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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



closeParameter code

5. Product information



二、Communication Mode

1. Serial Port

Using Serial Port , read module and the host devices must match exactly in communication 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



19200bp



38400bps



57600bps



115200bps

(2) parity



Odd



Even



* None

(3) Stop bit



*1 Stop Bit



2 Stop Bits

2. USB KBW



USB KBW

3. USB COM



USB COM

三、Trigger Mode

1. Power Mode

This parameter determines the power mode of the engine.

In Low Power mode, the scan engine enters into a low power consumption Sleep power state whenever possible (provided all WAKEUP commands were released)

In Continuous Power mode, the scan engine remains in the Awake state after each decode attempt

The Sleep and Awake commands can be used to change the power state in either the Low Power mode or the Continuous Power mode.



Continuous Power



Low Power

2. 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

3. 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](#)



Interval Time
(Default: 500ms.)

4. 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

5. 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

6. 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](#)



Duration in Scanning(Default: 3.0 sec.)

7. 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

8. 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 Lighting



Always Close

2. Positioning lights



* Lighting when Read



Always Lighting



Always Close

五、Output and prompt

1. Keyboard

(1) Country/Language Keyboard



* American Keyboard



Belgium



Finland



France



Germany



Italy



Sweden



England



Denmark







Hungary



Netherlands



Poland (214)



Romania (standard)



Slovakia

(2) Keyboardtype

Enable virtual keyboard, you can output the correct data in any keyboard language mode. When using virtual keyboard, you must ensure that the keypad keys are valid.



*StandardKeyboard



Virtual Keyboard

(3) Time interval that keyboard outputs character

Time interval that keyboard outputs character, range:
0-1000ms,unit: 5ms,default: 5ms



0ms



10ms

(4) Output Ctrl Combination Key

After opening the function, the ASCII control character between 0x00~0x1F becomes the output Ctrl combination control key. The specific combination keys refer to the attachment.



*Disable



Enable

2. Prompt sound

(1) type of Buzzer



*Passive Buzzer



Active Buzzer

(2) Mute



Open



* Close

(3) Beeper Volume



* High



Middle



Low

(4) Beep After Good Decode



*Open



Close

(5) Boot prompt



*open



Close

(6) Setup Code Prompt



*open



Close

3. LED After Good Decode

To enable or disable LED after good decode, scan the appropriate bar code below



Disable



*enable

4. operationModeof decode led



*the indicator led is always on



***the indicator led is always off**

5. 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

6. 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

7. Output Character Set Type

0: Primitive Type

1:GBK(GB2312)

2: UTF8



Primitive Type



*GBK



Unicode

8. Input Character Set Type





UTF8



ASCII



Japanese

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,detail in [Appendix 3](#).



***Disable send Code ID**



Enable send Code ID

2. Terminator

Add character format: Decode Data+Terminator.



*NONE



CR LF



CR



TAB



CR CR



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"



set multiple Suffix

- (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**



Prefixes+data



Data+suffixes



Prefixes+data+suffixes

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: 01 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: 01 6



(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: 01 6



Set Hidden Number-tail

5. STX&ETX



*Disable



STX



ETX



STX+ETX

6. Character Replace

The feature can replace any character in Barcode data with another character, and supports either 1:1 or 1: n replacement, such as A--B、 A--BC、 A--BCD

Operating instructions:

(1) Sets the data to be replaced



Sets the data to be replaced

For example: Group Separator, According to the [Character Equivalents](#), detail in Appendix 4, the scan value is 1029, scan the [Numeric Bar Code](#) 1,0,2,9 one by one

(2) Set the Replacement data



Set the Replacement data

For example: symbol }, According to the [Character Equivalents](#), detail in Appendix 4, the scan value is 1125, scan the [Numeric Bar Code](#) 1,1,2,5 one by one

(3) complete setup



complete setup

(4) Enable / disable data replacement



Enable



disable

七、Code Enable/Disable

1. All Barcode Switch



enable



disable

2. 1d code master switch



enable



*disable

3. 2d code master switch



enable



*disable

4. Reverse code reading



enable



*disable

5. UPC-A

(1) UPC-A enable/disable



*enable



disable

(2) UPC-A Preamble



No Preamble



*System Character

System Character & Country Code

(3) UPC-A check bit



Do not transmit UPC-A check bit



*transmit UPC-A check bit

6. UPC-A additional code

(1) UPC-A 2additional code



enable



*disable

(2) UPC-A 5additional code



Enable



*disable

(3) UPC-A Must read additional code



Enable



*disable

7. UPC-E

(1) UPC-E enable/disable



*enable



disable

(2) UPC-E Preamble



No Preamble



*System Character



System Character & Country Code

(3) UPC-E check bit



Do not transmit UPC-E check bit



*transmit UPC-E check bit

8. UPC-E additional code

(1) UPC-E 2additional code



enable



*disable

(2) UPC-E 5additional code



Enable



*disable

(3) UPC-E Must read additional code



Enable



*disable

9. UPC-EtransferUPC-A



Enable



*disable

10. UPC-A transfer EAN-13



Enable



*disable

11. UPC-E1



enable



*disable

12. EAN-8



*enable



disable

13. EAN-8additional code

(1) EAN-8 2additional code



Enable



*disable

(2) EAN-8 5additional code



Enable



*disable

(3) EAN-8 Must read additional code



Enable



*disable

14. EAN-13

(1) EAN-13 enable/disable



*enable



*disable

(2) EAN-13 check bit



Do not transmit EAN-13 check bit



*transmit EAN-13 check bit

15. 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

16. Bookland EAN (ISBN)

Isbn disabled is treated as Ean-13



Enable



*disable

17. CODE 128



* Enable



Disable

18. GS1-128



* enable



disable

19. Interleaved 2 of 5

(1) 1 2 of 5enable/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](#)



