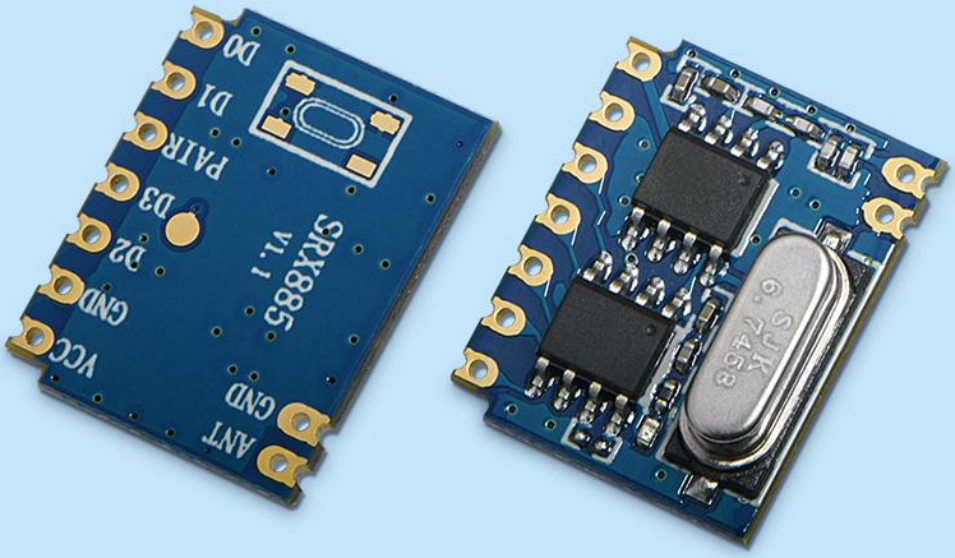
ASK with decoding receiver module

Product Specification



Catalog

1. Product description.....- 3 -
2. Product Features.....- 3 -
3. Application field.....- 3 -
4. Performance parameters.....- 4 -
5. Pin definition.....- 4 -
6. Typical application circuit.....- 5 -
7. Functional Description.....- 5 -
8. Application method.....- 9 -
9. Peripheral accessories.....- 9 -
10. Mechanical size（unit：mm, error±0.01mm）.....- 10 -
11. Product Ordering Information.....- 10 -

Note: Revision History

Historical version number	release time	Modify content
V1.0	2019-11-5	Initial Release

1. Product description

The SRX885 is a micro power consumption receiver module with RF superheterodyne demodulation. It can be used with our STX series ASK transmitter module. This product has high stability, anti-interference and high cost performance, and also has a four-way switch output function. It is flexible to use, low cost, development-free debugging, self-decoding, adaptive coding, automatic learning of the market RF remote control. A large number of applications in light control switches, wireless doorbells, smart homes, rolling gates, remote control toys, anti-theft alarm and other fields. The modules can pass ROHS, FCC, CE and other certifications。

SRX885 is manufactured and tested strictly using lead-free process and complies with RoHS and Reach standards.

2. Product Features

- Frequency range: 433 / 315 MHz
- Modulation：ASK/OOK
- Can pass various international testing standards
- Automatic identification and learning 2262, 1527, 2240 and other common coding methods
- Decoding corresponds to D0-D3 four outputs
- Five output modes are available (Toggle mode, Self-locking mode, Jog mode, Interlock mode , Serial output mode), LED status indication setting mode
- Wide range decoding, automatic adaptation to conventional oscillating resistors
- One-button emergency shutdown output function
- Can learn 80 remote control, power down can save in form ation optional serial mode output, baud rate fixed 9600bps
- Super strong against power interference
- Small volume, low self-radiation

