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Revision History

version	date	description
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Software Development Manual

一、Basic information

1. Factory Default Configuration

Communication Mode: USB

Trigger Mode: Manual mode

Terminator: CR。

Factory Default Configuration

2. Save current configuration as default

The user can set the required configuration , and then scan the following barcode，Save current configuration as default

Save current configuration as default

3. Default Configuration

When the user has set the default settings, scan the following barcode to restore the original set of customer configurations

Default Configuration

4. Parameter code

***open Parameter code**

close Parameter code

5. Product information

二、Communication Mode

1. Serial Port

Using Serial Port, read moudle and the host devices must match exactly in ommunication parameter configuration, to ensure smooth communication and content are correct, Serial Port is configured to: **9600 baud, 8 bits of data, no parity, 1 stop bit**

TTL 232

（1）Baud Rate

The default baud rate is 9,600

1200bps

2400bps

4800bps

* 9600bps

19200bps

38400bps

57600bps

115200bps

（2）parity

Odd

Even

* None

（3）Stop bit

*1 Stop Bit

2 Stop Bits

三、Trigger Mode

1. Manual mode

（1）Key Holding

Press the button to trigger the reading, release the button to end the reading. Reading success or reading time over a single reading time will end the reading。

***Manual mode-Key Holding**

（2）Single Key Trigger

Detects the change of the key level (Maintain 30ms, depending on the product)to start reading, and then detects the change of the key level (Maintain 30ms, depending on the product)again to end reading. Reading success or reading time over a single reading time will end the reading.

Manual mode-Single Key Trigger

2. Continuous Mode

The reading engine performs continuous work. Reading success or reading time over a single reading time will end the reading. More than the specified time will automatically trigger the next reading

Continuous Mode

（1）Interval Time

The interval time between two readings in continuous mode. Regardless of the last success or failure to read, more than the specified time will automatically trigger the next reading.

Default: 500ms,unit: 100ms,range: 0-9900ms

To set a Interval Time, scan the bar code below. Next scan two Numeric Bar Codes in appendix that correspond to the desired time-out. Single digit values must have a leading zero. For example, to set a time-out of 0.5 seconds, scan the bar code below, then scan the “0” and “5” bar codes. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

Interval Time

(Default: 500ms.)

3. Automatic Induction Mode

In automatic induction mode, the scan engine detects the brightness of the surroundings. Trigger reading when the brightness changes. Reading success or reading time over a single reading time will end the reading. Regardless of the last success or failure to read, re-enter the detection of the surrounding environment brightness.

Automatic Induction Mode

（1）Stability of Induction Time

Stability of induction time, Default: 500ms, unit:100ms, range: 0-9900ms

For example:

Set stability of induction time is 200ms

Scan stability of induction time setting code,then scan *Numeric Bar Codes* 0 and 2

Set stability of induction time is 1500ms

Scan stability of induction time setting code,then scan *Numeric Bar Codes* 1 and 5

Stability of Induction Time

（2）Sensitivity Level

There are three levels of sensitivity to choose from , Default: 500ms

***High**

Middle

Low

4. Host mode

Through the command to trigger the scan engine to read, also through the command to trigger the scan engine to end reading. Reading success or reading time over a single reading time will end the reading.

Host mode

5. Duration in Scanning

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable in 0.1 second increments from 0.50 to 25.5 seconds.

To set a duration in scanning, scan the bar code below. Next scan three *Numeric Bar Codes* in appendix that correspond to the desired on time. Single digit numbers must have a leading zero. For example, to set an on time of 0.5 seconds, scan the bar code below, then scan the "0", "0" and "5" bar codes; to set an on time of 10.5 seconds, scan the bar code below, then scan the "1", "0" and "5" bar codes. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

Duration in Scanning(Default: 3.0 sec.)

6. Output Interval of The Same Code

To avoid reading the same barcode multiple times in continuous mode and automatic induction mode, set the scan engine to allow reading the same barcode after a delay.

Output interval of the same code is to refuse to read the same barcode within the set length of time.

Default: 500ms,unit:100ms,range: 0-9900ms

To set output interval of the same code, scan the bar code below. Next scan two Numeric Bar Codes in appendix that correspond to the desired time-out. Single digit values must have a leading zero. For example, to set a time-out of 0.5 seconds, scan the bar code below, then scan the

“0” and “5” bar codes. To change the selection or cancel an incorrect entry, scan Cancel in appendix.

