

RF433 and 2.4G wireless barcode scanner user manual

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Revision record

2020/9/23 Rev 3.9

1. New character output method: Shift-JIS Japanese

2019/5/29 Rev 3.8

1. Remove the settings that do not match the code.
2. The version specification is revised based on Src-0085 V3.4 and Src-0083 V3.4.

2018/11/30

1. Classification character output setting code

2017/8/9 Rev 3.3

1. Add wireless channel setting code

2017/9/14 rev 3.4

1. Modify the input and output character format setting code

20170915 Rev 3.5

1. Increase keyboard case detection settings
2. Increase the small keyboard switch settings

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1. Increase proximity matching

Content

1 . Comprehensive settings(Please read the red part before make settings).....	3
2. An asterisk (*) in the description part indicates the factory default parameters.....	3
3.2 Set command data format.....	4
4. Setting barcode type.....	6
4.1 Pairing command★.....	6
4.2 HID-KEYBOARD multi langue setting★.....	7
4.4 Check parameter.....	8
4.5 Operation mode★.....	8
4.6 Character input/output/keyboard format setting.....	10
4.6.1 Case control and keypad switch.....	10
4.6.2 Out put format and function key setting.....	11
4.7 Sleep times setting★.....	11
4.8 Restore the factory settings★.....	12
4.9 0x0A filter.....	12
4.12. Output data way (USB/USB VCP) ★.....	13
4.14 Auto trigger configuration.....	14
4.9 The command of firmware upgrade.....	15
4.10 Wireless connectivity detection.....	15
(★Note: this function only in a scanner connected to a receiver).....	15
4.11 The sender wired output.....	16
4.13 Serial port setting ★.....	17
4.15 Start symbol mode setting(Prefix) ★.....	18
4.16 End symbol mode setting(Suffix).....	18
4.17 Sender end Prompt sound selection at the sender.....	19
5. Information instructions:.....	20
5.1 Receiver end instructions system.....	20
5.2.1 Receiver end LED light indicator.....	21
6. 2.4G Wireless sending and receiving data packet format.....	22
6.1 bk2425 Infinite packet format.....	22
7.Inventory mode to save and read data packet format:	23
7.1 Inventory model management information storage format:.....	23
8.433 wireless data packet.....	24
The packet format.....	24
9. ACK packet format.....	24
10. Symbol table.....	25

1 . Comprehensive settings(Please read the red part before make settings)

1.1 Setting instruction description

1. The setting bar code is uniformly printed with Code128 type CODE B set bar code.

2. An asterisk (*) in the description part indicates the factory default parameters.

(1) Scan: Enter setting mode “@SET”. After enter setting, it will exit the setting mode if next setting command is not scan within 20s.

(2) Scan: the relevant setting barcode. In this step, you can scan one or more setting barcode commands.

(3) Scan: Exit and save “@END”.

(4) The setting of some functions can directly scan the corresponding quick setting bar code. Such as: pairing barcode, unpairing barcode, etc.

3.2 Set command data format

Table 3.3-1 Setting command data format table①

Prefix	Setting goals	Type	Parameter
WN-	T-/R-/W-	Refer to "Set Barcode Type Table"	*****

Notice ①This format does not include instructions for entering settings and saving and exiting settings.

Table 3.3-2 Set instruction data format analysis

Format	Data	Description
Prefix	WN-	Fix prefix symbol
Setting goals	T-/R-/W-	T-:Means to set the barcode directly to the sender end. R-:Means to set the barcode directly to the receiver end, and the setting bar code of the receiving end needs to be forwarded by the sending end through wireless transmission. W-:The sender end and receiver end work at the same time
Type		Refer to "Set Barcode Type Table"
Parameter		The parameter is 4 characters in the range of "0~9"



3.4 Set barcode type table

Table 3.4-1 Set barcode type table

Type	Description
A	Wireless pairing/unpairing
B	Multi-language settings
C	View firmware information/Modify frequency
D	Infrared sensor trigger switch
F	Real-time mode / inventory mode / inventory mode data operation
G	Sleep time
H	Restore default setting
I	Data transmission form, start symbol mode setting, custom start symbol
K	Sending/receiving end firmware upgrade command
L	USB wired output switch

3.5 “Enter setting” and “Save and exit”



Command:

Function	Command	barcode	Remark
Enter setting	@SET		Enter the setting prompt sound, effective time of 20 seconds
Save and exit	@END		Save and exit settings prompt sound

Note: 1. For the setting of non-quick setting commands, it must first scan to enter the setting command, then scan the corresponding parameter setting command, and finally scan to save and exit the setting command.











