzzer makes 5 short sounds.

10.2 Control the host into learning state by S1 key

First keep pressing button to choose the devices to be learnt, then loosen the button, enter learning state. Refer to below tablet:

Device to be learnt	Keep pressing S1 button to choose the device to be learnt	Loosen S1 button to enter learning state of the device
Remotes	3 indicators ON together	3 indicators flash fast together
Door sensor	Red indicator ON	Red indicator flashes
PIR detector	Green indicator ON	Green indicator flashes
Emergency button	Yellow indicator ON	Yellow indicator flashes

10.3 Control the host into learning state or delete remotes/detectors by SMS

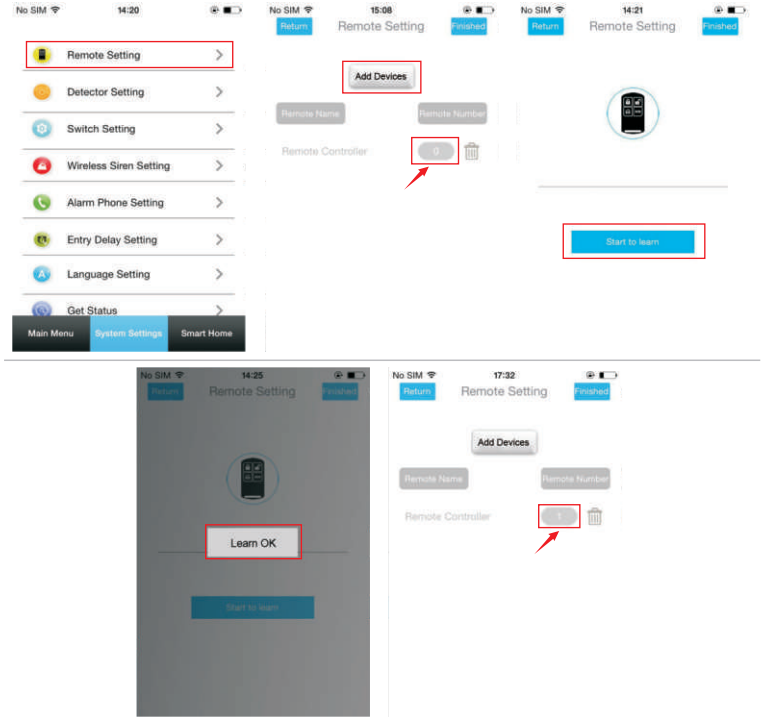
By sending an SMS to the host, control the host into the learning state or delete existing remotes or detectors. Specific methods, see SMS settings part.

10.4 Control the host into learning state or delete remotes/detectors by mobile APP

10.4.1 Query system setting

- Enter “System Settings” menu.
- Press "Remote Setting" and enter the remote controller interface, APP would obtain the Quantity of remotes already learnt with the host.
- Press "Add Devices" button, enter the remotes learning interface.
- Press the button "Learning”, send the host learning instructions of remotes.
- Press any key of the remotes to learn, finish the learning, the host sends the APP information of learning success.
- APP pops up "Learn OK”, finish the learning.
- APP returns to the interface of remote controller, and obtain again the quantity of remotes already learnt with the host.

