

AN-307

LoRaWAN Siren

User Manual



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1. Introduction

1.1 Profile

The AN-307 LoRaWAN Siren makes light and sound to tell the guard management there is an alert. It supports standard LoRaWAN protocol. It has high detection accuracy. With a durable shell, it has a long life span.

Application

Typically installed on wall. For example, you can get an alert on the management platform immediately if a window open when you go to bed, or if you leave home without closing the back door.

1.2 Feature

- Support LoRaWAN™
- Frequency: CN470/AS923/ EU868/US915/AU915 optional

1.3 Specification

Description	Item	Performance
Radio performance	Transfer rate	300bps~5.4Kbps
	Protocol	LoRaWAN 1.0.2/ 1.0.3
	Frequency	CN470MHz~510MHz EU863MHz~870MHz US902MHz~928MHz AU915MHz~928MHz AS920MHz~925MHz
	Max Tx Power	20dBm(17dBm in default)
	Max link budget	167dB
	Rx sensitivity	-141dBm(SF=12)
	LoRa	Built-in

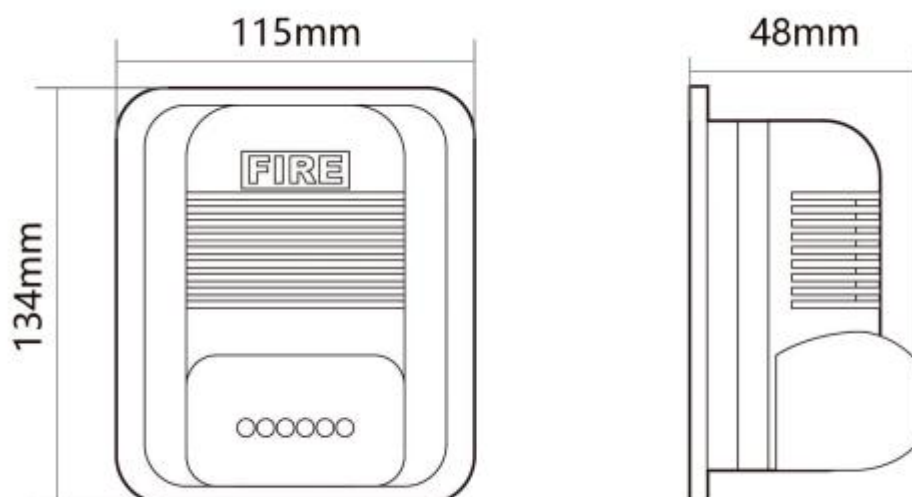


	antenna	
Working condition	Temperature	-10℃~ + 55℃
	Humidity	≤95%RH(non-condensation)
Power	Power supply	DC12V (with an adaptor optional)
Current	Working current	≤28mA
	Tx current	≤125mA
Size		125x125x47(mm)
	Light alarm	120 times/minute±10%
	Flash energy	≥1.2WS
	Siren volume	≥110dB
	Sounds optional	Police sound effect; Fire engine sound; Ambulance sound optional

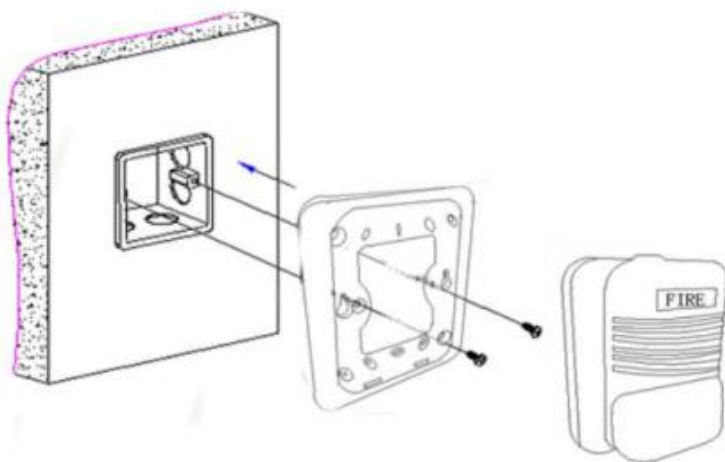


2. Structure

2.1 Dimension



2.2 Install and wiring



1. Before installation, please check if the device intact with full accessory kits.
2. The alarm shall be installed on the wall. It is recommended to be fixed as 0.2m away from the ceiling.
3. During installation, fix the device mounting plate to the embedded 86H50 junction box into the wall with two screws.
4. Connect the cable to the corresponding terminal through the inlet hole of the device base. Then clip device with the bottom and put it on the base plate. Gently press the

top of the device to fix.