4. Setting barcode type

4.1 Pairing command★

Function	Command	barcode	Remark
Start pairing	@.WN-T-A0001/		Can be paired remotely
Close pairing	@.WN-T-A0002/		Only allow pairing

- Note: 1. The effective time of pairing is within 20S from the moment the receiver is powered on (the LED is flashing). After 20s, the LED is always on and cannot be paired. **(This method is for the receiver without buttons)**
2. Press the receiver button, the receiver will automatically enter the pairing state, during this period it can be paired normally. (This method is for the receiver with buttons).
3. 2.4G stops flashing after pairing successfully.

4.2 HID-KEYBOARD multi langue setting★

Function	Command	barcode	Remark
	@SET		
*USA	WN-W-B1000		
FRENCH	WN-W-B1001		
GEMRAN	WN-W-B1002		
TUKISH	WN-W-B1003		
BELGIUM	WN-W-B1004		
BRAZIL	WN-W-B1005		
CRZCH	WN-W-B1006		
SPANISH	WN-W-B1007		Latin America
	@END		

Note: This setting code is valid for both the receiving end (Tx) and the sending end (Rx). If multiple languages are set when the wireless transmission connection is disconnected, the sending end language setting will be successful, but the receiving end language will not change.





4.4 Check parameter


Function	Command	barcode	Remark
Output parameter of system	WN-W-C1000		1> Firmware version 2> Battery level 3> Wireless channel

Explanation : The command to view the parameters is sent to the receiver along with the system parameters, and each parameter is separated by a terminator, such as:

PKT {protocol field|WN-W-B1001|parameter 1+0x0D|parameter 2+0x0D |.....} (the content of the data packet in {})

4.5 Operation mode★

Function	Command	barcode	Remark
*Real-time mode	@.WN-T-F0000/		Scan and transfer, fail alarm
Cache mode	@.WN-T-F1000/		On the basis of real-time mode, increase the buffer data after transmission failure. The system will automatically upload the cached data after detecting that the device has not been operated for three seconds. If the cached data is not uploaded when the machine is turned off, the system will continue to detect the upload after the next startup until the transmission is completed.
Inventory mode	@.WN-T-F2000/		The barcode data is automatically stored, and it is uploaded once after scanning "Upload Data"; scanning "Clear Data" to clear the data in the memory "Scan "Data Total" to view the total number of data in the memory After scanning the barcode, the data is directly stored in the barcode scanner, and the data will not be deleted until the [Clear Data] is scanned. During this period, you can scan [upload data] to send the data to the receiver or directly upload to the PC
Upload data	@.WN-T-F2001/		Upload barcode data

Data sum	@.WN-T-F2002/		Upload the sum of barcode
Clear data	@.WN-T-F2003/		Clear the barcode data in the inventory mode




- Notice☆:1. Six command in operation mode are all quick setting command, the setting is successful when scan them successful.
2. Upload data, data amount, clear data in inventory mode, these three operation setting command is unavailable when enter setting mode, if it is already in setting mode, must save and setting before using these three operation setting command.
3. New 433 and 2.4G solution (model number : WNI-xxx2, WNI-xxx3,WNC-xxx2,WNC-xxx3)

Storage data description:





- ①Inventory mode: storage length is 30 Byte data will be able to store 49,000pcs
- ②storage length is 13Byte data will be able to store 104,500pcs
- ③Cache mode:storage length is 30 Byte data will be able to store 14,200pcs
- ④storage length is 13Byte data will be able to store 30,300pcs

4.6 Character input/output/keyboard format setting








4.6.1 Case control and keypad switch

Function	Command	barcode	Description
*Uppercase key (CapsLK) detect on	@.WN-W-F3201/		Turn on uppercase detection, keyboard Caps will not affect the output example: barcode content:123ABCdef Turn on Caps output: 123ABCdef Turn off Caps output:123ABCdef
Uppercase key(CapsLK) detect off	@.WN-W-F3202/		After turn off the caps detection, the keyboard Caps lock will affect the output example: barcode content :123ABCdef Turn on Caps output:123abcDEF Turn off Caps output:123ABCdef
Turn on Numeric keyboard	@.WN-W-F3203/		After turn on, it need to set the output to GBK format. If the language is German at this time, it needs to be set to English, and other languages do not need to be set.

