# SRWF-1108 Wireless RF Transceiver Module User Manual

Phone +86-021-50275255
Fax +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 1 of 10

# Contents

Phone +86-021-50275255
Fax    +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 2 of 10

## I. Applications:

- Automatic Meter Reading (AMR) system for water, electric gas and heat meter system
- Remote Control for Industry vehicle and lifting machine
- Production line data collecting
- Data communication for railway, oil well, dock and army
- Medical treatments and electric instruments automation control
- Wireless intelligent control for lighting system
- Security alarm, attendance checking and locating for coal mine workers under well
- Car alarm, tire pressure monitoring and four-wheel orientation
- Wireless POS, PDA wireless smart terminals
- Wireless dishes ordering system
- Queuing management system in the bank, hospital, hall and etc

## II. Introduction

- SRWF-1108 Wireless RF Transceiver module can be used in any standard or nonstandard user protocol.
- The module has strong resistance of interference ability and long transmission distance. In the open field, the distance can reach up to 2500m (600bps, along with AT-1 antenna).

- Low power consumption, Transmitting current $450\sim600$mA, Receiving current $32\sim38$mA, Sleeping current 5uA.
- The frequency is 433/470/868/915MHz.

- User can order the channels. We can supply 8 channels normally. But it can be expanded to 16/32 channels if clients need.
- The module supports UART TTL/RS232/RS485 interface and 7E1, 8N1, 7E2, 8E1, 8O1, 9N1 parity.

- The band Rate of 600/1200/2400/4800/9600/19200bps is available, and clients can choose one of them based on your requirement.
- Various antennas are available for clients to select.

Phone +86-021-50275255
Fax    +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 3 of 10

## III. Working qualification

| Parameter | Minimum | Maximum | Remark |
|---|---|---|---|
| Temperature | -20℃ | 70℃ | If working on -40~85℃, clients need to inform us before releasing order |
| Working Voltage | 4.5V | 5.5V | |
| Power Supply | >1A | | |
| Working Humidity | 10% | 90% | |

## IV. Technical Specification

| Item | Description | Parameter | Remark |
|---|---|---|---|
| 1 | Modulation mode | GFSK/FSK | |
| 2 | Working Frequency | 430/470/868/915MHz | |
| 3 | Transmitting Power | 30±1dBm(1W) | |
| 4 | Receiving Sensitivity | -108~-110dBm | |
| 5 | Channel counts | 8 (default) | Can be expanded to 16/32 |
| 6 | Transmitting Current | 450~600mA | |
| 7 | Receiving Current | 32~38mA | |
| 8 | Sleeping Current | <8uA | |
| 9 | Baud Rate | 600/1200/2400/4800/9600/ 19200/38400/57600bps | Be told when releasing order |
| 10 | Interface | UART TTL/RS232/RS485 | Be told when releasing order |
| 11 | Power Supply | +4.5~5.5V DC | |
| 12 | Working Temperature | -20~70℃ | |
| 13 | Working Humidity | 10%~90% | relative humidity, no condensing |
| 14 | Dimension | 53*38*10mm | |
| 15 | Transmission Distance | 2500m | In open field, along with AT-1 antenna |

Phone +86-021-50275255
Fax    +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 4 of 10

## V. Pins Definition

| No | Pin Name | Description | Level | Connected to Terminals | Remark |
|---|---|---|---|---|---|
| 1 | GND | Ground | | Ground | |
| 2 | VCC | Power supply | +4.5-5.5V DC | | |
| 3 | RXD/TTL | Serial Data Receiving port | TTL | TXD | |
| 4 | TXD/TTL | Serial Data Transmitting port | TTL | RXD | |
| 5 | SGND | Ground of signal | | | It can be connected to Ground |
| 6 | A(TX) | A of RS485 or B of RS232 | | A(RX) | |
| 7 | B(TX) | B of RS485 or A of RS232 | | B(TX) | |
| 8 | SLEEP | Sleep control (Input) | TTL | Sleep signals | Low level effective |
| 9 | RESET | Reset Control (Input) | TTL | Reset signals | Negative pulse |

## VI. Configuration of Channel, Interface, Baud Rate and Parity

There is a 5-bit short-circuit jumper (J1) on the right corner of SRWF-1108 main board, defined as A/B/C/D/E respectively. Please refer to Figure 1.
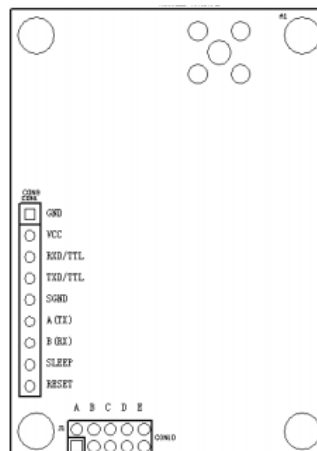


**Figure 1**

Phone +86-021-50275255
Fax +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 5 of 10

## 1. Channel Configuration

ABC jumpers provide 8 options for clients to choose 0-7 channels. The corresponding frequencies and setting are shown in Table 2.

