LS-U100 RF Module

Low Power RF Module User Manual

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1. General Introduction

LS-U100 rf module, designed with high efficiency FEC technology, good performance IC and high speed MCU, is an excellent RF transceiver. Its power output is 100mW, transmission distance reaches 1km LOS. It has the advantage of small size, low power consumption, long transmission distance, and also, strong anti-interference ability. LS-U100 adopts transparent transmission. Users don't need any program knowledge.

2. Application Field

* AMR (Automatic Meter Reading)
* Wireless alarm and security systems
* Building automation, wireless monitoring, Access Control System;
* Wireless data transmission, automatic data collection system;
* Wireless POS, PDA wireless smart terminal;
* Wireless PTZ remote control, LED display;
* Industry automation, wireless telemetry, SCADA and so on.
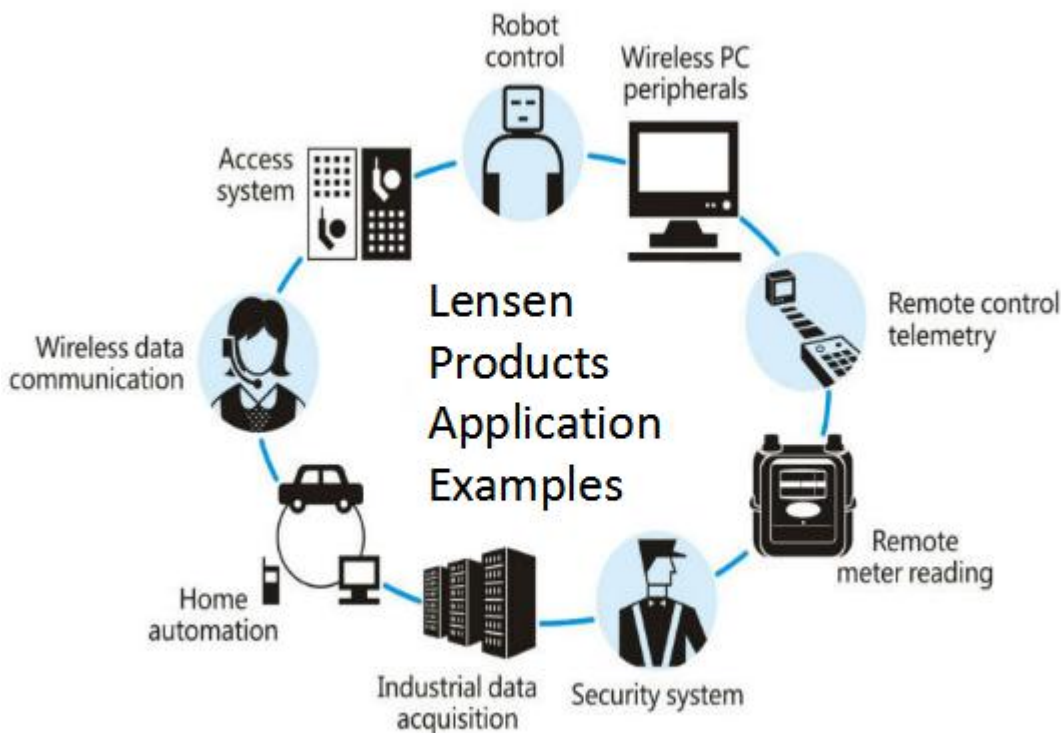
| PERFORMANCE	
Power Output:	100mW
RF Line-of-sight Range:	1000m@1200bps; 600m@9600bps
RF Effective Rate:	1200/2400/4800/9600/19200bps
Space Channel:	1MHz(Default), (12.5/25KHz customization)
Bandwidth:	<25KHz
Receiver Sensitivity:	-120dBm@1200bps, -115dbm(9600bps)
Data format:	8N1, 8E1, 8O1 (customize)
COMPATIBILITY	
LS-UN10, LS-U100, LS-U1000, LS-UN5000 series	
POWER	
Supply Voltage:	5V DC
Transmit Current:	<40mA
Receive Current:	<20mA
Sleep current:	<20uA
GENERAL	
Communication Mode:	Half-duplex
Frequency Band:	400MHz, or 450MHz, 470MHz
Frequency modulation	FSK/GFSK
Channel:	8(default),16/32/64(optional)
Interface:	TTL, RS232, RS485 (choose one)
PHYSICAL PROPERTIES	
Size:	47mm×26mm×10mm (excluding antenna base and data pin)
Weight:	20g
Antenna Base:	50Ω, SMA
Operating Temperature:	Industrial:-40℃~+85℃(TCXO)
Frequency Stability:	±2.5ppm Industrial