5. Gently press the top or bottom of the device for disassembling.

6. The power cord uses BV wire with the cross-sectional area as $\geq 1.5\text{mm}^2$.

3. How to work

After a sensor triggered, it sends alarm data to management platform. After receiving the data, it sends messages to AN-307. Then AN-307 generates sound and light as a warn for prompt alarm management. Once the alarm disarming, it makes sounds and light for 10 seconds.

Installation method: wall-mounted, track-mounted.

4. Configuration

4.1 Prepare for configuration

Before configuration, please prepare the following tools and docs.

Tool	Description
Laptop	Used for parking sensor setting
Wireless bluetooth Serial Port Tool	Tool communicates parking sensor via blue tooth.
Web-based configuration tool	Setting via Web-based graphic interface
Document	Please contact our after-sales technician for the latest documents.



Laptop as host computer



Wireless configuration module



Software work with host computer

Figure: Configuration Tool



Note:

1. Please contact our technical staff for Web configuration tool docs (host configuration tool).
2. Serialport.exe: CP210x_Windows_Drivers

4.2 Install wireless configuration tool driver

(1). Open the file and select the wireless configuration tool driver program.

(2). Install driver program.

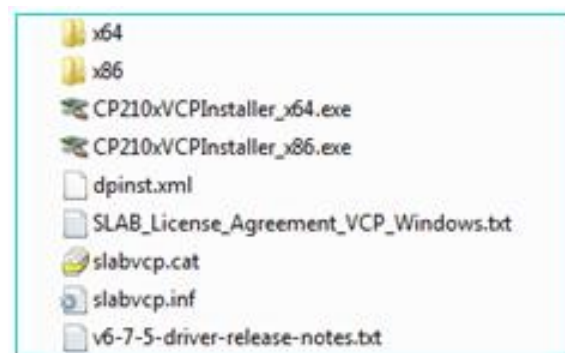
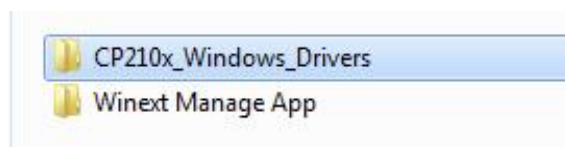
For 32-bit operating system, please uses “CP210xVCPInstaller_x86.exe”.

For 64-bit operating system, please uses “CP210xvcpiinstaller_x64.exe”.

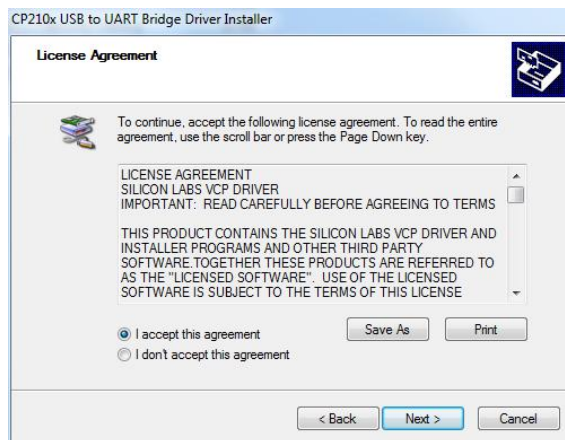
(3). Progress of installation

Here is an example as how to install “CP210xvcpiinstaller_x64.exe”

