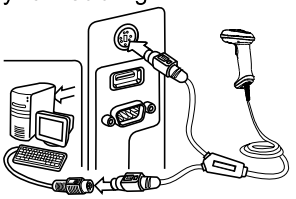
CONTENTS

1. Getting Started

Installing keyboard wedge scanner

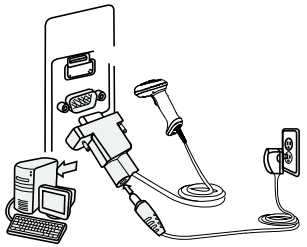
1.Make sure that the scanner has the correct cable for your system.
2.Turn off the power of the system.(or PC)
3.Unplug the keyboard from the system.
4.Connect Y cable to the system and keyboard.
5.Turn on the power of the system.
6.If the indicator LED lights up, buzzer sounds, the scanner is ready for reading.



Keyboard interface

Installing the RS-232 interface scanner

1.Make sure there is power supply for the scanner.
2.Connect the cable to the RS-232C port of the device.
3.Make sure the host device have communication program (Xcom,progam,Hyperterminal) before transmitting data.



RS-232 interface

Installing an USB interface scanner (connect two ends, the windows will detect automatically)

2. Setup Procedure

The general procedure to program is as follows.
1. Scan the command barcode “Start”.
2. Scan one or more parameters.
3. Scan the command barcode “End” to finish procedure.

Example 1. To set the RS232 parameters to 9600,8,0,1.
1.Scan the barcode “Start”.
2.Scan ”9600” ”8” ”0” ”1”.
3.Scan the barcode “End”.

Example 2. To set additional digit for UPC/EAN.
1.Scan the barcode “Start”.
2.Scan “Addenda 5 digit Enable”
3.Scan the barcode “End”.

Remark:
1.“Reserved” is reserved for firmware
2.This manual is subiected to change without notice.

Start

3. Default Setting

Default

"*"denotes default setting

4. Interface Selection

*AUTO

KB/USB-HID

RS232/ USB Virtual serial port
（driver is needed for virtual serial port）

Reserved 1

Reserved 2

End

5. Keyboard Interface

5-1. Funtion code selection

*Function keyboard ON

Function keyboard OFF

Number lock ON

*Number lock OFF

Capslock ignore ON

*Capslock ignore OFF

Start

5-2. Language

*US

French

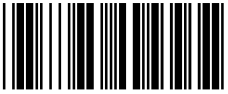
German

English

Turkey-Q

Danish

Japanese



Spanish (International)

Italian

Universal language

End

5-3. KB clock

*10K

20K

30K

6. RS-232 Interface

6-1. Baud Rate

1200

2400

4800

*9600

Start

14400

19200

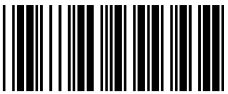
28800

38400

57600

115200

6-2. Data bits



7bit

*8bit

End

6-3. Parity


*None


Odd


Even


RTS/CTS ON


*RTS/CTSOFF

6-4. Stop bits


*1bit

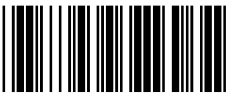

2bit

Start

6-5. Hand shaking

NAK ON

*NAK OFF



CTS/RTS ON

*CTS/RTS OFF

XON/XOFF ON

*XON/XOFF OFF

Repeat scan delay（1~255）

Example: If scanner needs 150ms of delay
Delay time T = N*10
150ms = N * 10
N = 15
So scan: “Start” “Repeat scan delay” “0” “1” “5” “END”.

