Programming Guide

Handheld CCD / Laser Scanner

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Specification or version may be subject to change without notice. The actual specification and version are based on the product delivered.

General handling precautions

- Do not dispose of the scanner in fire.
- Do not put the scanner directly in the sun or by any heat source.
- Do not use or store the scanner in a very humid place.
- Do not drop the scanner or allow it to collide violently with other objects.
- Do not take the scanner apart without authorization.

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Radio Notice

Some equipment generates uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions in this manual, it may cause interference to radio communications. The equipment has been tested and found to comply with the limits for a Class A computing device pursuant to EN55022 and 47 CFR, Part 2 and Part 15 of the FCC rules. These specifications are designed to provide reasonable protection against interference when operated in a commercial environment.

Radio and Television Interference
Operation of this equipment in a residential area can cause interference to radio or television reception. This can be determined by turning the equipment off and on.

The user is encouraged to try to correct the interference by one or more of the following measures:
Reorient the receiving antenna.
Relocate the device with respect to the receiver.
Move the device away from the receiver.
Plug the device into a different outlet so that the device and the receiver are on different branch circuits.

f necessary the user may consult the manufacturer, and authorized dealer, or experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: “How to Identify and Resolve Radio-TV Interference Problems.” This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 U.S.A., Stock No. 004000003454.

For CE-countries
This scanner is in conformity with CE standards. Please note that an approved, CE-marked power supply unit should be used in order to maintain CE conformance.

Laser Safety

The laser scanner complies with safety standard IEC 60825-1 for a Class I laser produce. It also complies with CDRH as applicable to a Class IIa laser product. Avoid long term staring into direct laser light.

Radiant Energy: The laser scanner uses one low-power visible laser diodes operating at 650nm in an opto-mechanical scanner resulting in less than 3.9μW radiated power as observed through a 7mm aperture and averaged over 10 seconds.

Do not attempt to remove the protective housing of the scanner, as un-scanned laser light with a peak output up to 0.8mW would be accessible inside.

Laser Light Viewing: The scan window is the only aperture through which laser light may be observed from this product. A failure of the scanner motor, while the laser diode continues to emit a laser beam, may cause emission levels to exceed those for safe operation. The scanner has safeguards to prevent this occurrence. If, however, a stationary laser beam is emitted, the failing scanner should be disconnected from its power source immediately.

Adjustments: Do not attempt any adjustments or alteration of this product. Do not remove the protective housing of the scanner. There are no user-serviceable parts inside.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Optical: The use of optical instruments with this product will increase the eye hazard. Optical instruments include binoculars, magnifying glasses, and microscopes but do not include normal eye glasses worn by the user.

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1. INTRODUCTION

This is a general guide for varies scanners, and not all functions will perform in every scanners. Other than specified in this guide, for any special functions or specifications, please contact your dealer for details.

This manual contains a series of programming bar code labels, and by scanning these codes, it can configure the series scanners. This allows decoding options and interface protocols to be tailored to a specific application. The configuration is stored in non-volatile memory and will not be lost by removing power from the scanner.

The scanner must be properly powered before programming. For RS-232C type scanners, an external power adapter must be used to supply DC power to the scanner. If a keyboard emulation type scanner is used with an IBM PC/XT/AT, PS/2 or any fully compatible computers, power will be drawn from the keyboard port, therefore no external power adapter is required. If keyboard emulation type scanner is used with any other non IBM PC compatible computers, an external power adapter may be required.

During the programming mode, the laser scanner will acknowledge a good and valid reading with a short beep. It will give long beeps for either an invalid or bad reading.

2. PROGRAMMING OPTIONS

Programmable options are divided into four groups. The first group includes the options that show the general behavior of the laser scanner. The second group of options governs the operation of RS-232C type serial ports. The third group selects the keyboard type that the keyboard emulation type will be emulated. The last group sets the decoding parameters for each barcode symbology.

DEFAULT PARAMETERS

This table gives the default settings of all the programmable parameters. The default settings will be restored whenever the "Reset" programming label is scanned and the laser scanner is in programming mode.