Output Interval of The Same Code

7. Quick set for output Interval of The Same Code

None

delay 1s

delay 3s

Delay 5s

delay 7s

delay forever

四、Floodlight and Positioning lights

1. Floodlight

*** Lighting when Read**

Always Close

2. Positioning lights

*** Lighting when Read**

Always Lighting

Always Close

五、Output and prompt

1. Prompt sound

（1） Mute

Open

* Close

（2） Beeper Volume

* High

Middle

Low

（3） Beep After Good Decode

*Open

Close

（4） **Boot prompt**

*open

Close

（5） **Setup Code Prompt**

*open

Close

2. Transmit “No Read” Message

Enable this option to transmit “NR” if a symbol does not decode during the timeout period or before the trigger is released. Any enabled prefix or suffixes are appended around this message.

When disabled, and a symbol cannot be decoded, no message is sent to the host.

*Disable No Read

Enable No Read

3. Letter case conversion

For example If the Barcode content is： ab123dE, if set to " all uppercase ", the output is：AB123DE；if set to "all lowercase", the output is：ab123de；if set to " Case Inversion", the output is： AB123De；

Default: **Normal Letter Case**

* Normal Letter Case

all uppercase

all lowercase

Case Inversion

4. Data encoding format

0: Primitive Type

1:GBK(GB2312)

2: UTF8

Primitive Type

***GBK**

Unicode

5. Invoice Function

*** Disable**

Enable

六、Data editor

1. Code ID

The user can identify different barcode types by CODE ID, and CODE ID USES a character to identify them

***Disable send Code ID**

Enable send Code ID

2. Terminator

Add character format: Decode Data+Terminator.

***NONE**

CR LF

CR

TAB

CRCR

CR LF CR LF

3. Add multiple Prefixes/suffixes

- Prefixes

(1) Scan following barcode “set multiple prefixes”

set multiple prefixes

(2) Next scan four Numeric Bar Codes in appendix,Scan the Numeric Bar Codes in turn, and set the successful prompt once every four times

(3) Scan following barcode “Complete setup multiple Prefixes/suffixes”

Complete setup multiple Prefixes/suffixes

- **suffixes**

（1）Scan following barcode “set multiple suffixes”

连续设置多个后缀

（2）Next scan four Numeric Bar Codes in appendix,Scan the Numeric Bar Codes in turn, and set the successful prompt once every four times

（3）Scan following barcode “ Complete setup multiple Prefixes/suffixes”

Complete setup multiple Prefixes/suffixes

- **Prefixes/suffixes take effect**

***Output Decoding Data Only**

Data+suffixes

Prefixes+data

4. Hide data

(1) Hide Head Data

*Disable

enable

Set Hidden Number

range 1-255. Scan the following barcode,Next scan three Numeric Bar Codes in appendix. For example, if you need to hide 16 characters, scan three Numeric Bar Codes in turn: 0 1 6

Hide Head Data-head

(2) Hide intermediate data

*Disable

enable

Sets the start position of hidden intermediate data

Sets the start position of hidden intermediate data, range 1-255.Scan the following barcode,Next scan three Numeric Bar Codes in appendix, for example, to hide the data after the third character(the fourth begins to hide),scan three Numeric Bar Codes in turn: 0 0 3

start position of hidden intermediate data

Set Hidden Number

range 1-255. Scan the following barcode,Next scan three Numeric Bar Codes in appendix. For example, if you need to hide 16 characters, scan three Numeric Bar Codes in turn: 0 1 6

Set Hidden Number-intermediate

(3) Hide tail data

***Disable**

enable

Set Hidden Number

range 1-255. Scan the following barcode,Next scan three Numeric Bar Codes in appendix. For example, if you need to hide 16 characters, scan three Numeric Bar Codes in turn: 0 1 6

Set Hidden Number-tail

5. STX&ETX

*Disable

STX

ETX

STX+ETX

七、Code Enable/Disable

1. 1d code master switch

enable

*disable

2. 2d code master switch

enable

*disable

3. 1D Reverse code reading

enable

*disable

4. UPC-A

***enable**

disable

Do not transmit UPC-A check bit

***transmit UPC-A check bit**

5. UPC-A additional code

(1) UPC-A 2 additional code

enable

***disable**

(2) UPC-A 5 additional code

enable

*disable

(3) UPC-A Must read additional code

enable

*disable

6. UPC-E

***enable**

disable

Do not transmit UPC-E check bit

* transmit UPC-E check bit

7. UPC-E additional code

(1) UPC-E 2 additional code

enable

*disable

(2) UPC-E 5 additional code

enable

*disable

(3) UPC-E Must read additional code

enable

***disable**

8. UPC-E transfer UPC-A

enable

*disable

9. UPC-A transfer EAN-13

enable

*disable

10. EAN-8

* Enable

Disable

11. EAN-8 additional code

(1) EAN-8 2 additional code

enable

*disable

(2) EAN-8 5 additional code

enable

*disable

(3) EAN-8 Must read additional code

enable

*disable

12. EAN-13

* Enable

Disable

13. EAN-13 additional code

(1) EAN-13 2 additional code

enable

***disable**

(2) EAN-13 5 additional code

enable

*disable

(3) EAN-13 Must read additional code

enable

*disable

14. CODE 128

* Enable

Disable

15. GS1-128

* enable

disable

16. ISBT-128

* enable

disable

17. Interleaved 2 of 5

(1) I 2 of 5 enable/disable

***enable**

disable

(2) Set Lengths for Interleaved 2 of 5

For example, to decode **Interleaved 2 of 5** symbols containing between 4 and 12 characters

first scan **Interleaved 2 of 5-Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must be preceded by a leading zero).

