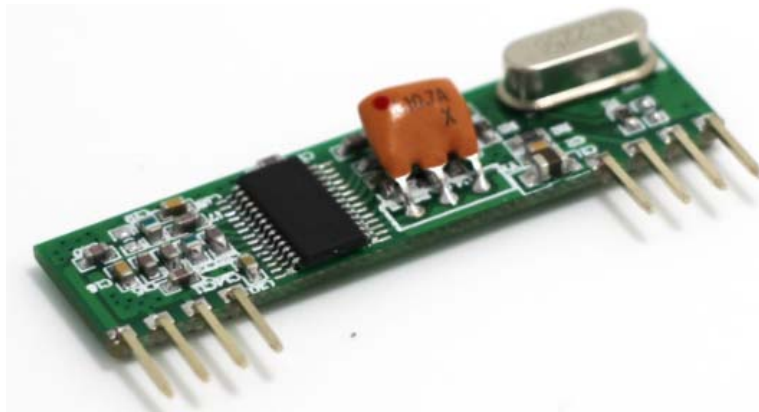


ASK Superheterodyne Wireless RF Receiver Module

# SPECIFICATION

Model No.: DL-RX98H

Version: V2.0



**Before using this module, please read this document carefully, and pay attention to the following important matters:**

This module is an electrostatic sensitive product. Please operate it on an anti-static workbench during installation and testing.

The module uses an external antenna by default. The antenna can be a wire antenna or a standard UHF antenna. You can choose a specific antenna according to the actual situation. If the terminal product uses a metal shell, be sure to install the antenna outside the metal shell. Otherwise, the RF signal will be seriously attenuated, which will affect the effective distance.

Metal objects and wires should be kept away from the antenna as much as possible.

When installing the module, nearby objects should be kept at a sufficient safety distance from the module to prevent short circuit damage.

This module should be used in a dry environment. Please do not make any liquid substance come into this module.

Please use an independent voltage regulator circuit to supply power to this module, and avoid sharing with other circuits. The tolerance of the power supply should not be less than 5%.

### **Limitations:**

This module is intended to be embedded in the customer's terminal product application, and does not provide a casing itself. It is not recommended that the customer directly resell this module as a final product without permission.

This series of modules are in accordance with commonly used international standards. If there is any special certification needed, we can adjust certain indicators according to your needs.

This module cannot be applied to life rescue, life-support systems, or any occasion where personal injury or life threatening may cause by equipment failure. Any organization or individual carrying out the above-mentioned applications shall bear all risks at their own.

We will not be responsible for any direct or indirect damage, injury or loss of profits caused by products that use this module.

DL-RX98H is an ISM band high performance superheterodyne RF receiver module. This receiving module adopts industrial grade RF wireless data receiving chip from Infineon, which has high receiving sensitivity, and very strong anti-interference ability. It can realize wireless signal input to data signal output without any external circuit.

Its superior performance makes it a good choice as RF receiving module for the automotive RKE system. Users can easily develop wireless products by simply adding a data decoding circuit

## 1. Features:

- Operation frequency: 315 Mhz, 433.92 Mhz (customizable for special frequencies);
- The receiving sensitivity can reach -110dBm;
- Operation voltage: 5V;
- Low power consumption, 4.6mA; power consumption can be as low as 100nA in power enabled mode;
- Completely integrated VCO and PLL synthesizers;
- Good selectivity and stray radiation suppression, easy to pass safety test;
- Good local radiation suppression, can work together with multiple modules (one to many) and will not interfere with each other, the receiving distance also not been affected;
- Temperature range: -40~85 C (industrial grade), can work well even in harsh environment.

## 2. Applications:

- Auto anti-theft RKE system
- Access Control System
- Tire Pressure Monitoring System
- Wireless Security alarm
- Data Communication System
- Controlled Curtain Machine
- Remote Control System
- Wireless Industrial Controller
- Smart Home System
- Wireless Data Transmission