End

6-6. COM port switch configuration

*COM control master switch ON

COM control master switch OFF

*COM trigger ON

COM trigger OFF

*COM beep ON

COM beep OFF

Start

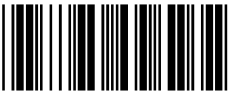
7. Data Format

7-1. Code ID

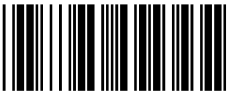
ON

*OFF

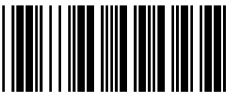
7-2. Terminator



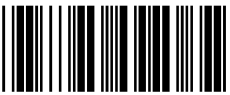
None



Tab(0X0D+0X0A)



*Enter(0X0D)



Space(0X20)

Return(0X0A)

End

7-3. Febraban transfer function

Febraban ON

*Febraban OFF

7-4. Data interception

*Not intercept

Intercept from left to right

Intercept from right to left

Data interception starting digit

Data interception ending digit

Example:barcode "0123456", need to intercept "234". Scan "Start" "Data interception starting digit" "0" "0" "3" "data intercept ending digit" "0" "0" "5" "Intercept from left to right" "End".

Start

7-5. Caps lock

*Original data

Upper case compulsive

Lower case compulsive

Upper and lower case convert compulsive

7-6. Barcode data inversion

ON

*OFF

7-7. Set the barcode length as prefix (2 digits)

ON

*OFF

End

7-8. Prefix and Suffix for all codes

Prefix for all codes

Suffix for all codes

Example: add “SN” prefix to all codes.
Scan “Start” “Prefix for all codes” “S” “N” “Prefix for all codes” “End”.

7-9. Reading length setting for all codes

Minimun length for all codes

Maximum length for all codes

Reading length setting for all codes is used to limit the barcode length that can be read (is subjected to the data length).

For example: set the reading length as 5-10 digit.

Scan “Start” “Minimun length for all codes” “0” “0” “5” “Maximun length for all codes” “0” “1” “0” “End”.
After that, any barcodes shorter than 5 digits or longer than “10” digits can not be read successfully.

Start

8. Barcode Setting

8-1. Industrial 2 of 5

Industrial 2 of 5 enable

*Industrial 2 of 5 disable

Verify check

*Not verify check

Verify check transmit

*Verify check not transmit

End

8-2. Standard 2 of 5

Standard 2 of 5 enable

*Standard 2 of 5 disable

Verify check

*Not verify check

Verify check transmit

*Verify check not transmit

Start

8-3. Chinese postal 2 of 5

Chinese postal 2 of 5 enable

*Chinese postal 2 of 5 disable

Verify check

*Not verify check

Verify check transmit

*Verify check not transmit

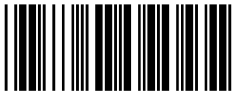
End

8-4. Interleaved 2 of 5


*Interleaved 2 of 5 enable


Interleaved 2 of 5 disable

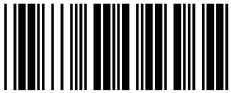

Verify check


*Not verify check


Verify check transmit


*Verify check not transmit


*Transmit the first “0”


Not transmit the first “0”