DEFAULT VALUES OF OPERATING PARAMETERS

Function	Default Values
Scanning Mode Selection	Trigger mode
Header and trailer	None
Inter-Message delay	Normal
Inter-Character delay	Normal
Message/Block mode selection	Message
Send command in block mode communication	Disable
Good read beeper tone selection	Medium
Code identifier transmitting	Disable

PREDEFINED BARCODE IDENTIFIERS*

Code 39 barcode identifier code	M
ITF 2 of 5 barcode identifier code	I
Chinese post code identifier code	H
UPC-E barcode identifier code	E
UPC-A barcode identifier code	A
EAN-13 barcode identifier code	F
EAN-8 barcode identifier code	FF
Codabar barcode identifier code	N
Code 128 barcode identifier code	K
Code 93 barcode identifier code	L
MSI barcode identifier code	P
MATRIX 25 barcode identifier code	G

*

DEFAULT VALUES OF KEYBOARD EMULATION PARAMETERS SETTING

Function	Default Values
Keyboard type selection	IBM PC/AT USA
Message terminator	Enter/ carriage Return

DEFAULT VALUES OF RS-232C SERIAL COMMUNICATION PARAMETERS

Function	Default Values
Handshaking protocol	None
ACK/NAK response time setting	300 msec
Baud rate	9600
Data bit	8
Stop bit	1
Parity	Mark
Message terminator selection	CR/LF

DEFAULT VALUES OF WAND EMULATION PARAMETERS

	Function	Default Values
※	Wand emulation speed	Normal
※	Wand emulation output	Black = High

Note: For wand emulation, the configuration is only effective for the items with asterisk (※).

DEFAULT VALUES OF USB EMULATION PARAMETERS

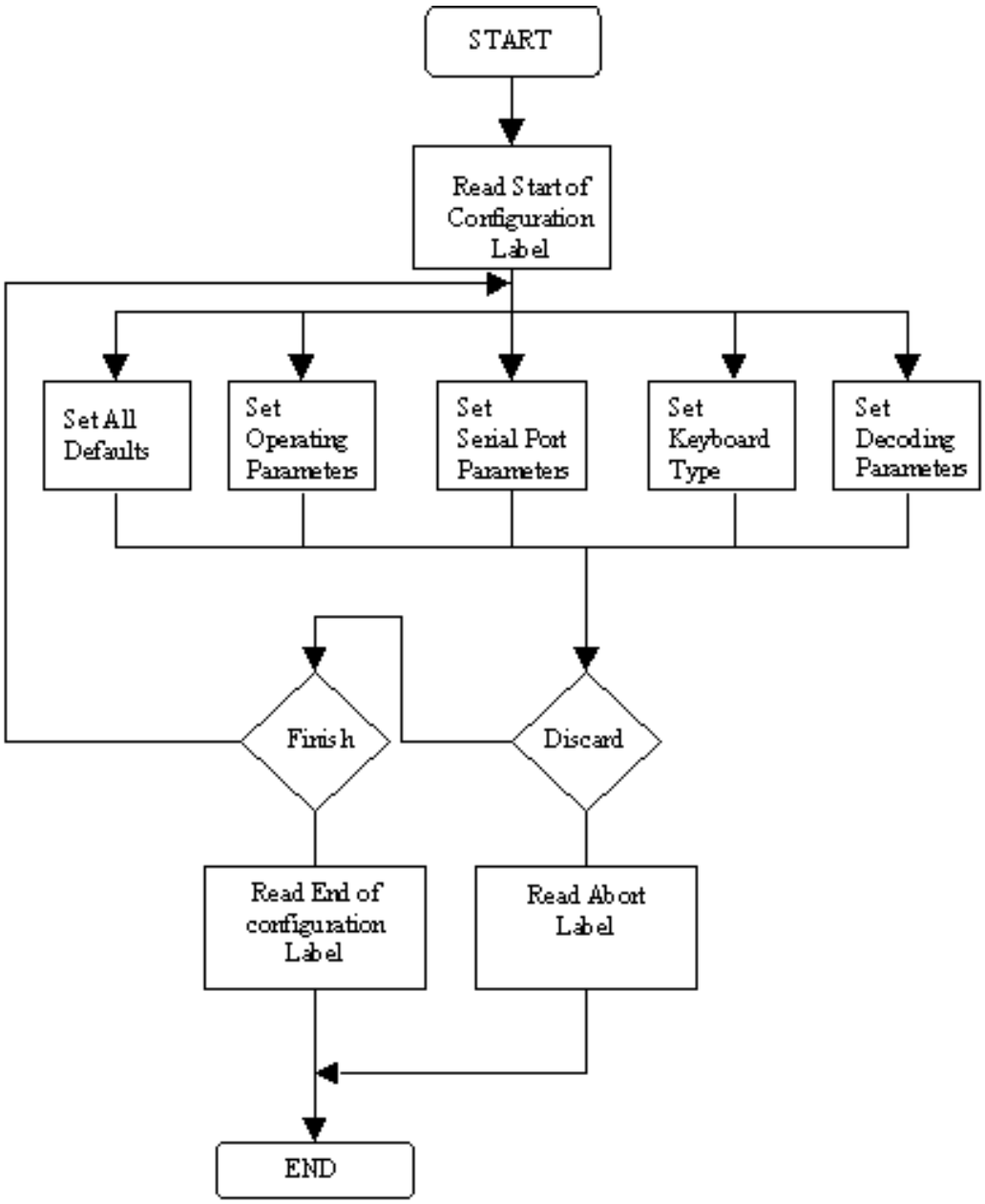
	Function	Default Values
※	Keyboard Type	US Keyboard
※	Message Terminator	Enter