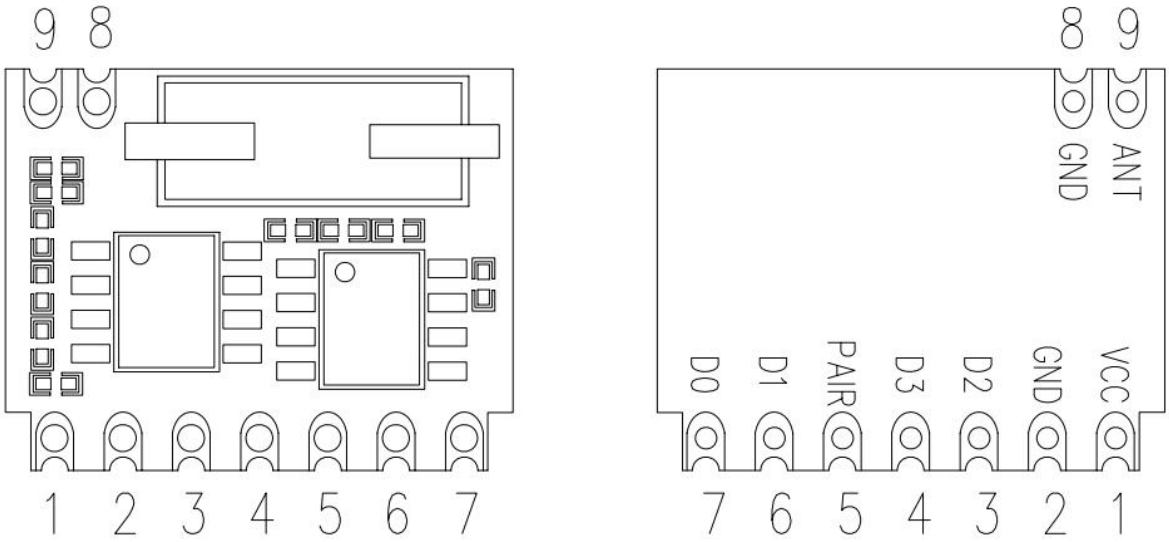
3. Application field

- Remote control door
- Wireless security alarm
- Wireless industrial control
- Wireless data transmission

4. Performance parameters

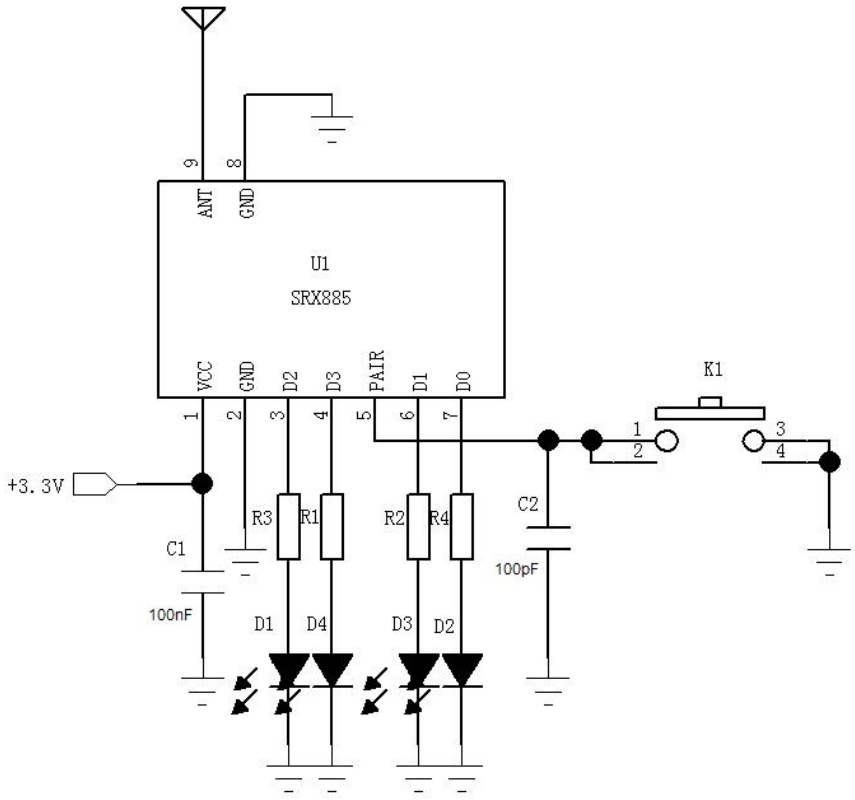
Parameter	Minimum	Typical	Largest	Unit	Condition
Operating conditions					
Operating voltage range	2.8	3	5.5	V	
range of working temperature	-20	25	70	℃	
Current consumption					
Working current		4.5		mA	@433MHz
Radio frequency parameter					
Frequency Range	433.82	433.92	434.02	MHz	@433MHz
	314.9	315	315.1	MHz	@315MHz
Sensitivity		-115		dBm	@1Kbps
Receiving bandwidth		350		KHz	

