



Barcode
Magstripe

Decoder & Scanner

Programming Manual

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Getting Started

Installing Keyboard Wedge Scanner

To install a keyboard wedge scanner, follow the steps listed below:

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

Installing a RS-232 Interface Scanner

To install a RS-232 interface scanner, the host device should have a RS-232 port to receive data from the scanner, follow the steps listed below:

- 1) Make sure that the scanner has the right connector for the RS-232 port of the host device
- 2) Make sure that there is a power supply to the scanner (if necessary)
- 3) Connect the cable to the RS-232 port of the device
- 4) If the indicator LED lights up and the buzzer sounds, the scanner is ready for reading

Note: The installation and setting up procedures of a USB interface scanner are the same as those of a keyboard wedge scanner.

Setup Procedures

- 1) Locate a group that contains the parameters to be changed.
- 2) Scan the "Enter Group #" label. The scanner will sound beeps indicate that setup is in progress
- 3) Scan the label representing the parameter to be changed
- 4) Scan the "Exit" to end the group currently selected, the scanner will sound beeps
- 5) Repeat the procedure for other groups including the parameters to be changed

Example 1:

Set the operating mode to "Continuous mode"

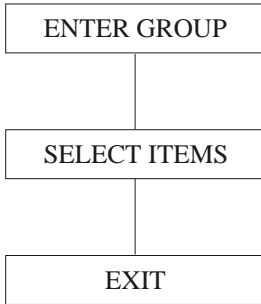
- 1) Scan "Enter Group 5"
- 2) Scan "Continuous/Trigger off"
- 3) Scan "Exit"

Example 2

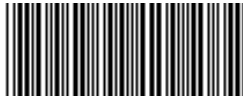
Assign Preamble string as "#", and postamble string as "END"

- 1) Scan "Enter Group 6"
- 2) Scan Preamble
- 3) Scan "#" from "Full ASCII Table and Table-Hex."
- 4) Scan "Confirm" Label in Table-Hex
- 5) Scan "Postamble"
- 6) Scan "E", "N", "D" from "Full ASCII Table and Table Hex" consecutively
- 7) Scan "Confirm" Label in Table-Hex.
- 8) Scan Exit

Setup Flow Chart



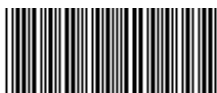
Set All Defaults



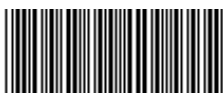
Show Version

Note: (*) denotes default setting options marked by ()
are only available upon request.

Group 0: Interface Selection



ENTER GROUP



EXIT



KEYBOARD



RS-232



(WAND)



(OCIA)



(DTMF)



Reserved 2



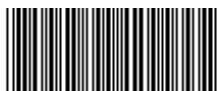
Resered 3



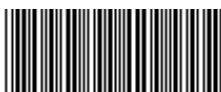
Reserved 4

Note: The interface is pre-set at factory according to the model of the device.

Group 1: Device Selection for Keyboard Interface



ENTER GROUP



EXIT



PC/AT, PS/2 50,60,70,80(*)



PC/XT



PS/2 25, 30



(NEC 9801)



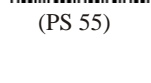
(IBM 5550)



(PS 55)



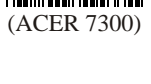
(NEC N5520)



(ACER 7300)



(KW105D/
CT-700A/WANG 5120)



(WANG 5425)



(MAC_SE)



(LC-6533)

Note: Options marked by () are only available upon request.

Group 1: Device Selection for Keyboard Interface



ENTER GROUP



EXIT



(IBM3196, 3197, 3476, 3477)



Reserved Q



Reserved R



Reserved T



IBM3197



IBM 3476



IBM3477



Reserved 5



Reserved 6



Reserved 7

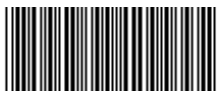


Reserved 8

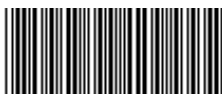


Reserved 9

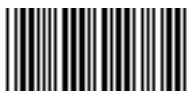
Group 2: Intercharacter Delay



ENTER GROUP



EXIT



Start Keyboard Setting

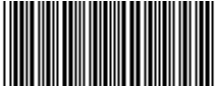
Scan Enter Group 2 Label -->
Scan Start Keyboard (or RS-232) Setting Label -->
Scan two digits labels in Table-Hex -->
Scan Exit Label