Start

8-5. Matrix 2 of 5

Matrix 2 of 5 enable

*Matrix 2 of 5 disable

Verify check

*Not verify check

Verify check transmit

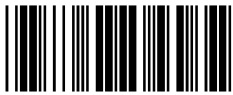
*Verify check not transmit

End

8-6. Codabar


*Codabar enable


Codabar Disable


Verify check


*Not verify check


Verify check transmit


*Verify check not transmit


Transmit start & stop digit

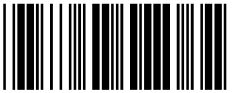

*Not transmit start & stop digit


*Transmit start & stop
ABCD/ABCD


Transmit start & stop
ABCD/TN*E

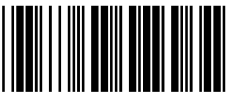
Start

8-7. Code MSI



Code MSI enable

*Code MSI disable



Verify check

*Not verify check

*Verify the second check digit

Not verify the second check digit

Verify the first check digit MOD11

*Verify the first check digit MOD10

Verify the second check digit MOD11

*Verify the second check digit MOD10

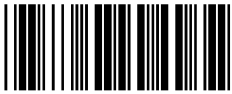
End

Verify check transmit

*Verify check not transmit

8-8. UK/Plessey

*Code UK enable



Code UK disable

*Verify check

Not verify check

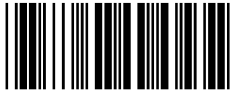
Verify check transmit

*Verify check not transmit

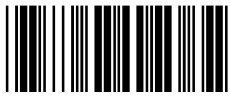
Start

8-9. Code 11

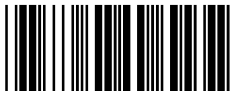
Code 11 enable



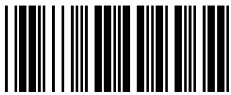
*Code 11 disable



Verify check



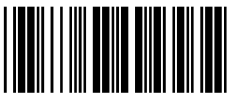
*Not verify check



*Verify the second check digit

Not verify the second check digit

Verify the first check digit MOD09



*Verify the first check digit MOD10

End

Verify the second check digit MOD09

*Verify the second check digit MOD10

Verify check transmit

*Verify check not transmit

8-10. Code 93

*Code 93 enable

Code 93 disable

Verify check

*Not verify check

Start

8-11. Code 39

*Code 39 enable

Code 39 disable

Verify check

*Not verify check

*Full ASCII 39

Standard 39

Verify check transmit

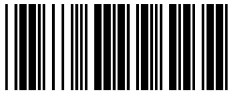
*Verify check not transmit

Transmit start & stop*

End

Not transmit start & stop

Code 32 enable



*Code 32 disable

Transmit code 32 prefix A

*Not transmit code 32 prefix A

Transmit code 32
checking digit

*Not transmit code 32
checking digit

Start

8-12. Supplements +2/+5

Addenda 2 digit enable

*Addenda 2 digit disable

Addenda 5 digit enable

*Addenda 5 digit disable

Space Separator enable

*Space Separator disable

End

8-13. UPC-A


*UPC-A enable


UPC-A disable


*Transmit leading digit


Not transmit leading digit


Convert to EAN-13


*Not convert to EAN-13


*Transmit checking digit


Not transmit checking digit

Start

8-14. UPC-E

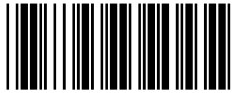
*UPC-E enable

UPC-E disable

*Transmit leading digit “0”

Not transmit leading digit “0”

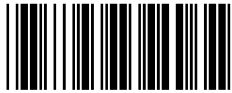
Convert to UPC-A



*Not convert to UPC-A

Convert to EAN-13

*Not convert to EAN-13



*Transmit checking digit

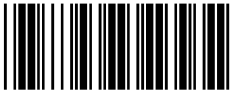
Not transmit checking digit

Remark: if "Covert to UPC-A" and "Convert to EAN-13" are enabled both, in actuality convert to EAN-13.

End

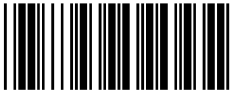
8-15. EAN-13


*EAN-13 enable


EAN-13 disable


*Transmit leading digit


Not transmit leading digit


*Transmit second digit

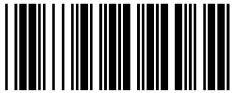

Not transmit second digit


ISBN enable

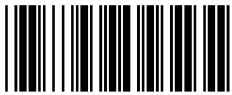

*ISBN disable

Start

ISSN enable

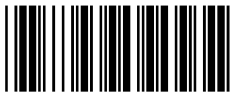


*ISSN disable



Addendum mandatory
for 378_379

*Not addendum mandatory
for 378_379



Addendum mandatory
for 978_977

*Not addendum mandatory
for 978_977

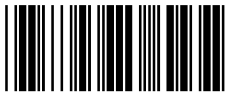
Addendum mandatory
for 434_439

*Not addendum mandatory
for 434_439

Remark: enable 2 digit or 5 digit addenda on page 27 before enable "Addendun mandatory" function.

End

Addendum mandatory for 419_414



*Not addendum mandatory for 419_414

Addendum mandatory for 491

*Not addendum mandatory for 491

Addendum mandatory for 978_192

*Not addendum mandatory for 978_192

*Transmit checking digit

Not transmit checking digit

Start

8-16. EAN-8


*EAN-8 enable


EAN-8 disable


Transmit leading digit ”0”


*Not transmit leading digit “0”


Convert to UPC-A


*Not convert to UPC-A


Convert to EAN-13


*Not convert to EAN-13


*Transmit checking digit


Not transmit checking digit

Remark: if "Covert to UPC-A" and "Convert t EAN-13" are enabled both, in actuality convert to EAN-13.