Numeric Bar Codes is in appendix. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

I 2 of 5 - Length Within Range

I 2 of 5 - Any Length

(3) transmit Interleaved 2 of 5 check bit

enable

*disable

18. Matrix 2 of 5

(1) Matrix 2 of 5 enable/disable

enable

***disable**

(2) Set Lengths for Matrix 25

For example, to decode Matrix 25 symbols containing between 4 and 12 characters

first scan **Matrix 25 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must be preceded by a leading zero). *Numeric Bar Codes* is in appendix. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

Matrix 25 - Length Within Range

Matrix 25 - Any Length

(3) transmit Matrix 2 of 5 check bit

Enable

*disable

19. Industrial 2 of 5

(1) Industrial 2 of 5 enable/disable

enable

***disable**

(2) Set Lengths for Industrial 2 of 5

For example, to decode **Industrial 2 of 5** containing between 4 and 12 characters

first scan **Industrial 2 of 5 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must be preceded by a leading zero). *Numeric Bar Codes* is in appendix. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

D 2 of 5 - Length Within Range

D 2 of 5 - Any Length

20. Standard 2 of 5

(1) Standard 2 of 5 enable/disable

enable

***disable**

(2) Set Lengths for Standard 2 of 5

For example, to decode **Standard 2 of 5** containing between 4 and 12 characters

first scan **Standard 2 of 5 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must be preceded by a leading zero).

Numeric Bar Codes is in appendix. To change the selection or cancel an incorrect entry, scan *Cancel* in appendix.

Standard 25 - Length Within Range

Standard 25 - Any Length

(3) transmit Standard 2 of 5 check bit

enable

*disable

21. Code 39

(1) code39 enable/disable

***enable**

disable

(2) Code39 Length

Any Lnegth code39

(3) Code39 check bit

transmit

*do not transmit

(4) Transmit Code 39 start and ending symbol

*disable

enable

22. Code 39 Full ASCII

Enable

* Disable

23. Code 32

(1) code32 enable/disable

Enable

* disable

(2) code32 add prefix A

enable

* disable

24. Code 93

enable

*** disable**

25. Code 11

(1) code11 enable/disable

Enable

* disable

(2) transmit check bit

enable

* disable

26. Codabar

enable

* disable

disable start and ending symbol

* enable start and ending symbol

27. PLESSEY

enable

*disable

28. MSI

(1) MSI enable/disable

enable

*** disable**

(2) Length

any Length can read

29. GS1-Databar

enable

*** disable**

30. ITF14

enable

*** disable**

Transmit check bit

***** do not transmit check bit

31. GS1 composite code

enable

*** disable**

32. QR Code

(1) QR code enable/disable

*** enable**

disable

(2) read two QR codes at the same time

Read only one code

Read only two code

Read one or two code

(3) Read reverse QR code

*only read Normal code

Read Normal/reverse code

33. Data Matrix

(1) Data Matrix enable/disable

*** enable**

disable

(2) read two Data Matrix codes at the same time

Read only one code

Read only two code

Read one or two code

(3) Read reverse Data Matrix

*only read Normal code

Only Read reverse code

Read Normal/reverse code

34. PDF 417

(1) PDF417 enable/disable

*** enable**

disable

(2) read two PDF417 codes at the same time

Read only one code

Read only two code

Read one or two code

(3) Read reverse PDF417

*only read Normal code

Only Read reverse code

Read Normal/reverse code

35. Aztec code

enable

*disable

36. Maxi code

enable

*disable

37. Hanxin code

encode

*disable

Appendix 1：numbered bar code

For parameters requiring specific numeric values, scan the appropriately numbered bar code(s).

0

1

2

3

4

5

6

7

8

9

Appendix 2：CANCEL

To change the selection or cancel an incorrect entry, scan the bar code below.