5. Pin definition



Pin number	Pin definition	Description
1	VCC	Power supply is positive, range 2.8V-5.5V
2,8	GND	Power ground
3	D2	4-way switch output
4	D3	4-channel switch output, can be used as serial output
5	Pair	Pair of code buttons
6	D1	4-way switch output
7	D0	4-way switch output
9	ANT	Connect 50 ohm antenna

6. Typical application circuit



7. Functional Description

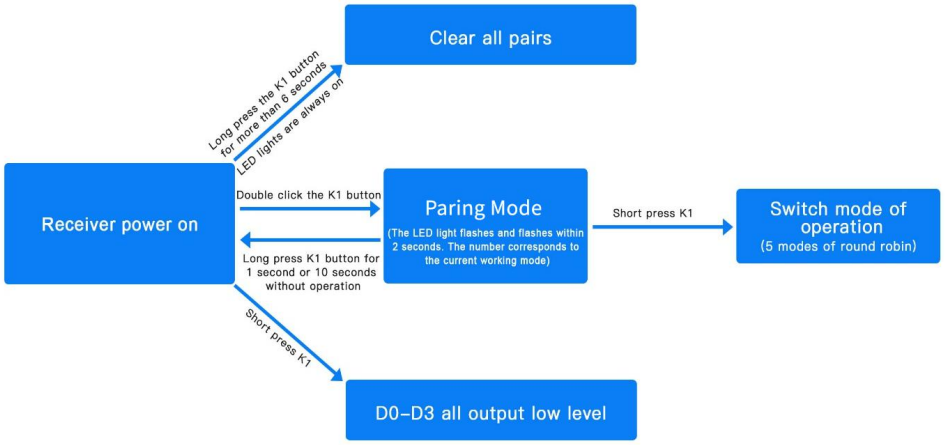
➢ Module usage conditions:

SRX885 needs to be used with the transmitter, and the buttons need to be drawn from the PAIR pin, and then can communicate with each other after the code is matched with the transmitter.

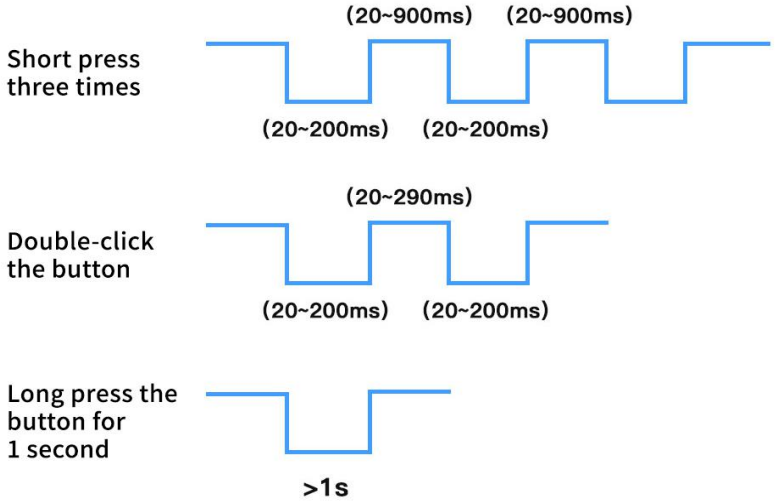
➢ PAIR button instructions:

The button defaults to high level. Double-click the button, that is, press twice within 1 second; short-press the button, that is, press once within 1 second; long-press the button, that is, hold down for more than 1 second.

➢ The key functions are as follows:



➢ The key sequence diagram is as follows:



➢ Coding method:

After the module is powered on, double-click the button to enter the code matching mode. At this time, any key of the transmitter will transmit data to learn the code. After the receiver receives it, the blue light will be on for about 1 second, and the code matching will be successful.

➢ Exit the code matching mode:

After the module enters the code matching mode, the indicator light flashes at a fixed period of 2 seconds, and the number of flashes corresponds to the current working mode. At this time, press and hold the button for more than 1 second and then release it to exit the code matching mode, or without any operation, it will automatically exit the code matching mode after 10 seconds. At this time, the indicator light no longer flickers fixedly.

