

Barcode scanner

User's Manual

Contents

Programming with Parameter	4
Interface selection	6
Scanning Mode Setting.....	7
Keyboard wedge	9
USB interface	10
RS-232 Interface	11
Global Settings.....	16
Indication	19
EAN-13 and ISBN/ISSN.....	20
EAN-8	22
UPC-A.....	23
UPC-E	25
Code128 C.....	28
Code 39.....	29
Code 93.....	32
Interleaved 2 of 5	34
Industrial 2 of 5.....	35
Matrix 2 of 5	36
Codabar	37
Code 11.....	38
MSI/Plessey	40
UK/Plessey	42
GS1 DataBar (GS1 DataBar Truncated).....	44
GS1 DataBar Limited.....	45
GS1 DataBar Expanded	45
Advanced Bar Code Data Formatting	46
Prefix.....	46
Suffix	47

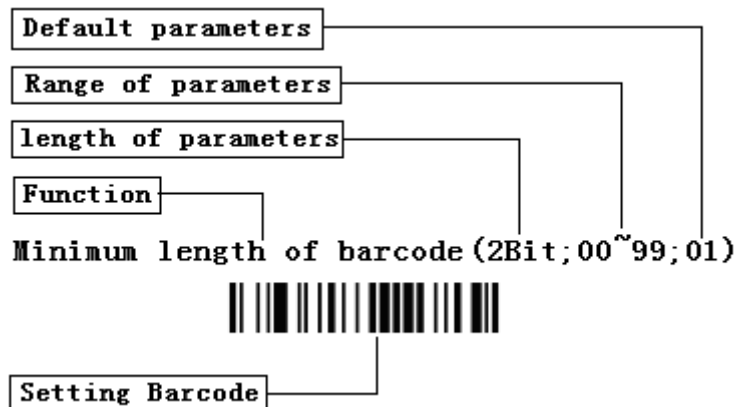
Preamble	47
Postamble.....	48
Code ID	48
Code ID position	48
Code name transmission	49
Code length transmission	49
Case conversion:.....	49
Insert String G1 Setting.....	50
Insert String G2 Setting.....	50
Insert String G3 Setting.....	50
Insert String G4 Setting.....	51
FN1 substitution string setting	51
Truncate leading G5 String setting	52
Truncate ending G6 string setting	52
Replace String Setting.....	52
Appendix 1 ASCII Table 1-2.....	53
Appendix 2 Parameter bar code.....	55
**Wireless Communication Setting.....	56
Wireless Channel.....	57
RF operating mode.....	58

Notice:

1. Please carefully read the User Manual before using the barcode scanner.
2. All software, including firmware, furnished to the user is on a licensed basis.
3. The right is reserved to make changes to any software or product to improve reliability, function, or design.
4. The material in this manual is subject to change without notice.
5. When powered on, the wireless function will automatically send signal each 11seconds.For your health, turn it off is recommended when not use.

Programming with Parameter

It is need to scan more than one setting barcode to program the scanner with parameter.



Program Parameters

The steps of programming are:

1. Scan the Function Setting Barcode. The Scanner will issue a "beep" sound, and the Red LED is on until the program is finished.
2. Scan the parameters bar code. The parameters may be one or more than one digits.
3. Scan the setting barcode "Finish Setting". If it is programmed successful , the scanner will issue a "beep beep" sound, but issue a "beep beep beep" sound when fails.

e.g.: Set min. code length of Code 128 to 5 chars :

①: Open the manual and turn chapter "code128 ". Scan the setting bar code
"Scan Min. Code Length".

Scan Min. Code Length (2 Digits; 00~99, 1*)



②: Turn to the last page of this Manual Appendix 10 Parameter bar code,
scan the parameter bar code "0" and "5":

0



5



③: Scan "Finish Setting", finish the setting.

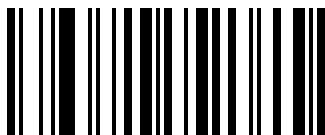
Finish Setting



Set Factory Defaults

If you wish to return the base unit to the entire factory default settings (radio communication setting is not included), scan the barcode "Set Defaults".

Set Defaults



Interface selection

This scanner supports interfaces such as keyboard wedge, RS-232 serial wedge, and USB interface.

Typically, host is able to identify the host port type automatically. In extreme cases, host port may need setting manually if the host fails to identify it.

USB



AutomaticIdentification*



PS/2KeyBoard



RS232



Scanning Mode Setting

Good-read off scanning Mode: The trigger button must be pressed once to activate scanning. The light source of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed.