4.6.2 Out put format and function key setting




Function	Command	barcode	Test instruction
*GBK output	@.WN-W-F3001/		1.Support txt and Excel output 2.Use WDI2000 module, set to GBK output 3.Open txt or Excel , scan the code to transmit data normally
Unicode output	@.WN-W-F3002/		1.Support Word output; 2.Use WDI2000 module, set to UTF-8 output
ShiftJIS output	@.WN-W-F3003/		Support TEXT and EXCEL output
Function key output	@.WN-W-F3005/		1.Support testing in Excel file; 2.Add function key suffix: For example: set the "→" function key as a suffix, after outputting data in Excel, the cursor will point to the right cell

4.7 Sleep times setting★

Function	Command	barcode	Remark
	@SET		
1 min	WN-T-G0001		
*5min	WN-T-G0005		
15min	WN-T-G0015		
45min	WN-T-G0045		
non-sleep	WN-T-G0000		
	@END		


Instructions☆: The calculation method of sleep time: $60 * x = n$ (s), X is two decimal values after the barcode

4.8 Restore the factory settings★






Function	Command	barcode	Remark
	@SET		
Factory Default setting	WN-W-H0000		1> autoSetFactory remains unchanged 2> The current spectrum constant 3> Matching the address remains the same 4> The wireless channel is constant 5> Locking band logo remains the same 6> Data output way remains the same 7> The keyboard language remains the same 8> Buzzer sound remains the same
	@END		

4.9 0x0A filter

Turning on will filter out the 0x0A (newline character) in the middle of the string, and the 0x0A at the end of the string (the first and second to last) will not be filtered.

Function	Command	barcode	Remark
*Turn on 0x0A filter	@.WN-W-F3301/		After turn on, the newline character 0x0A in the middle of the string will be filtered.
Turn off 0x0A filter	@.WN-W-F3302/		If there is a newline character in the data after closing, it will be output normally

4.12. Output data way (USB/USB VCP) ★

Function	Command	barcode	Remark
Start setting	@SET		Enter setting mode
*USB output	WN-W-L1000		USB interface
VCP output	WN-W-L1001		USB virtual serial port need to install the serial port (USB) driver can be normal use
RS232 output	WN-R-L1002		1.a serial port output function only in support of a serial port output devices (hardware) can use, now only RF433 receive support serial output 2. optimizes the transmission way of new products. USB and RS232 serial port transmission can automatically identify, do not need to set up a serial port output
End setting	@END		Save and exit setting





Notice★ :

1. The default for USB and RS232 serial Port output, the system will automatically choose the USB or RS232 serial Port output according to the hardware, without setting
2. When switching USB and Virtual serial Port (Virtual COM Port) need to scan settings to change, but it don't need to plug the receiver.
3. If the base data is not uploaded, please check whether the connection cable is used correctly, whether the USB device enumeration is normal, and whether it has entered the upgrade mode.

4.14 Auto trigger configuration





Function	Command	Barcode	Remark
	@SET		
Enable auto trigger	WN-T-D0000		Enable infrared induction trigger
Disable auto trigger	WN-T-D0001		Disable infrared induction trigger
	@END		

4.9 The command of firmware upgrade

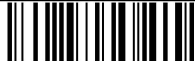



Function	Command	Barcode	Remark
	@SET		
Receiver upgrade	WN-R-K0000		<p>1. Receive PC via USB way connection, and in the case of pairs, scanning the barcode after Saul, receiving end after receiving the plug again</p> <p>2. Receive a PC via RS232 serial interface mode connection, scanning the barcode after Saul, receiving end after receiving the plug again</p> <p>3. Receive a PC via a serial port connection, hold down the button at the bottom for 8 s after system in upgrade mode</p>
Sender upgrade	WN-T-K0000		<p>1. The PC via USB cable connection, and then send the upgrade barcode, upgrade equipment to restart after testing</p>
	@END		

