

# **Programming**

## **User's Manual**

**Ver1.3**

Start Configuration((+SETF))



---

## Chap.1 System Information



Set All default((+RETF))



S/W Version((+SFVR))

---

## Chap.2 System Installation

### 2.1 Interface Selection



<Keyboard>((+A1A))



RS-232((+A1B))



USB\_Keyboard((+A1C))



USB\_COM((+A1D))

---

### 2.2.1 Keyboard Language



<U.S.A>((+B2A))



Italian((+B2B))



Spanish((+B2C))



French((+B2D))



Germany((+B2G))



Japan((+B2F))



Portugal((+B2G))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

## 2.2.1 Language



Swedish((+B2I))



Hungary((+B2H))



Denmark((+B2K))



Norwegian((+B2J))



Turkey((+B2M))



Netherland((+B2L))



Belgium((+B2O))



UK((+B2N))

---

## 2.2.2 Keyboard Wedge function

### Function Key Emulation



<OFF>((+B3A))



ON((+B3B))

### KB Emulation



<OFF>((+B4A))



ON((+B4B))

### ALT Mode



<OFF>((+BCB))



ON((+BCA))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Caps Lock**



<OFF>((+B5A))



ON((+B5B))

**Num Lock**



<OFF>((+B6A))



ON((+B6B))

---

**2.2.3 Inter-character Delay (Default:00)**



Appendix A (00H – 64H)((+B7A))

---

**2.2.4 Message Terminator for keyboard &USB interface**



None((+B9A))



<CR>((+B9B))



Tab((+B9C))



ESC((+B9D))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 2.3.1 RS-232 Parameters

#### BAUD Rate



2400((+C8B))



<9600>((+C8D))



4800((+C8C))



38400((+C8F))



19200((+C8E))

---

#### Data bits



7 ((+C7B))



<8>((+C7A))

#### Stop Bit



<1>((+C6A))



2((+C6B))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Parity**



<None>((+C5A))



Odd((+C5B))



Even((+C5C))

---

**2.3.2 Message Terminator for RS232 interface**



None((+C9A))



<CR+LF>((+C9B))



CR((+C9C))



LF((+C9D))



TAB((+C9E))



STX/ETX((+C9F))



EOT((+C9G))

---

**RS-232 Function Installation**  
**Inter-character Delay (Default: 00)**

End Configuration((+ENDF))



Start Configuration((+SETF))



Appendix A (00H-64H)((+C2A))

Delay time=set up data\*100(ms)

**Handshaking Protocol Delay(Default:00)**



Appendix A (00H-0AH)((+C4A))

---

### Handshaking Protocol



<None>((+C1A))



RTS/CTS((+C1B))



ACK/NAK((+C1C))



Xon/Xoff((+C1D))

---

### 2.4 Scan Mode

Time out set up

1. Scan the barcode of "Continuous/Timeout OFF"
2. Scan 2 digits of the ASCII code of the Appendix A
3. Scan the "End" of the Appendix A
4. Scan the End Configuration to end the procedure
5. The settings unit is a second. Ex:0\*39 stands for 1 minute

End Configuration((+ENDF))



Start Configuration((+SETF))



Trigger On/Off  
((+E1A))



Continuous/Trigger Off  
((+E1C))



Continuous/LED always On  
((+E1E))



Flash On (CCD only)  
((+E1G))



<Trigger On/Good read off>  
((+E1B))



Testing  
((+E1D))



Continuous/Timeout Off  
((+E1F))



Continuous/No Trigger  
((+E1H))

---

End Configuration((+ENDF))





Start Configuration((+SETF))



---

**Blinking mode(Option)**



<OFF>((+EFA))



5 sec((+EFB))



15 sec((+EFD))



60 sec((+EFG))



10 sec((+EFC))



20 sec((+EFE))



30 sec((+EFF))



Always ON((+EFH))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

## 2.5 Buzzer Set-up

You can pitch the buzzer tone and adjust the buzzer time. Besides, you can set the voice of boot and decoding.