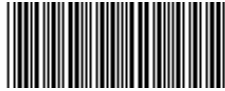
Start RS-232 Setting

Keyboard Default Value: 05
RS-232 Default Value : 00

Group 3: Language for Keyboard Interface



ENTER GROUP



EXIT



U.S. (*)



ENGLAND



FRANCE



GERMANY



ITALY



BELGIUM



SWEDEN/FINLAND



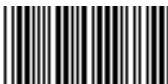
SPANISH



DENMARK



PORTUGAL



SWISS

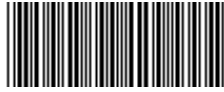


NORWAY

Group 3: Language for Keyboard Interface



ENTER GROUP



EXIT



CANADA



HOLLAND



POLAND



LATIN



JAPAN



Reserved 1



Reserved 2



Reserved 3



(IBM THINK-PAD FOR JAPAN)



(PANASONIC CF-II
FOR JAPAN)

Note: Options marked by () are only available upon request.

Group 4: Terminator



ENTER GROUP



EXIT

KEYBOARD

NONE



CR



(*)

SPACE



TAB



ESC



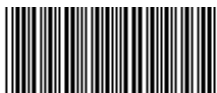
CTRL-C



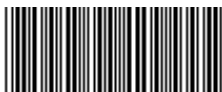
EXEC



Group 4: Terminator

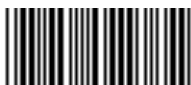


ENTER GROUP



EXIT

RS-232



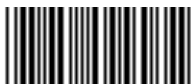
NONE



CR/LF



SPACE



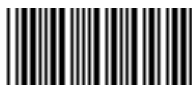
ESC



STX..ETX



EOT



CR (*)



LF



TAB

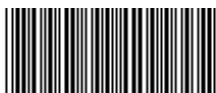


CTRL-C

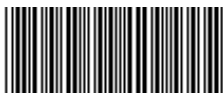


XON..XOFF

Group 5: Scan Mode



ENTER GROUP



EXIT



1: Trigger On/Off



2: Trigger On/
Good Read Off (*)



3: Trigger On/
Good Read Off/
Delay Timeout = ?



4: Continuous/
Trigger Off



5: Continuous/
LED Always on



6: Continuous/
No Trigger



7: Continuous/
Testing



8: Continuous/
Trigger Off/
Delay Timeout = ?

Delay Timeout Setting:

Scan Enter Group 5 Label -->

Scan 3 or 8 Label -->

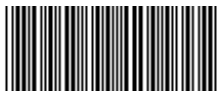
Scan two digit labels in Table-Hex -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Note: Scan mode setting is only available for CCD/LASER type scanner. Setting wand type scanner to this mode will cause the scanner to break down.

Group 5: Scan Mode



ENTER GROUP



EXIT



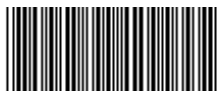
FLASH OFF(*)



FLASH ON

Note: Scan mode setting is only available for
CCD/Laser type scanner.

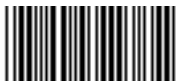
Group 6: Preamble and Postamble



ENTER GROUP



EXIT



Preamble



Postamble

Preamble & Postamble Setting:

Scan Enter Group 6 Label -->

Scan Preamble or Postamble Label -->

Refer to ASCII Table(page 46), scan two digits in Table-Hex (Page 45)

Representing one character, maximum 10 characters can be accepted. -->

Scan Confirm Label in Table-Hex (Page 45)

Scan Exit Label



Clear

Clear Preamble & Postamble :

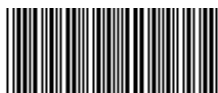
Scan Enter Group 6 Label -->

Scan Preamble or Postamble Label -->

Scan Clear Label-->

Scan Exit Label

Group 7: RS-232 Parameters



ENTER GROUP



EXIT

Baud Rate



600



1200



2400



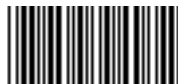
4800



9600(*)