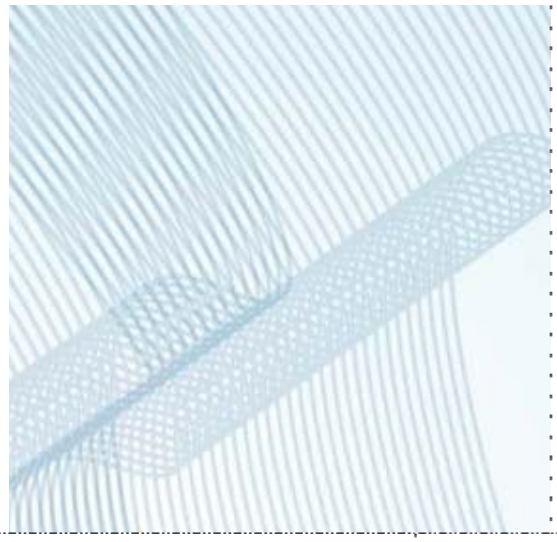
DEFAULT VALUES OF DECODING PARAMETERS

Function	Code	Default Value
Reading codes Selection	Code 39	Enable
	ITF 2 of 5	Enable
	Chinese Post Code	Disable
	UPC/EAN/JAN	Enable
	Coda bar	Enable
	※ MSI	Disable
	Code 128	Enable
	Code 93	Enable
	※ IATA	Disable
	※ EAN-128	Disable
	※ MATRIX 25	Disable
	※ Italian Pharmacy	Disable
	ISSN/ ISBN	Disable
Code 39	Codes	Standard
	Start/stop characters	Not transmitting
	Check digit	Disabled
	Concatenation	Off
Interleaved 2 of 5	Length	6-32 digits
	Check digit	Disable
Chinese Post Code	Length	10~16 digits
	Check digit	Transmit
UPC/EAN/JAN	Format	All
	Addendum	Disable
	UPC-E=UPC-A	Disabled
	UPC-A leading digit	Transmit
	UPC-A check digit	Transmit
	UPC-E leading digit	Transmit
	UPC-E check digit	Transmit
Coda bar	Type	Standard
	Start/stop characters	A, B, C, D
	Length	6~32 digits
Code 128	FNC 2 append	Disable
	Check digit	Disable
MSI	Length	Variable
	Check digit	Transmit
Italian Pharmacy	Transmit "A" Character	Not transmitting

Note: The configuration of the items with asterisk (※) is effective when being appointed in advance.

3. PROGRAM PROCEDURE





SYSTEM SETTING

Start of Configuration

RESET

- The reading of the "RESET" label turns all the parameters back to default values.
- When you intend to turn your scanner back to default parameter, please scans the "Start of configuration" label first, then scan "RESET" label

---

ABORT

- The reading of the "ABORT" label discards all the parameters read prior to the "End of configuration".

RS-232C

PC/AT

- The scanner remains in the last interface mode when the scanner is reset. The label below should be scanned if the scanner is configured the first time.

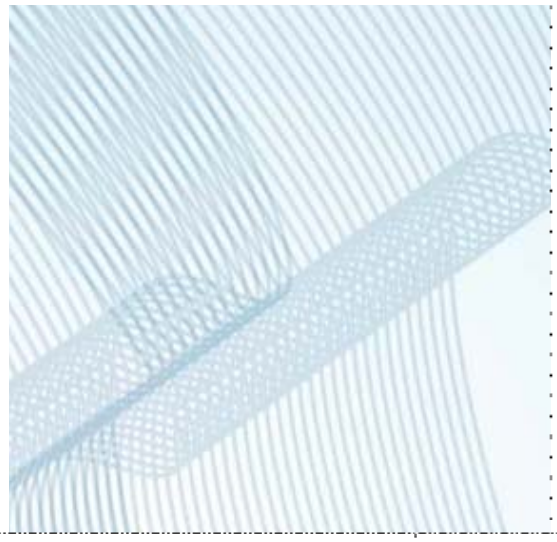
USB

WAND EMULATION

- The reading of the “SHOW VERSION” label will be show firmware version.

SHOW VERSION

End of Configuration



GENERAL CONFIGURATION

Start of Configuration

SCANNING MODE SELECTION

For Laser Scanner

For series laser scanners, there are 3 scanning modes to suit your application requirements.