1 2 of 5 - Length Within Range



2 of 5 - Any Length

(3) **1 2 of 5 Check Digit Verification**



enable



*disable

(4) **Transmit 1 2 of 5 Check Digit**



enable



*disable

20. 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) **Matrix 25 Check bit Verification**



Enable



*disable

(4) **transmit Matrix 2 of 5 check bit**



Enable



*disable

21. 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](#)



D 2 of 5 - Length Within Ranged



2 of 5 - Any Length

22. 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](#)



Standard 25 - Length Within Range



Standard 25 - Any Length

23. Code 39

(1) code39 enable/disable



*enable



disable

(2) Code39 Length



Any Length code39

(3) Code 39 Check bit Verification



enable



*disable

(4) transmitCode39 check bit

Transmit the check bit, the check bitVerification function should

enabled



transmit



*do not transmit

(5) Transmit Code 39 start and ending symbol



*disable



enable

24. Code 39 Full ASCII



Enable



* Disable

25. Code 32

(1) code32 enable/disable



Enable



* Disable

(2) code32 add prefixA



Enable



* disable

26. Code 93

(1) Code93 enable/disable



Enable



* disable

(2) code93 lenght



Any lenght can read

27. Code 11

(1) code11 enable/disable



Enable



* disable

(2) code11 lenght



Any lenght can read

(3) Code 11 Check bit Verification



enable



one check bit



two check bit

(4) transmit check bit



enable



* disable

28. Codabar

(1) Codabar enable/disable



enable



* disable

(2) **Codabar lenght**



Any lenght can read

(3) **Start Character and Terminator**

The start character and terminator are allowed to be one of the four characters of "A", "B" "C" "D".The terminator is also allowed to be one of the four characters of "T", "N", "*", "E".



*ABCD/ABCD



ABCD/TN*E

(4) **Transmit Start Character and Terminator**



Don not transmit



*transmit

29. MSI

(1) **MSI enable/disable**



Enable



*disable

(2) **MSI lenght**



30. GS1-Databar



Enable



* disable

31. GS1 composite code



Enable



* disable

32. QR Code

(1) QR code enable/disable



* enable



disable

(2) QR codereverse



*only read Normal code



Read Normal/reverse code

(3) **QRMirror**



***disable**



enable

33. Data Matrix

(1) **Data Matrix enable/disable**



*** enable**



disable

(2) **Read reverse Data Matrix**



***only read Normal code**



Only Read reverse code



Read Normal/reverse code

① **Data MatrixMirror**



***disable**



enable

34. PDF 417



* enable



disable

35. Aztec code



enable



*disable

36. Maxi code



enable



*disable

37. Hanxin code



enable



*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 character	Code symbol
A	UPC-A, UPC-E, EAN-8, EAN-13
B	Code 39, Code 32
C	Codabar
D	Code 128, GS1-128,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
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 Equivalents

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	RightArrow	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	
1033	21h	!	
1034	22h	'	
1035	23h	#	
1036	24h	\$	
1037	25h	%	
1038	26h	&	
1039	27h	'	
1040	28h	(	
1041	29h	)	
1042	2Ah	*	
1043	2Bh	+	
1044	2Ch	,	
1045	2Dh	-	
1046	2Eh	.	
1047	2Fh	/	
1048	30h	0	
1049	31h	1	
1050	32h	2	
1051	33h	3	
1052	34h	4	
1053	35h	5	
1054	36h	6	
1055	37h	7	
1056	38h	8	
1057	39h	9	
1058	3Ah	:	
1059	3Bh	;	
1060	3Ch	<	
1061	3Dh	=	

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

1095	5Fh	—	
1096	60h	‘	
1097	61h	a	
1098	62h	b	
1099	63h	c	
1100	64h	d	
1101	65h	e	
1102	66h	f	
1103	67h	g	
1104	68h	h	
1105	69h	i	
1106	6Ah	j	
1107	6Bh	k	
1108	6Ch	l	
1109	6Dh	m	
1110	6Eh	n	
1111	6Fh	o	
1112	70h	p	
1113	71h	q	
1114	72h	r	
1115	73h	s	
1116	74h	t	
1117	75h	u	
1118	76h	v	
1119	77h	w	
1120	78h	x	
1121	79h	y	
1122	7Ah	z	
1123	7Bh	{	
1124	7Ch		
1125	7Dh	}	
1126	7Eh	~	
1127	7Fh		Undefined