19200



38400

Data Bit

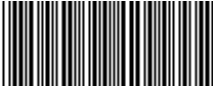


BIT 7

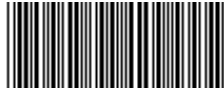


BIT 8 (*)

Group 7: RS-232 Parameters



ENTER GROUP



EXIT

Parity :



NONE (*)



ODD



EVEN

Handshaking:



NONE (*)



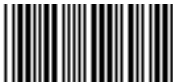
XON/XOFF



Scanner Ready

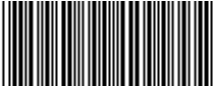


Data Ready



ACK/NAK

Group 7: RS-232 Parameters



ENTER GROUP



EXIT

**(ACK/NAK Response Time
CTS Observation Time:)**



100 ms



300 ms



500 ms



1 sec



3 sec (*)



5 sec

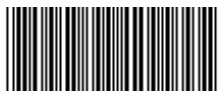


10 sec



00

Group 8: CODE 39 / CODE 32



ENTER GROUP



EXIT

Code 39



Enable (*)



Disable



Full ASCII



Standard (*)

Transmit Start/End Character



Enable



Disable (*)

Transmit Check Character



Enable (*)



Disable

Verify Checksum

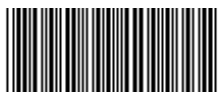


Enable

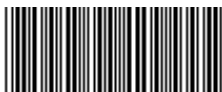


Disable (*)

Group 8: CODE 39 / CODE 32



ENTER GROUP



EXIT



Enable CODE 32 (*)



Disable CODE 32

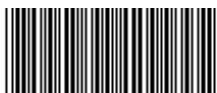


Verify Normal (*)

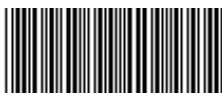


Verify Strick

Group 9-1: Interleaved 2 OF 5



ENTER GROUP



EXIT



Enable (*)



Disable

Transmit Check Character



Enable (*)



Disable

Verify Checksum



Enable



Disable (*)



Barcode Length Setting:

Scan Enter Group 9-1 Label -->

Scan Length Define Label -->

Scan Four Digit Labels in Table Hex (Page 45) -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Length Define

Min: 4

Max: 48



User Define Length Setting:

Scan Enter Group 9-1 Label

Scan User Define Label-->

Scan Six Digit Labels in Table Hex

(Only 3 sets of length can be defined)

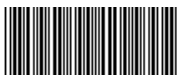
Scan Confirm Label in Table Hex -->

Scan Exit Label

User Define

3 Sets Available

Group 9-2: Industrial 2 OF 5 / IATA



ENTER GROUP



EXIT



Enable (*)



Disable

Transmit Check Character



Enable (*)



Disable

Verify Checksum



Enable



Disable (*)



Barcode Length Setting:

Scan Enter Group 9-2 Label -->

Scan Length Define Label -->

Scan Four Digit Labels in Table Hex (Page 45) -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Length Define

Min: 2

Max: 24



User Define Length Setting:

Scan Enter Group 9-2 Label

Scan User Define Label-->

Scan Six Digit Labels in Table Hex

(Only 3 sets of length can be defined)

Scan Confirm Label in Table Hex -->

Scan Exit Label

User Define

3 Sets Available

IATA

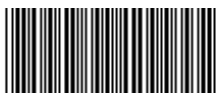


Enable



Disable (*)

Group 9-3: Matrix 2 OF 5



ENTER GROUP



EXIT



Enable (*)



Disable

Transmit Check Character



Enable (*)



Disable

Verify Checksum



Enable



Disable (*)



Barcode Length Setting:

Scan Enter Group 9-3 Label -->

Scan Length Define Label -->

Scan Four Digit Labels in Table Hex (Page 45) -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Length Define

Min: 2

Max: 40



User Define Length Setting:

Scan Enter Group 9-3 Label

Scan User Define Label-->

Scan Six Digit Labels in Table Hex

(Only 3 sets of length can be defined)