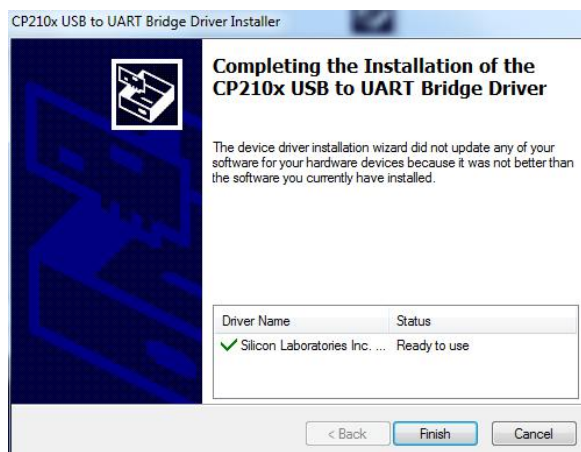
Double click “CP210xvcpiinstaller_x64.exe”



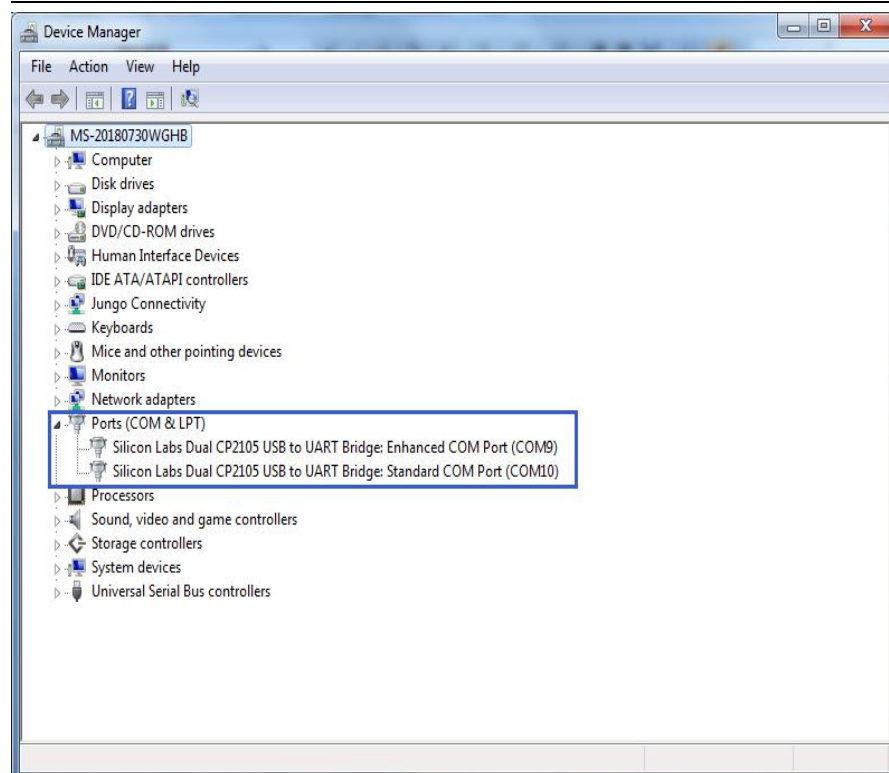
Select *Accept the License Agreement* and click on *Next*.



Wait for a while and click on *Finish*.

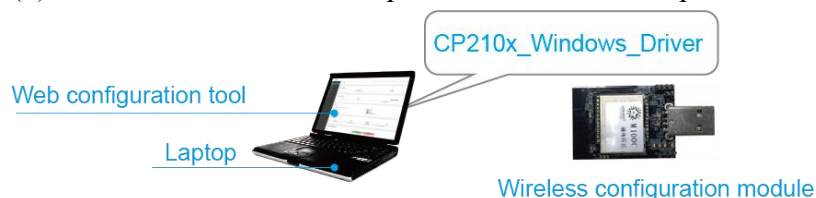


Check the driver program after installation done. Click on *Computer-Attribute-Device manager* icon



4.3 Configuration process

(1). Insert the wireless serial port tool into the USB port of the laptop.



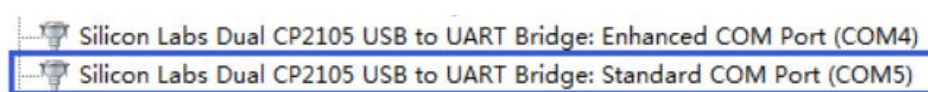
(2). Open the web-based configuration tool folder, “serialport-win32-x64” folder, double-click “serialport.exe” to open the web-based configuration tool software.