Trigger Mode

The scanner becomes inactive as soon as the data is transmitted. It must be triggered to become active again.

Pulse Mode

The scanner will light up when press the pulse mode trigger switch once. And, the scanner will turn off for next pressing.

For CCD scanner

The scanner becomes inactive as soon as the data is transmitted. It must be triggered to become active again.

Trigger mode

In auto scan mode, the scanner is still active after the data is transmitted, but the successive transmission of the same bar code is not allowed when the trigger switch is pressed again.

Auto scan mode

This scanner will light up when press the scanner trigger switch once. And, the scanner will turn off for next pressing.

Alternate mode

This mode is similar to Auto scan mode, but double reading for the same barcode is prohibited if the scanner switch is pressed.

Repeat mode

1

End of Configuration

Start of Configuration

DATA REDUNDANT CHECK

The option allows you to set decoder data redundant check.

Enable

Disable

INTER-MESSAGE DELAY

These series of scanners allow you to add a delay between two consecutive messages. This delay will be added before each data transmission.

None

100 msec

500 msec

1 Second

End of Configuration

Start of Configuration

INTER-CHARACTER DELAY

This option governs delay time between consecutive characters. Scanning the following labels can alter the delay time.

None

10 msec

20 msec

50 msec

MESSAGE/BLOCK MODE SELECTION

This option allows you to treat scanned data as either an independent message or a block message. In the message mode, the data scanned will be transmitted immediately. In block mode, the data scanned will be appended to the message buffer if the scanner is programmed in block mode. A block of message will only be transmitted after a “Send” command is entered. This mode is only available when the scanner is working with code 39 labels. You are free to choose any character as the “ Send” command.

Message

Block

End of Configuration


Start of Configuration

SEND COMMAND IN BLOCK MODE COMMUNICATION

You can use this option to set your own “Send” command used in block mode communication.


Enable


Disable


Store


Set

GOOD READ BEEPER TONE SELECTION

You can use this option to set frequency and / or duration of the buzzer after successful reading.


Medium


Low


High


Disable


End of Configuration

Start of Configuration

SOUND DURATION

long(100 ms)

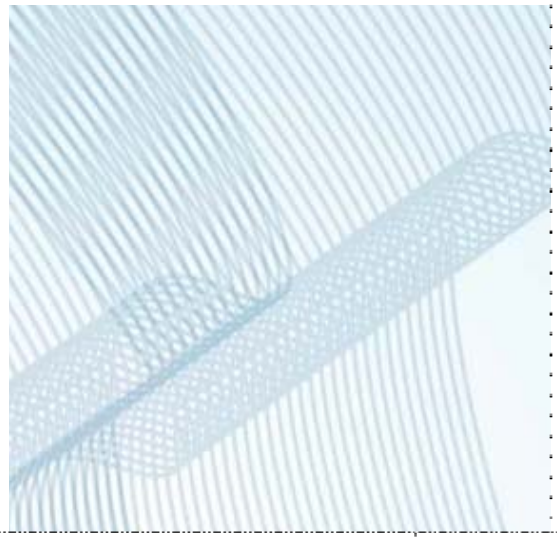
Medium(50 ms)

Short(20 ms)

Very short(5 ms)

*For Alpha-70 and SC-2070 Series only Medium and disable setting available, it's hardware beeper control.

End of Configuration



INTERFACE CONFIGURATION

Start of Configuration

---

1. RS-232C SERIAL COMMUNICATION PARAMETERS SETTING

The RS-232C scanner supports four handshaking protocols. With these options of communication protocol, you can tailor the scanner to meet the requirement of most systems

HANDSHAKING PROTOCOL

None

RTS/CTS

ACK/NAK

Xon/Xoff

ACK/NAK RESPONSE TIME SETTING

300 msec

2 sec

500 msec

End of Configuration

Start of Configuration

ACK/NAK RESPONSE TIME SETTING (Cont'd)

3 sec

1 sec

5 sec

BAUD RATE

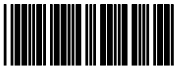
19200

9600

4800

2400

1200



600

End of Configuration

Start of Configuration

DATA BIT

7

8

STOP BIT

1

2

PARITY

Even

Odd

Mark

Space

None

End of Configuration

Start of Configuration

MESSAGE TERMINATOR (FOR RS-232C TYPE ONLY)

None

CR/LF

CR

LF

H Tab

STX/ETX

EOT

End of Configuration

Start of Configuration

---

2. KEYBOARD EMULATION PARAMETERS SETTING

KEYBOARD TYPE SELECTION

The keyboard emulation scanners can emulate a number of personal computers keyboard and a number of terminal keyboard. Keyboard emulation is activated whenever you have selected the type of keyboard for which the scanner is going to emulate. Choose the appropriate type of keyboard emulation by scanning the labels under the following labels.