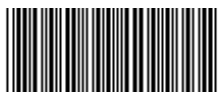
Scan Confirm Label in Table Hex -->

Scan Exit Label

User Define

3 Sets Available

Group 9-4: CHINA POSTAGE



ENTER GROUP



EXIT



Enable (*)



Disable

Transmit Check Character



Enable (*)



Disable

Verify Checksum



Enable



Disable (*)



Barcode Length Setting:

Scan Enter Group 9-4 Label -->

Scan Length Define Label -->

Scan Four Digit Labels in Table Hex (Page 45) -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Length Define

Min: 2

Max: 40



User Define Length Setting:

Scan Enter Group 9-4 Label

Scan User Define Label-->

Scan Six Digit Labels in Table Hex

(Only 3 sets of length can be defined)

Scan Confirm Label in Table Hex -->

Scan Exit Label

User Define

3 Sets Available

Group 10: Code 128



ENTER GROUP



EXIT



Enable (*)



Disable

Enable/Disable Checkdigit



Enable (*)
(not send checkdigit)



Disable

UCC/EAN/128



Enable



Disable (*)

GTIN



Enable



Disable (*)

Note: Options marked by () are only available upon request

Group 11: CODE 11



ENTER GROUP



EXIT



Enable (*)



Disable

Number of Check Character



Two (*)



One

Transmit Check Character



Enable (*)



Disable

Enable/Disable Checkdigit



Enable (*)



Disable

Group 12: Code 93



ENTER GROUP



EXIT



Enable (*)



Disable

Verify Checkdigit

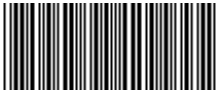


Enable (*)



Disable

Group 13: MSI-PLESSEY



ENTER GROUP



EXIT



Enable (*)



Disable

Verify Checkdigit



Enable (*)



Disable

Enable MOD



Enable MOD 10-10



Enable MOD 10 (*)



Enable MOD 11-10

Transmit/Truncate Checkdigit



Truncate 1st checkdigit

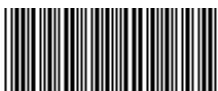


Transmit checkdigit (*)



Truncate 1st & 2nd checkdigit

Group 14: CODABAR / NW7



ENTER GROUP



EXIT



Enable (*)



Disable

Transmit Start/End Character



Enable



Disable (*)

Start/End Transmit Type



ABCD/ABCD



ABCD/TN*E



abcd/abcd (*)



abcd/tn*e

Group 15: Code 4



ENTER GROUP



EXIT



Enable (*)



Disable

Group 16-1: EAN-13/JAN-13



ENTER GROUP



EXIT



Enable (*)



Disable

ADD-ON 2/5



Enable



Disable (*)

Transmit Check Character



Enable (*)



Disable

Truncate 1st digit



Enable



Disable (*)

Truncate 2nd digit



Enable



Disable (*)

EAN Checkdigit



Enable (*)



Disable

Group 16-2: UPC-A



ENTER GROUP



EXIT



Enable (*)



Disable

ADD-ON 2/5



Enable



Disable (*)

Transmit Check Character



Enable (*)



Disable

Truncate Leading Digit



Enable



Disable (*)

UPC-A Convert to EAN-13



Enable



Disable (*)

Group 16-3: EAN-8/JAN-8



ENTER GROUP



EXIT



Enable (*)



Disable

ADD-ON 2/5



Enable



Disable (*)

Transmit Check Character



Enable (*)



Disable

Truncate Leading Digit



Enable



Disable (*)

EAN-8 Convert to EAN-13



Enable 1
(add zeros in the front
of barcode)



Disable (*)



Enable 2
(add zeros in the middle
of barcode)

Group 16-4: UPC-E



ENTER GROUP



EXIT



Enable (*)



Disable

ADD-ON 2/5



Enable



Disable (*)

Transmit Check Character



Enable (*)



Disable

Truncate Leading Digit



Enable



Disable (*)

UPC-E Convert to UPC-A



Enable



Disable (*)

Group 16-5: ISBN/ISSN



ENTER GROUP



EXIT



Disable (*)

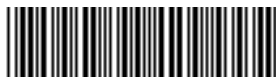


Enable

Group 17: General Parameters



ENTER GROUP



EXIT



Upper Case



Lower Case (*)



