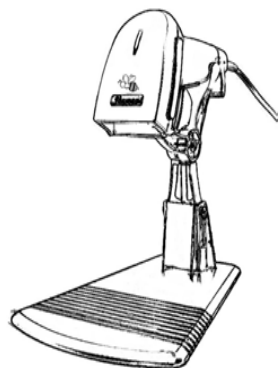




# CONFIGURATION MANUAL

ST LASER series  
Bar Code Scanner



## Configuration Commands

START 

To begin the configuration procedures

END 

To finish the configuration procedures and save new parameters in memory.

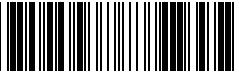
ABORT 

To give up all parameters that you have just selected.


SET 

To make all parameters back to default settings with \* in this manual.


## Configuration Commands

**START** 


To begin the configuration procedures

**END** 

To finish the configuration procedures and save new parameters in memory.

**ABORT** 

To give up all parameters that you have just selected.

**SET** 

To make all parameters back to default settings with \* in this manual.

## Configuration Procedures

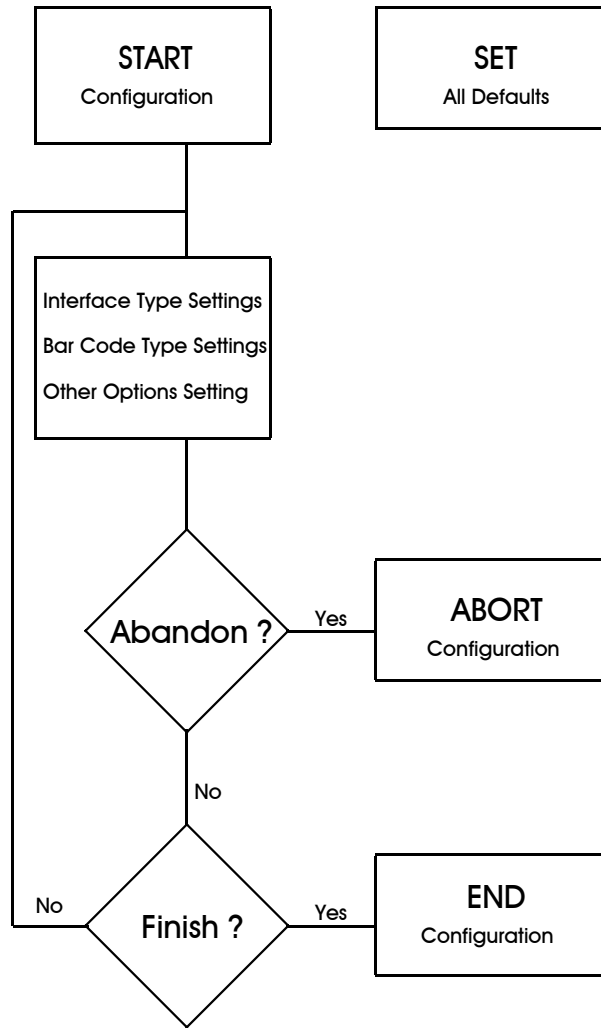


Fig. 1 - Flow Chart of Configuration Procedures

## IMPORTANT NOTICE

Each standard package contains main unit, interface cable and user's manual. The user's manual gives you an overall review and information about the scanner only. For those who can do the configuration by themselves, please contact your dealer for separate configuration manual.

To avoid any misuse or misunderstanding, we strongly suggest and recommend that the configuration manual should be used by either your dealer or your software consultant for proper set-up and custom configuration.

## INFORMATION

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## SOFTWARE COPYRIGHTS

All parts of the softwares implemented in the scanners are protected by Copyright International Regulations.

COPYRIGHT ©1996,SCSC.

## Safety Requirements

The scanner passes and complies with the following tests and regulations.