Select Good-read off scanning Mode *



Auto-detection scanning Mode: The scanner will start scan Automatically if any object enter the scan area. The laser light of scanner stops scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed. Once the laser light stops scanning, the present object must be remove away from the scan area to enable Auto-detect sensor.

Select Auto-detection scan



Press Scanning Mode: It can continue scan barcode when the button is continuing pressed.

Press Scanning Mode



Click Scanning Mode: When the button is click, the scanner will keep scanning the barcode until the barcode is reader or the Stand-by duration elapsed.

Click Scanning Mode



Continuous Scanning mode: the scan engine is always scanning and decoding. The module will read the barcode which gets into the scanning area automatically. Only when the barcode that has been read gets out of the scanning area, the module can read the next barcode.

Select Continuous Scanning mode



Auto Continue mode: The scanner will start continuous scan Automatically if any object enter the scan area. When there is no bar code is read for half a minute, the scanner shutdown the laser line and exit continuous scanning mode.

Auto Continue mode



Keyboard wedge

Keyboard type

IBM AT, PS/2 *



Other (Reserved)



Keyboard layout

USA *



Italian



French



Turkish F



Turkish Q



USB interface

USB device type

HID Keyboard*



Virtual RS232 Port (reserved)



Note: Virtual RS232 Port need driver!

IBM Table Top USB



IBM Hand-Held USB



USB OPOS Hand-Held



USB Keyboard layout

USA*



German



French



Other



RS-232 Interface

Baud Rate

2400



4800



9600*



19200



38400



57600



Handshaking

None: Scan the bar code below if no Hardware Handshaking is desired

None (Default)



Standard RTS/CTS: Scan the bar code below to select Standard RTS/CTS Hardware Handshaking.

Standard RTS/CTS



RTS/CTS Option 1: When RTS/CTS Option 1 is selected, the scanner asserts RTS before transmitting and ignores the state of CTS. The scanner de-asserts RTS when the transmission is complete.

RTS/CTS Option 1



RTS/CTS Option 2: When Option 2 is selected, RTS is always high or low (user-programmed logic level). However, the scanner waits for CTS to be asserted before transmitting data. If CTS is not asserted within Host Serial Response Time-out, the scanner issues an error indication and discards the data

RTS/CTS Option 2



RTS/CTS Option 3: When Option 3 is selected, the scanner asserts RTS prior to any data transmission, regardless of the state of CTS. The scanner waits up to Host Serial Response Time-out for CTS to be asserted. If CTS

is not asserted during this time, the scanner issues an error indication and discards the data. The scanner de-asserts RTS when transmission is complete.

RTS/CTS Option 3



ACK/NAK: When this option is selected, after transmitting data, the scanner expects either an ACK or NAK response from the host. When a NAK is received, the scanner transmits the same data again and waits for either an ACK or NAK. After three unsuccessful attempts to send data when NCK are received, the scanner issues an error indication and discards the data.

ACK/NCK



ENQ: When this option is selected, the scanner waits for an ENQ character from the host before transmitting data. If an ENQ is not received within the Host Serial Response Time-out, the scanner issues an error indication and discards the data. The host must transmit an ENQ character at least every Host Serial Response Time-out to prevent transmission errors.

ENQ



ACK/NAK with ENQ: This combines the two previous options. For re-transmissions of data, due to a NAK from the host, an additional ENQ is not required.

ACK/NCK with ENQ



XON/XOFF: An XOFF character turns the scanner transmission off until the scanner receives an XON character. There are two situations for XON/XOFF:

- XOFF is received before the scanner has data to send. When the scanner has data to send, it waits up to Host Serial Response Time-out for an XON character before transmission. If the XON is not received within this time, the scanner issues an error indication and discards the data.
- XOFF is received during a transmission. Data transmission then stops after sending the current byte. When the scanner receives an XON character, it sends the rest of the data message. The scanner waits up to 30 seconds for the XON

XON/XOFF



RTS Line State

Host: Low RTS (Default)



Host: High RTS &RH



Host Serial Response Time-out

2 sec (Default)



