Wireless Partner
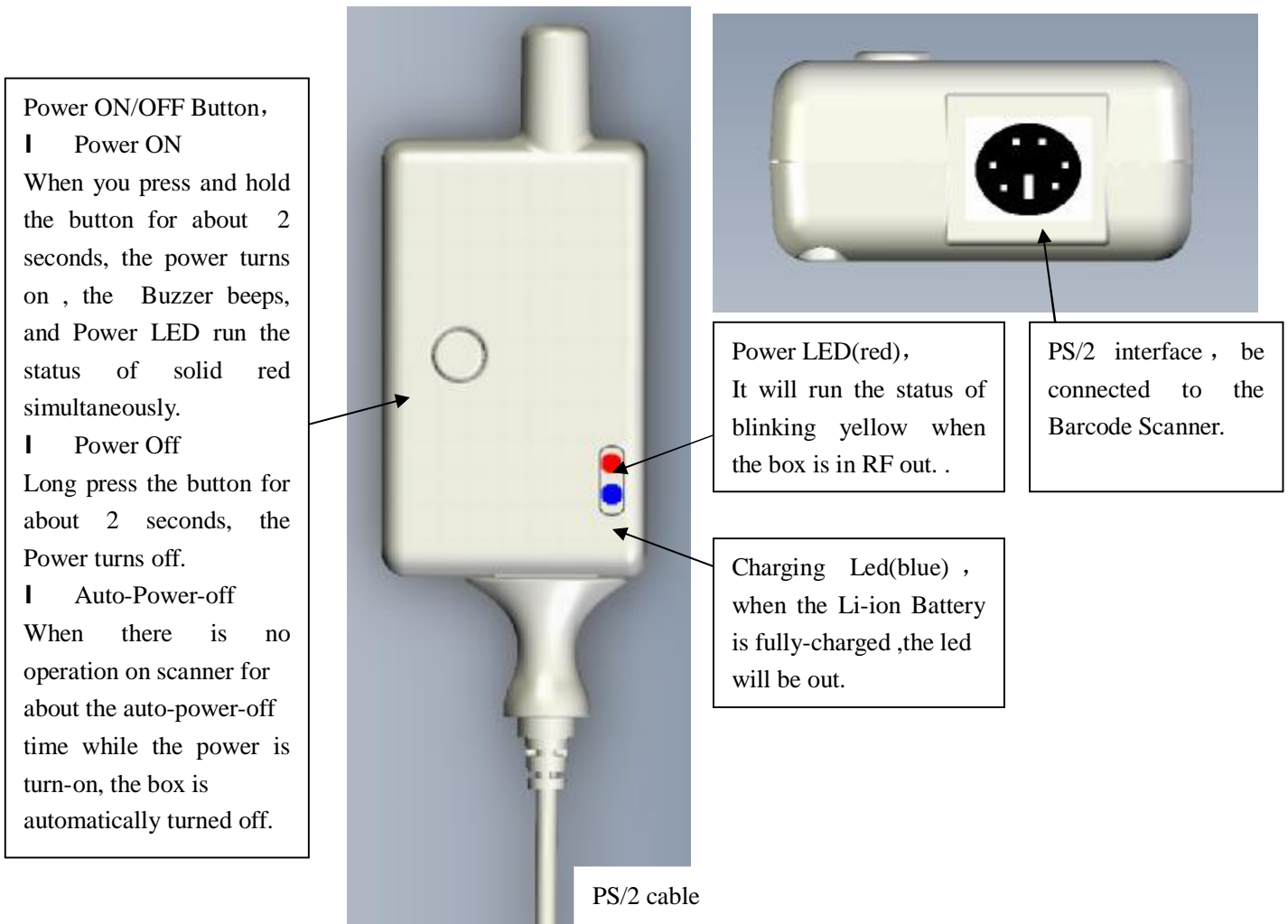
for Barcode Scanner (keyboard interface)

User Guide

ShangHai Sunray Technology Co.,Ltd

I. Introduction

Wireless Partner for Barcode Scanner is the upgrade for your wired scanner, specially designed for solving inconvenience of wired scanner while scanning. Within our Wireless Partner box , you can enjoy with 433M wireless transmitting technology, which includes wireless transmitting、data verification、low voltage alarm, guaranteeing the real-time communication and accuracy of data transmitting. You can match the Wireless Partner with PC receiver to building the RF-SCANNER System. The System separates the way by using different ID number, supporting point to multi-point communication(one PC receiver and multiple Wireless Partner).