Cancel

Appendix 3：Code ID

Code charactar	Code type
A	UPC-A, UPC-E, EAN-8, EAN-13
B	Code 39, Code 32
C	Codabar
D	Code 128, ISBT 128
E	Code 93
F	Interleaved 2 of 5/ITF, ITF14
G	Industrial 2 of 5, Standard 2 of 5
H	CODE11
J	MSI, MSI/Plessey
K	UCC/EAN-128/GS1-128
L	Bookland EAN/ISBN，ISSN
R	GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded, RSS
V	Matrix 25
r	PDF417
u	DataMatrix(DM)
q	QR
a	Aztec Code
x	Maxi Code
c	HanXin

Appendix 4：Character comparison table

Scan Value	HEX Value	Keyboard Function Key	Keyboard Ctrl Combination Key
1000	00h	Null	CTRL 2
1001	01h	Keypad Enter	CTRL A
1002	02h	Caps lock	CTRL B
1003	03h	Right Arrow	CTRL C
1004	04h	Up Arrow	CTRL D
1005	05h	Null	CTRL E
1006	06h	Null	CTRL F
1007	07h	Enter	CTRL G
1008	08h	Left Arrow	CTRL H
1009	09h	Horizontal Tab	CTRL I
1010	0Ah	Down Arrow	CTRL J
1011	0Bh	Vertical Tab	CTRL K
1012	0Ch	Backspace	CTRL L
1013	0Dh	Enter	CTRL M
1014	0Eh	Insert	CTRL N
1015	0Fh	Esc	CTRL O
1016	10h	F11	CTRL P
1017	11h	Home	CTRL Q
1018	12h	Print Screen	CTRL R
1019	13h	Delete	CTRL S
1020	14h	tab+shift	CTRL T
1021	15h	F12	CTRL U
1022	16h	F1	CTRL V
1023	17h	F2	CTRL W
1024	18h	F3	CTRL X
1025	19h	F4	CTRL Y
1026	1Ah	F5	CTRL Z
1027	1Bh	F6	CTRL [
1028	1Ch	F7	CTRL \

1029	1Dh	F8	CTRL]
1030	1Eh	F9	CTRL 6
1031	1Fh	F10	CTRL -
1032	20h	Space	Space
1033	21h	/A	!
1034	22h	/B	‘
1035	23h	/C	#
1036	24h	/D	$
1037	25h	/E	%
1038	26h	/F	&
1039	27h	/G	‘
1040	28h	/H	(
1041	29h	/I	)
1042	2Ah	/J	*
1043	2Bh	/K	+
1044	2Ch	/L	,
1045	2Dh	-	-
1046	2Eh	.	.
1047	2Fh	/	/
1048	30h	0	0
1049	31h	1	1
1050	32h	2	2
1051	33h	3	3
1052	34h	4	4
1053	35h	5	5
1054	36h	6	6
1055	37h	7	7
1056	38h	8	8
1057	39h	9	9
1058	3Ah	/Z	:
1059	3Bh	%F	;
1060	3Ch	%G	<
1061	3Dh	%H	=

1062	3Eh	%I	>
1063	3Fh	%J	?
1064	40h	%V	@
1065	41h	A	A
1066	42h	B	B
1067	43h	C	C
1068	44h	D	D
1069	45h	E	E
1070	46h	F	F
1071	47h	G	G
1072	48h	H	H
1073	49h	I	I
1074	4Ah	J	J
1075	4Bh	K	K
1076	4Ch	L	L
1077	4Dh	M	M
1078	4Eh	N	N
1079	4Fh	O	O
1080	50h	P	P
1081	51h	Q	Q
1082	52h	R	R
1083	53h	S	S
1084	54h	T	T
1085	55h	U	U
1086	56h	V	V
1087	57h	W	W
1088	58h	X	X
1089	59h	Y	Y
1090	5Ah	Z	Z
1091	5Bh	%K	[
1092	5Ch	%L	\
1093	5Dh	%M	]
1094	5Eh	%N	^

1095	5Fh	%O	_
1096	60h	%W	‘
1097	61h	+A	a
1098	62h	+B	b
1099	63h	+C	c
1100	64h	+D	d
1101	65h	+E	e
1102	66h	+F	f
1103	67h	+G	g
1104	68h	+H	h
1105	69h	+I	i
1106	6Ah	+J	j
1107	6Bh	+K	k
1108	6Ch	+L	l
1109	6Dh	+M	m
1110	6Eh	+N	n
1111	6Fh	+O	o
1112	70h	+P	p
1113	71h	+Q	q
1114	72h	+R	r
1115	73h	+S	s
1116	74h	+T	t
1117	75h	+U	u
1118	76h	+V	v
1119	77h	+W	w
1120	78h	+X	x
1121	79h	+Y	y
1122	7Ah	+Z	z
1123	7Bh	%P	{
1124	7Ch	%Q	|
1125	7Dh	%R	}
1126	7Eh	%S	~
1127	7Fh		Undefined