5 sec



7.5 sec



10 sec



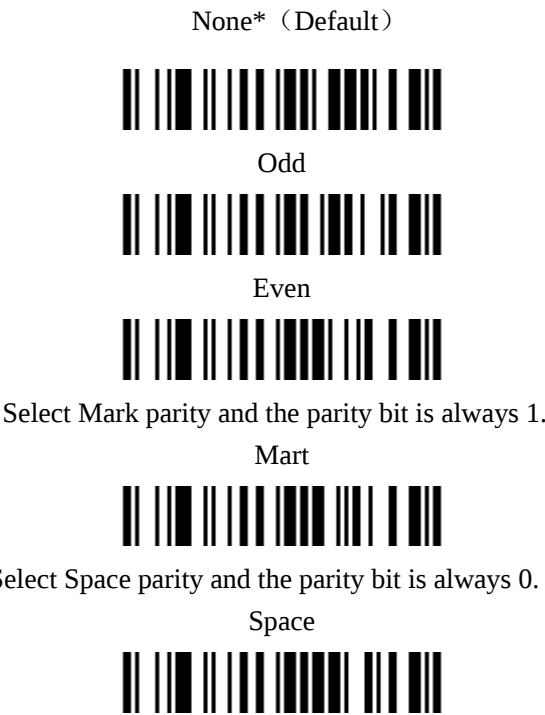
Data Bits



Stop Bit Select



Parity



Global Settings

Element amendment

Enable Element amendment *



Disable Element amendment



Printable character Output only

Enable



Disable*



Decoder optimization

Enable Decoder optimization *



Disable Decoder optimization



Save Power

Enable*



Disable



Standby duration

2 second



5 second *



10 second



20 second



Double confirm

Disable Double confirm*



2 Times



5 Times



10 Times



Same barcode delay time

If a barcode has been scanned and output once successfully, the laser beam must be off or moved away from the barcode beyond delay time to active scanning the same barcode. When this feature is set to be “0xFF”, then the delay time is indefinite.

Same barcode delay time (2 Digits;00~99;00*)



Global Max./Min. code length

Global Max. code length (2 Digits;00~99;99*)



Global Min. code length (2 Digits;00~99;XX*)



Global G1-G6 string selection

Global Insert String 1(1 Digits; 0~6; 0*)



Global Insert String 2(1 Digits; 0~6; 0*)



Decode UPC/EAN Only With Supplemental

Enable



Disable *



Indication

Volume of beeper

High*



Middle



Low



Mute



Beep tone

High Tone



Middle Tone *



Low Tone



EAN-13 and ISBN/ISSN

Enable/Disable EAN-13

Enable EAN-13*



Disable EAN-13



EAN-13 Check Digit Verification

Enable EAN-13 Check Digit Verification *



Disable EAN-13 Check Digit Verification



EAN-13 Check Digit Transmission

Transmit EAN-13 Check Digit*



Do Not Transmit EAN-13 Check Digit



EAN13 Supplement Digits

2 Digits



5 Digits



2 Digits or 5 Digits



None*



ISBN/ISSN Conversion

Convert EAN-13 to ISBN/ISSN



Do Not Convert EAN-13 to ISBN/ISSN*



EAN-8

Enable/Disable EAN-8

Enable EAN-8*



Disable EAN-8



EAN-8 Check Digit Verification

Enable EAN-8 Check Digit Verification *



Disable EAN-8 Check Digit Verification



EAN-8 Check Digit Transmission

Transmit EAN-8 Check Digit L*



Do Not Transmit EAN-8 Check Digit



EAN-8 Supplement Digits

2 Digits



5 Digits



2 Digits or 5 Digits



None*



Expand EAN-8 to EAN-13

Expand to EAN-13



Do Not Convert to EAN-13*



EAN-8 Code ID setting (“d”)

Scan Code ID (2 Digits; 00~FF; 64*)



