Programming
User's Manual

Ver1.4.2

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_>((+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))

Česko((+B2P))

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))

Parity

<None>((+C5A))

Odd((+C5B))

Even((+C5C))

End Configuration((+ENDF))

Start Configuration((+SETF))

2.3.2Message 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)

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))

End Configuration((+ENDF))

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

Trigger On/Off
((+E1A))

Continuous/Trigger Off
((+E1C))

Continuous/LED always On
((+E1E))

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

Auto Scan
((+E1J))

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

Testing
((+E1D))

Continuous/Timeout Off
((+E1F))

Continuous/No Trigger
((+E1H))

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))

Adjust Buzzer Tone (Default:04H)

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

Power On Tone

<ON>((+EBA))

OFF((+EBB))

Good read Beep

<ON>((+ECA))

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 bar-code:

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

End Configuration((+ENDF))

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".
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))

Start Configuration((+SETF))

G1 Character Insertion Position(Default:00)

Appendix A((+E8A))

G2 Character Insertion Position(Default:00)

Appendix A((+E9A))

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))

End Configuration((+ENDF))

Start Configuration((+SETF))

Chap.3 BAR-CODE INSTALLATION

3.1 UPC-A

Reading

OFF((+F1A))

<ON>((+F1B))

Code ID (Default:F)

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

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))

3.1 UPC-A

Add-On 2/5

<None>((+F8A))

2 digit((+F8B))

5 digit((+F8C))

2 or 5 digit((+F8D))

AUTO_Enable
((+F8E))

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))

3.2 UPC-E

Add-On 2/5

<None>((+G8A))

2digit((+G8B))

5digit((+G8C))

2 or 5 digit((+G8D))

AUTO_Enable
((+G8E))

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))

3.3 EAN-13

Add-On 2/5

<None>((+H6A))

2 Digit((+H6B))

5 Digit((+H6C))

2or 5 Digit((+H6D))

AUTO_Enable
((+H6E))

ISBN/ISSN Convert

<OFF>((+H7A))

ON((+H7B))

3.4 EAN-8

Reading

OFF((+I1A))

<ON>((+I1B))

Code ID (Default: I)

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

Transmit Check Character

OFF((+I3A))

<ON>((+I3B))

Truncate Leading Digit (Default:00)

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

Truncate Last Digit (Default:00)

<00H-08H>((+I5A))

Select Insertion (Default:00)

<00H-02H>((+I7A))

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))

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))

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))

End Configuration((+ENDF))

Start Configuration((+SETF))

3.6 Codabar

Reading

OFF((+K2A))

<ON>((+K1B))

Code ID (Default: K)

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

Verification

<OFF>((+K3A))

ON((+K3B))

Transmit Check Character

<OFF>((+K4A))

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))

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))

Start Configuration((+SETF))

3.7 Code93

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))

End Configuration((+ENDF))

Start Configuration((+SETF))

3.8 Code 128

Reading

OFF((+M1A))

<ON>((+M1B))

Code ID (Default: M)

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

Verification

OFF((+M3A))

<ON>((+M3B))

Transmit Check Character

<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))

ON((+M6B))

FNC1 Transmit

<OFF>((+M7A))

ON((+M7B))

FNC2 Concatenation

<OFF>((+M5A))

ON((+M5B))

IATA Code

<OFF>((+V1A))

ON((+V1B))

End Configuration((+ENDF))

Start Configuration((+SETF))

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

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))

End Configuration((+ENDF))

Start Configuration((+SETF))

3.10 Industrial 2 of 5

Reading

<OFF>((+O1A))

ON((+O1B))

Code ID (Default: O)

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

Verification

<OFF>((+O7A))

ON((+O7B))

Transmit Check Character

<OFF>((+O8A))

ON((+O8B))

Truncate Leading Digit(Default:00)

<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))

End Configuration((+ENDF))

Start Configuration((+SETF))

3.11 Matrix 2 of 5

Reading

<OFF>((+P1A))

ON((+P1B))

Code ID (Default: P)

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

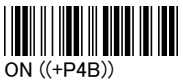
Verification

<OFF>((+P3A))

ON((+P3B))

Transmit Check Character

<OFF>((+P4A))



ON ((+P4B))

Truncate Leading Digit(Default:00)

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

Truncate Last Digit(Default:00)

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

Select Insertion(Default:00)

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

Min. Length(Default:06)

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

Max. Length(Default:50H)

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

End Configuration((+ENDF))

Start Configuration((+SETF))

3.12 China Post Code

Reading

<OFF>((+Q1A))

ON((+Q1B))

Code ID (Default: Q)

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

Verification

<OFF>((+Q3A))

ON((+Q3B))

Transmit Check Character

<OFF>((+Q4A))

ON((+Q4B))

Truncate Leading Digit(Default:00)

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

Truncate Last Digit(Default:00)

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

Select Insertion(Default:00)

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

Min. Length(Default:06)

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

Max. Length(Default:50H)

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

End Configuration((+ENDF))

Start Configuration((+SETF))

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))

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))

4.1 Wand type(Option)

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))

Start Configuration((+SETF))

APPENDIX A -- ASCII CODE


0


1


2


3


4


5


6


7


8


9


A


B


C


D


E


F


Y


N

End Configuration((+ENDF))

Start Configuration((+SETF)) 

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

End Configuration((+ENDF)) 

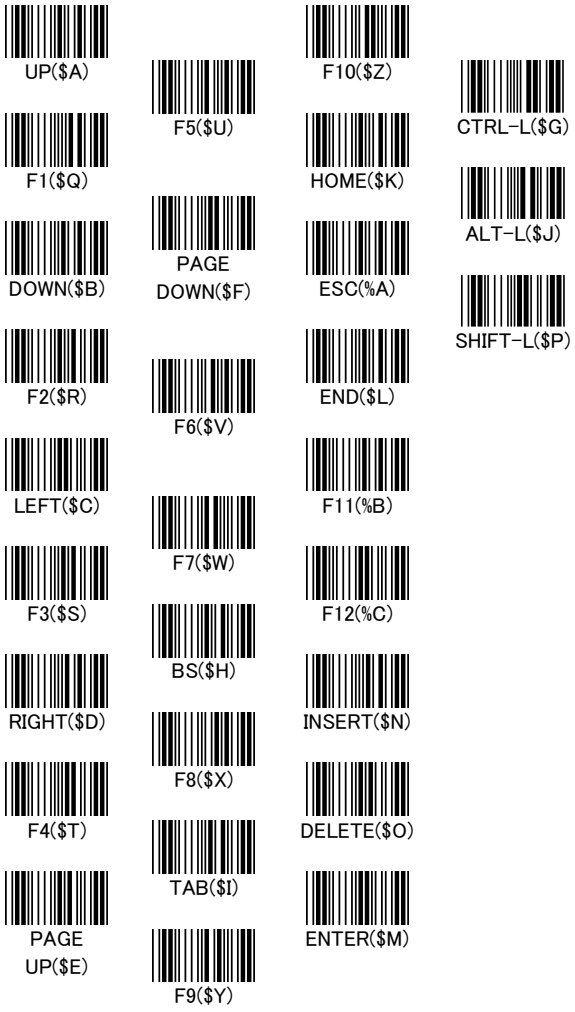
APPENDIX B -- Function Key Table

	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.



End Configuration((+ENDF))

Start Configuration((+SETF))

End Configuration((+ENDF))