Universal



ALT Mode



Buzzer Pitch
(Default : 21)



Buzzer Duration
(Default: AA)

Buzzer Pitch & Buzzer Duration Setting:

Scan Enter Group 17 Label -->

Scan Buzzer Pitch or Buzzer Duration Label -->

Scan Two Digit Labels in Table-Hex -->

Scan Confirm Label in Table-Hex -->

Scan Exit Label

Power Up Beeping



Enable (*)



Disable



Turbo (*)



Normal

Group 18: Code ID Setting



ENTER GROUP



EXIT



CODE 39/CODE 32



INDUSTRIAL 2 OF 5



CHINA POSTAGE



CODE 93



MSI/PLESSEY



EAN-13



UPC-E



CODE 4



INTERLEAVED 2 OF 5



MATRIX 2 OF 5



CODE 128



CODE 11



CODABAR/NW7



EAN-8



UPC-A

Note: Refer to ASCII Table, scan two hexadecimal labels in Table Hex to represent one character

Group 19: WAND Type Parameters



ENTER GROUP



EXIT



BAR=LOW



BAR=HIGH(*)

Scan Speed



Low (*)



Lowest



Highest



High

Data Format



Transmit in Normal Format (*)



Transmit in Code 128 Format



Transmit in Code 39 Format

Group 20-1: (Magnetic Parameters)



ENTER GROUP



EXIT



Enable (*)



Disable

Track Order



Track 1/3/2



Track 1/2/3 (*)



Track 2/3/1



Track 2/1/3



Track 3/1/2



Track 3/2/1

Note: Options marked by () are only available upon request

Group 20-1: (Magnetic Parameters)



ENTER GROUP



EXIT

Track Selection



Track 1 only



Track 3 only



Track 2 and 3



Track 1&2&3 any (*)



Track 2 only



Track 1 and 2



Track 1 and 2 and 3



ISO (*)



(JIS-2)

Note: Options marked by () are only available upon request

Group 20-2: (Magnetic Parameters)



ENTER GROUP



EXIT

**Start Sentinel:
(SS)**



Tk2 Default: ;



Tk1 Default : %



Tk3 Default: ;

**End Sentinel:
(ES)**



Tk1&2&3 Default: ?

DLE:



Tk2 Default: Null



Tk1 Default : Null



Tk3 Default: Null

STX:



Tk1&2&3 Default: Null

Magnetic Output Data Format:

STX - Tk1 Start Sentinel - Tk1 Data - End Sentinel - Tk1 - DLE

STX - Tk2 Start Sentinel - Tk2 Data - End Sentinel - Tk2 - DLE

STX - Tk3 Start Sentinel - Tk3 Data - End Sentinel - Tk3 - DLE

Note: Options marked by () are only available upon request

Group 21: (Function Key Emulation)



ENTER GROUP



EXIT



Enable

Enable Function Key Emulation:

Scan Enter Group 21 Label -->

Scan Enable Label -->

Scan Exit Label



Disable (*)

1:

To concatenate a function key with input data, please refer to Function Key Table for its hexadecimal representation.

For Example:

Preamble data with F1

Scan Enter Group 6 Label -->

Scan Preamble Label -->

Scan Label 0 and 1 respectively in Table-Hex (Page 45) -->

Scan Confrim Label in Table-Hex (page 45) -->

Scan Exit Label

Function Key Table (Full ASCII Code 39 Table)

F1:01	F2:02	F3:03	F4:04
F5:05	F6:06	F7:07	F8:08
F9:09	F10:0A	F11:0B	F12:0C
Enter:0D	Tab:0E	BS:0F	Up:10
Down:11	Left:12	Home:14	End:15
PgUp:16	PgDn:17	Ins:18	Del:19
Esc:1B	Right:13	S-Tab:1C	

2:

To scan a function key barcode label, Full ASCII must be enabled. Please refer to Full ASCII Code 39 Table to produce the function key barcode label.