3. Technical specification

4. How to Use It

1) Install Dimension
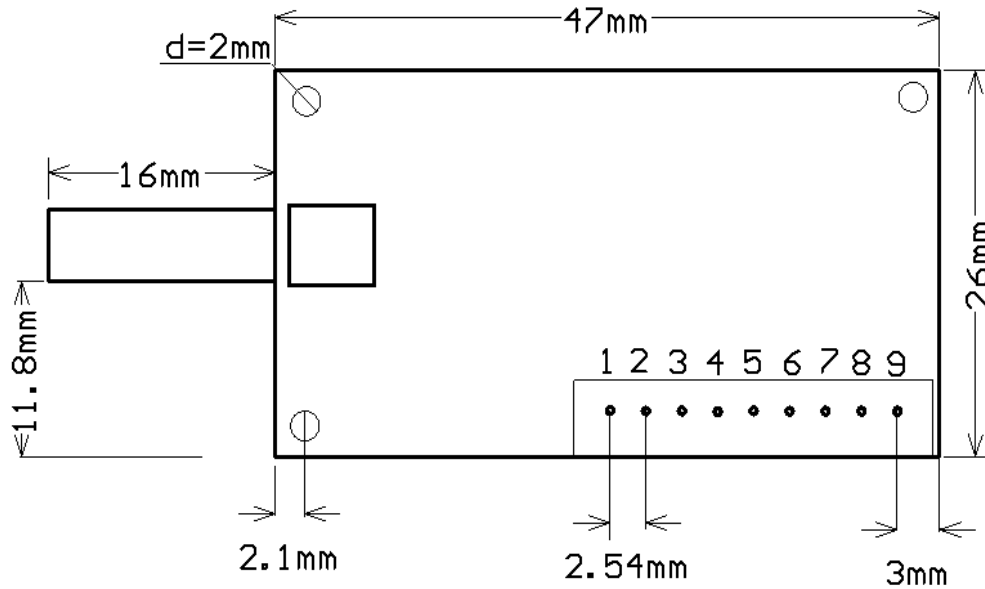
2) How to connect LS-U100 with PC.

PC   RF Module
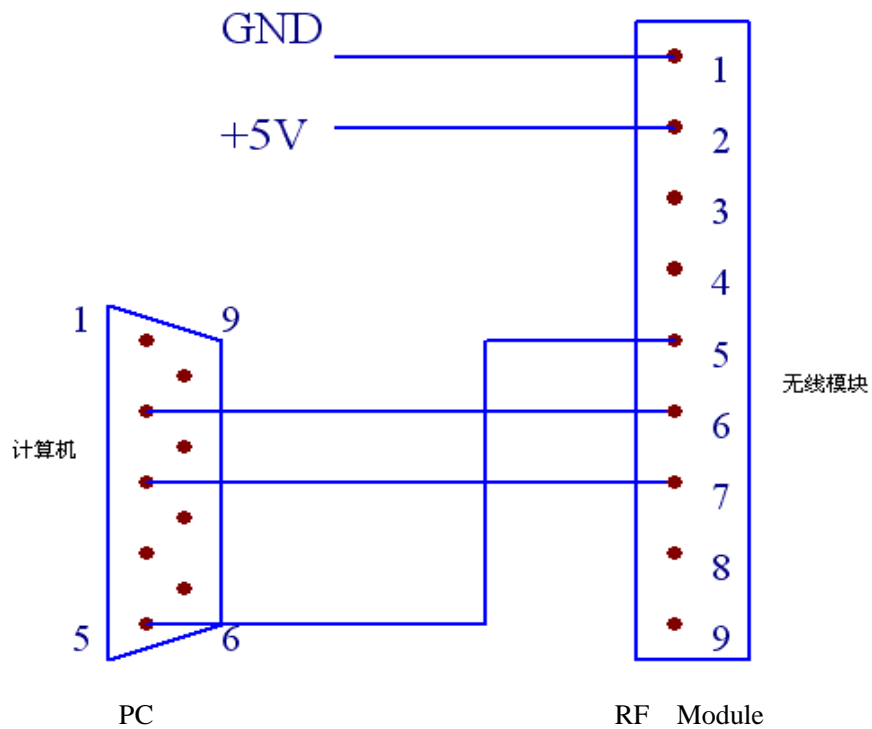
3) Pin Definition (9 pin)