End

8-17. Code 128

*Code 128 enable

Code 128 disable

UCC 128 enable

*UCC 128 disable

Transmit checking digit

*Not transmit checking digit

Start

8-18. GS1

*GS1 enable

GS1 disable

*RSS14 enable

RSS14 disable

*AI_RSS14 enable

AI_RSS14 disable

*Transmit RSS14 checking digit

Not transmit RSS14 checking digit

End

*RSS Limited enable

RSS Limited disable

*AI Limited enable

AI Limited disable

*Transmit RSS Limited checking digit

Not transmit RSS Limited checking digit

*RSS expanded enable

RSS expanded disable

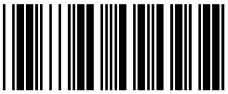
8-19. Black and White Inverse Code

Inverse code reading on
(Row type codes can not be read)

*Inverse code reading off

Start

9. Scan Mode

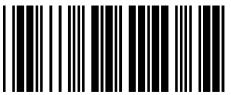


Testing

*Manual mode

Continuous scanning
(Chang Liang)

Continuous scanning
(flashing)



Reserved 1

Reserved 2

Repeat scan delay (1~255)

Example: If scanner needs 300ms of repeat scan delay.
Delay time T=N*10
300ms=N*10
N=30.
So scan: “Start” “Repeat scan delay ” “0” “3” “0” “End”.

End

10. Redundancy

*None

2 times

3 times

4 times

11. Automatic induction

*ON

OFF

Sensitivity setting（1~255）

Remark: Press the button for 10 seconds, the scanner can be switched between "Automatica induction mode" and "Manual scan mode"

Start

12. Beep Tones

None

Beep duration short

*Beep duration medium

Beep duration long

Set as customized duration

Customize duration (0.01~2.55S)

Example: If scanner needs 200ms of customized duration.

duration time T = N*10

200ms = N * 10

N =20.

So scan: “Start” “Customize duration” “0” “2” “0” “Set as customized duration” “End”.

End

Low

*Medium

High

Set as customized tone

Customized tone (100-2550 HZ)

Example: If scanner needs 200HZ of customized tone.
Customized Tone = N*10
200HZ = N * 10
N =20.
So scan: “Start” “Customized tone” “0” “2” “0” “Set as customized tone” “End”.

*Starting sound on

Starting sound off

Start

13. Data Delay

Delay between characters (T=N)
(1~255ms)

Barcode delay (T=10*N)
(10~2550ms)