Power ON/OFF Button，
l Power ON
When you press and hold the button for about 2 seconds, the power turns on , the Buzzer beeps, and Power LED run the status of solid red simultaneously.
l Power Off
Long press the button for about 2 seconds, the Power turns off.
l Auto-Power-off
When there is no operation on scanner for about the auto-power-off time while the power is turn-on, the box is automatically turned off.

Power LED(red)，
It will run the status of blinking yellow when the box is in RF out. .

PS/2 interface，be connected to the Barcode Scanner.

Charging Led(blue)，when the Li-ion Battery is fully-charged ,the led will be out.

PS/2 cable

II. Feature of Wireless Partner for Barcode Scanner

l **Make the wired scanner be limitless , reliable transmitting distance is up to 400m.**

l **One PC Receiver Terminal can communicate with up to 255 scanners .**

l **Low power consumption ,no-load current is 26 mA and sleep current is 5±2 uA.**

l **3.7V Li –ion Battery (1070mAh) , be easy to replaced with.**

III. System Function

※ **Low power transmission:** Transmission power is 50mW(17dBm),with working frequency of 433Mz.

※ **Multi-channel : The system in standard configuration provides 8 channels, meeting the multiple combinational mode of communication**

※ **High anti-interference and low BER(Bit Error Rate):** Based on the GFSK/FSK modulation mode, carry on the verification to the each package of data , guaranteeing the accuracy.

※ **Low power consumption and auto-power-off time set:**
User can set the auto-power-off time , range from 20~255s. Wireless Partner will be in sleeping mode when received no data from scanner in the setting time, and it will cut off the power of scanner at the same time.

※ **Not affect mutually when working simultaneously:** Scanners detect Carrier signal before transmitting the data, keeping them from colliding when working simultaneously.

※ **Low voltage alarm :** When the battery voltage is below 3.6v,the buzzer will have three short beep every third minute or so, reminding to charge.

※ **Successful transmitting tweet: When PC receiver get the barcode data, it will transmit a response and there will be a sound** 'bee' to remind the user of Wireless Partner that the transmission is finished successfully. If user cannot get the beep 'bee', he should scan the barcode again.

IV. Technical Specification

RF communication & Electrical elements	RF module	SRWF-1021-50
	Working frequency	433 MHz
	Radio Output	50mW / 17 dBm
	Coverage line of sight	400 Meter
	Air velocity	9600bps
	Interface Mode	PS/2 (Keyboard wedge)
	Transmitting current	120mA (including the test barcode scanner)
	Receiving current*	45mA (including the test barcode scanner)
	Sleeping current	5±2uA
	Power Supply (Voltage)	3.7V 1070mAh Li-ion battery
	Battery Charge Time	Fully Charged (100%) in approx. 2.5h (via AC-DC adapter)
Physical Characteristics	Dimensions	83mm * 50mm *25mm
	Weight (including battery)	86 g
	Color	Dark grey
Performance Characteristics	The number of nodes in a single star network (Max size)	255 nodes
	The estimated working hours	24 h （while the barcode scanner current up to 150mA)
User Environment	Operating temperature	-20℃~50℃ (-4°F~122°F)
	Storage temperature	-20℃~60℃ (-4°F~140°F)
	Humidity	10%~90%(relative humidity without condensation)
	Drop specifications	Multiple 1.5m / 5 ft drops to concrete

*the standby current of barcode scanner which in the test environment is 15mA

V.Parameters Setting

Before using scanner, you have to make simple configuration of your system parameter. Through scanning special barcodes, you can set the scanner's parameters. The parameters can be saved in memory , reserving in it when cut off the power.

1.Setting the time of automatic power off

Wireless Partner will be in sleeping mode when received no data from scanner in the setting time, and it will cut off the power of scanner at the same time. The time of automatic power off can be changed through scanning special barcodes, ranging from 20 to 255s. When the setting time is less than 20s, system will make the time as 20s by itself. The steps are as follows: Scan "autopower" barcode, at this time the buzzer will tweet, then scan number code, the number code is "number0"～"number9" barcodes, finally scan the "setok" code, For example: the barcodes are "autopower"、 "number6"、 "number0"、 "setok", when setting the time as 60s. (The command barcode is shown in Appendix .)

2. Setting of the channel

Wireless Partner can supply 8 channels, the range is from 0~7. The Frequency of every channel is shown in Table 3,The command barcode of setting the scanner 's channel is "setchan", for example ：when setting the channel as 6,the barcodes are "setchan"、 "number6" 、 "setok". (The command barcode is shown in Appendix .)