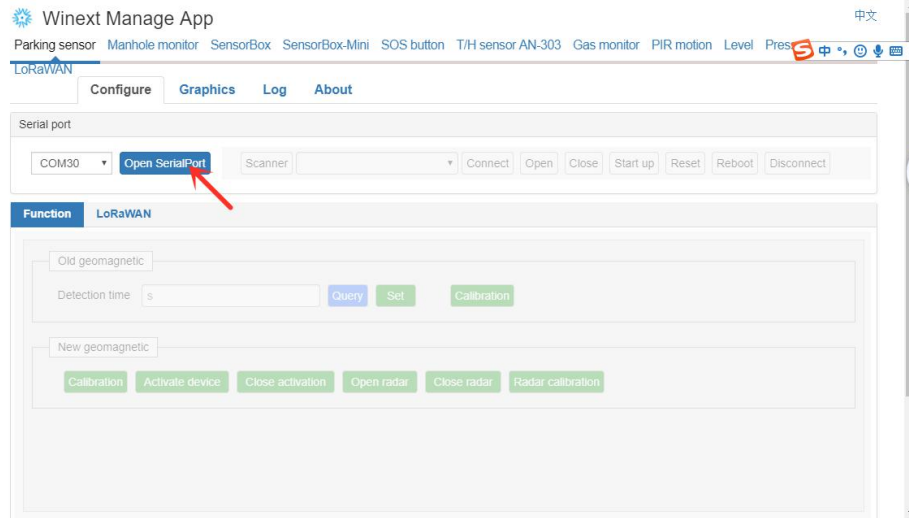
Note: The serial port number may different on different laptop.

(3). Process

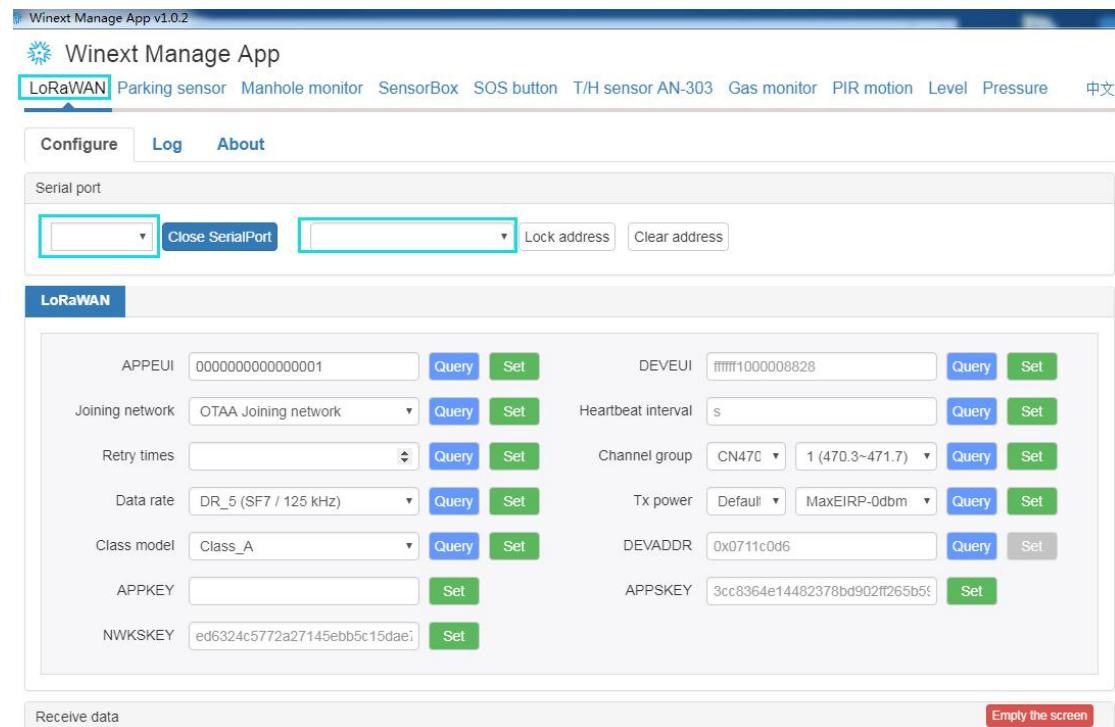
a. Choose serial port

Click on Computer-Attribute- Device manager icon to check serial port number, select bluetooth “Silicon Labs Dual CP2105 USB to UART Bridge: Standard COM Port”. Here is an example to type in COM5.