14. Reading Length for Each Kind of Code

Industrial 2 of 5
minimum length

Industrial 2 of 5
maximum length

Standard 2 of 5
minimum length

Standard 2 of 5
maximum length

Matrix 2 of 5
minimum length

Matrix 2 of 5
maximum length

End

Chinese postal 2 of 5 minimum length

Chinese postal 2 of 5 maximum length

Interleaved 2 of 5 minimum length

Interleaved 2 of 5 maximum length

Code 11 minimum length

Code 11 maximum length

Codabar minimum length

Codabar maximum length

Code MSI minimum length

Code MSI maximum length

Start

Code UK minimum length

Code UK maximum length

Code 39 minimum length

Code 39 maximum length

Code 93 minimum length

Code 93maximum length

Code 128 minimum length

Code 128 maximum length

Expanded minimum length

Expanded maximum length

End

15. Prefix / Suffix for Each Kind of Code

Industrial 2 of 5 prefix

Industrial 2 of 5 suffix

Standard 2 of 5 prefix

Standard 2 of 5 suffix

Matrix 2 of 5 prefix

Matrix 2 of 5 suffix

Chinese postal 2 of 5 prefix

Chinese postal 2 of 5 suffix

Interleaved 2 of 5 prefix

Interleaved 2 of 5 suffix

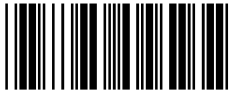
Start

Code 11 prefix

Code 11suffix

Codabar prefix

Codabar suffix



Code MSI prefix

Code MSI suffix

Code UK prefix

Code UK suffix

Code 39 prefix

Code 39 suffix

End

Code 93 prefix

Code 93 suffix

Code 128 prefix

Code 128 suffix

RSS Expaned prefix

RSS Expanded suffix

Code 32 prefix

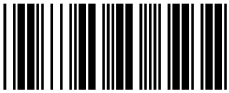
Code 32 suffix

UPC-A prefix

UPC-A suffix

Start

UPC-E prefix

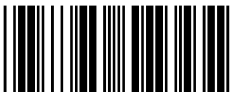


UPC-E suffix

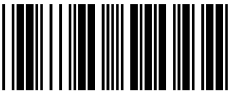
EAN-13 prefix

EAN-13 suffix

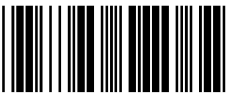
EAN-8 prefix



EAN-8 suffix



RSS14 prefix



RSS14 suffix

RSS Limited prefix

RSS Limited suffix

End

16. Version

Version

Reserved 1

Reserved 2

Reserved 3

Reserved 4

Reserved 5

Reserved 6

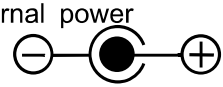
Reserved 7

17. Appendix

17-1. Pin assingment

PIN	Function
1	TXD
2	RXD
3	RTS
4	GND
5	PC_DATA/D+
6	PC_CLK/D-
7	VCC_5V
8	KB_CLK
9	KB_DATA
10	CTS

Note：JACK connector for external power
（Regulated+5Vdc/300mA)



17-2. Default barcode parameter settings table

TYPES	Read	Verify check	Transmit checking digt	Minimun length	Maxnimun length	ID
Industrial 2 of 5	N	N	N	4	64	A
Standard 2 of 5	N	N	N	4	64	B
MatriX 2 of 5	N	N	N	6	64	C
Chinese Postal 2 of 5	N	N	N	6	64	D
Interleave 2 of 5	YES	N	N	6	64	E
Code 11	N	YES	N	4	64	F
Codabar	YES	N	N	4	64	G
Code MSI	N	YES	N	4	64	H
Code UK	YES	YES	N	1	64	I
Code39	YES	N	N	1	64	J
Code32	N	N	N	8	8	M
Code93	YES	YES	N	1	64	K
EAN-13	YES	YES	N	13	13	Q
UPC-A	YES	YES	YES	12	12	O
EAN-8	YES	YES	YES	8	8	R
UPC-E	YES	YES	YES	7	7	P
Code128	YES	YES	N	1	100	L
RSS Truncated	YES	N	N	14	14	S
RSS Limited	YES	N	N	14	14	T
RSS Expanded	YES	N	N	1	74	W
Gray background denotes default						

17-3. Default setting table

List	Project Name	Description	Default
1	Scan mode		Manual scan
2	Interface setting		*Automatic
3	KB/USB	Keyboard language	US
4		Function keyboard	ON
5		Enable digital keypad	Disable
6		Caplock Ignore	Not ignore
7		KB clock	10K(slow)
8	RS-232	Baud rate	9600
9		Data bits	8
10		Parity	None
11		Stop bits	1
12		Communication handshake	None
13		Allow COM settings	No
14		COM trigger	Disable
15		COM beep	Disable
16	Data editing	Terminator	Enter(0x0d)
17		Caps lock	Origianl data
18		Data inversion	Disable
19		CODE ID	OFF
20		Data interception	All output
21		Overall Prefix and Suffix	None
22		Overall decoding length limitation	None
23		Character delay	None
24		String delay	None
25	Beeper settings	Successful decoding sound tips	Middle tone, Long duration
26		Starting sound tips	ON
27	Other functions	Repeated	None
28		Inverse barcode decoding	OFF
29		Automatic induction	ON

Remark: for USB-HID cable, KB cable, and RS232 cable, they can be detected automatically. If using vitual serial port, must configure to "RS232 / USB vitual serial port" (page 3).

