Barcode scanner

LBR100

User’s and installation manual

Note

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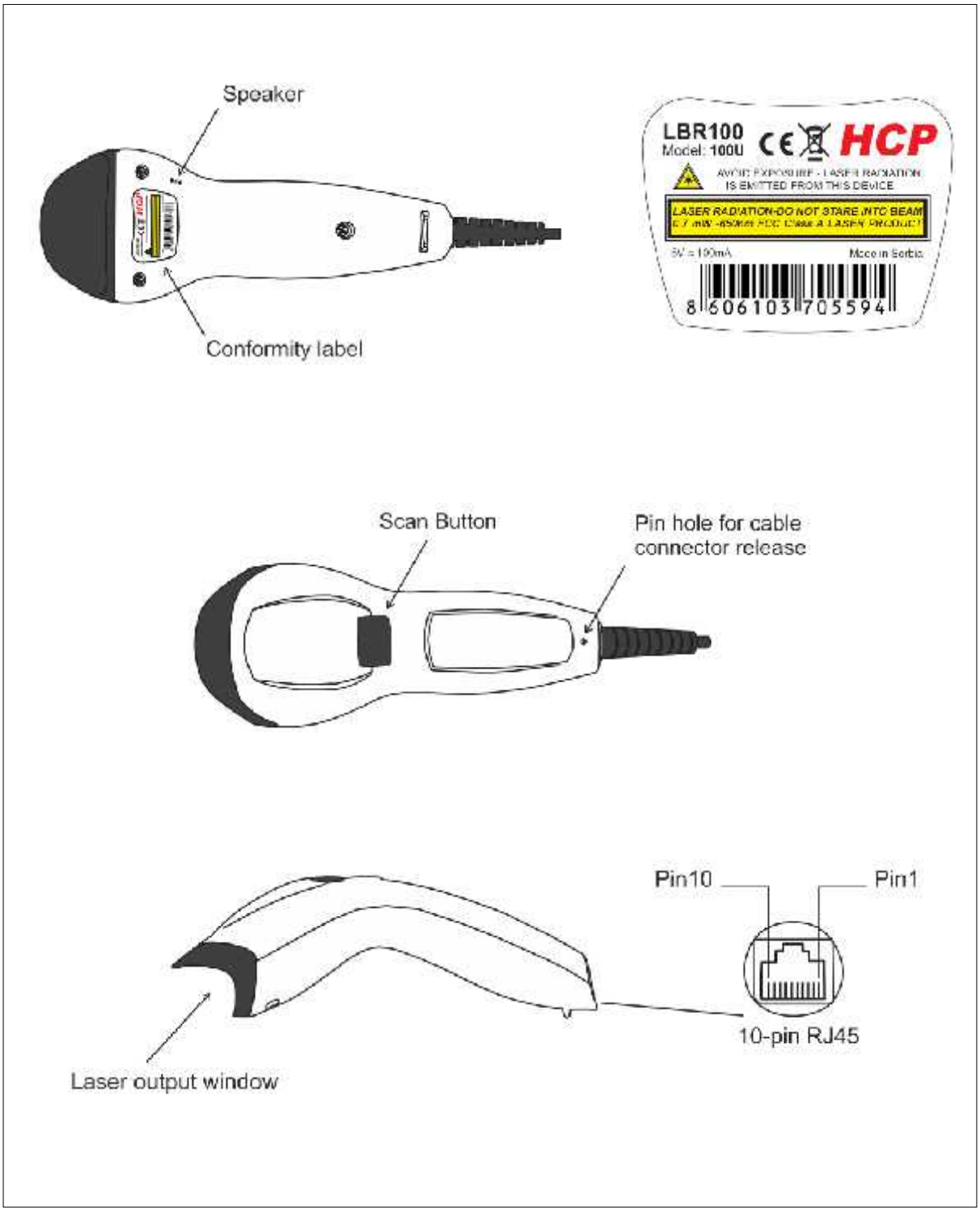