### Frequency (Default: 09H)



Appendix A(00-10H)((+E2A))

### Power On Tone



<ON>((+EBA))

### Good read Beep



<ON>((+ECA))

### Adjust Buzzer

#### Tone (Default: 04H)



Appendix A(00-10H)  
((+E3A))



OFF((+EBB))



OFF((+ECB))

---

## 2.6 Character Installation

The preamble and postamble character: You can put 10 ASCII at most in front of the barcode data. When the installation is "0" that means you don't need to add the first and last character. Please find the format as below:

Preamble Character	Barcode	Postamble Character
--------------------	---------	---------------------

The process for adding the first and last character to the barcode:

1. Scan the barcode of "Start Configuration" and "The Preamble Character Installation".
2. Check the ASCII table to get the ASCII code of the first and last character.
3. Scan the barcode of ASCII in the Appendix.
4. Scan the "End Configuration".

G1/G2 character Insertion: You can put 10 ASCII at most in front of the barcode data. When the installation is "0" that means you don't need to add the first and last character.

1. Scan the barcode of the "Start Configuration" and "G1 Insert Character".
2. Check the ASCII table to get the ASCII code of the first and last character.
3. Scan the barcode of ASCII in the Appendix.
4. Scan the "End Configuration".

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

5. Repeat the same process to the G2 insertion.

6. Scan the “End Configuration”.

The position of G1/G2 character insertion: To select a character insert to the barcode. You can't insert any character while the installation is “0”

1. Scan the barcode of the “Start Configuration” and “G1 character insertion position”

2. Check the ASCII table to get the corresponding ASCII code of the insertion position.

3. Scan the “End Configuration”.

4. Repeat the same process to the G2 character insertion position.

5. Scan the “End Configuration”.

Code Transmission: If your application needs to transmit the code (barcode type ID), you have to set “ON” for this feature and the format is ID + Barcode data.

**The Preamble Installation (Default:00)**



Appendix A((+E4A))

---

**The Postamble Installation (Default:00)**



Appendix A((+E5A))

---

**G1 Character Insertion (Default:00)**



Appendix A((+E6A))

---

**G2 Character Insertion (Default:00)**



Appendix A((+E7A))

---

**G1 Character Insertion Position (Default:00)**



Appendix A((+E8A))

---

**G2 Character Insertion Position (Default:00)**



Appendix A((+E9A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### Code ID Transmission



ON((+EAA))



<OFF>((+EAB))

---

## 2.7 Other Installation

Scanning Precision: You can set to scan once or twice and then transfer the bar code data. The twice will reduce the error reading.

Bar Reverse Output Installation: This feature can read the highlight barcode.

### Scanning Verify



<Single>((+EDA))



Multi-verify(Max:2)  
((+EDB))

---

### Laser Data Speed Up(For Laser)



<ON>((+EFA))



OFF((+EFB))

---

## Chap.3 BAR-CODE INSTALLATION

### 3.1 UPC-A

#### Reading



OFF((+F1A))



<ON>((+F1B))

#### Code ID (Default: F)



<20H-7EH>((+F2A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**UPC-A convert to EAN-13**



<OFF>((+F3A))



ON((+F3B))

**Transmit Check Character**



OFF((+F4A))



<ON>((+F4B))

**Truncate Leading Zero**



<OFF>((+F5A))



ON((+F5B))

---

**Truncate Leading Digit(Default:00)**



<00H-0DH>((+F6A))

---

**Truncate Last Digit(Default:00)**



<00H-0DH>((+F7A))

---

**Select Insertion(Default:00)**



<00H-02H>((+F9A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**3.1 UPC-A  
Add-On 2/5**



<None>((+F8A))



2 digit((+F8B))



5 digit((+F8C))



2 or 5 digit((+F8D))



AUTO\_Enable  
((+F8E))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.2 UPC-E

#### Reading



OFF((+G1A))



<ON>((+G1B))

#### Code ID (Default: G)



<20H-7EH>((+G2A))

#### UPC-E Convert to UPC-A



<OFF>((+G3A))



ON((+G3B))

#### Transmit Check Character



OFF((+G4A))



<ON>((+G4B))

#### Truncate Leading Zero



<OFF>((+G7A))



ON((+G7B))

---

#### Truncate Leading Digit(Default:00)



<00H-08H>((+G5A))

---

#### Truncate Last Digit(Default:00)



<00H-08H>((+G6A))

---

#### Select Insertion(Default:00)



<00H-02H>((+G9A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.2 UPC-E

#### Add-On 2/5



<None>((+G8A))



2digit((+G8B))



5digit((+G8C))



2 or 5 digit((+G8D))



AUTO\_Enable  
((+G8E))

---

End Configuration((+ENDF))





Start Configuration((+SETF))



---

### 3.3 EAN-13

#### Reading



OFF((+H1A))



<ON>((+H1B))