This module has 5 different working modes, the functions are as follows：

1) **Toggle mode**：That is, each time the remote control is pressed, the corresponding output pin state is reversed, and the high and low level is rotated.

2) **Self-locking mode**： That is equivalent to the 2272L4 function, keeping the state of the last trigger.

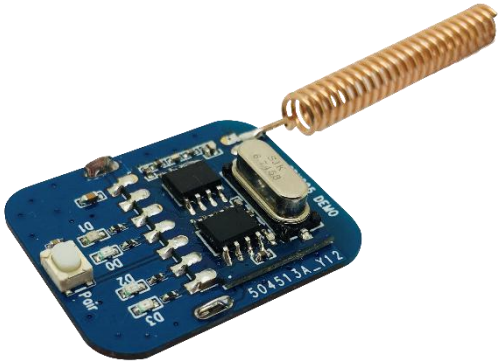
3) **Jog mode**：Corresponding to the function of 2272M4, the corresponding level of the temporary output is transmitted. After no trigger, D0-D3 becomes low.

4) **Interlock mode**：D0-D3, each time only one is high, the other is low, the transmitter can only be independently pressed, combination not allowed.

5) **Serial output mode**：That is, the corresponding three-byte decoding is output from the serial port of the D3 pin fixed at 9600bps, and the ASC2 code clear text output, such as LC: 1234569C\r\n, then the three valid bytes of the string are 0x12, 0x34, 0x56, and "LC:" is a fixed frame header, 0x9c is a three-byte sum check, and the last \r\n is an escaped newline character, which can be viewed through the serial port assistant. (STX885 button K0, K1, K2, K3 output string are respectively, LC: 8510A83D, LC: 8510A439, LC: 8510A237, LC: 8510A136)

DEMO board instructions：

We have designed a DEMO board for this module, which is convenient for customers to choose the operation demonstration, as shown below：



1) After power-on, double-click the K1 button, the work indicator will start flashing, enter the setting mode (in addition to learning the code, you can also set the output mode). In this mode, you can use it to learn the code and trigger the corresponding remote transmitter. The work indicator light is about 1 second, which is the success of learning. If there are other remote control, you can repeat the above actions. After the learning is completed, stay for 10 seconds without any operation， it exit the learning mode,.User can also press and hold the K1 button for about 1s to exit the learning mode. After exiting the learning mode, learning indicator is no longer fixed. After receiving the remote control that has been learned, it will light up. After the transmission signal disappears, it will go out. (The module can learn 80 remote control transmitters at the same time, which can be saved even

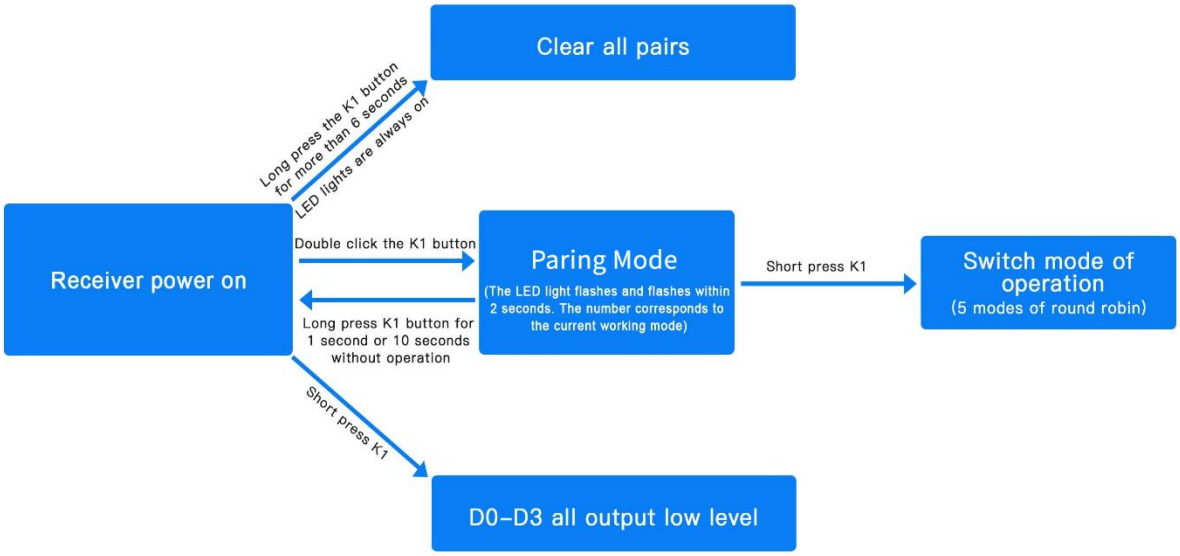
power is off)