4.10 Wireless connectivity detection

(★Note: this function only in a scanner connected to a receiver)

Function	Command	barcode	Remark
	@SET		
Enable connection test	WN-T-C0001		This setting only in a scanner connected to a receiver
*Disable connection test	WN-T-C0002		When more than a scanner connected a receiving a case, need to close the connection test, factory default is close the connection test
	@END		

4.11 The sender wired output

Function	Command	Barcode	Remark
	@SET		
* Enable USB wired output	WN-T-L0000		1. After open the sender after the PCB via USB cable connection, connection can be directly through the normal USB transmission, do not use the wireless transmission
Disable USB wired output	WN-T-L0001		Shut down after insert USB cable only allows charging, only through wireless data transmission
	@END		





Note☆:USB wired output is used only for the sender

4.13 Serial port setting ★

Function	Command	barcode	Remark
	@SET		
3.10.1 Baud rate			
2400	WN-R-D0000		
4800	WN-R-D0001		
*9600	WN-R-D0002		
19200	WN-R-D0003		
38400	WN-R-D0004		
57600	WN-R-D0005		
115200	WN-R-D0006		
3.10.2 The length of the data			
7 Data Bits	WN-R-D1002		
*8 Data Bits	WN-R-D1001		
3.10.3 Stop bit			
*1 Stop Bit	WN-R-D1003		
2 Stop Bit	WN-R-D1004		
3.10.4 Parity bit			
*No Parity	WN-R-D1005		
Odd Parity	WN-R-D1006		
Even Parity	WN-R-D1007		
	@END		

Note★: The serial port setting can be used normal on support serial output equipment only





4.15 Start symbol mode setting(Prefix) ★

Function	Command	barcode	Remark
	@SET		
*No start symbol	WN-T-I0000		
Custom start symbol+bar code	WN-T-I0002		
	@END		

The sample of start symbol mode setting: To set a start symbol “#Ab9”in barcode “1234567”,The barcode data will be “#Ab91234567”.




- 1.Scan 【@SET】 barcode.
- 2.Scan 【Custom start symbol + bar code】
- 3.Scan the following symbol 【#】 、 【A】 、 【b】 、 【9】 in turn.
- 4.Scan 【@END】 barcode.
5. Max 10 digits for the prefix

4.16 End symbol mode setting(Suffix)

Function	Command	barcode	Remark
	@SET		
No end symbol(suffix)	WN-T-I1000		No suffix
*Custom end symbol(Suffix)	WN-T-I100A		Custom suffix can be composed of ASCII codes of any character, customers can set according to need
	@END		



The sample of end symbol mode setting: To set a start symbol “%B”in barcode “1234567”,The barcode data will be “1234567%B”.

- 1.Scan 【@SET】 barcode ->2.Scan 【Custom end symbol】 barcode ->3. Scan the following symbol 【%】 、 【B】 、 in turn
- 4.Scan 【Exit&Save】 barcode
5. End symbol of factory reset: 0x0D(Enter)
6. End symbol of commonly used symbols: 0x0D(Enter), 0x0A, 0x09(Tab)
7. Suffix max 10 digits.

		
0x0D(Enter)	0x0A(newLine)	0x09(Tab)

4.17 Sender end Prompt sound selection at the sender

When the wireless code scanner is in normal use, there are two prompt sounds. The first sound is the sound of successful code reading, and the second sound is the sound of successful wireless transmission.

Function	Command	barcode	Remark
	@SET		
Enable turn on sound	WN-T-E0001		
*Disable turn on sound	WN-T-E0002		
Enable transmit successful sound	WN-T-E1001		
*Disable transmit successful sound	WN-T-E1002		
	@END		

Note: This function is mainly for the use of modules. Most modules have their own startup sound and code scanning sound, so the motherboard's startup sound and wireless transmission sound are turned on. The two sounds overlap. So the added sound switch setting can cope with the module. The group voice is repeated and the voice is mixed.