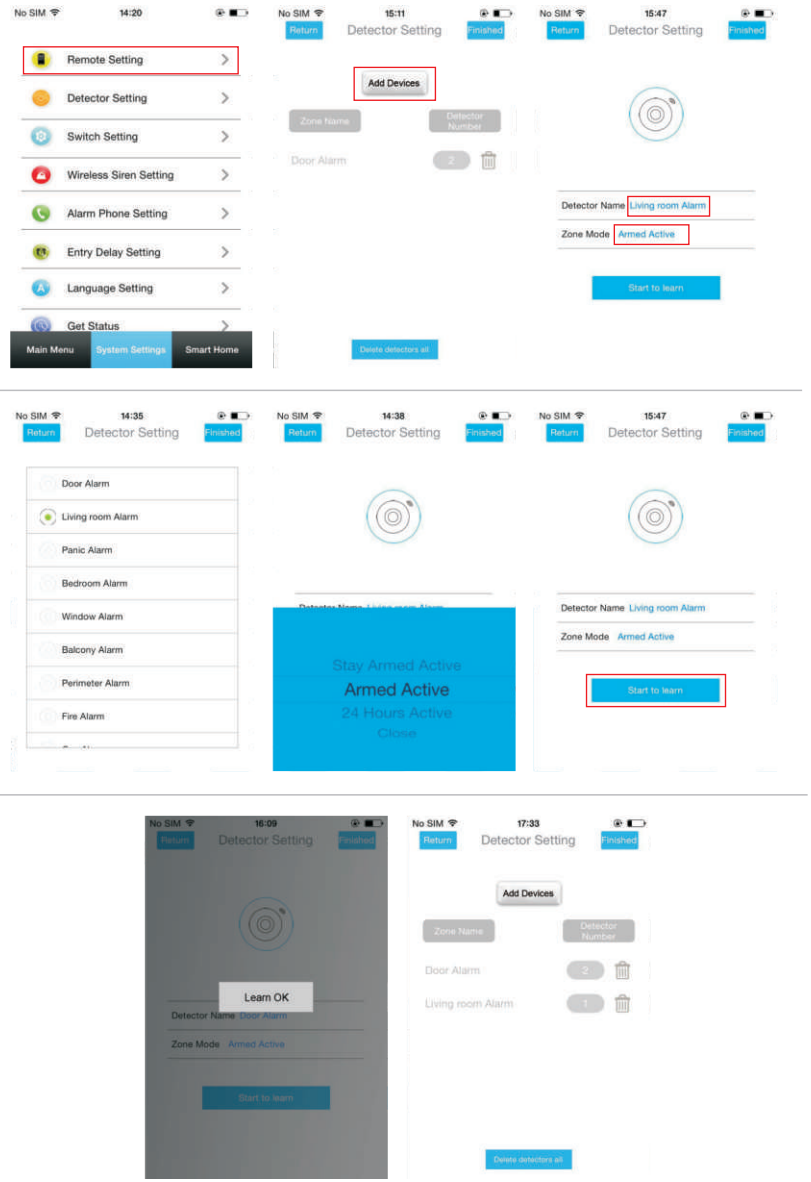
As shown in the figures below:



10.4.2 Mobile APP controls the host to learn detectors

- Enter“System Settings" menu .
- Press "Detector Setting", enter the detector setup interface, APP would obtain the quantity of detectors already learnt with the host.
- Press the "Add Devices" button to enter the detector coding interface.
- Press "Detector Name"column, select one name for the detector which is waiting for coding .
- Press" Zone Mode" column, select the zone type required by corresponding detector .
- Press the "Learning" to send command to the host .
- Trigger the detector to finish coding .Then the host sends message to APP to show it's coded successfully .
- APP pops up “Learn OK”, coding is finished .
- APP returns to detector setup interface, and obtains again the detectors coded and its quantity learnt with the host .

As shown in the figures below:



10.4.3 Mobile APP controls the host to delete remotes learnt

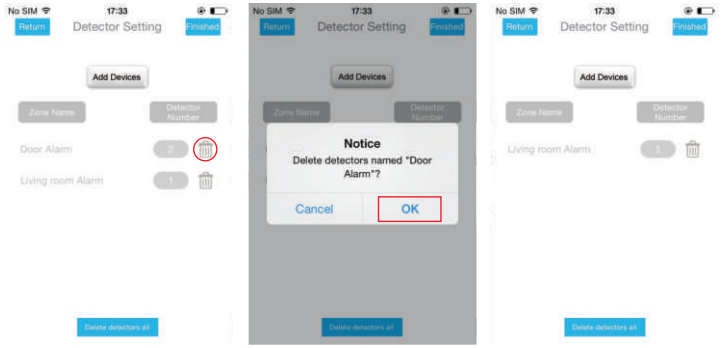
- Keep pressing “Remote Controller” on its setting interface.(In IOS system, press “Delete” symbol)
- Dialogue window pops up, if user confirm to delete, press “OK”. App sends deleting commands to host
- APP returns to the remote setup interface, then obtains the quantity of remote controllers coded again. If deleted successfully, the quantity of remote controller would be zero.

As shown in the figures below:

10.4.4 Mobile APP controls the host to delete detectors learnt

- In detector setup interface, Press detector’s “Deleting”icon in the list coded.
- Dialogue window pops up, if user confirm to delete, press “OK”. App then sends deleting command of corresponding detector to host
- APP return to detector setup interface, then obtains the quantity of all detectors coded again. The detectors deleted would disappear.