- A) Emission: EN55022 Class B
- B) Emission: EN55022 Class B which includes
  - 1) IEC801-2 (ESD) Class B
  - 2) IEC801-3 (RS) Class A
  - 3) IEC801-4 (EFT) Class B
- C) CDRH class II and IEC class 2 laser product
- D) UL, CSA and TUV

Manual P/No: SCCM - 80S-01A

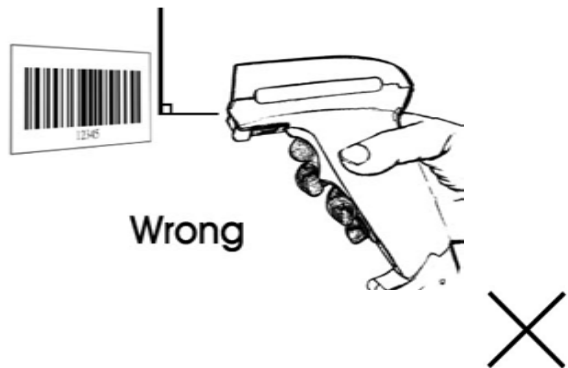
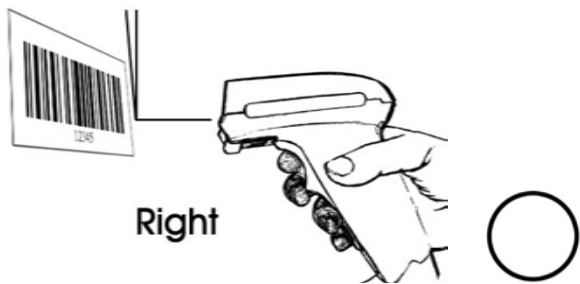
Released Date: July 11, 2006

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### Aiming at barcode

hold for an angle



Scan the Entire barcode



## CHAPTER 1 INTRODUCTION

This manual provides all useful information regarding configuration, custom configuration and configuration procedure. You are suggested to read all information containing herein before starting to configure your scanner. As stated, we recommend that configuration, especially custom configuration, better to be performed

by experienced users, your dealer or your software consultant.

### 1.1. Default Configuration

The operation parameters of the scanner are set to defaults at the factory in order to suit for the most popular bar code data collection applications.

All default parameters are marked with an asterisk "\*" in this manual. Generally, the defaults set in the factory are:

- \* Emulation as keyboard wedge
- \* IBM PC AT, PS/2 series computers
- \* US keyboard layout
- \* Data transmitted in lower case
- \* Reading mode: Trigger on/good read off
- \* Good reading beep active
- \* Keyboard data terminator : CR
- \* Keyboard number key: Alphanum
- \* Red LED light on

### 1.2 Custom Configuration

The scanner can be re-configured at any time for your different application. You can change one or several default parameters by scanning the labels provided in this manual to fit our applications. For entering our own custom configuration, please refer to Chapter 2,3,4 and appendixes of this manual for details. Please, however, note that once the configuration is re-programmed, the desired parameters will be saved in the memory even after the power is turned off.

### 1.3 Configuration Procedure

One or more parameters of the scanner can be reconfigured to meet your need. The basic steps of customs configuration are as under :

- 1) Scan " START " label
- 2) Scan desired parameters
- 3) Scan " EXIT" label, otherwise proceed to the next step
- 4) Scan " END" label

In order to have a better idea about all configuration procedures, please refer to the Fig. 1, Flow Chart of Configuration Procedure, which is on the overleaf of the front cover of this manual.

## Important configuration commands:

START -Scan START label to initiate your custom configuration procedure.

ABORT -Scan ABORT label to abandon all parameters you have just selected.

END - Scan END label to finish the configuration and save the new parameters in memory.

EXIT - "EXIT" is specially for ending the setup of "Hex-Label" printed in Appendix D.

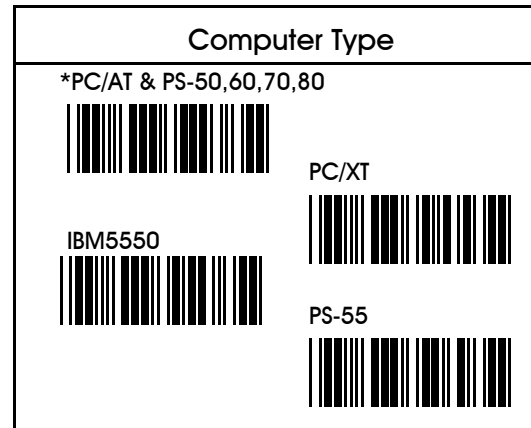
## CHAPTER 2 INTERFACE SETTING

The scanner has 2 modes of communication, keyboard wedge, and RS-232C, (CCD WAND and OCIA are options.)