2) During the learning of the code period, the LED will flash rapidly every 2 seconds. The number of flashes 1-5 corresponds to the above 5 different output modes. To switch the working mode, press the K1 button once, then go to the next step. Mode, the next mode of mode 5 is mode 1, and this way, until the appropriate mode is selected, the exit mode is the same as the way of learning the code above.。

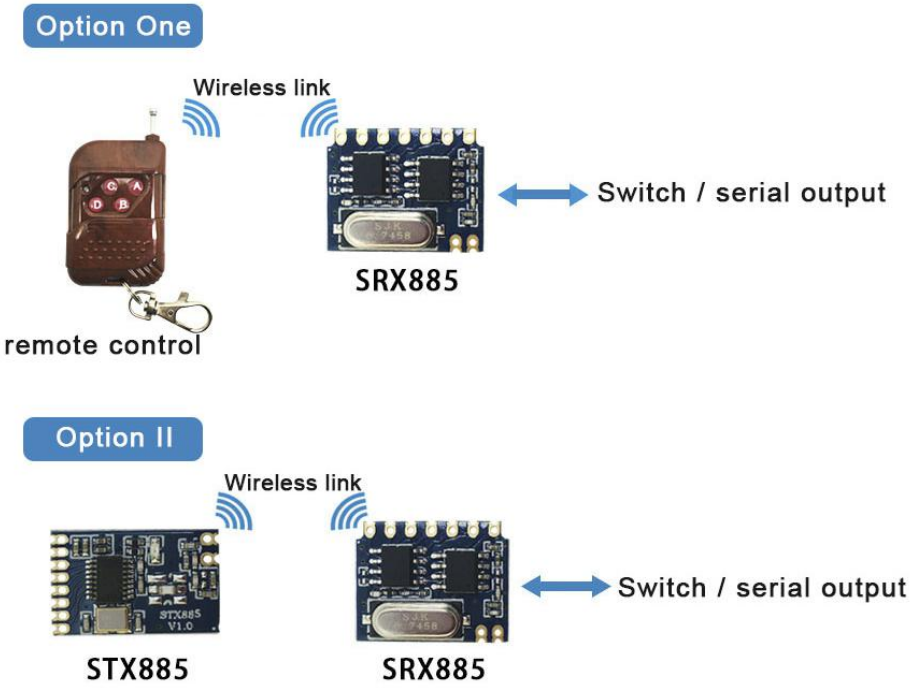
3) After power-on, press and hold the K1 button for more than 6 seconds, release the button, then all the learned codes are cleared.。

4) During the operation of the module, when it is urgent to shut down, for example , the motor of the rolling gate needs to stop urgently, you can short press K1, then D0-D3 all turn low output.。