UPC-A

Enable UPC-A 0*



Disable UPC-A



UPC-A Check Digit Verification

Enable UPC-A Check Digit Verification *



Disable UPC-A Check Digit Verification



UPC-A Check Digit Transmission

Transmit UPC-A Check Digit *



Do Not Transmit UPC-A Check Digit



Supplement Digits

2 Digits



5 Digits



2 Digits or 5 Digits



None *



UPC-A Truncation/Expansion

Expand UPC-A to EAN-13



Truncate leading zeros



None*



UPC-E

Enable/Disable UPC-E

Enable UPC-E*



Disable UPC-E



UPC-E Check Digit Verification

Enable UPC-E Check Digit Verification *



Disable UPC-E Check Digit Verification



UPC-E Check Digit Transmission

Transmit UPC-E Check Digit *



Do Not Transmit UPC-E Check Digit



Supplement Digits

2 Digits



5 Digits



2 Digits or 5 Digits



None*



UPC-E Truncation/Expansion

Truncate leading zeros



Expand UPC-E to EAN-13



Expand UPC-E to UPC-A



None*



Code128 C

Enable Code 128*



Disable Code 128



Code128 Check Digit Verification

Enable Code 128 Check Digit Verification *



Disable Code 128 Check Digit Verification



Code 128 Check Digit Transmission

Transmit Code 128 Check Digit *



Do Not Transmit Code 128 Check Digit



Code128 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



UCC/EAN 128

Enable/Disable UCC/EAN 128

Enable*



Disable



UCC/EAN 128 Check Digit Verification

Enable*



Disable



UCC/EAN 128 Check Digit Transmission

Transmit Check Digit *



Do Not Transmit Check Digit



UCC/EAN 128 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Code 39

Enable/Disable Code 39

Enable*



Disable



Code 39 Check Digit Verification

Enable



Disable*



Code 39 Check Digit Transmission

Transmit Code 39 Check Digit



Do Not Transmit Code 39 Check Digit *



Code 39 Full ASCII Conversion

Enable **Code 39** Full ASCII



Disable **Code 39** Full ASCII *



Start/End transmission

Enable Code 39 Start/End transmission



Disable Enable Code 39 Start/End transmission *



Convert Code 39 to Code 32

Enable Convert Code 39 to Code 32



Disable Convert Code 39 to Code 32*



Code 32 Prefix “A” transmission

Enable Code 32 Prefix “A” transmission



Disable Code 32 Prefix “A” transmission*



“*” as data character

Enable



Disable*



Code39 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99; 1*)



Code 93

Enable/Disable Code 93

Enable*



Disable



Code 93 Check Digit Verification

Enable Code 93 Check Digit Verification *



Disable Code 93 Check Digit Verification



Code 93 Check Digit Transmission

Transmit Check Digit *



Do Not Transmit Check Digit



Code 93 Full ASCII Conversion

Enable Code 93 Full ASCII



Disable Code 93 Full ASCII *



Code 93 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Interleaved 2 of 5

Data digits (Variable)	Check digit (one bit ,optional)
------------------------	---------------------------------

Interleaved 2 of 5 Enable*



Disable



Interleaved 2 of 5 Check Digit Verification

Enable



Disable*



Interleaved 2 of 5 Check Digit Transmission

Transmit Check Digit



Do Not Transmit Check Digit *



Interleaved 2 of 5 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Industrial 2 of 5

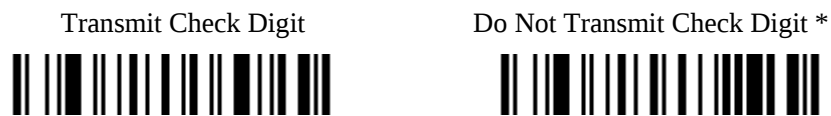
Enable/Disable Industrial 2 of 5



Industrial 2 of 5 Check Digit Verification



Industrial 2 of 5 Check Digit Transmission



Industrial 2 of 5 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Matrix 2 of 5

Enable/Disable Matrix 2 of 5

Enable*



Disable



Matrix 2 of 5 Check Digit Verification

Enable



Disable *



Matrix 2 of 5 Check Digit transmission

Transmit Check Digit



Do Not Transmit Check Digit *



Matrix 2 of 5 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Coda bar

Enable/Disable Codabar

Enable*	Disable

Coda bar Check Digit Verification

Enable	Disable*

Coda bar Check Digit Transmission

Transmit Check Digit	Do Not Transmit Check Digit *

Coda bar Start/End type

ABCD/ABCD *	abcd/abcd
ABCD/TN*E	abcd/tn*e

Coda bar Start/End transmission

Enable



Disable *



Coda bar Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Code 11

Enable/Disable Code 11

Enable*



Disable



Code 11 Check Digit Verification

Enable 1bit check Digit *



Enable 2 bit check Digit



Disable check Digit



Code 11 Check Digit Transmission

Transmit **Code11** Check Digit



Do Not Transmit **Code11** Check Digit *



Code 11 Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 4*)



MSI/Plessey

Enable/Disable MSI/Plessey

Enable *0



Disable



MSI/Plessey Check Digit Verification

Enable 1 digit (Mod10)



Enable 2 digit (Mod10/10)



Enable 2 digit (Mod11/10)



Disable*



MSI/Plessey Check Digit Transmission

Transmit MSI/Plessey Check Digit



Do Not Transmit MSI/Plessey Check Digit *



MSI/Plessey Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 4*)



UK/Plessey

Check digit verification: The UK/Plessey has two optional check digits. The check digit 1 and check digit 2 will be calculated as the sum module 10 or 11 of the data digits.