b. Open the web-based configuration tool software-Winext Manage App.

c. Lock device

Put the device close to configuration tool and turn it on. If the device is turned, please reboot. The ID will pop up automatically on in the Winext Manage App. Then please lock the device.


d. Device parameters query and setting

e.g.: Query APPEUI, heartbeat interval, channel group

Winext Manage App v1.0.2

Winext Manage App

LoRaWAN Parking sensor Manhole monitor SensorBox SOS button T/H sensor AN-303 Gas monitor PIR motion Level Pressure 中文

Configure Log About

Serial port

LoRaWAN

APPEUI 0000000000000001 Query Set	DEVEUI ffffff1000008828 Query Set
Joining network OTAA Joining network Query Set	Heartbeat interval s Query Set
Retry times Query Set	Channel group CN47C 1 (470.3~471.7) Query Set
Data rate DR_5 (SF7 / 125 kHz) Query Set	Tx power Default MaxEIRP-0dbm Query Set
Class model Class_A Query Set	DEVADDR 0x0711c0d6 Query Set
APPKEY Set	APPSKEY 3cc8364e14482378bd902ff265b5f Set
NWKSKEY ed6324c5772a27145ebb5c15dae Set	

Receive data

Winext Manage App v1.0.5

Winext Manage App

Parking sensor Manhole monitor SensorBox SensorBox-Mini SOS button T/H sensor AN-303 Gas monitor PIR motion Level Pressure 中文

LoRaWAN

Configure Log About

Serial port

LoRaWAN

APPEUI 0000000000000001 Query Set	DEVEUI ffffff1000008828 Query Set
Joining network OTAA Joining network Query Set	Heartbeat interval s Query Set
Retry times Query Set	Channel group CN47C 1 (470.3~471.7) Query Set
Data rate DR_5 (SF7 / 125 kHz) Query Set	Tx power Default MaxEIRP-0dbm Query Set
Class model Class_A Query Set	DEVADDR 0x0711c0d6 Query Set
APPKEY Set	APPSKEY 3cc8364e14482378bd902ff265b5f Set
NWKSKEY ed6324c5772a27145ebb5c15dae Set	

Receive data

[14:15:24] OK

[14:15:25] Sending data: AT+APPEUI=?

[14:15:25] +APPEUI:>0000000000000001 OK

It returns acknowledgement message after query or setting at the bottom of the interface.

When the device locked successfully please query or set promptly. If there is no any operation, after 10 seconds it will lose connection. It needs to operate from first step.