IBM AT

PS/2 30-80

IBM 5550

IBM 5295 Terminal

IBM XT

IBM 5530-SC

IBM 5530-ZC

End of Configuration

Start of Configuration

KEYBOARD TYPE SELECTION (Cont'd)

NEC 9801

IBM 3196 Terminal

APPLE MAC II(※)

IBM 3477/3472 Terminal

PS2/30/56

IBM 3477 Terminal
(Without break code)

NEC 5200(※)

Note: The configuration of the items with asterisk (※) is optional.

End of Configuration

Start of Configuration

KEYBOARD LANGUAGE SELECTION

USA

UK

Germany

French

Spanish

Italian

Swiss

Swedish

International Keyboard

End of Configuration

Start of Configuration

MESSAGE TERMINATOR (FOR KEYBOARD WEDGE USE)

None

Return /Enter

Hor. TAB

Execute

BREAK CODE ON/ OFF SETTING (FOR IBM Terminals 31xx, 34xx, 37xx USE)

To select the interface for these IBM terminals, read the correct key transmission code.

ON

OFF

End of Configuration

Start of Configuration

FUNCTION KEY ACTIVE ON/ OFF (FOR IBM AT USE)

Function keys can be concatenated with input data as header and/or trailer. See table on page 40.

ON

OFF

CAPITAL LOCK ON/ OFF

Select the suitable code to match your keyboard caps lock status.

ON

OFF

Number data format

Send number as normal data

Send number as keypad data

End of Configuration

Start of Configuration

---

3. WAND EMULATION PARAMETERS SETTING

EMULATION SPEED SELECTION

Low

Medium

Normal

High

Higher

EMULATION DATA OUTPUT SELECTION

The decoded data output logic level can be set to befit the external decoder.

Black = High

Black = Low

End of Configuration

Start of Configuration

WAND EMULATION NARROW/WIDE RATIO

1:2

1:3

CURSOR PAD WORK AT NUMLOCK

ON

OFF

End of Configuration

Start of Configuration

---

4. USB INTERFACE PARAMETERS SETTING

The USB mode is effectively a keyboard emulator that works with hosts that USB-compatible operating system and USB ports. USB compatible operating systems are Windows 98, Windows NT 5.0 and later, no additional software is needed since the USB driver support is built into this operating system.

KEYBOARD Language TYPE

US Keyboard

Germany

French

Spanish

International Keyboard

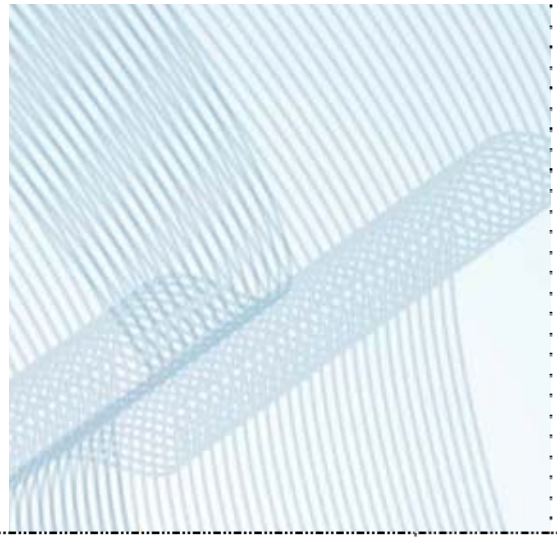
MESSAGE TERMINATOR

None

Enter

H Tab

End of Configuration



THE SYMBOLOGIES

Start of Configuration

READING CODE SELECTION

Code 39 Enable

Code 39 Disable

Coda bar Enable

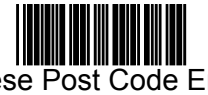
Coda bar Disable

UPC/ EAN/ JAN Enable

UPC/ EAN/ JAN Disable

ITF 2 of 5 Enable

ITF 2 of 5 Disable



Chinese Post Code Enable

Chinese Post Code Disable

Code 128 Enable

End of Configuration

Start of Configuration

READING CODE SELECTION (Cont'd)

Code 128 Disable

MSI Enable

MSI Disable

Code 93 Enable

Code 93 Disable

IATA Enable

IATA Disable

EAN- 128 Enable

EAN-128 Disable

End of Configuration

Start of Configuration

READING CODE SELECTION (Cont'd)

Italian Pharmacy Enable

Italian Pharmacy Disable

CODE 39 PARAMETERS SETTING

CHARACTER SET

Standard Code 39

Full ASCII Code 39

START/STOP CHARACTER TRANSMISSION

Yes

No

CHECK DIGIT

Calculate and Transmit

Calculate but not Transmit

End of Configuration

Start of Configuration

CODE 39 PARAMETERS SETTING (Cont'd)