Table 3. The Frequency of every channel

Channel Number	Frequency(MHz)	Channel number	Frequency(MHz)
0	433.85	4	434.80
1	433.45	5	432.20
2	434.00	6	432.60
3	434.40	7	432.80

3.Setting Source Address and Destination Address

Every Wireless Partner has one source address and one destination address, and the source address of Wireless Partner corresponds to its ID Number. The system can offer 255 source addresses. The setting range is from 0 to 254. The barcode of the source address setting is "setsour", and the destination address is "setdest"**.** For example ：when setting the source address as 12,the barcodes are "setsour"，"number1" ，"number2"，"setok". They couldn't communicate with each other until the destination address of scanner is the same with the source address of receive terminal. When scanners have the same destination address ,they could communicate with the same source address of receive terminal(point to multi-point communication) .
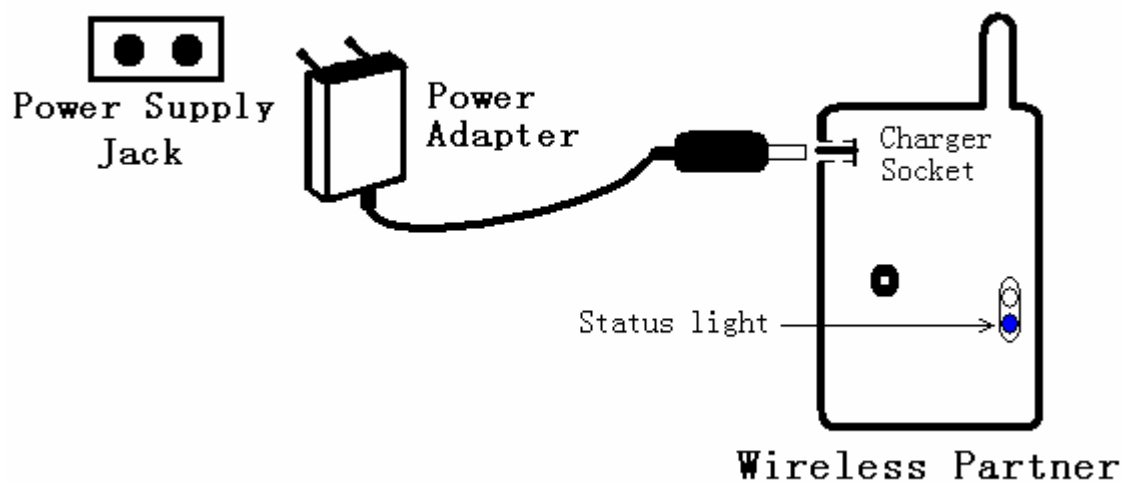
4. Inquiring the edition information

You can inquire the edition information of Wireless Partner when you need acquire it . Scan the barcode "copyright", then you could get the partner's edition from the PC screen (you need run the notepad or other editor software).For example:

c=0

s=006

d=002

t=030

Note: "c" means channel number, "s" means source address, "d" means destination address, "t" means automatic power off time.

VI. Charging the Battery

1. **For the best results , before the first** time you use Wireless Partner ,let it charge for about 2.5 hours to fully charge it.

2 If the power of battery is low, the buzzer will have three short beep every third minute or so, reminding to charge. You can use AC-DC Power Adapter to charge the battery .

Fig.1 Charge Mode—cable charging---use the Power Adapter

3 If you have Traveling Charger , you also can use it .

4 If Wireless Partner isn't used for a while , the battery might need to be recharged.

VII. System Integration

Connect the wired scanner with Wireless Partner via PS/2 cable. If the system is power off , press and hold the Power ON/OFF Button for about 2 seconds, the power turns on .Then you can set the Channel ,Source Address , Destination Address and auto-power-off time etc.

VIII. Operation Demo

1. According to the Manual of SRWF-RF Scanner-SDK (V1.0), connect the PC Receiver Terminal to the Computer.
2. Run the notepad(or other editor software), input the command EDITION(or edition), don't input quickly. And click the "Enter" key to confirm the command. If the PC Receiver is first used , then the notepad will display as Fig .2.