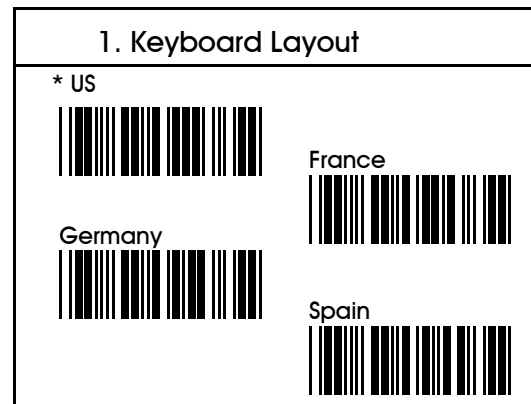
### 2.1 Keyboard Wedge Parameters

The keyboard wedge is convenient for most applications. First of all, select one of the computer type from labels below for keyboard interface.




Keyboard parameters include:

1. Keyboard layout
2. Keyboard speed
3. Keyboard character delay
4. keyboard upper/lower case
5. keyboard number keys
6. keyboard data terminator




### 2. Keyboard Speed of PC/AT

\* Normal




Turbo



### 3. Keyboard Character Delay


Min. to Max:(00-99)  
Define char. delay=??




Note: For setting up, please refer to the examples in Chapter 5.

### 4. Keyboard Upper/Lower Case


\* Lower



Upper




Auto

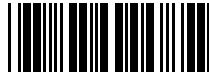


### 5. Keyboard Number Keys

\* Alphanum




Numeric Pad





### 6. Keyboard Data Terminator

\* CR




None


SPACE


TAB



ESC



Ctrl + C



## 2.2 RS-232C Parameters

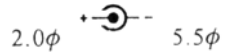
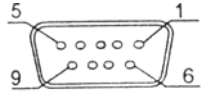
The scanner also provides RS-232C interface to meet your application . Scan the label below for RS-232C interface.



### RS-232 Pin Assignment:

#### DUSB-9P Female

- 1 \_\_\_\_\_N/C (=no connection)
- 2 \_\_\_\_\_TXD
- 5 \_\_\_\_\_GND
- 7 \_\_\_\_\_CTS
- 8 \_\_\_\_\_RTS
- 9 \_\_\_\_\_VCC (+5V)



DC Adapter  
+5v +- 10%  
150mA (min.)

### RS-232C parameters include:


1. Baud rate
2. Data bits
3. Parity
4. Handshaking protocol
5. Character delay
6. Data terminator

1. Baud Rate ( bps)	
<p>19200</p>	<p>300</p>
<p>600</p>	<p>1200</p>
<p>2400</p>	<p>4800</p>
<p>*9600</p>	<p>38400</p>
2. Data Bits	
<p>* 8 Bits</p>	<p>7 Bits</p>
3. Parity	
<p>* None</p>	<p>Odd</p>
<p>Even</p>	




### 4. Handshaking


\* None



Xon/Xoff




RTS/CTS













### 5. Character Delay

Min. to Max.:(00-99)  
Define char. delay=??
























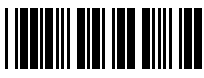
### 6. Data Terminator

<p>* CR</p> 	<p>None</p> 
<p>LF</p> 	<p>CR+LF</p> 
<p>SPACE</p> 	<p>TAB</p> 
<p>ESC</p> 	<p>Ctrl + C</p> 
<p>STX/ETX</p> 	<p>Xon/Xoff</p> 

## CHAPTER 3 BAR CODE SETTING

The scanner can read almost all popular symbologies in the world. Scan one or more codes from the following labels to meet your applications.

Readable Code Setting	
Code 39	*On 
	Off 
ITF 2/5	On 
	* Off 
IND 2/5	On 
	* Off 
MTX 2/5	On 
	*Off 
CODABAR	*On 
	Off 



Readable Code Setting ( Cont'd)	
EAN-13/UPC-A	* On 
	Off 
EAN-8	* On 
	Off 
UPC-E	* On 
	Off 
UPC/EAN	On 
Add-on 2/5	* Off 
Code 128	* On 
	Off 
Code 14	On 
	Off 



Standard readable codes include Code 93, Code 11, Code IV, MSI/Plessey, China Postage and ISBN/ISSN listed in page 25.