5. Information instructions:

5.1 Receiver end instructions system

Serial number	The type of status indicators	The type of status indicators	State of the LED
Boot to detect hints			
1	Wireless module to detect anomalies	Short three beeps(high frequency)	Red light blinks three times
2	External storage module abnormal	Long two beeps (high frequency)	Red light blinks twice
3	Power on	Short Four beeps (high / mid / low frequency)	Green light continuous on
Pairing status prompt			
4	Start the wireless pairing	One short beeps (high frequency)	LED light blinks once
5	Wireless pairing period	None	Red light blinks
6	Wireless pairing failure	None	Red light continuous on, Green light off
7	Wireless pairing success	three long beeps (high / mid / low frequency) big difference	Green light continuous on
Setting state instructions			
8	Enter setting mode	long one beep and short two beeps (high / mid / low frequency)	Green light blinks once
9	Exit & Save	Long one beep and short two beeps (high / mid / low frequency)	Green light blinks once
10	Setting command state	Long one beep and short one beep (high / low frequency)	Green light continuous on
11	Effective command	Long one beep and two short long (high / mid / low frequency)	Green light blinks once
12	Non-effective command	Long one beep (low frequency)	Green light blinks once & Red light blink once
Instructions of Inventory mode			
13	Data uploaded successfully	short one beep(high frequency)	Green light blinks once
14	Data uploaded failure	short three beeps(Intermediate frequency)	Red light blinks three times
15	Data Overflow	long two beeps(high frequency)	Red light blinks twice
Real-time mode			
17	Upload data successfully	Short one beep(high frequency)	Green light blinks once
18	Upload data failde	beeps(Intermediate frequency)	Red light blinks three times

Power status indicators			
20	Charging status	None	Blue light on
21	Charging completed	None	Blue light off, Green light on
22	Sleep / power off	Long one beep(Intermediate frequency)	Light off
23	Low battery tips	None	Red light on (does not affect the green light to red light)
Quick command indicators			
24	Quick instructions	Long one beep and short two beeps (high / mid / low frequency)	Green light blink once
Data Overflow			
25	Data Overflow	Long one beep(Low frequency)	Red light blink once

5.2.1 Receiver end LED light indicator

Serial number	System state	Buzzer announce	Indicator light
2.4G & 433 USB adapter			
1	power on within 30 seconds	---	Green light blink slowly
2	Boot after 30 seconds	---	Green light normally on
3	Receive the packet	---	Green light blink once
433 receiver			
1	Electricity boot	Boot ringtone	
2	power on within 30 seconds	None	Green light blink slowly
3	30 seconds later	None	Green light normally on
4	Press the button to enter matching state	None	Green light blink slowly

6. 2.4G Wireless sending and receiving data packet format

6.1 bk2425 Infinite packet format

The statement field	Size	Description
U8 pkt_len	1byte	The length of the barcode
U8 pkt_check	1 byte	[[7] Address pairing indication marks [6] 0: command package 1: The packet [5] Barcode transmission complete indication marks 0: Transfer to complete 1: unfinished [4] Whether to show ID 0: ID hide 1: ID show [3:0] system working mode 0:real-time mode 1:Inventroy mode 2:Cache mode
u8 pkt_part	1 byte	Long subcontract send number barcode data
u8 payload[29]	Max 29byte	Effective data area (Data of barcode)

7.Inventory mode to save and read data packet format:

The statement field	Size	Description
u16 len	2byte	The length of the barcode
u8 barcode_buf[520]	The size of the data of effective barcode data	Effective barcode data

7.1 Inventory model management information storage format:

Type	Fields	Length	Description
u8	sequence	1Byte	The order of the information stored in the management sector
u16	barcode_count	2Byte	The number of barcode in the inventory model of storage
U16	mode2_barcode_count	2Byte	Cache barcode number
u32	write_addr	4Byte	The initial address of can be written (Inventory mode)
u32	read_addr	4Byte	The initial address of can be read(Inventory mode)
u32	mode2_write_addr	4Byte	Initial address of can be written in the buffer(Cache mode)
u32	mode2_read_addr	4Byte	Initial address of can be read in the buffer(Cache mode)