As shown in the figures below:



11.Learning With External Wireless Siren

11.1 By S1 button

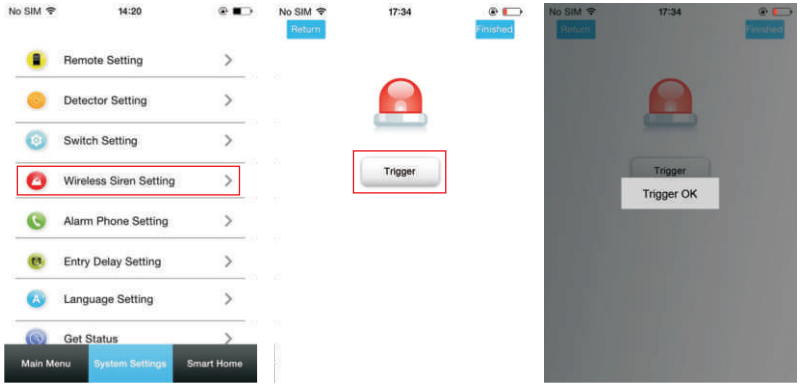
Make the wireless siren into learning status. Press “S1” button till the two led lights flash at the same time then loose it , host will continuously emit one-second signal to the siren.

11.2 By mobile APP control

The way of mobile APP control

- Choose “Wireless Siren Setting” in “System Settings” menu.
- Press “Trigger” button in the interface of wireless siren setup,then App sends wireless triggering signal to host if trigger succeed.
- App shows “Trigger OK” .

As shown in the figures below:



12.Parameter Setting and Query

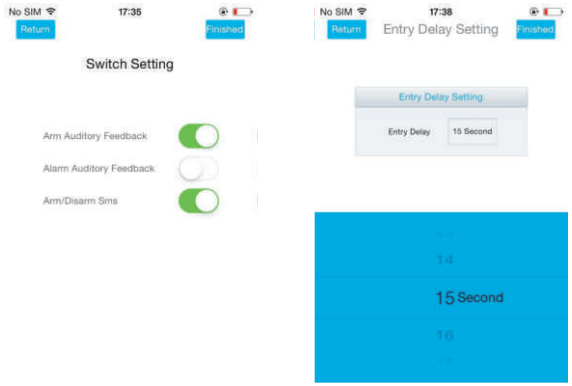
User can set or query host parameters by SMS or mobile app

12.1 App query and parameter setting: function switch setting, alarm phone setting, entry delay setting

- In the switch setting interface:There are three function switches for setting.Turn on or turn off to select the desired function.
- In the alarm phone setting interface:Select the phones icon indicates that alarm phone function is on ,select the SMS icon indicates that alarm message function is on,select the delete icon indicates that alarm function of this phone number is off.
- In the Entry delay setting interface: User can select the desired delay time（unit:second） in the following digital turntable to set entry delay.

After setting the desired function in setup interface, press "Finish" button,App sends setting command to the host.After setting up, user return to the setting interface again with updated contents

As shown in the figures below:



12.2 Remote SMS setting of parameters

Users only need to edit SMS with the following format and send to the host SIM number to complete the setting.

*	Engineer Password	*	Add.	Content	*	Add.	Content	*

One setting SMS can obtain multiple setting addresses and contents,but must isolate them with *,head and tail must end with*,each address must be two digital,or may occur unexpected setting results.One setting SMS can not be more than 160 characters.We recommend set one SMS with all needed contents.