### 3.1 CODE 39 Parameters



These parameters include:

1. Character set
2. Verify check digit
3. Transmit check digit
4. Transmit start/stop digit

1. Character Set
* Standard Code 
Full ASCII code 



2. Verify Check Digit
* No 
Yes 



3. Transmit Check Digit
* Yes 
No 



4. Transmit Start/Stop Digit
* No 
Yes 

### 3.2 Interleave 2 of 5 Parameters

1. Verify check digit
2. Transmit check digit
3. Code length

1. Verify Check Digit	
* No 	Yes 



2. Transmit Check Digit	
* No 	Yes 


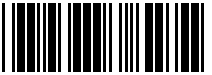
3. Code Length	
* Variable length Min.=?? Max.=?? (4 - 48) 	Fixed length Custom define=??? 



- Note: 1. Default is set to various length with minimum 4 and maximum 48.
2. In order to suit your routine application, you may also re-define as fixed length up to 3.
  3. You may see examples in Chapter 5 for re-definition.

### 3.3. Industrial 2 of 5 Parameters

1. Verify check digit
2. Transmit check digit
3. Code length

1. Verify Check Digit	
* No 	Yes 

2. Transmit Check Digit	
* No 	Yes 


3. Code Length	
* Variable length Min.=?? Max.=?? ( 2-24) 	Fixed length Custom define=??? 

Note: See examples in Chapter 5 for re-definition.



### 3.4 Matrix 2 of 5 Parameters

1. Verify check digit
2. Transmit check digit
3. Code length

**1. Verify Check Digit**


\* No  Yes 


**2. Transmit Check Digit**

\* No  Yes 

**3. Code Length**

\* Variable length  
Min. = ?? Max. = ?? ( 2-40)

 Fixed length  
Custom define=???



Note: See examples in Chapter 5 for re-definition.

### 3.5 Codabar Parameters

1. Transmit start/stop characters
2. Type of start/stop characters

**1. Transmit Start/Stop Characters**



\* No  Yes 

**2. Type of Start/Stop Characters**



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

### 3.6 EAN-13 Parameters

1. Transmit first digit
2. Transmit second digit
3. Transmit check digit



1. Transmit First Digit
* Yes  No 



2. Transmit Second Digit
*Yes  No 



3. Transmit Check Digit
* Yes  No 

### 3.7 UPC-A Parameters

1. Transmit first digit
2. Transmit second digit
3. Transmit check digit



1. Transmit First Digit
* Yes  No 



2. Transmit Second Digit
* Yes  No 

3. Transmit Check digit
* Yes  No 

### 3.8 EAN-8 Parameters



1. Transmit first digit
2. Transmit check digit



1. Transmit First Digit	
* Yes 	No 

2. Transmit Check Digit	
* Yes 	No 

### 3.9 UPC-E Parameters


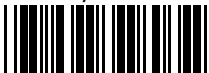

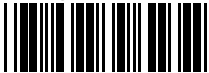





1. Transmit first digit
2. Transmit check digit

1. Transmit First Digit	
* Yes 	No 

2. Transmit Check Digit	
* Yes 	No 

## CHAPTER 4 OPTIONAL SETTING

This chapter provides you instructions for selecting optional parameters in order to fit your special requirements. These options include reading modes, code mark, pre-amble, post-amble, buzzer pitch, buzzer duration, power-up tone, and LED indicator.

Reading Mode Parameters	
* Trigger on/good read off 	* Trigger on/good read off delay=?sec. 
Trigger on/off 	Continuous/LED always on 
Continuous/trigger off 	Continuous/trigger off delay=?sec. 
Continuous/no trigger 	Reading Mode Parameter * Auto 
Testing 	

#### 4.1.1 Mode 1 - Trigger on/good read off

Press the trigger and LED (of the reading window) will be turned on then scan a bar code label. The beep sounds for a good read, then, LED turns off automatically. If a good read does not occur, LED also turns off after THE DEFAULT 3 SECOND.