NO

CONCATENATION

Enable

Disable

INTERLEAVED 2 OF 5 PARAMENTERS SETTING

Examples: Felting length 4 to 8 digits

Steps: Scan barcodes "Start of Configuration" ➔ "Min" ➔ "0" ➔ "4" ➔ "Set" ➔ "Max" ➔ "0" ➔ "8" ➔ "Set" ➔ "End of Configuration

LENTGTH

Max

Min

Set

End of Configuration


Start of Configuration

CHECK DIGIT


NO


Calculate and Transmit


Calculate but not Transmit

CHINESE POST CODE PARAMETERS SETTING

Examples: Felting length 4 to 8 digits

Steps: Scan barcodes “Start of Configuration” ➔ “Min” ➔ “0” ➔ “4” ➔ “Set” ➔ “Max” ➔ “0” ➔ “8” ➔ “Set” ➔ “End of Configuration

LENGTH


MAX


MIN


Set


End of Configuration

Start of Configuration

CHECK DIGIT

NO

Calculate and Transmit

Calculate but not Transmit

UPC/EAN/JAN PARAMETERS SETTING

FORMAT

All

EAN-8 or EAN-13

UPC-A and EAN-13

UPC-A and UPC-E

UPC-A

UPC-E

End of Configuration

Start of Configuration

UPC/EAN/JAN PARAMETERS SETTING (Cont'd)

EAN-13

EAN-8

ADDENDUM

NO

5 Characters

2 Characters

2 or 5 Characters

FORCE UPC-E TO UPC-A FORMAT

Yes

No

End of Configuration

Start of Configuration

FORCE UPC-A TO EAN-13 FORMAT

Yes

No

TRANSMIT UPC-A LEADING CHARACTER

Yes

No

TRANSMIT UPC-A CHECK DIGIT

Yes

No

TRANSMIT UPC-E LEADING CHARACTER

Yes

No

End of Configuration

Start of Configuration

TRANSMIT UPC-E CHECK DIGIT

Yes

No

TRANSMIT EAN-13 CHECK DIGIT

Yes

No

TRANSMIT EAN-8 CHECK DIGIT

Yes

No

End of Configuration

Start of Configuration

CODABAR/ MONARCH PARAMETERS SETTING

START/ STOP CHARACTER TRANSMISSION

No

A, B, C, D

DC1~DC4

a/ t, b/ n, c/ *, d/ e

CONCATENATION

Enable

Disable

CODE 128 PARAMETERS SETTING

FNC 2 CONCATENATION

Enable

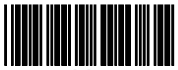
Disable

End of Configuration

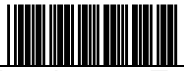
Start of Configuration

CODE 128 PARAMETERS SETTING (Cont'd)

CHECK DIGIT



No



Calculate but not Transmit

Calculate and Transmit

UCC/EAN128 PARAMETERS SETTING

The character FNC1 can be transmitted or not using these codes.

FNC1 Character Transmitted

FNC1 not Transmitted

End of Configuration

Start of Configuration

MSI/PLESSY PARAMETERS SETTING

Examples: Felting length 4 to 8 digits

Steps: Scan barcodes “Start of Configuration” ➔ “Min” ➔ “0” ➔ “4” ➔ “Set” ➔ “Max” ➔ “0” ➔ “8” ➔ “Set” ➔ “End of Configuration