#### Code ID (Default: H)



<20H-7EH>((+H2A))

#### Transmit Check Character



OFF((+H3A))



<ON>((+H3B))

---

#### Truncate Leading Digit (Default:00)



<00H-0DH>((+H4A))

---

#### Truncate Last Digit (Default:00)



<00H-0DH>((+H5A))

---

#### Select Insertion (Default:00)



<00H-02H>((+H8A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.3 EAN-13

#### Add-On 2/5



<None>((+H6A))



2 Digit((+H6B))



5 Digit((+H6C))



2or 5 Digit((+H6D))



AUTO\_Enable  
((+H6E))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**ISBN/ISSN Convert**



<OFF>((+H7A))



ON((+H7B))

---

**3.4 EAN-8**

**Reading**



OFF((+I1A))



<ON>((+I1B))

**Code ID (Default: 1)**



<20H-7EH>((+I2A))

**Transmit Check Character**



OFF((+I3A))



<ON>((+I3B))

---

**Truncate Leading Digit (Default:00)**



<00H-08H>((+I4A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Truncate Last Digit (Default:00)**



<00H-08H>((+15A))

---

**Select Insertion (Default:00)**



<00H-02H>((+17A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Add-On 2/5**



<None>((+I6A))



2 digit((+I6B))



5 digit((+I6C))



2 or 5 digit((+I6D))



AUTO\_Enable  
((+I6E))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.5 Code 39

#### Reading



OFF((+J1A))



<ON>((+J1B))

#### Code ID (Default: J)



(20H-7EH)((+J2A))

#### Verification



<OFF>((+J3A))



ON((+J3B))

#### Transmit Check Character



OFF((+J4A  
)



<ON>((+J4B))

#### Min. Length (Default:01)



<01H-50H>((+J6A))

#### Max. Length (Default:50H)



<01H-50H>((+J7A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.5 Code 39

#### Format



<Standard Code39> ((+J9A))



Full ASCII Code39  
((+J9B))



Trioptic CODE39  
((+J9C))

---

#### Transfer Start / End Character



<OFF>((+JDA))



ON((+JDB))

---

#### Code 39 Concatenation



<OFF>((+JFA))



ON((+JFB))

---

#### Truncate Leading Digit(Default:00)



<00H-32H>((+JAA))

---

#### Truncate Last Digit(Default:00)



<00H-32H>((+JBA))

---

#### Select Insertion(Default:00)



<00H-02H>((+JCA))

---

### 3.6 Codabar

#### Reading



OFF((+K2A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Code ID (Default: K)**



<20H-7EH>((+K2A))



<ON>((+K1B))

**Verification**



<OFF>((+K3A))

**Transmit Check Character**



<OFF>((+K4A))



ON((+K3B))



ON((+K4B))

---

**Truncate Leading Digit(Default:00)**



<00H-7EH>((+K6A))

---

**Truncate Last Digit(Default:00)**



<00H-7EH>((+K7A))

---

**Select Insertion (Default:00)**



<00H-02H>((+KCA))

---

End Configuration((+ENDF))





Start Configuration((+SETF))



---

### 3.6 Codabar

#### Start / End Character Type



<ABCD/ABCD>((+K8A))



abcd/abcd((+K8B))



abcd/tn\*e((+K8C))

---

#### Transmit Start / End Character



OFF((+K9A))



<ON>((+K9B))

#### Min. Length (Default:06)



<01H-50H>((+KAA))

#### Max. Length (Default:50H)



<01H-50H>((+KBA))

---

### 3.7 Code93

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Reading**



OFF((+L1A))



<ON>((+L1B))

**Code ID (Default: L)**



<20H-7EH>((+L2A))

**Verification**



OFF((+L3A))



<ON>((+L3B))

**Transmit Check Character**



<OFF>((+L4A))



ON((+L4B))

---

**Select Insertion (Default:00)**



<00H-02H>((+L9A))

---

**Truncate Leading Digit (Default:00)**



<00H-7EH>((+L7A))

---

**Truncate Last Digit (Default:00)**



<00H-7EH>((+L8A))

---

**Min. Length(Default:03)**



<01H-50H>((+L5A))

**Max. Length(Default:50H)**



<01H-50H>((+L6A))

---

**3.8 Code 128**

**Reading**



OFF((+M1A))



---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Code ID (Default: M)**

<ON>((+M1B))



<20H-7EH>((+M2A))

**Verification**



OFF((+M3A))