#### 4.1.2 Mode 2 - Trigger on/good read off But Define delay time=??

This mode is almost the same as mode 1, but you can define delay time for turning off LED. For example, you can set to 07 seconds. (The default is 3 second.) You can use the provided Decimal and Hex-Label Tables for your own setup.

#### 4.1.3 Mode 3 - Trigger on/off

This mode is a little bit different from above 2 modes, which is that trigger dominates the on/off the LED. This means LED will be turned off when you release the trigger and there will be no delay time..

#### 4.1.4 Mode 4 - Continuous LED always on

This mode provides you to read bar code labels continuously with the LED always on. But note that this mode will also enable LED always on when you are not reading the bar code labels. You will have to switch off the power to turn off LED.

#### 4.1.5 Mode 5 - Continuous/trigger off

This mode is much the same as mode 4 except you can turn off the LED by releasing the trigger.

#### 4.1.6 Mode 6 - Continuous/trigger off But delay =??

As above mode 5 except you can define the delay time to control the LED off after releasing the trigger. For instance, you may define the delay time as 05 seconds. You may utilize Decimal & Hex-Label Tables for your own setup.

#### 4.1.7 Mode 7 - Continuous/ no trigger

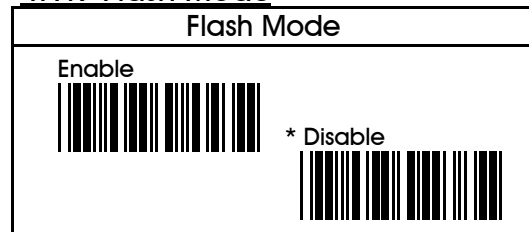
This mode means the LED is controlled by system power. When system is on, the LED is on and vice versa. The trigger, therefore, is off no use.

#### 4.1.8 Reading mode Parameter - Auto

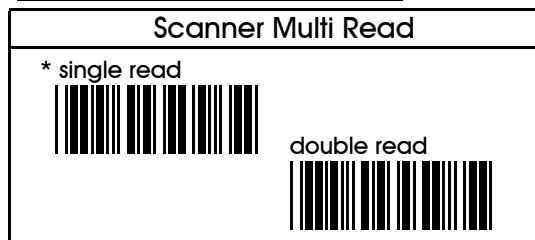
This mode is ST laser new function. While you don't use Laser, the laser will automatically turn off, and when you need to use it, when you focus on barcode, it will automatically turn on, without using any trigger.

This mode is different from Mode 3, mode 3 could non-stop scanning barcode without pushing trigger and it is always on turn-on. But this mode could save more power but on waste energy while user doesn't use it.

