
CONTENTS

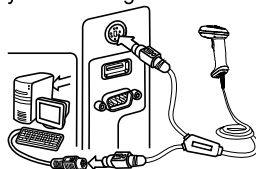
1. Getting Started	1
2. Setup Procedure	2
3. Default Setting	3
4. Interface Selection	3
5. Keyboard Interface	4
5-1. Funtion code selection	4
5-2. Language	5
5-3. KB clock	6
6. RS-232 Interface	6
6-1. Baud Rate	6
6-2. Data bits	7
6-3. Parity	8
6-4. Stop bits	8
6-5. Hand shaking	9
6-6. COM port switch configuration	10
7. Data Format	11
7-1. Code ID	11
7-2. Terminator	11
7-3. Febraban transfer function	12
7-4. Data interception	12
7-5. Caps lock	13
7-6. Barcode data inversion	13
7-7. Set the barcode length as prefix (2 digits)	13
7-8. Prefix and Suffix for all codes	14
7-9. Reading length setting for all codes	14
8. Barcode Setting	15
8-1. Industrial 2 of 5	15
8-2. Standard 2 of 5	16
8-3. Chinese postal 2 of 5	17
8-4. Interleaved 2 of 5	18
8-5. Matrix 2 of 5	19
8-6. Codabar	20
8-7. Code MSI	21
8-8. UK/Plessey	22
8-9. Code 11	23
8-10. Code 93	24
8-11. Code 39	25
8-12. Supplements +2/+5	27
8-13. UPC-A	28
8-14. UPC-E	29

8-15. EAN-13.....	30
8-16. EAN-8.....	33
8-17. Code 128.....	34
8-18. GS1.....	35
8-19. Black and White Inverse Code.....	36
9. Scan Mode.....	37
10. Redundancy.....	38
11. Automatic induction.....	38
12. Beep Tones.....	39
13. Data Delay.....	41
14. Barcode Classification Length Limit.....	41
15. Barcode Classification Before Suffix...	44
16. Version.....	48
17. Appendix.....	49
17-11. Pin assignment.....	49
17-12. Default barcode parameter settings table	50
17-13. Default setting table.....	51
17-14. ASCII TABLE.....	52
17-15. FULL ASCII TABLE	54

1. Getting Started

☑ Installing keyboard wedge scanner

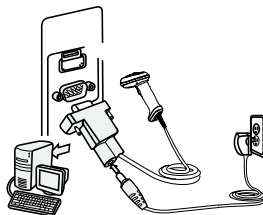
1. Make sure that the scanner has the correct cable for your system.
2. Turn off the power of the system. (or PC)
3. Unplug the keyboard from the system.
4. Connect Y cable to the system and keyboard.
5. Turn on the power of the system.
6. If the indicator LED lights up, buzzer sounds, the scanner is 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 has communication program (Xcom, program, 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 subjected to change without notice.



Start

3. Default Setting



Default

“*” denotes default setting

4. Interface Selection



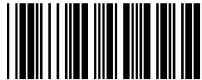
*AUTO



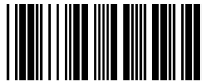
KB/USB-HID



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

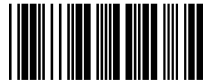
5-2. Language



*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



Reserved 1



Reserved 2

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 $T = N * 10$

$150\text{ms} = N * 10$

$N = 15$

So scan: "Start" "Repeat scan delay" "0" "1" "5" "END".

XON: 0X11

XOFF: 0X13

ACK: 0X06

NAK: 0X15



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)



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



7-8. Prefix and Suffix for all codes



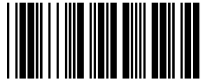
Prefix for all codes



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



Minimum 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" "Minimum length for all codes" "0" "0" "5"
"Maximum 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



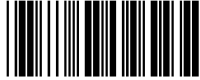
Interleaved 2 of 5 disable



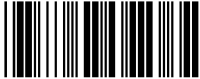
Verify check



*Not verify check



Verify check transmit



*Verify check not transmit



*Transmit the first "0"



Not transmit the first "0"

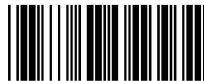


Start

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

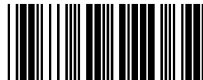


Transmit start & stop
ABCD/TN*E



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



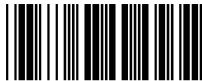
Verify the first check
digit MOD09



*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

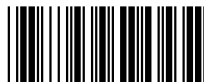
8-13. UPC-A



*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



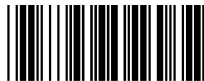
ISBN enable



*ISBN disable



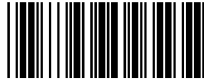
Start



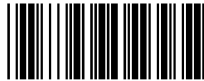
ISSN enable



*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 "Addendum 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



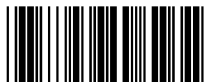
*GS1 enable



GS1 disable



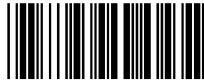
*RSS14 enable



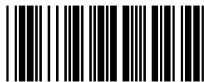
RSS14 disable



*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

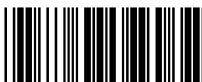


RSS expanded disable

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



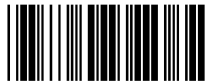
Beep duration short



*Beep duration medium



Beep duration long



Set as customized duration



Customize duration (0.01~2.55S)

Example: If scanner needs 200ms of customized duration.

$$\text{duration time } T = N * 10$$

$$200\text{ms} = N * 10$$

$$N = 20.$$

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



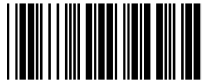
End



Low



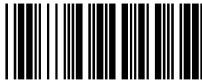
*Medium



High



Set as customized tone



Customized tone (100-2550 HZ)

Example: If scanner needs 200HZ of customized tone.

Customized Tone = $N \times 10$

$200\text{HZ} = N \times 10$

$N = 20$.

So scan: "Start" "Customized tone" "0" "2" "0" "Set as customized tone" "End".



*Starting sound on



Starting sound off



13. Data Delay



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



Barcode delay ($T=10 \cdot N$)
(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 93 maximum 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



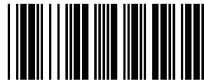
Code 11 suffix



Codabar prefix



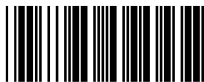
Codabar suffix



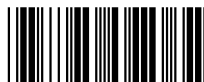
Code MSI prefix



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 Expanded prefix



RSS Expanded suffix



Code 32 prefix



Code 32 suffix



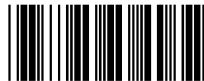
UPC-A prefix



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



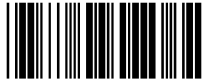
Reserved 1



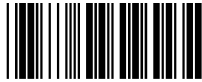
Reserved 2



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 digit	Minimum length	Maximum 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	N
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		Cap lock 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	Original 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 virtual serial port, must configure to "RS232 / USB virtual 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	SUB
	
DC2	ESC
	
DC3	FS
	
DC4	GS
	
NAK	RS
	
SYN	US
	
ETB	SPACE
	
CAN	!
	
EM	"



#



+



\$



,



%



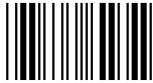
-



&



.



'



/



(



0



)



1



*



2



3



4



5



6



7



8



9



:



;



<



=



>



?



@



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



[



\



]



^



_



`



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