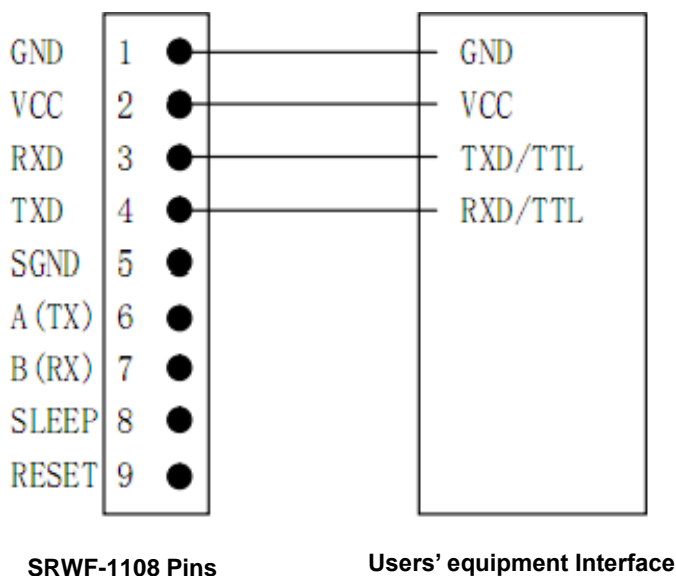| Jumping wire ABC | Channel No. | 433MHz Center Frequency | 470MHz Center Frequency | 868MHz Center Frequency | 915MHz Center Frequency |
|---|---|---|---|---|---|
| A ○○ B ○○ C ○○ | 0 (ABC remain open) | 432.90 | 469.2 | 867.9 | 914.9 |
| A ⊠ B ○○ C ○○ | 1 | 433.10 | 469.4 | 868.1 | 915.1 |
| A ○○ B ⊠ C ○○ | 2 | 433.30 | 469.6 | 868.3 | 915.3 |
| A ⊠ B ⊠ C ○○ | 3 | 433. 50 | 469.8 | 868.5 | 915.5 |
| A ○○ B ○○ C ⊠ | 4 | 433.70 | 470 | 868.7 | 915.7 |
| A ⊠ B ○○ C ⊠ | 5 | 433.90 | 470.2 | 868.9 | 915.9 |
| A ○○ B ⊠ C ⊠ | 6 | 434.10 | 470.4 | 869.1 | 916.1 |
| A ⊠ B ⊠ C ⊠ | 7 | 434.30 | 470.6 | 869.3 | 916.3 |

**Table 2**

## 2. Interface Mode

SRWF-1108 provides 2 serial ports, COM1 (Pin3 and Pin4 of CON1) for UART TTL, COM2 (Pin6 and Pin7 of CON1) for RS232/RS485. Clients should confirm which interface will be used when releasing orders.

1) TTL interface connection sketch map

Phone +86-021-50275255
Fax　　+86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 6 of 10

**SRWF-1108 Pins**          **Users' equipment Interface**

**Note: All other pins remain idle, no connection is needed.**

Pin3 and Pin4 of CON1are defined as UART TTL interface, and Pin6 and Pin7 of CON1are defined as RS232/RS485 interface. Both TTL and RS485 interface exist at the same time.