17-4. ASCII TABLE

ASCII	HEX	DEC	ASCII	HEX	DEC
NUL	00	0	SP	20	32
SOH	01	1	!	21	33
STX	02	2	"	22	34
ETX	03	3	#	23	35
EOT	04	4	$	24	36
ENQ	05	5	%	25	37
ACK	06	6	&	26	38
BEL	07	7	'	27	39
BS	08	8	(	28	40
HT	09	9	)	29	41
LF	0A	10	*	2A	42
VT	0B	11	+	2B	43
FF	0C	12	,	2C	44
CR	0D	13	-	2D	45
SO	0E	14	.	2E	46
SI	0F	15	/	2F	47
DLE	10	16	0	30	48
DC1	11	17	1	31	49
DC2	12	18	2	32	50
DC3	13	19	3	33	51
DC4	14	20	4	34	52
NAK	15	21	5	35	53
SYN	16	22	6	36	54
ETB	17	23	7	37	55
CAN	18	24	8	38	56
EM	19	25	9	39	57
SUB	1A	26	:	3A	58
ESC	1B	27	;	3B	59
FS	1C	28	<	3C	60
GS	1D	29	=	3D	61
RS	1E	30	>	3E	62
US	1F	31	?	3F	63

ASCII	HEX	DEC	ASCII	HEX	DEC
@	40	64	`	60	96
A	41	65	a	61	97
B	42	66	b	62	98
C	43	67	c	63	99
D	44	68	d	64	100
E	45	69	e	65	101
F	46	70	f	66	102
G	47	71	g	67	103
H	48	72	h	68	104
I	49	73	i	69	105
J	4A	74	j	6A	106
K	4B	75	k	6B	107
L	4C	76	l	6C	108
M	4D	77	m	6D	109
N	4E	78	n	6E	110
O	4F	79	o	6F	111
P	50	80	p	70	112
Q	51	81	q	71	113
R	52	82	r	72	114
S	53	83	s	73	115
T	54	84	t	74	116
U	55	85	u	75	117
V	56	86	v	76	118
W	57	87	w	77	119
X	58	88	x	78	120
Y	59	89	y	79	121
Z	5A	90	z	7A	122
[	5B	91	{	7B	123
\	5C	92	|	7C	124
]	5D	93	}	7D	125
^	5E	94	~	7E	126
–	5F	95	DEL	7F	127

17-5. FULL ASCII TABLE

SOH

HT

STX

LF

ETX

VT

EOT

FF

ENQ

CR

ACK

SO

BEL

SI

BS

DLE

DC1

DC2

DC3

DC4

NAK

SYN

ETB

CAN

EM

SUB

ESC

FS

GS

RS

US

SPACE

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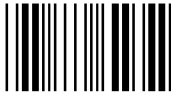

<

=

>

?

@

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

[

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]

^

_

`

a

b

c

d

e

f

g

h

i

j

k

l

m

n

o

p

q

r

s

t

u

v

w

x

y

z

{

|

}

~

F1(@A)

F2(@B)

F3(@C)

F4(@D)

F5(@E)

F6(@F)

F7(@G)

F8(@H)

F9(@I)

F10(@J)

F11(@K)

F12(@L)

HOME(&A)

END(&B)

Cursor Right(&C)

Cursor Left(&D)

Cursor Up(&E)

Cursor Down(&F)

PgUp(&G)

PgDn(&H)

TAB(&I)

Back TAB(&J)

ESC(&K)

ENTER(&L)

Insert(&M)

Delet(&N)

Return(&O)

CTRL ON(&P)

CTRL OFF(&Q)

ALT ON(&R)

ALT OFF(&S)

SHIFT ON(&T)

SHIFT OFF(&U)

WIN (&V)

HOME (&W)

END (&X)

Sample bar codes

Code 39

Codabar

Interleaved 2 of 5

Code 128

UPC−A with 5

EAN-13 with 2