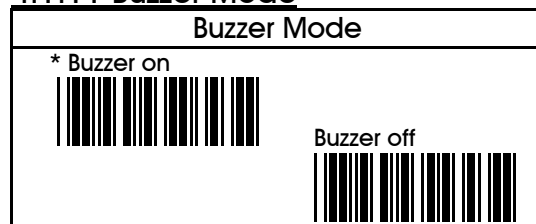
#### 4.1.9 Flash Mode



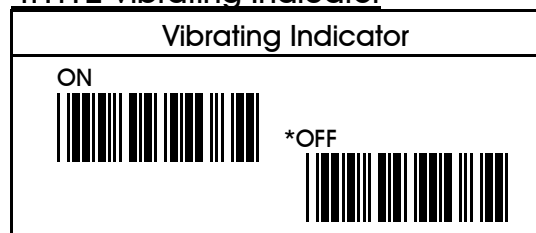
#### 4.1.10 Scanner Multi Read



#### 4.1.11 Buzzer Mode



#### 4.1.12 Vibrating Indicator



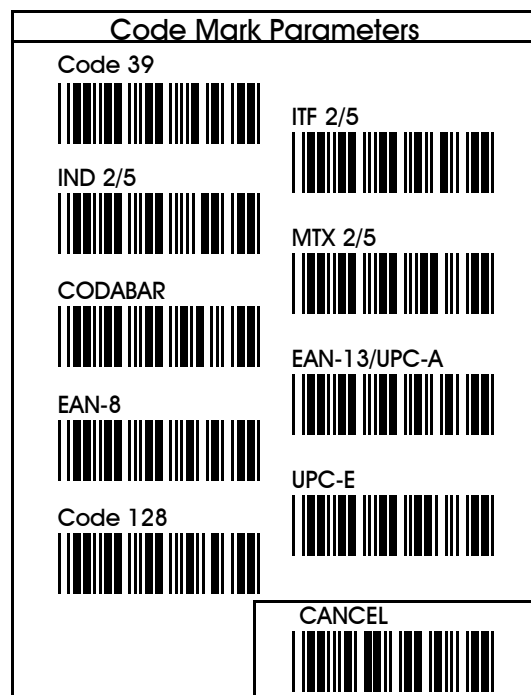
### 4.2 Code Mark ( Code ID) Parameters

You may use the example listed below to define the code mark for your own applications.

*Please note that each code mark you define has to follow the steps as example shown below. You may also refer to Chapter 5 for details.*

For example: to define " Z " as code mark for code 39. , the steps will be as under :

- Scan " Start " label.
- Scan Code 39 label as below.
- Refer to Appendix A. ASCII Code Table where shows " 5" "A" stand for " Z".
- From Appendix D. Hex-Label to scan " 5" "A" labels.
- Scan " EXIT" label also from Hex-Label Table.
- Scan " END" to complete your definition

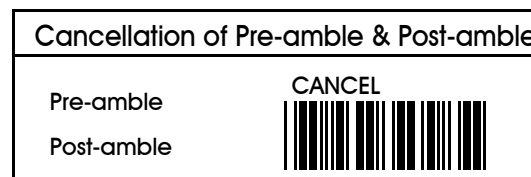


- Note: 1. Read code type and then CANCEL label.  
2. Please follow the rule for cancellation step by step, i.e.: to read one code type and then scan CANCEL label.

### 4.3 Pre-amble and Post-amble



- Note: 1. You can define maximum 10 characters/digits for each pre-/post-amble.  
2. Please refer to examples in Chapter 5.





- Note: Read pre-amble for post-amble first and then CANCEL label afterwards.



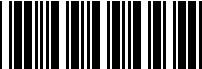

## 4.4 Buzzer Parameters



Buzzer parameters include buzzer pitch ( buzzer frequency) and buzzer duration.

Buzzer Pitch & Duration	
Buzzer pitch=?? (0-22)	Buzzer duration=?? (0-127)
	



## 4.5 Other parameters

These parameters include power up tone and LED indicator.

Power up Tone	
* On	Off
	

LED Indicator	
* LED on Good read off	LED off Good read on
	

## 4.6 Code(S) Single or Double Read

Code(S)	
Single Read	Double Read
	

## CHAPTER 5 USEFUL EXAMPLES

Here we list examples concerning configuration steps for your reference. We have illustrated the steps for defining code mark. Now we try others and you will see that it's very important and very useful of our ASCII Code Table and Decimal Table shown in Appendix A and Appendix B respectively.

*Please do remember one thing, that is - everytime before setting up your own definition, you will have to write down the order of characters/digits that you find out from ASCII Code Table/Decimal Table first. This important step will minimize mistakes when you proceed configuration procedures.*

Example 1. To setup pre-amble,  
let's say AjX, of any code

Now simply follow the following steps:  
1) From Appendix A. ASCII Code Table you may find out that:

- " 4" & " 1" stand for A
- "6" & "A" stand for j
- " 5" & " 8 " stand for X

- Please take note, in orders, "4", "1", "6", "A", "5", "8"
- 2) Scan " START" label printed in the front cover of manual.
  - 3) Scan the provided pre-amble label.
  - 4) Follow the order of "4", "1", "6", "A", "5", "8" to scan the bar code in the Appendix D. Hex-Label Table.
  - 5) Then scan " EXIT" label also printed in Appendix D. Hex-Label Table.
  - 6) Finally, scan "END" label printed in the front cover in order to complete your own configuration.