Full ASCII Code 39 Enable

Function Code for PC XT/AT



F1 (\$A)



F2 (\$B)



F3 (\$C)



F4 (\$D)



F5 (\$E)



F6 (\$F)



F7 (\$G)



F8 (\$H)



F9 (\$I)



F10 (\$J)



F11 (\$K)



F12 (\$L)

Function Code for PC XT/AT



Enter (\$M)



Tab (\$N)



BS (\$O)



Up (\$P)



Down (\$Q)



Left (\$R)



Right (\$S)



End (\$U) (\$B)



PgUp (\$V)



PgDn (\$W)



Ins (\$X)



Del (\$Y)



Esc (%A)



Home (\$T)

Table-Hex : HEXADECIMAL



0



2



4



6



8



A



C



E



Confirm



1



3



5



7



9



B



D



F

ASCII TABLE

L/H	0	1	2	3	4	5	6	7
0	NULL	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

Hexadecimal-Decimal Conversion Table

H/I	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

For Example:

Hexadecimal

56 ^ H:5 L:3

D5 ^ H:D L:5

Decimal

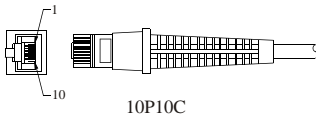
83

213

PIN ASSIGNMENTS

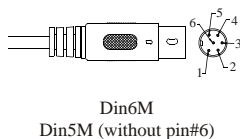
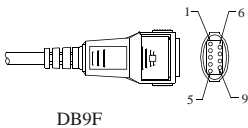
10 Pin Modular Plug

RJ-45 Male 10P10C	TTL	WAND	KB	RS-232	KB→USB
1	×	×	×	RTS	×
2	×	×	×	CTS	×
3	PWR-CTL	×	×	TX	×
4	GND	GND	GND	GND	GND
5	GOOD-READ	GOOD-READ	PC-DATA	×	PC-DATA
6	DATA	DATA	PC-CLK	×	PC-CLK
7	VCC	VCC	VCC	VCC	VCC
8	SW-DET	×	KB-CLK	×	×
9	S.O.S	×	KB-DATA	×	×
10	×	×	×	RX	×



TTL Signal Output

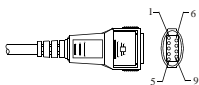
Function	DB9F	Din6M/5M(240°)
Start of Scan	1	6
Signal Data	2	2
Led Indicator	3	---
Trigger	5	5
Power Enable	6	4
GND	7	3
VCC+5V	9	1



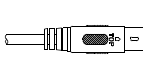
PIN ASSIGNMENTS

Wand Emulation Signal Output

Function	DB9F	Din5M (180°)	Din6M/Din5M (240°)
Signal Data	2	1	2
GND	7	2	3
VCC+5V	9	3	1



DB9F



Din5M (180°)



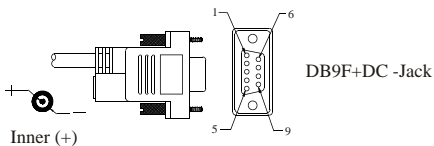
Din6M
Din5M (without pin#6)

Note : "F" stands for a female connector, while "M" stands for a male connector.

RS-232 Signal Output

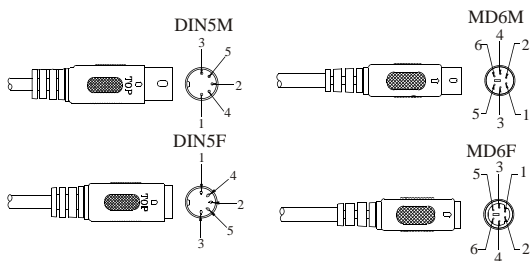
Function	DB9F+DC (or without DC)
GND	5
CTS	7
RTS	8
RX	3
TX	2
VCC+5V	9

Note : For PC applications, a cable with DC power jack is required to accept external power input.



Keyboard Signal Output

Funcion	Din5F	Din5M	Mini-Din6M	Mini-Din6F
GND	4	4	3	3
PC_Data	---	2	1	---
PC_CLK	---	1	5	---
Vcc+5V	5	5	4	4
KB_CLK	1	---	---	5
KB_Data	2	---	---	1



USB Signal Output

FUNCTION	USB-A
GND	4
Vcc	1
D+	3
D-	2