Pin No.	Signal Name	Function	Level	Connection with terminal	Remarks
1	GND	Grounding of power supply		Ground	
2	VCC	Power supply DC	+3V ~5.5V		
3	RxD/TTL	Data receiving	TTL	TxD	
4	TxD/TTL	Data transmitting	TTL	RxD	
5	SGND	Signal			
6	A (TXD)	A of RS-485 (TxD of RS-232)		A(RxD)	
7	B (RXD)	B of RS-485 (RxD of RS-232)		B(TxD)	
8	SLEEP	Sleep control	TTL	Sleep signal	Low level valid
9	TEST	Factory testing			

LS-U100 can provide RS232, RS485 or TTL interface, please choose one when you place order.

4). The Function of LED indicator

    a. The LED indicator flashes red for 0.5S when power supply on.
    b. The LED indicator blinking blue when receiving data.
    c. The LED indicator blinking Red when transmitting data.
    d. The LED indicator keeps dark when the module is in sleep mode.

5). Parameter setting by our software

You can use our software Lensen.exe to read or set the parameter on computer. When you connect RF module to PC by the testing cable, please remember to connect the DB9 as well as USB port to computer.

Channel Configuration:

Each channel has its fixed frequency point which is pre-write to MCU in factory. The following is the configuration table for our common module. If you need other frequency points, please tell our sales when you place order.

Channel No.	Frequency	Channel No.	Frequency
1	429.0325MHz	5	433.0325MHz
2	430.0325MHz	6	434.0325MHz
3	431.0325MHz	7	435.0325MHz
4	432.0325MHz	8	436.0325MHz

5. Accessories

1) Antenna

A0   A1   A2   A3   避雷器   30CM排线

2) Standard unit
  a. LS-U100 RF module 1pc
  b. 9-PIN cable 1pc
  c. rubber antenna 1pc (A0)

3) Other accessories you may be interested
  a. Power supply D.C.(5V, 1A)
  b. RS232 program cable (for module with RS232 interface, use this to connect PC)
  c. TTL program cable (for module with TTL interface, use this to connect PC)
  d. RS232-RS485 converter (for module with RS485 interface, if you need to program module on PC, you need a converter)
  e. Higher gain antenna (to reach longer distance, you may need high gain antenna)
  f. Antenna connector (to extend antenna connector)
  g. Arrest (to Prevent Lightning Strikes)

Notes:

1. To keep good communication effects, please use power supply D.C. with lower ripple coefficient whose max current need to be higher than 1.5*module's max current. (Suggest 5V, 1A)
2. TTL, RS232, RS485 interface, please choose one when you place order.
3. Baud rate: interface rate are programmable by our software. Air rate is fixed; please indicate when you place order.
4、When Pin8 is at low level, module will enter sleep mode. Under this mode, you cannot transmit and receive data. When it is at high level or hang on for 150s, module will enter working mode. (if you don't need sleep function, please hang on PIN8)