

FC-211SU 868MHz Micropower Data RF Module

USER MANUAL



SHENZHEN FRIENDCOM TECHNOLOGY DEVELOPMENT CO.,LTD

Address: 2/F, Multifunction Building, Dongpeng Industrial Park,

Wuhao Road, North Section of Hi-tech Park, Shenzhen 518057 China

Tel: +86-755-86026603 +86-755-29926100

Fax: +86-755-86026300

E-mail: faq@friendcom.com

Website: <http://www.friendcom.cn>

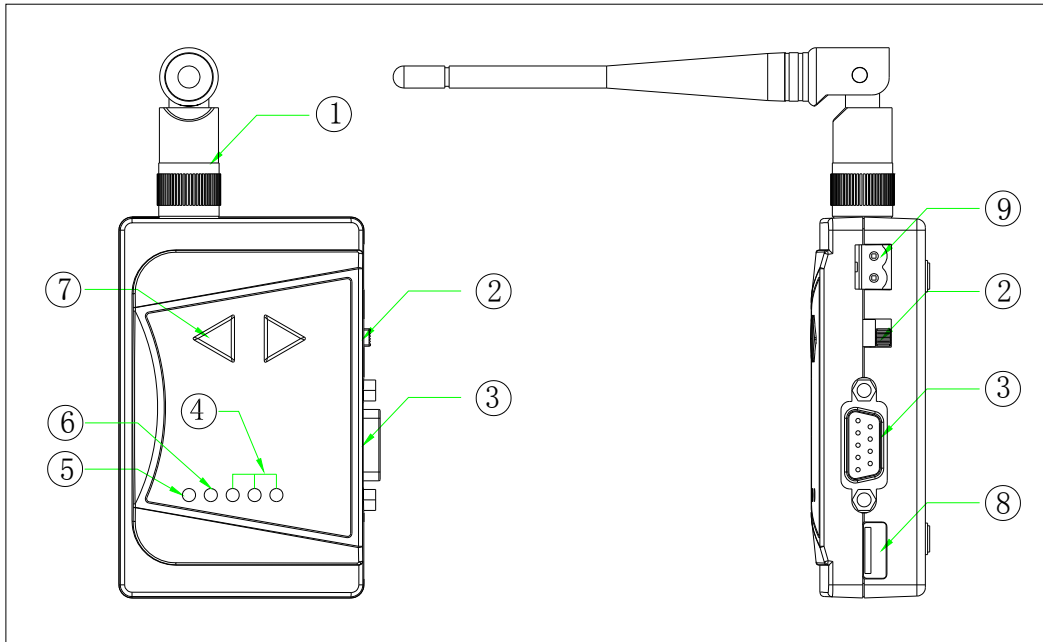
TABLE OF CONTENTS

TABLE OF CONTENTS-----	1
FEATURES-----	2
INTERFACE AND FUNCTION DESCRIPTION-----	2
SETTING OF CHANNEL AND DATA FORMAT-----	3
TECHNICAL SPECIFICATION-----	5
FACTORY DEFAULT SETTING AND ACCESSORIES-----	5

I. Features of FC-211SU:

1. AT86RF211S based design with high performance.
2. Standard RS-232 and USB interface available.
3. Industrial design for various data transmission application.

II. Interface and Function Description:



- ① ANT: Antenna Port
- ② Interface-selection Switch. If the switch is put to USB, the module is connected to computer via USB and the module can be powered by USB. If the switch is put to SERI, the module is connected to computer via RS-232 interface. The module will be powered by the external power(which is connected to ⑨).
- ③ RS-232: Standard RS-232 Interface(female)
- ④ CHANNEL Led: Channel Indicator, three LEDs'status will represent 1-8 channel, The corresponding LED status for each channel number is shown in the following table.

Channel No.	LED1	LED2	LED3
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON
8	OFF	OFF	OFF

- ⑤ POWER Led: Power Indicator, the LED will be red while power-on.
- ⑥ TX/RX Led: TX/RX Indicator, while the module is in transmitting status, the LED will turn red, while the module is in receiving status, the LED will turn green.

- ⑦ Button: Channel-selection button, push the Up button(Δ) one times, the channel number will be added one, push the Down button(∇) one times, the channel number will be decreased one.
- ⑧ USB: USB Interface
- ⑨ PWR: Power Socket

III.Setting of channel and data format

1. Setting or reading parameters

User can set or read the serial port data rate, RF data rate, channel number and address code.

Parameter setting or reading can be done with software FC211SP.EXE in our delivered CD.

Command frame format:

Table 1.

Command frame header	Frame length	Command word	Check sum
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Command frame header: 55H AAH

Frame length = Command word length +1

Command word: less than 8 bytes

Check sum (2 bytes): Frame length +command data 1+...+command data n

All of the command word expressed in hex.

Table 2. Command frame format:

Command type	Frame header	Frame length	Command word	Check sum	Remarks
Channel No.	55 AA	06	07 XX 00 00 00		XX: 01-08
RF data rate setting	55 AA	04	20 05 XX		XX=00: 2400; 20: 1200; 30: 4800; 40: 9600
Power-saving mode setting	55 AA	04	58 00 XX		XX= 00: mode 1 22: mode 2
Power-saving mode reading	55 AA	04	59 00 00		Return: 59 00 XX
Address code setting	55 AA	04	32 XX XX		XXXX: 4 bytes BCD (0000-9999)
Interface data rate setting	55 AA	03	28 XY		X=0: no check; X=2: odd check; X=3: even check; Y=0: 9600; Y=1: 4800; Y=2: 2400; Y=3: 1200; Y=4: 600; Y=6: 19200
Channel reading	55 AA	03	24 00		Return : 24 XX
RF data rate reading	55 AA	03	23 00		Return: 23 XX
Address code reading	55 AA	04	26 00 00		Return: 26 XX XX
Correct setting response	55 AA	02	20	00 22	
Wrong setting response	55 AA	02	21	00 23	

2. Corresponding frequency of 1~8 channels

Table 3:

Channel No.	Frequency	Channel No.	Frequency
1	867.800MHZ	2	867.900MHZ
3	868.000MHZ	4	868.100MHZ
5	868.200MHZ	6	868.300MHZ
7	868.400MHZ	8	868.500MHZ

IV. Technical Specifications

Table 4:

1	Carrier frequency	868MHz	
2	Modulation mode	FSK	
3	RF power	20mW	
4	Sensitivity	-110dBm	
5	Transmitting current	<90 mA	
6	Receiving current	<50 mA	
7	RF data rate	2400/4800/9600Bps	Set by user
8	Interface data rate	2400/4800/9600Bps	Set by user
9	Interface data format	8E1/8N1/8O1	Set by user
10	Power supply	DC 5±0.5V	
11	Temperature	-25°C ~ 60°C	
12	Working humidity	10% ~ 90% RH, non-condensing	
13	Dimensions	85mm×55mm×25mm	

V. Factory default setting and Accessories.
Factory default setting

Channel No.	1
Interface data rate	9600bps
RF data rate	9600bps
Check	None

Accessories

User's manual	optional
USB Cable	optional
868MHz/SMA antenna	optional
CD	optional