Enable UK /Plessey *



Disable UK /Plessey



UK/Plessey Check Digit Verification

Enable*



Disable



UK /Plessey Check Digit Transmission

Transmit Check Digit



Do Not Transmit Check Digit *



UK/Plessey Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



GS1 DataBar (GS1 DataBar Truncated)

GS1 DataBar Truncated is structured and encoded the same as the standard GS1 DataBar format, except its height is reduced to a 13 modules minimum; while GS1 DataBar should have a height greater than or equal to 33 modules.

Enable/Disable GS1 DataBar

Enable *



Disable



Conversion

Convert GS1 DataBar to UCC/EAN 128



Convert GS1 DataBar to UPC-A or EAN-13



Disable Conversion *



GS1 Data Bar Limited

Enable/Disable GS1 DataBar Limited

Enable*



Disable



Conversion

Convert **GS1 DataBar Limited** UCC/EAN 128



Convert **GS1 DataBar Limited** UPC-A OR EAN-13



Disable Conversion*



GS1 DataBar Expanded

Enable/Disable GS1 DataBar Expanded

Enable*



Disable



Conversion

Convert **GS1 DataBar** to UCC/EAN 128



Disable Conversion*



GS1 DataBar Expanded Length

Scan Max. Code Length (2 Digits; 00~99; 99*)



Scan Min. Code Length (2 Digits; 00~99, 1*)



Advanced Bar Code Data Formatting

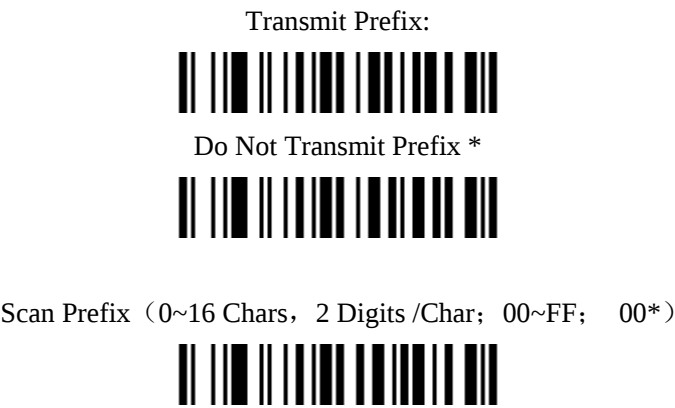
Format of barcode data transmission:

Prefix	Code name	Preamble	Code ID	Code length	Code data	Code ID	Postamble	Suffix
--------	--------------	----------	------------	----------------	--------------	------------	-----------	--------

Suffix Quick Setup



Prefix



Suffix

The default Suffix is CR。

Transmit Suffix *



Do Not Transmit Suffix



Scan Suffix (0~22 Chars, 2 Digits /Char; 00~FF; 00*)



Preamble

Transmit Preamble



Do Not Transmit Preamble *



Scan preamble (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Postamble

Transmit Postamble



Do Not Transmit Postamble *



Scan Postamble (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Code ID

Transmit Proprietary ID



Transmit AIM ID



Do Not Transmit Code ID*



Code ID position

Before code data



After code data *



Code name transmission

Transmit Code name



Do Not Transmit Code name *



Code length transmission

Transmit **Code length**



Do Not Transmit **Code length** *



Case conversion:

The characters within code data or the whole output string can be set in either upper case or lower case

Disable*



Upper (data only)



Lower (data only)



Upper (whole string)



Lower (whole string)



Insert String G1 Setting

Scan Inert String G1 (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Scan the Position of G1 (2 Digits; 00~99; 00*)



Insert String G2 Setting

Scan Inert String G2 (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Scan the Position of G2 (2 Digits; 00~99; 00*)



Insert String G3 Setting

G3 is also used as the string to be replaced when the replace function is enabled.

Scan Inert String G3 (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Scan the Position of G3 (2 Digits; 00~99; 00*)



Insert String G4 Setting

G4 is also used as the string to replace G3 in a bar code data when the replace function is enabled.