5) Key function diagram, as shown below：



8. Application method



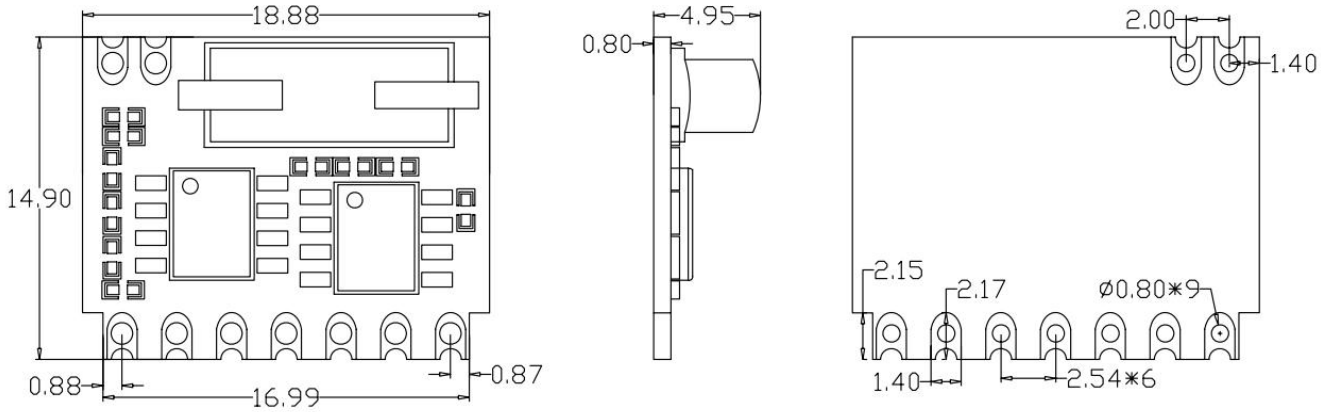
9. Peripheral accessories

The antenna is an important part of the communication system. Its performance directly affects the indicators of the communication system. The antenna impedance required by the module is 50 ohms. The universal built-in antenna has a spring antenna, and can also be used to connect the antenna such as straight head/elbow/folding rod and small sucker through SMA. Users can purchase the antenna according to their own application environment.In order to make the module in the best working condition, it is recommended. Use the antenna provided by NiceRF。

Note: The following principles should be followed during antenna use to ensure the best communication distance of the module.：

- Try not to be close to the ground surface of the antenna, and it is best to stay away from obstacles.；
- If the suction cup antenna is purchased, the lead wire should be straightened as much as possible, and the suction cup base should be attached to the metal object.；

10. Mechanical size（unit：mm, error±0.01mm）



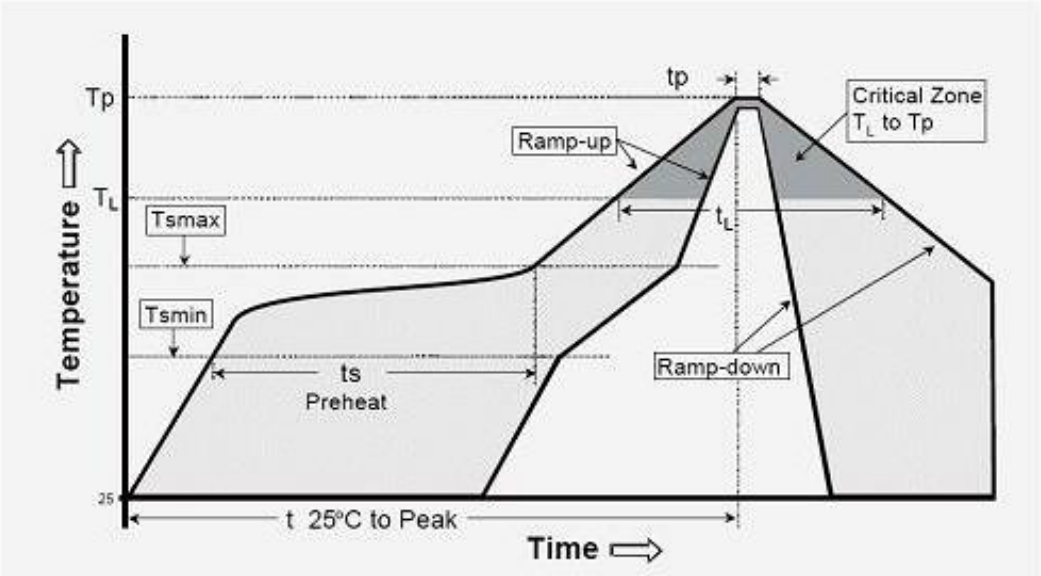
11. Product Ordering Information

For example, the customer needs a module in the 433MHz band, and the order model is: SRX885-433

Currently SRX885 products are available in the following models：

Order model	product type
SRX885-315	Product working frequency band is 315 MHz
SRX885-433	Product working frequency band is 433 MHz

Appendix: furnace temperature curve



IPC/JEDEC J-STD-020B the condition for lead-free reflow soldering	big size components (thickness >=2.5mm)
The ramp-up rate (Tl to Tp)	3℃/s (max.)
preheat temperature - Temperature minimum (Tsmin) - Temperature maximum (Tsmax) - preheat time (ts)	 150℃ 200℃ 60~180s
Average ramp-up rate(Tsmax to Tp)	3℃/s (Max.)
- Liquidous temperature(TL)	217℃
- Time at liquidous(tL)	60~150 second
peak temperature(Tp)	245+/-5℃