8.433 wireless data packet







The packet format




















The statement field	Size	Description
U8 pkt_length	1byte	The length of the packet (The entire packet length, contains the length of byte)
u8 pkt_part	1 byte	Long subcontract send number barcode data
U16 src_addr	2byte	source address
U32 dst_addr	2byte	destination address
U8 pkt_check	1 byte	[7] Address pairing indication marks [6] 0: command package 1: The packet [5] Barcode transmission complete indication marks 0: Transfer to complete 1: unfinished [4] Whether to show ID 0: ID hide 1: ID show [3:0] Reserved[0~7]
U8 pkt_repeat	1byte	Packets duplicate detection
u8 pkt_payload [56]	Max 56byte	Effective data area (Data of barcode)(Plan to increase to120Bytes)






















9. ACK packet format






















The statement field	Size	Description
U8 pkt_length	1byte	The length of the packet (The entire packet length, contains the length of byte)
U8 pkt_check	1 byte	[7] Address pairing indication marks [6] 0: command packet 1: Data packet [5] Bar code transmission complete indication marks 0: Transmission complete 1: Transmission failure [4] Whether to showID 0: ID hide 1: ID show [3:0] Reserved[0~7]
U16 src_addr	2byte	source address
U32 dst_addr	2byte	destination address
U16 cmd	2byte	The command of ACK return






















10. Symbol table






















Control symbol	Hex	
^@ (NULL)	00	
^A (SOH)	01	
^B (STX)	02	
^C (ETX)	03	
^D (EOT)	04	
^E (ENQ)	05	
^F (ACK)	06	
^G (BEL)	07	
^H (BS)	08	
^I (HTab)	09	
^J (LF)	0A	
^K (VTab)	0B	
^L (FF)	0C	
^M (CR)	0D	
^N (SO)	0E	
^O (SI)	0F	
^P (DLE)	10	




















^Q (DC1)	11	
^R (DC2)	12	
^S (DC3)	13	
^T (DC4)	14	
^U (NAK)	15	
^V (SYN)	16	
^W (ETB)	17	
^X (CAN)	18	
^Y (EM)	19	
^Z (SUB)	1A	
^[(ESC)	1B	
^\\ (FS)	1C	
^] (GS)	1D	
^^ (RS)	1E	
^_ (US)	1F	
SPC	20	
Symbol	Hex	
!	21	
"	22	
#	23	

\$	24	
%	25	
&	26	
'	27	
(28	
)	29	
*	2A	
+	2B	
,	2C	
-	2D	
.	2E	
/	2F	
0	30	
1	31	
2	32	
3	33	
4	34	
5	35	
6	36	
7	37	
8	38	



9	39	
:	3A	
;	3B	
<	3C	
=	3D	
>	3E	
?	3F	
@	40	
A	41	
B	42	
C	43	
D	44	
E	45	
F	46	
G	47	
H	48	
I	49	
J	4A	
K	4B	
L	4C	
M	4D	

N	4E	
O	4F	
P	50	
Q	51	
R	52	
S	53	
T	54	
U	55	
V	56	
W	57	
X	58	
Y	59	
Z	5A	
[5B	
\	5C	
]	5D	
^	5E	
_	5F	
`	60	
a	61	
b	62	

c	63	
d	64	
e	65	
f	66	
g	67	
h	68	
i	69	
j	6A	
k	6B	
l	6C	
m	6D	
n	6E	
o	6F	
p	70	
q	71	
r	72	
s	73	
t	74	
u	75	
v	76	
w	77	

x	78	
Y	79	
z	7A	
{	7B	
	7C	
}	7D	
~	7E	
DEL	7F	
Function keys	Hex	
F1	80	
F2	81	
F3	82	
F4	83	
F5	84	
F6	85	
F7	86	
F8	87	
F9	88	
F10	89	
F11	8A	

F12	8B	
Backspace	8C	
Tab	8D	
Return (ENTER)	8E	
Enter (Numeric Keypad)	8F	
Esc	90	
Arrow Down	91	
Arrow up	92	
Arrow right	93	
Arrow left	94	
Insert	95	
Home	96	
End	97	
Page up	98	
Page down	99	
Left Shift	9A	
Left Ctrl	9B	
Left Alt	9C	
Left GUI	9D	
Right Shift	9E	
Right Ctrl	9F	

Right Alt	A0	
Right GUI	A1	
Caps Lock	A2	