Add.	Function Setting	Content or Range	Factory Default
21	Remotes Learning	Null	Null
22	Delete All Remotes	Null	
23	Detector Learning	Refer to annotation 1	Null
24	Delete Detector with Specified Name of Defense Zone	0~11,Refer to annotation 2	
25	Delete all detectors		
27	SN	0~1048575	SN will roll up with the updating of new software
31	Arm/Disarm,Alarm Siren Beep Switch	1:0N 0:OFF（Only valid for external wireless siren ）	OFF
32	Siren Ring Time	0~255 mins	3mins
33	Exit Delay	0~255s	40s
34	Entry Delay	0~255s	30s
35	Redial Count	1~255 times	once
36	Auto Answer Call Ring Times	1~255 times	once
38	Change User Password	0000~9999 4 digits	1234
39	Change Engineer Password	0000~9999 4 digits	6666
41	Auto Arm/Disarm Switch	1:0N 0:OFF	OFF
42	Auto Arm/Disarm Setting	Refer to annotation 3	Null
43	Parameter Initialization	Null,Refer to annotation 4	
46	SMS Notification of Arm/Disarm Switch	1:0N 0:OFF	OFF
51	Phone Number 1	Refer to annotation 5	OFF
52	Phone Number 2	Refer to annotation 5	OFF
53	Phone Number 3	Refer to annotation 5	OFF
54	Phone Number 4	Refer to annotation 5	OFF
55	Phone Number 5	Refer to annotation 5	OFF
62	GSM CSQ	Null	
90	GPRS IP	Only valid for GPRS networking Refer to annotation 6	Null
91	NTP IP	Only valid for auto arm/disarm Refer to annotation 6	210.72.145.39:123
92	APN		CMNET

Note:All examples below with default engineer password "6666"

(1) Control host into learning status setting format A,B

A is for setting detector name,"0-11" O-others, 1-gate, 2-hall, 3-SOS, 4-bedroom, 5-window, 6-balconies, 7- perimeter, 8-smoke, 9-gas, 10-carbon monoxide, 11-water leak. B is for setting defense zone type, "0-11"t, 0- stay arm , 1- out arm , 2 -24-hour zone , 3- close all corresponding defense zones.

Example:

The detector name is hall and defense zone is out arm,set SMS"*6666*232,1*"

When host receives this SMS,it will enter learning status and trigger detector within 20s,then host will automatically name this detector "hall"(only valid for out arm).

(2) Delete detector

Example:

Delete all named"window" detector,set SMS to be"*6666*245*".

(3) Auto Arm/Disarm setting format: HHMM,hhmm

HHMM is disarm time(hour,minute),hhmm is arm time(hour,minute)

Example:

Set disarm time is 8:20,arm time is 20:30,turn on auto arm/disarm switch, set SMS "*6666*411*420820,2030*".

(4) Parameter initialization:Reserve all learned remotes and detectors , the remaining restore factory settings,set SMS "*6666*43*".

(5) Alarm Phone Number Setting format xxxxxxxxxxA,B

xxxxxxxxxx is phone number (up to 19), A is alarm voice dialing switch (1- ON , 0 -OFF), B is the alarm SMS switch (1 -ON , 0 -OFF) .

Example:

Set two alarm phone numbers ,number 13912345678 to receive voice dialing and SMS , number number 075 581 234 567 only receive voice dialing , then set SMS: *6666 *5113912345678,1,1*52075581234567,1,0*.

(6) IP Address Setting Format aaa,bbb,ccc,ddd,xxxxx

aaa,bbb,ccc,ddd is IP address,xxxxxis port number,intermediate must be isolated with commas

Example:

Set GPRS network server IP address 120.24.237.164, port number is 2001 , then set SMS *6666*90120,24,237,164,2001*.

12.3 Remote SMS setting of host name

Host support to name host in(up to 20 characters), prefix alarm messages for easy identification of specific host or alarm location.

Set SMS:1234mz,xx district, building, "1234" is user password, "xx district, building"is the setting name

12.4 Remote SMS query of parameters set

12.4.1 Query system setting

SMS format *6666*62*

SYSTEM set:
SN:
ENGINEER PASSWORD:
USER PASSWORD:
GSM CSQ:
WIFI RSSI:

12.4.2 Query system setting 2

SMS format*6666*90*

SYSTEM set2:
APN:
GPRS IP:
NTP IP:

12.4.3 Query alarm phone number setting

SMS format *6666*51*

PHONE set:
1:
2:
3:
4:
5:
REDIAL COUNTER:

12.4.4 Query various delay setting

SMS format:*6666*33*

DELAY set:
ENTRY:
EXIT:
SIREN:

12.4.5 Query ON/OFF setting

SMS format:*6666*46*

SWITCH set:
ARM/DISARM BEEP:
ALARM BEEP:
ARM/DISARM SMS:

12.4.6 Query the quantity of remotes and detectors learnt

SMS format :*6666*26*

DETECTOR learned:

REMOTE:

DETECTOR:

13.User Daily Operation

The user can operate the host at any way as follows:

- ✓ Operate by remote controller on site
- ✓ Remotely Sending SMS
- ✓ Remotely using a mobile phone APP
- ✓ Center Remote Control (valid only for GPRS network)

13.1 Arm

Remote control operation: Press the remote control Out Arm key [🔒].