Example 2. To set variable length  
for code ITF 2/5

The defaults of minimum and maximum length are 4 and 48 respectively. If you want to set 8 for minimum and 20 for maximum, the steps will be as below:

- 1) Refer to Appendix B. Decimal Table you may find that :
  - " 08 " stands for 8
  - " 14 " stands for "20"
 Please take note, in orders, "0", "8", "1", "4"
- 2) Scan " START" label printed in the front cover of manual.
- 3) Scan the provided variable length of bar code label.
- 4) Follow the orders you write down to scan bar code labels from Appendix D. Hex-Label Table..
- 5) Scan " EXIT" label also printed in Appendix D. Hex-Label Table.
- 6) Scan " END" label printed in front cover to complete your configuration.

## Chapter 6. USB Connection (Optional)

Scan the following command codes to complete USB setting:

SET



START



USB Setting



END



## APPENDICES

### APPENDIX A. ASCII CODE TABLE

L \ H	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	,	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL


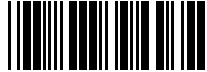

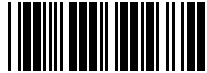

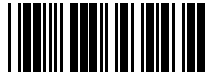

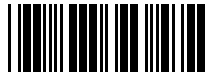
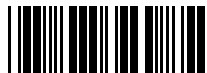
## APPENDIX B. DECIMAL TABLE

L \ H	0	1	2	3	4	5	6	7
0	0	16	32	48	64	80	96	112
1	1	17	33	49	65	81	97	113
2	2	18	34	50	66	82	98	114
3	3	19	35	51	67	83	99	115
4	4	20	36	52	68	84	100	116
5	5	21	37	53	69	85	101	117
6	6	22	38	54	70	86	102	118
7	7	23	39	55	71	87	103	119
8	8	24	40	56	72	88	104	120
9	9	25	41	57	73	89	105	121
A	10	26	42	58	74	90	106	122
B	11	27	43	59	75	91	107	123
C	12	28	44	60	76	92	108	124
D	13	29	45	61	77	93	109	125
E	14	30	46	62	78	94	110	126
F	15	31	47	63	79	95	111	127



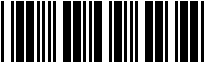









## APPENDIX C. OTHER OPTIONS

In this appendix, we also list some optional parameters regarding computer types and keyboard layout of the keyboard wedge, readable codes and parameters for these readable codes, general parameters.

















## A)

Computer Type	
IBM 3196/97,3476/77	
	NEC N5200
NEC PC-98	
	ACER 7300
Sun Type 4/5/5C	
	ADI CC-III
	
	MAC SE
	
	LC-6533
	
	IBM 4714
	



B)

Keyboard Layout	
Switzerland 	Sweden/Finland 
Italy 	Belgium 
U.K. 	Denmark 
Portugal 	Norway 
Latin America 	Japan 
Poland 	Holland 

C)



Readable Code	
Code 93	On 
	* Off 
Code 11	On 
	* Off 
MSI/Plessey	On 
	* Off 
China Postage	On 
	* Off 
Code IV	On 
	* Off 
ISBN/ISSN	On 
	*Off 
GTIN14	* Off 
	ON 
Ean-128	* Off 
	ON 

D) Code 11 Parameters :



1. Number of Check Digit	
One 	Two 

2. Transmit Check Digit	
Yes 	No 



E) Code 93 Parameters

Concatenation	
On 	Off 




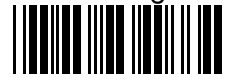


F) China Postage Parameters

1. Code Length	
Variable Length Min=? Max=?(2-40) 	Fixed length Custom Define=??? 

2. Verify Check Digit	
Yes 	No 



3. Transmit Check Digit	
Yes 	No 

G) General Parameters- Code Mark



Code Mark Parameters	
Code 93 	Code 11 
MSI/Plessey 	China Postage 
Code IV 	CANCEL 

Note: 1. Read code type ( just once a time) and then CANCEL label afterwards.

















H) General Parameters

Bar — Space Invert to Read	
Yes 	No 

I) K/B Control Code Emulation F1-F12

K/B Control Code Emulation F1-F12	
Disable 	Enable 

## APPENDIX D. HEX-LABEL TABLE

0		A	
1		B	
2		C	
3		D	
4		E	
5		F	
6			
7		EXIT	
8			
9	