**Transmit Check Character**

<ON>((+M3B))



<OFF>((+M4A))



ON((+M4B))

---

**Truncate Leading Digit(Default:00)**



<00H-7FH>((+M8A))

---

**Truncate Last Digit(Default:00)**



<00H-7FH>((+M9A))

---

**Select Insertion(Default:00)**



<00H-02H>((+MCA))

---

**Min. Length(Default:03)**



<01H-50H>((+MAA))

**Max. Length(Default:50H)**



<01H-50H>((+MBA))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**UCC/EAN128**



<OFF>((+M6A))

**FNC1 Transmit**



<OFF>((+M7A))

**FNC2 Concatenation**



<OFF>((+M5A))



ON((+M6B))



ON((+M7B))



ON((+M5B))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**IATA Code**



<OFF>((+V1A))



ON((+V1B))

---

**3.9 Interleaved 2 of 5**

**Reading**



OFF((+N1A))



<ON>((+N1B))

**Code ID (Default: N)**



<20H-7EH>((+N2A))

**Verification**



<OFF>((+N3A))



ON((+N3B))

**Transmit Check Character**



---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

OFF((+N4A))



<ON>((+N4B))

---

**Truncate Leading Digit(Default:00)**



<00H-7EH>((+N5A))

---

**Truncate Last Digit(Default:00)**



<00H-7EH>((+N6A))

---

**Select Insertion(Default:00)**



<00H-02H>((+N9A))

---

**Min. Length(Default:06)**



<01H-50H>((+N7A))

**Max. Length(Default:50H)**



<01H-50H>((+N8A))

---

### 3.10 Industrial 2 of 5 Reading



<OFF>((+O1A))

**Code ID (Default: 0)**



<00H-7EH>((+O2A))



ON((+O1B))

**Verification**



<OFF>((+O7A))



ON((+O7B))

**Transmit Check Character**



<OFF>((+O8A))



ON((+O8B))

---

**Truncate Leading Digit(Default:00)**

---

End Configuration((+ENDF))



Start Configuration((+SETF))



<00H-32H>((+O5A))

**Truncate Last Digit(Default:00)**



<00H-32H>((+O6A))

**Select Insertion (Default:00)**



<00H-02H>((+O9A))

**Min. Length (Default:06)**



<01H-50H>((+O3A))

**Max. Length(Default:50H)**



<01H-50H>((+O4A))

### 3.11 Matrix 2 of 5

**Reading**



<OFF>((+P1A))



ON((+P1B))

**Code ID (Default: P)**



<20H-7EH>((+P2A))

**Verification**



<OFF>((+P3A))



ON((+P3B))

**Transmit Check Character**



<OFF>((+P4A))



ON ((+P4B))

**Truncate Leading Digit(Default:00)**



<00H-50H>((+P5A))

**Truncate Last Digit(Default:00)**

End Configuration((+ENDF))



Start Configuration((+SETF))



<00H-50H>((+P6A))

**Select Insertion(Default:00)**



<00H-02H>((+P9A))

**Min. Length(Default:06)**



<01H-50H>((+P7A))

**Max. Length(Default:50H)**



<01H-50H>((+P8A))

---

### 3.12 China Post Code

**Reading**



<OFF>((+Q1A))

**Code ID (Default: Q)**



<20H-7EH>((+Q2A))



ON((+Q1B))

**Verification**



<OFF>((+Q3A))

**Transmit Check Character**



<OFF>((+Q4A))



ON((+Q3B))



ON((+Q4B))

---

**Truncate Leading Digit(Default:00)**



<00H-50H>((+Q5A))

**Truncate Last Digit(Default:00)**



<00H-50H>((+Q6A))

**Select Insertion(Default:00)**

---

End Configuration((+ENDF))





Start Configuration((+SETF))



<00H-02H>((+Q9A))

**Min. Length(Default:06)**



<01H-50H>((+Q7A))

**Max. Length(Default:50H)**



<01H-50H>((+Q8A))

---

### 3.13 MSI / Plessey Reading



<OFF>((+R1A))



ON((+R1B))

**Code ID (Default: R)**



<20H-7EH>((+R2A))

**Verification**



<OFF>((+R3A))



MOD 11/10((+R3D))



MOD 10((+R3B))



MOD 10/10((+R3C))

**Transmit Check Character**



OFF((+R4A))



<ON>((+R4B))