MAX

MIN

SET

Double Check digit

Calculate but not Transmitted

No

Calculate but only first one Transmitted

Calculated and both Transmitted

Single Check digit

Calculated but not Transmitted

Calculated and transmitted

End of Configuration

Start of Configuration

ITALIAN PHARMACY PARAMETERS SETTING

TRANSMIT "A" CHARACTER

Yes

No

End of Configuration

Start of Configuration

BARCODE LENGTH SETTING

CODE 39 LENGTH SETTING

MAX

MIN

CODE 93 LENGTH SETTING

MAX

MIN

CODE 128 LENGTH SETTING

MAX

MIN

CODABAR LENGTH SETTING

MAX

MIN

SET

End of Configuration

Start of Configuration

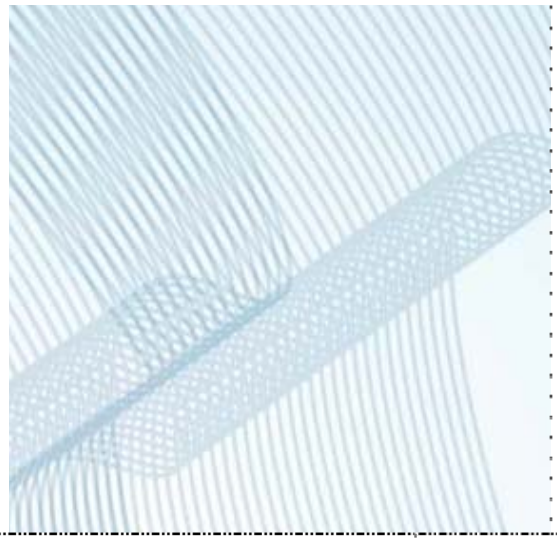
ISBN/ ISSN CONVERSION

The function convents the UPC/EAN codes appearing on books and magazine not ISBN/ISSN format.

ACTIVE ISBN/ ISSN

INACTIVE ISBN/ ISSN

End of Configuration



DATA EDITING

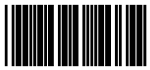
Start of Configuration

HEADER AND TRAILER

This option allows you to append a header and/or a trailer to every message transmitted via the serial ports or the keyboard port. There is no restriction in selecting header or trailer characters as far as the sum of the lengths of header and trailer is not greater than 10 digits.

Header

Trailer



Set

1. Select either header or trailer you are going to program by scanning the corresponding label
2. Scan the character(s) you want from the enclosed ASCII table to set as header or trailer (be sure to enable full ASCII code 39 option before you start).
3. Read the “Set” label to set your choice into memory.

BARCODE IDENTIFIER CODE SELECTION

The series of scanners can transmit max.2-digit barcode identifier code for different types of barcodes. Use the labels to choose transmit or not transmit predefined barcode identifier code (ID’s are listed on page 2):

Enable

Disable

End of Configuration

Start of Configuration

BARCODE IDENTIFIER CODE SETTING

Each of the series type scanners can set max.2 digits as barcode identifier code according to different barcode. The procedure is as follows:

1. Scan “Start of configuration” label
2. Scan “Barcode identifier setting code” label.
3. Scan the new code mark from ASCII table (max. two digits). For example, if one “AB” want for code mark then scan “A” and “B”.
4. Scan “Set” label.
5. Scan “ End of configuration” label.

UPC-E

UPC-A

EAN-13

EAN-8

Chinese post code

ITF 2 OF 5

End of Configuration

Start of Configuration

BARCODE IDENTIFIER CODE SETTING (Cont'd)

Coda bar

Code 39

Code 128

Code 93

MSI

Set

End of Configuration

Start of Configuration

Truncate Header/Trailer Character

(**Version az1.24, dz1.05, ac1.01, dz1.05,pl1.39**
Or higher is required)

You can truncate a number header or trailer for a symbology. When you do, the specific character you select is deleted from the symbology you want.

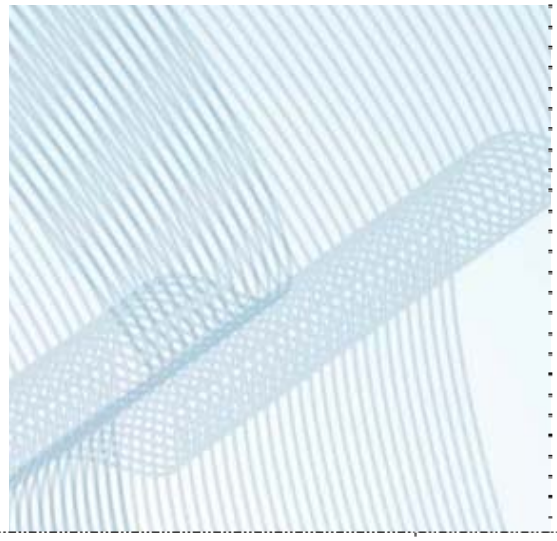
Truncate header character

Truncate trailer character

Set

1. Scan ”start of configuration”
2. Select ”truncate header or truncate trailer
3. scan two barcode value from the full ASCII code table(0~9) For example, if 2 number header you want clear then scan ”0” and “2”
4. Scan” set” barcode
5. end of configuration