Scan Inert String G4 (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Scan the Position of G4 (2 Digits; 00~99; 00*)



FN1 substitution string setting

The FN1 character (0x1D) in an UCC/EAN128 barcode, or a Code 128 barcode, or a GS1 DataBar barcode can be substituted with a defined string.

Enable FN1 Substitution



Disable FN1 Substitution *



Scan FN1 substitution string setting (0~4 Chars, 2 Digits /Char; 00~FF; 00*)



Truncate leading G5 String setting

By setting G5, a defined leading character or string can be truncated. G5 can also be set to be repeated.

Scan G5 String (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Truncate leading G5 string setting (2 Digits; 00~99; 01*)



Truncate ending G6 string setting

By setting G6, a defined ending character or string can be truncated. G5 can also be set to be repeated.

Scan G6 String (0~16 Chars, 2 Digits /Char; 00~FF; 00*)



Scan Repeat of a G6 String (2 Digits; 00~99; 01*)



Replace String Setting

Replace G3 string to G4 string in barcode data.

Enable



Disable *



Appendix 1 ASCII Table

Table 1 Function Keys

H L	P/S2 keyboard /USB		RS-232	
	0	1	0	1
0	Null		NUL	DLE
1	Up	F1	SOH	DC1
2	Down	F2	STX	DC2
3	Left	F3	ETX	DC3
4	Right	F4	EOT	DC4
5	PgUp	F5	ENQ	NAK
6	PgDn	F6	ACK	SYN
7		F7	BEL	ETB
8	Bs	F8	BS	CAN
9	Tab	F9	HT	EM
A		F10	LF	SUB
B	Home	Esc	VT	ESC
C	End	F11	FF	FS
D	Enter	F12	CR	GS
E	Insert	Ctrl+	SO	RS
F	Delete	Alt+	SI	US

Example: “Tab” = “09” .

Table 2 Chars

H L	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	“	2	B	R	b	r
3	#	3	C	S	c	s
4	\$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	‘	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l	
D	–	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Example: ASCII “! ” = “21” .

Appendix 2 Parameter bar code

0 %N0	1 %N1
	
2	3
	
4	5
	
6	7
	
8	9
	
A	B
	
C	D
	
E	F
	
Finish Setting	
	

Wireless Communication Setting

Unpair the scanner from host

Unpair the scanner from host



Pair Scanner with Host

Pairing is the process by which a scanner initiates communication with a host. The scanner with the Host pairing as follows:

1. Connect the scanner to the Host with the Charging Cable.
2. Press the "Pairing Button" until the Scanner issued a "beep beep" sound.

NOTE: A host is able to work with as more as 99 scanners at the same time.

Clear the Buffer of Scanner

Scan the setting bar code below will clear the bar code data save in the scanner buffer.

Clear the Buffer of Scanner



Wireless Channel

When there are more than one host work in the same Space, every host has to work in different channel. Channel is set as follows:

1. Open a Notepad or other text editor.
2. Press the "Channel Settings button" to change the channel of a host, and the channel NO will be displayed in the screen.

Scanner ID

Set the Scanner ID (2 Digits; 00~99; 00*)



Add Scanner ID as Prefix

If this item is enabled, the scanner will add its ID as prefix of every barcode. E.g. When scan the bar code “12345”,if the ID of the scanner is “15”,and the output barcode data will be “ID1512345”.

NOTE: The ID of a scanner can be set manually or assigned by the host automatically. Every scanner work with the same Host can't be with the same ID.

Enable Add Scanner ID as Prefix



Disable Add Scanner ID as Prefix *



Power off Interval

Power Off Interval (2 Digits; 00~99seconds; 15seconds*) 4



Shut down the Scanner Immediately



RF operating mode:

Auto-Store Mode:

The scanner starts storing barcode data when it loses its connection to a host (for example, when a user holding the scanner walks out of range). Data transmission is triggered by reestablishing the connection with host (for example, when a user holding the scanner walks back into range).

Auto-Store Mode*



NO-Store Mode:

Do not batch data. The scanner attempts to transmit every scanned barcode. If the transmission is failed, the barcode data is ignored and issued a "beep beep" sound.

NO-Store Mode



Manual Transmission Mode : Data transmission is triggered by scanning “Start transfer Bar Code Data” .

Manual Transmission Mode



Start transfer Bar Code Data (for Manual Transmission Mode)



Wireless Communication Inter-character delay

Scan Wireless Communication Inter-character delay (2 Digits;
0.0~9.9seconds; 0.5seconds*)



Battery Status



*Scan the barcode, the battery status will display on your screen.