Fig. 2 Run the notepad and input the command edition slowly

In Fig.2 , PC Receiver Terminal runs on the channel 0,Source Address is 255, Destination Address is 0

3. Change the channel of PC Receiver to 6, input the command setc006 slowly. The notepad will display as Fig .3.

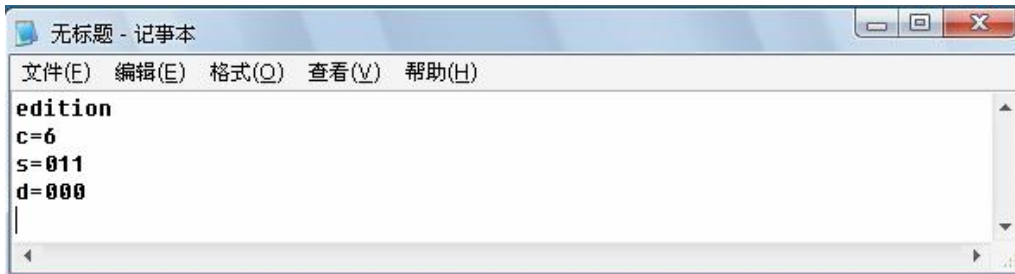**Fig.3** Input the command setc006 slowly and change the channel to 6

4. Change the Source Address of PC Receiver to 11, input the command sets011 slowly,

   The notepad will display as Fig.4.

Fig.4 Input the command sets011 slowly and change the Source Address to 11

5.   Input the command edition again in sluggish rate.

Fig.5 Input the Command edition again

In Fig.5 ,PC Receiver Terminal runs on the channel 6,Source Address is 11, Destination Address is 0.

6.   Connect the wired scanner with Wireless Partner via PS/2 cable. Press and hold the

Power ON/OFF Button for about 2 seconds (the power-led lights and the Buzzer tweets).

7. Modify and Confirm the Channel of Wireless Partner, scan the barcode "setchan" -> "number 6" -> "setok" one by one.

8. Scan the barcode "copyright".

Fig.6 After scan the barcode "copyright"

In Fig.6 ,Wireless Partner works on the channel 6，Source Address is 0 (ID 0), Destination Address is 0.

9: Because the Source Address of PC Receiver Terminal is 11,the Wireless Partner's destination must be 11. User can scan the barcode "setdest"-> "number1"-> "number1" -> "setok" one by one.
Then notepad will display as Fig.7

Fig.7 After modify the destination of Wireless Partner

10 Scan the Barcode "copyright " again.

Fig.8 After Scan the Barcode "copyright"
In Fig.8 Wireless Partner's Destination Address is successfully modified. Then Wireless Partner could limitlessly communicate with PC Receiver. While you scan the barcode, there will be a sound 'bee' to remind user successfully transmit the barcode data. See Fig.9

Fig 9 PC Receiver get the data which transmit from Wireless Partner

11. The auto-power-off time is 255s at present, if you want to change the time to 60s , you must scan the barcode command "autopower","number 6", "number 0", "setok" one by one.

12 If you want to turn off the box, please press the POWER ON/OFF Button for about 2 Seconds . (The Power-led will black out meanwhile.)

IX. Technology Support And After Service :

We offer sufficient technology support for user use the module and second development for free; mending broken module one year for free, always offer after service. To adapt different user structure, we can develop smaller module or various size modules

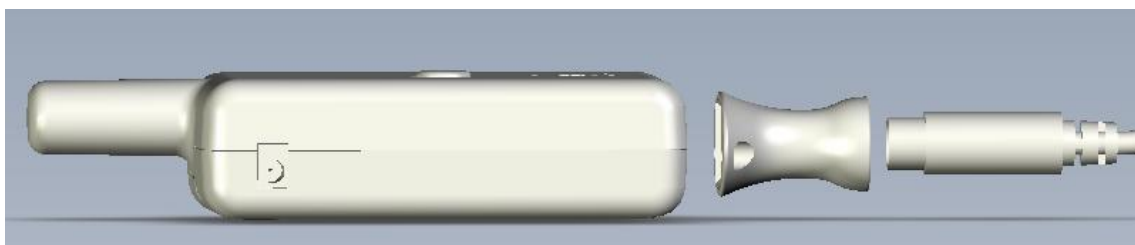**ShangHai Sunray `**
Info-tech Co.,Ltd
ADDRASS: No 201,Keyuan RD Zhangjiang high-tech park,
Shanghai Pudong china
Tel:+86-021-50275250/50275255/50273877
Fax:+86-021-50270187

E-mail：   sales@tangray.com

Website: www.51sunray.com

X. Appendix

COMMAND BARCODE TABLE

number0

number1

number2

number3

number4

number5

number6

number7

number8

number9

Set scanner Source Address

setsour

Set scanner Destination Address

setdest

Set the Auto Power Off time

autopower

Set Scanner channel

setchan

Display the copyright

copyright

OK

setok

Set PC Receiver Terminal Source Address

TERMINALSOURSET

Set PC Receiver Terminal Channel

TERMINALCHANSET