---

**Truncate Leading Digit (Default:00)**



<00H-3CH>((+R5A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

**Truncate Last Digit (Default:00)**



<00H-3CH>((+R6A))

---

**Select Insertion (Default:00)**



<00H-02H>((+R9A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.13 MSI / Plessey

**Min. Length (Default:06)**



<01H-50H>((+R7A))

**Max. Length (Default:50H)**



<01H-50H>((+R8A))

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.14 CODE32

#### Reading



<OFF>((+S1A))



ON((+S1B))

#### Code ID (Default: S)



<20H-7FH>((+S2A))

#### Verification



<OFF>((+S3A))



ON((+S3B))

#### Transmit Check Character



<OFF>((+S4A))



ON((+S4B))

---

#### Truncate Leading Digit( Default:00)



<00H-0AH>((+S5A))

---

#### Truncate Last Digit(Default:00)



<00H-0AH>((+S6A))

---

#### Select Insertion (Default:00)



<00-02H>((+S7A))

---

#### Transmit "A"



<OFF>((+S8A))



ON((+S8B))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.15 Code 11

#### Reading



<OFF>((+T1A))



ON((+T1B))

#### Code ID (Default: T )



<20H-7EH>((+T2A))

#### Verification



<OFF>((+T3A))



ON((+T3B))

#### Transmit Check Character



<OFF>((+T4A))



ON ((+T4B))

---

#### Truncate Leading Digit (Default:00)



<00H-50H>((+T5A))

---

#### Truncate Last Digit (Default:00)



<00H-50H>((+T6A))

---

#### Select Insertion(Default:00)



<00H-02H>((+T9A))

---

#### Min. Length (Default:06)



<01H-50H>((+T7A))

#### Max. Length (Default:50H)



<01H-50H>((+T8A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



---

### 3.16 RSS Code (Option)

#### RSS-14

##### Reading



<OFF> ((+U1B))



ON ((+U1A))

##### Application ID transmit



OFF((+UAA))



<ON>((+UAB))

---

#### RSS-14 Limited

##### Reading



<OFF> ((+U2B))



ON ((+U2A))

##### Application ID transmit



OFF((+UBA))



<ON>((+UBB))

---

#### RSS-14 Expanded

##### Reading



<OFF> ((+U3B))



ON ((+U3A))

---

#### RSS code To UPC/EAN

##### Reading



<OFF> ((+U4B))



ON ((+U4A))

---

End Configuration((+ENDF))



Start Configuration((+SETF))



#### 4.1 Wand type(Optional)

##### Output polarity



<Bar = High>((+D1A))



Bar =Low((+D1B))

##### Output data format



<Transmit in Normal  
format>  
((+D2A))



Transmit in Code 39  
format  
((+D2B))



Transmit in Code 128  
format  
((+D2C))

##### Scan speed



Low(5ms)  
((+D3A))



Medium(2ms)  
((+D3B))



High(0.5ms)  
((+D3C))

End Configuration((+ENDF))



Start Configuration((+SETF))



---

APPENDIX A -- ASCII CODE



0



A



1



B



2



C



3



D



4



E



5



F



6



Y



7



N



8



9

---

End Configuration((+ENDF))







## ASCII Table

	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 -- Function Key Table

	0	1
0	NULL	CTRL
1	UP	F1
2	DOWN	F2
3	LEFT	F3
4	RIGHT	F4
5	PAGE UP	F5
6	PAGE DOWN	F6
7		F7
8	BS	F8
9	TAB	F9
A		F10
B	HOME	ESC
C	END	F11
D	ENTER	F12
E	INSERT	ALT
F	DELETE	SHIFT



Start Configuration((+SETF))



---

Function Key Code

Before scanning, please turn on the Full CODE 39.

---



UP(\$A)



F5(\$U)



F10(\$Z)



CTRL-L(\$G)



F1(\$Q)



PAGE  
DOWN(\$F)



HOME(\$K)



ALT-L(\$J)



DOWN(\$B)



PAGE  
DOWN(\$F)



ESC(%A)



SHIFT-L(\$P)



F2(\$R)



F6(\$V)



END(\$L)



LEFT(\$C)



F7(\$W)



F11(%B)



F3(\$S)



BS(\$H)



F12(%C)



RIGHT(\$D)



F8(\$X)



INSERT(\$N)



F4(\$T)



TAB(\$I)



DELETE(\$O)



PAGE  
UP(\$E)



F9(\$Y)



ENTER(\$M)

---

End Configuration((+ENDF))