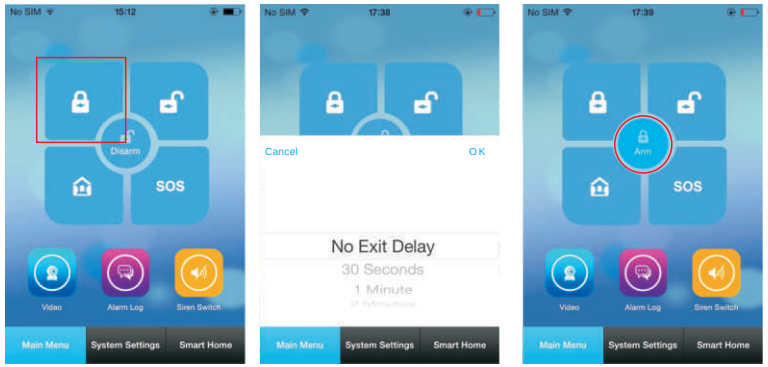
SMS Operation: Send SMS 1234bf, "1234" stands for the user's password. The host will reply to the controlling phone with a message saying "Remote Arm success!".

APP Operation : In the main menu, press "Arm" icon, then select the delayed arming time (Exit delay),3 seconds later, the device will return to Arm successfully, APP's middle status icons is updated as Arm.

Host Tip: 3 LED lights flash slowly once, and the buzzer makes long beeps twice, the host indicator light starts blinking in turn in the exit delay status,the red LED light will keep on when delay time is over, please leave the scene before the end of the delay. If the "Arm / Disarm SMS notification switch" has been opened in the setting, host will send a message saying "Arm success" to the preset phone.

In Arm state, all defense zones are into alert status, at this time once one defense zone is triggered, the control panel generates a local sound and light alarm, and send alarm messages and make phone calls to the pre-set phone numbers , at the same time push the alarm message to phone APP while send alarm information to the network monitoring center.

As shown in the figures below:



13.2 Stay Arm

Remote control operation: press Arm key on the remote control at home[ ].

SMS Operation: Send SMS[1234zj], "1234" stands for the user's password. The host will reply to the controlling phone with a message saying "Stay Arm success!".

APP Operation: In the main menu, press the "Stay Arm" icon for 3 seconds, the device will return to stay Arm successfully, APP's middle state icon is updated as Stay Arm.

Host Tip: 3 LED lights flash in turn for 1 second, the buzzer makes short beeps twice, and the red indicator light starts breathing display. If the "Arm / Disarm SMS notification switch" has been open in the setting, the host will send a message saying "Home Arm success" to the preset telephone.

In home Arm state, only stay arm's effective defense zone is into alert state, if the zone is triggered at this time, the control panel generates a local sound and light alarm, and send alarm messages and make phone calls to a pre-set alarm phone number, meanwhile push alarm message to the phone APP, and send alarm information to the network control center.

As shown in the figures below:

13.3 Disarm

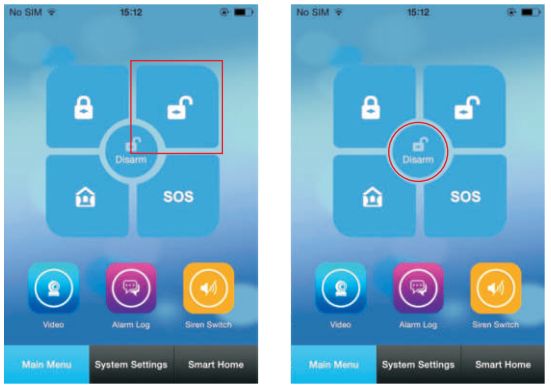
Remote control operation: Press the [ ] button on the remote control to disarm.

SMS Operation: Send SMS[1234cf], "1234" stands for the user's password. The host will reply to the controlling phone with a message saying "disarm success!"