3. Product Size & Pins Definition:

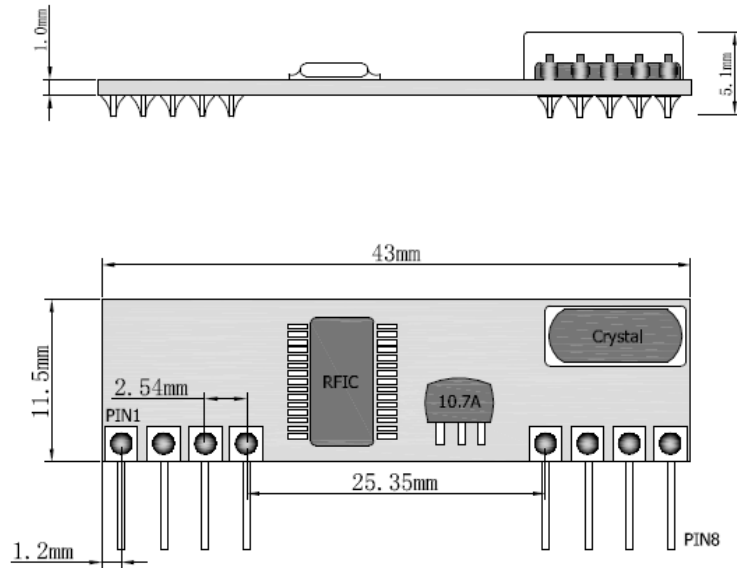


Figure 1: Module size

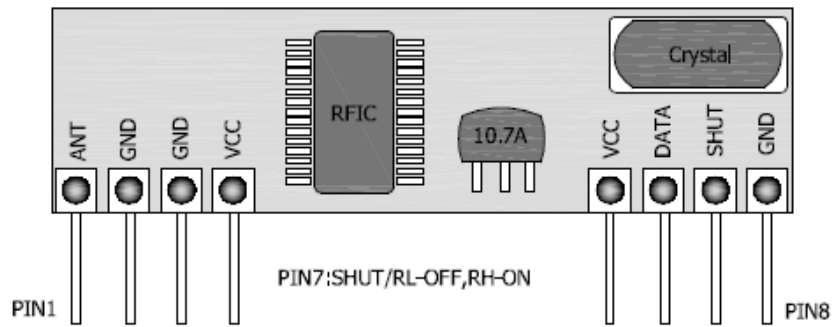


Figure 2: Pins diagram

The DL-RX98H module has 8 pins, which are defined in the following table

Pin	Name	Description	Remark
1	ANT	Antenna input, single core copper wire is recommended	>0.8mm $\phi$
2	GND	Grounding, common ground with the system	
3	GND	Grounding, common ground with the system	
4	VCC	Positive power supply	

5	VCC	Positive power supply	
6	DATA	Data output	
7	SHUT	Power saving mode enable port	
8	GND	Grounding, common ground with the system	

Table 1: Pins Definition of DL-RX98H Module

#### 4. Technical Parameter

RF characteristics ( under the Power supply of 5V, Ta = 25 °C , frequency 315MHz test conditions)

No	Characteristics	Technical Parameter			Unit
		Min.	Typi.	Max.	
1	Frequency range	314.90	315.00	315.00	MHz
2	Modulation mode		ASK		
3	Receive sensitivity		-110		dBm
4	Receiving bandwidth		200		KHz
5	Working voltage	4.5	5.0	5.5	V
6	Working current			4.6	mA
7	Mirror frequency suppression		20@336.4MHz		dB
8	Standby current	50		100	nA
9	Wake up time		1		mS
10	Communication distance			300	M
11	Working temperature	-40		85	°C

Table 2: High frequency characteristic table under 315Mhz

RF characteristics ( under the Power supply of 5V, Ta = 25 °C , frequency 433.92MHz test conditions)

No	Characteristics	Technical Parameter			Unit
		Min.	Typi.	Max.	
1	Frequency range	433.82	433.92	434.02	MHz

2	Modulation mode		ASK		
3	Receive sensitivity		-110		dBm
4	Receiving bandwidth		200		KHz
5	Working voltage	4.5	5.0	5.5	V
6	Working current			4.6	mA
7	Mirror frequency suppression		20@412.52Mhz		dB
8	Standby current	50		100	nA
9	Wake up time		1		mS
10	Communication distance			300	M
11	Working temperature	-40		85	°C

Table 2: High frequency characteristic table under 433.92Mhz

\*Note 1: If one or more ratings are exceeded the max. value in use, the device will be permanently damaged.

\*Note 2: Electrostatic sensitive devices shall comply with the protection rules during operation.

\*Note 3: The driving current of the data output pin of the module is weak. If an MCU is connected to the driver, the I / O port of the MCU must not be connected with the pull-up or pull-down resistance, and the internal resistances of the MCU should also be set in the disabled state.

## 5. Connection between module and terminal equipment (TTL electrical level)

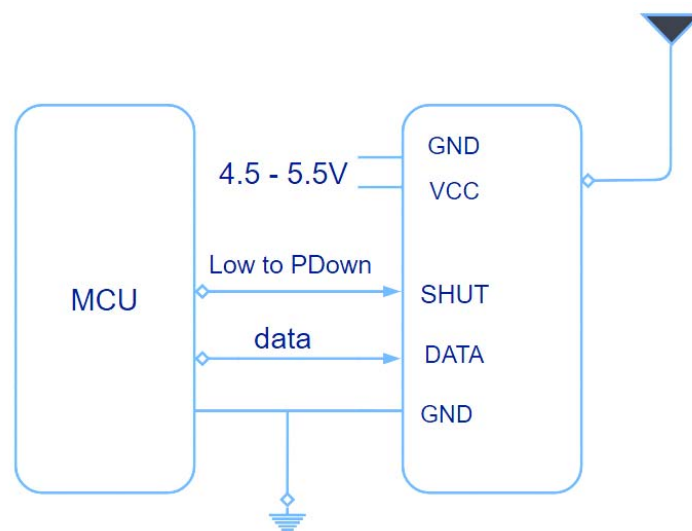


Figure 2: Wiring diagram for module application

## 6. Notices in module application

Considering the complexity of data transmission over the air, the radio frequency modulation method of the data, and some inherent characteristics of electromagnetic waves, the following issues should be considered during the application process.

1. The electromagnetic interference of the application environment will affect the actual distance of the remote control. Electromagnetic wave interference is divided into mainboard power supply interference, TFT screen data cable interference, Flash data exchange interference; and airborne carrier frequency interference, noise interference, high-power signal source interference, etc.
2. Factors such as product size, internal space, and coating of the shell will cause the attenuation of the wireless signal, which will affect the remote-control distance. Usually the narrow internal space of the product is not conducive to the extension of the antenna. The outer shell should avoid metal or metal plating as much as possible.
3. To choose a proper antenna is very important. The antenna is an important part of the communication system, and its performance directly affects the indicators of the communication system. We must pay attention to its performance (antenna type, antenna electrical performance) when selecting the antenna. Please feel free to contact us for consultation or recommendation, if you need.

## 7. Contact us

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