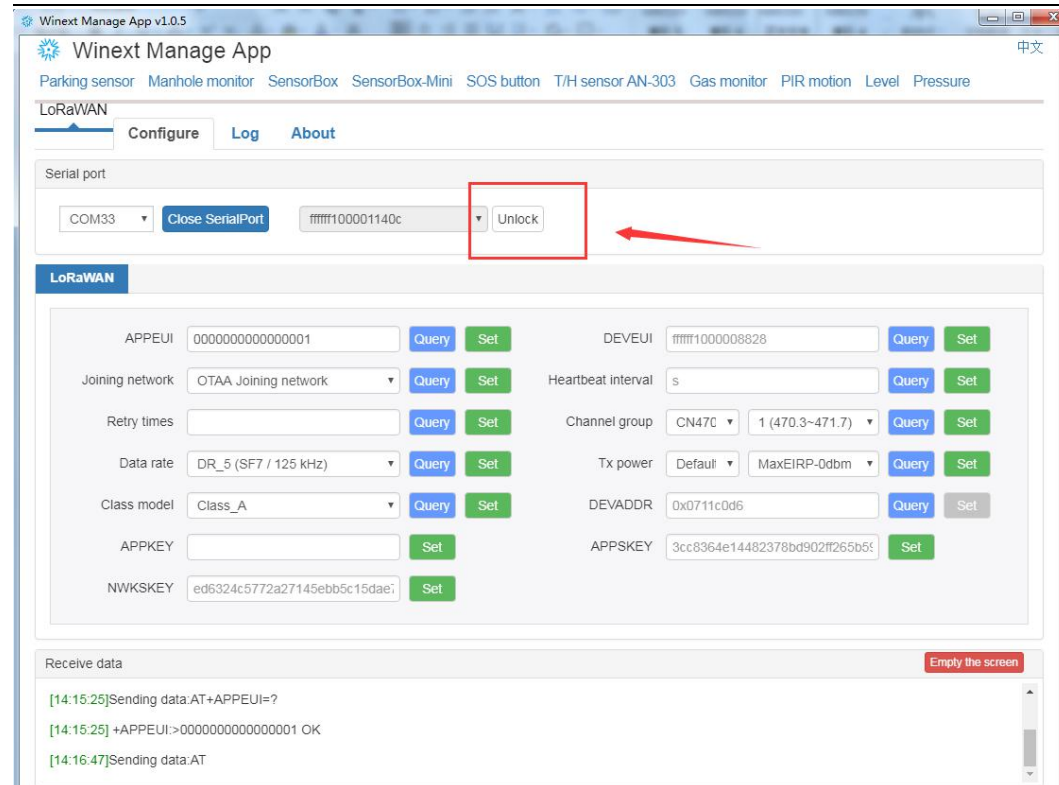
e. Some parameters can not be set. You can query it only.

 Winext Manage App

The screenshot displays the Winext Manage App v1.0.5 interface, specifically the LoRaWAN configuration screen. The top navigation bar includes links for Parking sensor, Manhole monitor, SensorBox, SOS button, T/H sensor AN-303, Gas monitor, PIR motion, Level, Pressure, and 中文. The main interface is divided into two tabs: 'Configure' and 'Log'. The 'Configure' tab is active, showing various configuration fields for the LoRaWAN network. The fields are organized into two columns. The left column includes APPEUI (0000000000000001), Joining network (OTAA Joining network), Retry times, Data rate (DR_5 (SF7 / 125 kHz)), Class model (Class_A), APPKEY, and NWKKEY. The right column includes DEVEUI (ffffff1000008828), Heartbeat interval (s), Channel group (CN47C), Tx power (Default), DEVADDR (0x0711c0d6), and APPKEY (3cc8364e14482378bd902ff265b5f). Each field has a 'Query' button and a 'Set' button. The 'Log' tab is also visible, showing the received data, including the timestamp [14:15:24] OK and the message [14:15:25] Sending data: AT+APPEUI=?.

f. Activation

After finishing setting, please click unlock icon and reboot the device.



5.Communication format

1. AT_COMMAND packet definition

Byte	Description
1	0x06 Sensor type
2	0x01: Turn on device; 0x00: Turn off device
3	1-65534, Timing(in Hex)
4	

Here is an example to turn on AN-307 and set timing as 10s.

e.g.: 06 01 00 0A



2. AT_COMMAND uplink packet definition

Byte	Description
1	0x06: Sensor type
2	0x01: Sensor disabled 0x00: Sensor enabled

3. Heartbeat packet uplink definition

Byte	Description
1	0x09: Sensor type
2	0x00: Sensor online

6. Cautions

- 1.Prohibit the use of salt spray, acid, alkaline and organic solvents in the environment.
2. Avoid using in the environment with large dust.
- 3.Prolonged exposure to sunlight or intense ultraviolet radiation is prohibited, which will degrade the performance.
- 4.When the sensor needs to carry out long-distance signal transmission, attention should be paid to the attenuation of the signal.
5. Ensure the normal use of the product. Please read this manual carefully and keep it for future reference.

Version	Description	Editor	Date
V1.0	Initial version	Peng Su	2nd-Dec-2019



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This is a product manual as an installation, operation and use file. Specifications subject to change are without notice. For more information, please call us or contact the sales staff.