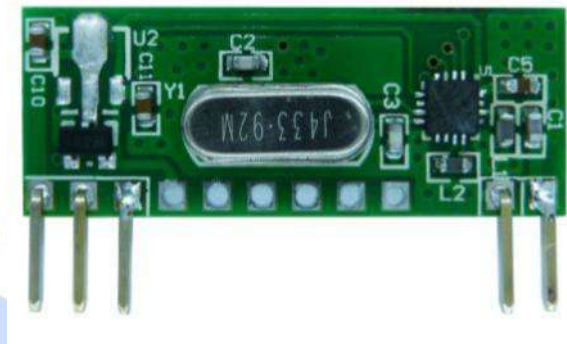




Type: ASK/OOK/FSK Super-Heterodyne Receiver Module**Model: CY121****1. Description:**

The CY121 is an ASK/OOK/FSK compatible super heterodyne wireless receiving module with high performance for ISM frequency band. With the adoption of European brand RF wireless data transferring/receiver chipsets, the module has advantages at high receiving sensitivity, small size and low cost. It solves the problem on space for the small-sized product. From wireless signal input to data output can be done without any electrical circuit. User only use extra simple data decode circuit can achieve wireless products development.

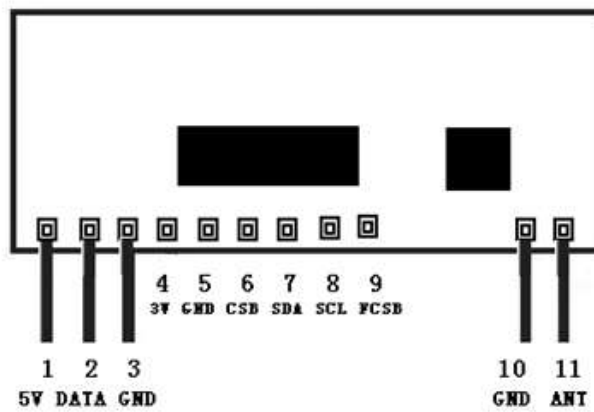
**2. Features:**

- Frequency: 300M – 960M (315 MHz, 433.92 MHz, 868.325 MHz, 915 MHz. Other frequencies, such as 868mhz, 868.35mhz, 868.6, 868.8mhz, in this range can be customized);
- High sensitivity -109dBm;
- Supply voltage: 3.6V – 5.5V;
- Operating temperature: -20°C ~ 70°C (Customized -40 ~ 85°C is available), work normally even in the severe temperature environment;
- Excellent inhibiting ability for local oscillator radiation: multiple receivers receive signals from one transmitter simultaneously without any mutual interference and influence on range;
- 31.5*12*5mm;

3. Application

- Remote door openers
- Remote keyless entry
- Wireless security systems
- Remote control
- Wireless door ring
- Wireless data transmission

4. Pin Description



CY121 Shape & Pin

Pin Name	Pin Definition
5V	Connect to positive power supply
VDD	Connect to positive power supply
GND	Connect to negative power supply
3V	Interior configuration program port
GND	Interior configuration program port
CSB	Interior configuration program port
SDA	Interior configuration program port
SCL	Interior configuration program port
FCSB	Interior configuration program port
GND	Connect to negative power supply
ANT	Antenna input

Note 1: CY121 is come with standard 5 PINs. Please notify us if you would like 11 PINs



Note 2: ANT pin is a 50 ohm antenna input.

The length is about: 23cm for 315MHz; 17cm for 433.92MHz; 8.6cm for 868.325 MHz; 8.2cm for 915 MHz

5. Electrical Characteristics:

Condition: Ta=25°C Vcc=5V Frequency=315MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		315		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		25		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	3.5	4.0	4.5	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5V Frequency=315MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		315		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	3.5	4.0	4.5	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	



Condition: Ta=25°C Vcc=5.0V Frequency=433.92MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		433.92		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5.5	3.6	V	
Current	3.8	4.3	4.8	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=433.92MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		433.92		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	3.8	4.3	4.8	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	



Condition: Ta=25°C Vcc=5.0V Frequency=868MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.325MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.325		MHz	
Modulation	FSK				



CY121

RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.325MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.325		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.35MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.35		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	



CY121

Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.35MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.35		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.6MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.6		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min.		0		V	



CY121

voltage					
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.6MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.6		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=868.8MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.8		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	



Condition: Ta=25°C Vcc=5.0V Frequency=868.8MHz ASK/OOK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		868.8		MHz	
Modulation	ASK/OOK				
RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=915MHz FSK

Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		915		MHz	
Modulation	FSK				
RF Sensitivity		-108		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		60		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