2) RS-232/RS485 interface connection sketch map



**SRWF-1108Pins**          **Users' equipment Interface**
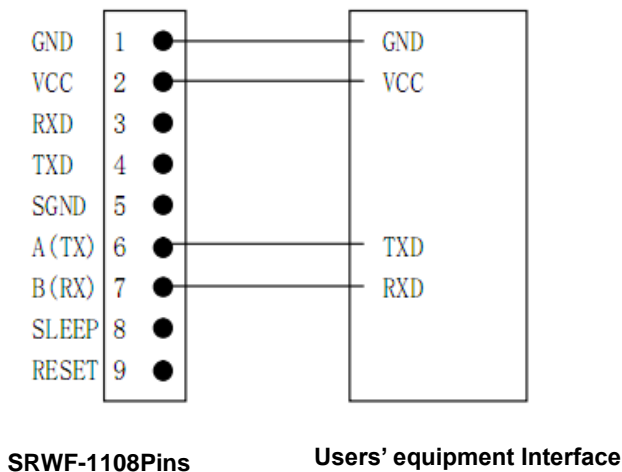
**Note: All other pins remain idle, no connection is needed.**

RS232 Interface: D=1(with short-circuit jumper: )

RS485 Interface: D=0(without short-circuit jumper: )

## 3. Baud Rate

The baud rate depends on module hardware, so we must be told before ex-factory. The general baud rate is from 600bps to 19200bps. If clients need 38400bps or 57600bps, we can accept the custom request.

Remark: ●Short -circuit ○Open-circuit

| Baud Rate(bps) | JP1 | JP2 | JP3 |
|---|---|---|---|
| 600 | ○ | ○ | ○ |
| 1200 | ● | ○ | ○ |
| 2400 | ○ | ● | ○ |
| 4800 | ● | ● | ○ |
| 9600 | ○ | ○ | ● |
| 19200 | ● | ○ | ● |
| 38400 | ○ | ● | ● |
| 57600 | ● | ● | ● |

**Note: the higher the baud rate you choose, the shorter the transmission distance will reach up.**

## 4. Parity Mode
The parity mode (choice of 8E1/801/8N1) is chosen by D and E of JP1.
D=0(without short-circuit jumper), E=0(without short-circuit jumper), 8N1 (no parity)
D=1(with short-circuit jumper), E=0(without short-circuit jumper), 801 (odd parity)
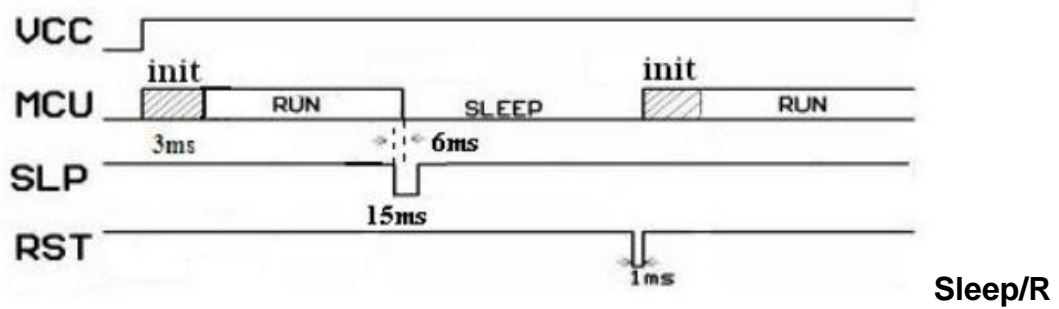D=0(without short-circuit jumper), E=1(with short-circuit jumper), 8E1 (even parity)
   **Note: after all the parameters above are finished, the new configuration will be not effective until the module is power on again.**

# VII.  Time Diagram

## 1. Sleeping Mode
SRWF-1108 has sleeping function, it is controlled by SLP pin, usually the SLP pin is in high level (SLP=1), while the SLP becomes low level (SLP=0), the module is in the sleeping mode. If you need the module in the working mode, you need make the RST pin become low level, means keep module reset or re-power on. The time diagram is as following.

Phone +86-021-50275255
Fax    +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 8 of 10

**Sleep/Reset Time Diagram**

## 2. Transmitting Delay Time

After the RXD of module A receives data, and TXD sends data to modules B, there will be delay time (Td) when the RXD of module B receives data and TXD output data. Different baud rate will result in different delay time, shown in below table.

| Baud Rate(bps) | Delay Time |
|----------------|------------|
| 1200           | 86         |
| 2400           | 45         |
| 4800           | 25         |
| 9600           | 13         |
| 19200          | 5          |



**Data Transmitting Time Delay**

# VIII.  Layout Dimension

Phone +86-021-50275255
Fax     +86-021-50270187
sunray230@hotmail.com

No.498 Guo Shoujing Road, Zhangjiang
Shanghai Pudong New Zone, China
www.en.51sunray.com

Page 9 of 10

## IX. Technical Support and After Service

We provide technical support of applications and secondary development for our clients. Our products have one-year warranty and perpetual maintenance services.