End of Configuration



APPENDIXES

APPENDIX A

CODE 39 FULL ASCII CODE TABLE

ASCII	CODE 39	VALEUR HEXA.	ASCII	CODE 39	VALEUR HEXA.
NUL	%U	00	%	/E	25
SOH	$A	01	&	/F	26
STX	$B	02	'	/G	27
ETX	$C	03	(	/H	28
EOT	$D	04	)	/I	29
ENQ	$E	05	*	/J	2A
ACK	$F	06	+	/K	2B
BEL	$G	07	,	/L	2C
BS	$H	08	-	-	2D
HT	$I	09	.	.	2E
LF	$J	0A	/	/	2F
VT	$K	0B	0	0	30
FF	$L	0C	1	1	31
CR	$M	0D	2	2	32
SO	$N	0E	3	3	33
SI	$O	0F	4	4	34
DLE	$P	10	5	5	35
DC1	$Q	11	6	6	36
DC2	$R	12	7	7	37
DC3	$S	13	8	8	38
DC4	$T	14	9	9	39
NAK	$U	15	:	/Z	3A
SYN	$V	16	;	%F	3B
ETB	$W	17	<	%G	3C
CAN	$X	18	=	%H	3D
EM	$Y	19	>	%I	3E
SUB	$Z	1A	?	%J	3F
ESC	%A	1B	@	%V	40
FS	%B	1C	A	A	41
GS	%C	1D	B	B	42
RS	%D	1E	C	C	43
US	%E	1F	D	D	44
SP	SP	20	E	E	45
!	/A	21	F	F	46
"	/B	22	G	G	47
#	/C	23	H	H	48
$	/D	24	I	I	49

APPENDIX A

CODE 39 FULL ASCII CODE TABLE

ASCII	CODE 39	VALEUR HEXA.	ASCII	CODE 39	VALEUR HEXA.
J	J	4A	e	+E	65
K	K	4B	f	+F	66
L	L	4C	g	+G	67
M	M	4D	h	+H	68
N	N	4E	i	+I	69
O	O	4F	j	+J	6A
P	P	50	k	+K	6B
Q	Q	51	l	+L	6C
R	R	52	m	+M	6D
S	S	53	n	+N	6E
T	T	54	o	+O	6F
U	U	55	p	+P	70
V	V	56	q	+Q	71
W	W	57	r	+R	72
X	X	58	s	+S	73
Y	Y	59	t	+T	74
Z	Z	5A	u	+U	75
[	%K	5B	v	+V	76
\	%L	5C	w	+W	77
]	%M	5D	x	+X	78
^	%N	5E	y	+Y	79
_	%O	5F	z	+Z	7A
`	%W	60	{	%P	7B
a	+A	61 |	%Q	7C
b	+B	62	}	%R	7D
c	+C	63	~	%S	7E
d	+D	64	DEL	%T	7F

APPENDIX A
FUNCTION KEY EMULATION

FUNCTION KEY	ASCII	CODE 39	FUNCTION KEY	ASCII	CODE 39
Ins	$A	01	F1	$Q	11
Del	$B	02	F2	$R	12
Home	$C	03	F3	$S	13
End	$D	04	F4	$T	14
Up	$E	05	F5	$U	15
Down	$F	06	F6	$V	16
Left	$G	07	F7	$W	17
Backspace	$H	08	F8	$X	18
TAB	$I	09	F9	$Y	19
Enter(num)	$J	0A	F10	$Z	1A
Right	$K	0B	F11	%A	1B
PgUp	$L	0C	F12	%B	1C
Enter	$M	0D	ESC	%C	1D
PgDn	$N	0E	Ctl(L)	%D	1E
shift	$O	0F	Alt(L)	%E	1F
5 (num)	$P	10			

APPENDIX B
CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

NUL

ENQ
(Up)

SOH
(Ins)

ACK
(Down)

STX
(Del)

BEL
(Left)

ETX
(Home)

BS
(Backspace)

EOT
(End)

HT
(TAB)

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

LF
(Enter)(num)

VT
(Right)

FF
(PgUp)

CR
(Enter)

SO
(PgDn)

SI
shift(L)

DLE
5 (num)

DC1
(F1)

DC2
(F2)

DC3
(F3)

DC4
(F4)

NAK
(F5)

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

SYN
(F6)

ETB
(F7)

CAN
(F8)

EM
(F9)

SUB
(F10)

ESC
(F11)

FS
(F12)

GS
(ESC)

RS
Ctl (L)

US
Alt (L)

SP

!

"

#

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

$

%

&

'

(

)

*

+

,

-

.

/

0

1

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

2

3

4

5

6

7

8

9

:

;

<

=

>

?

@

A

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

B

C

D

E

F

G

H

I

J

K

L

M

N

O

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

P

Q

R

S

T

U

V

W

X

Y

Z

[

\

]

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

^

_

`

a

b

c

d

e

f

g

h

i

j

k

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

l

m

n

o

p

q

r

s

t

u

v

w

x

y

End of Configuration

APPENDIX B

CODE 39 FULL ASCII BARCODE TABLE

Start of Configuration

z

}

{

~

|

DEL

End of Configuration

APPENDIX C
BARCODE SAMPLES

Code 39

Code 128

Interleaved 2 of 5

Coda bar(NW-7)

UPC A

EAN-13