Condition: Ta=25°C Vcc=5.0V Frequency=915MHz ASK/OOK

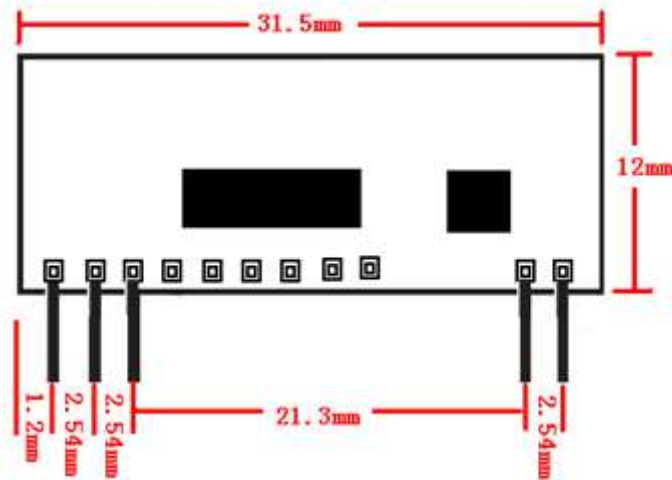
Characteristics	Specification			Unit	Note
	Min.	Typ.	Max.		
Frequency Range		915		MHz	
Modulation	ASK/OOK				



CY121

RF Sensitivity		-109		dBm	50Ohm antenna input directly/1K Kbps
Receiving Bandwidth		160		KHz	
Supply Voltage, VDD	3.6	5	5.5	V	
Current	5.2	5.7	6.2	mA	
Image Rejection		35		dB	
Decoding output max. voltage		3.3		V	RL=500K
Decoding output min. voltage		0		V	
Operating Temperature	-20/-40		70/85	°C	

6. Mechanical Size: (Unit: MM)



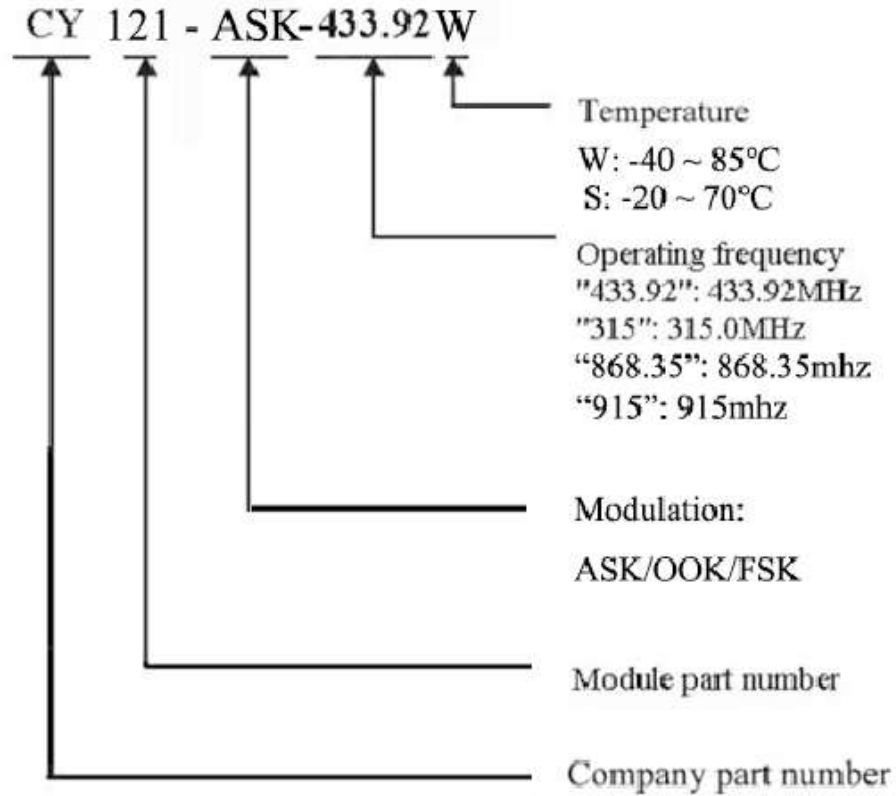
CY121 Dimension

7. Caution

Because of the low drive current of data output pin, if directly drive MCU, please do not connect I/O port of this MCU with pull-up resistor or pull-down resistor and disable the interior pull-up resistor or pull-down resistor of this MCU.



8. Order Information



For more information and assistance, please contact us as follows:

CY WIRELESS TECHNOLOGY LIMITED

Add: 1407, Block C, Tairan Building, 8th Tairan Road, Futian District,
Shenzhen, Guangdong Province, China

Website: www.rficy.com

Email: info@rficy.com