APP Operation: In the main menu, press "Disarm" icon for 3 seconds, the device will return to disarm successfully, APP's middle state icon is updated as disarm.

Host Tip: 3 LEDs flash twice slowly, the buzzer makes a long beep once, after disarm, all alarms would be stopped, the host will be back to normal state. If the "Arm / Disarm SMS notification switch" has been opened in the setting ,the host will send a message saying"disarm success" to the preset phone number.

As shown in the figures below:



13.4 SOS

Remote control operation: Press the SOS button on the remote control [**SOS**].

APP Operation: In the main menu, press the "SOS" icon.

Host Tip: 3 LED lights flash quickly 10 times, the buzzer makes 5 short sounds quickly , 3 seconds later, the middle icon of the APP is updated as “SOS” icon, generating a local sound and light alarm, meanwhile send an alarm SMS message or dial the pre-set alarm phone number, meanwhile send alarm information to the network control center.

As shown in the figures below:

13.5 Modify SMS to control user password

SMS operation: Send SMS 1234mm5678, “1234” stands for the user's password, “5678” is for the new password, must be four digits.

13.6 SMS operation feedbacks

◁Host’s name>:
Remote Operation Results
Current status: Arm / Stay Arm / Disarm
Power supply status: main power / backup (backup battery voltage)

14.Alarm and Remote Monitoring

The host supports multiple alarm types, when the alarm occurs, it would send the corresponding alarm message to the user mobile phone number and push alarm information to the mobile APP through the detector name defined in learning and even send alarm information to network monitoring center while dial the user’s phone number , the user can monitor the scene once the telephone has been got through.

The host also supports the following alarm types:

- ✓ The host AC power failure (the host AC power fault lasts for 5 seconds, the alarm will be valid).
- ✓ Back-up battery low power (in power fault state, if the backup battery voltage is lower than 3.45V for 10 seconds, this alarm will be valid
- ✓ The main power restore

14.1 SMS Alarm

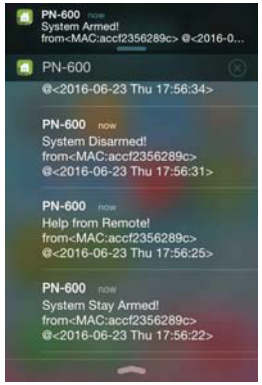
When the alarm occurs, the host sends alarm SMS to the preset phone numbers, as follows:

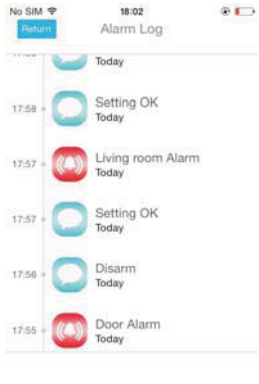
◁Host’s English name>:
The current alarm
Current status: Arm / Stay arm / Disarm
Power supply status: main power / backup (back-up battery voltage)

14.2 Mobile APP receiving alarm process.

When the alarm occurs, the host push alarm information to the mobile phone then the user enter the main menu of APP, APP’s middle icon status is changed to” red bell” symbol, and APP displays the current alarm type. The user can choose "alarm message" icon to query for all user operation records and host alarm records by pressing “Alarm Log”.

As shown in the figures below:





14.3 Network monitoring center alarm

When the alarm occurs, the host will instantly send alarm information to the network monitoring center through GPRS network online function. Once it receives alarm and recheck the alarm, will rapidly deal with emergency response.

This function will be valid after the user network alarm function and service of the host have been opened .

14.4 Remote monitoring

In monitoring, users can cut off warning signal on scene by pressing any number key on phone.Directly hang up the phone if no need to monitor.

14.4.1 Host automatically calls preset phone numbers when alarm

When the alarm occurs, the control panel will automatically dial the preset several groups of telephone numbers (voice switch must be turned on in setting), the user can monitor the scene after the answer has been got through. If the user does not answer or dial-up fails, the host will redial the preset phone numbers constantly according to recycling times until the user answers.

14.4.2 Preset phone numbers remotely call host

When the preset several groups of phone numbers call alarming host automatically, the host will be got through automatically to make user monitor the site.

15. Packing list

- One kit of alarm system, built-in backup battery.
- micro USB 5V / 1000mA standard power.
- The rest parts is up to customer demand.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
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.

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

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