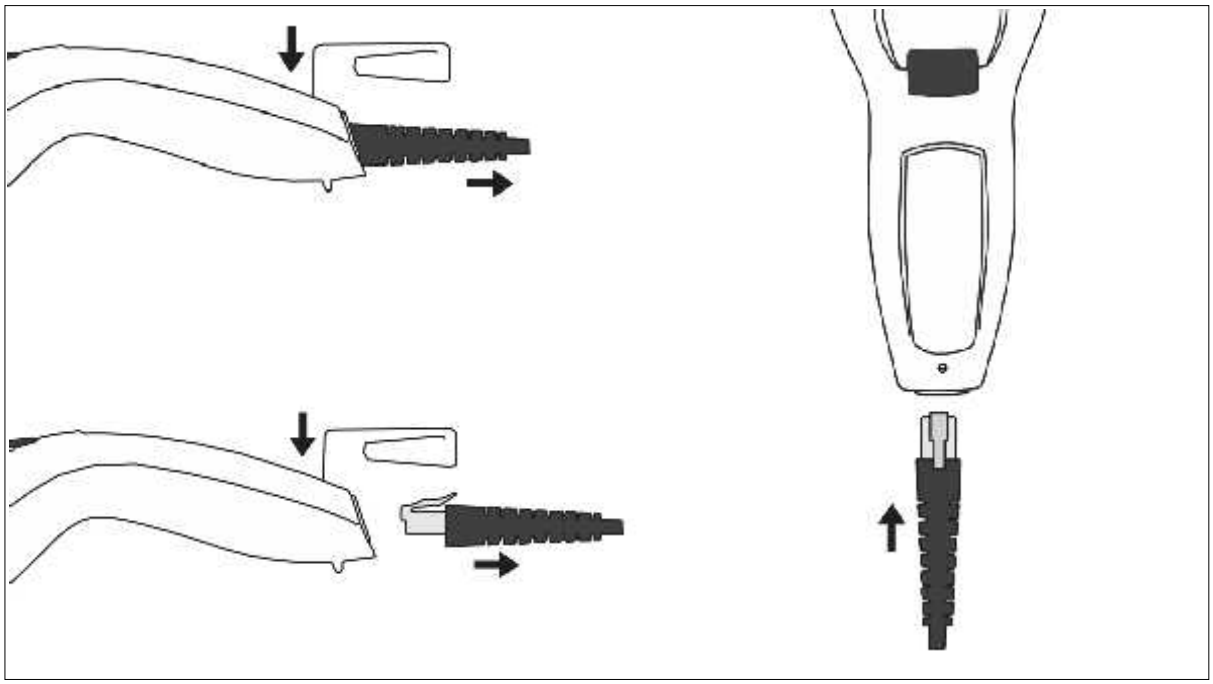
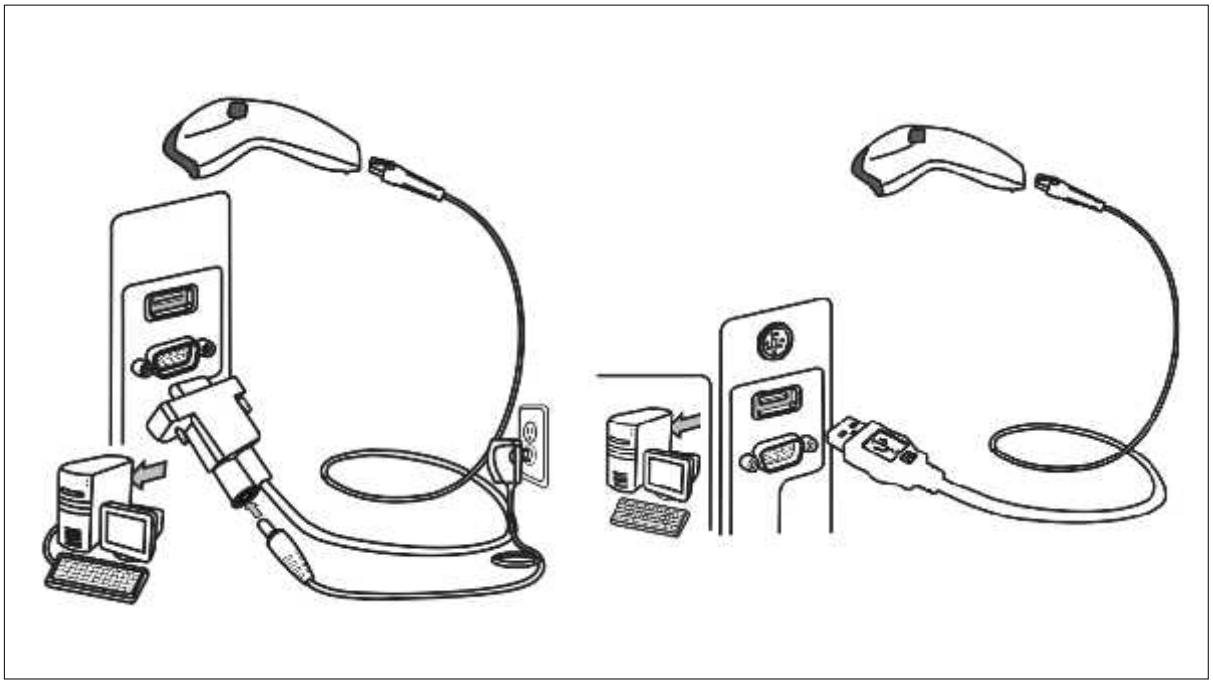
Content

Device overview



Cable installation i removal





RS - 232C Serial COM Port

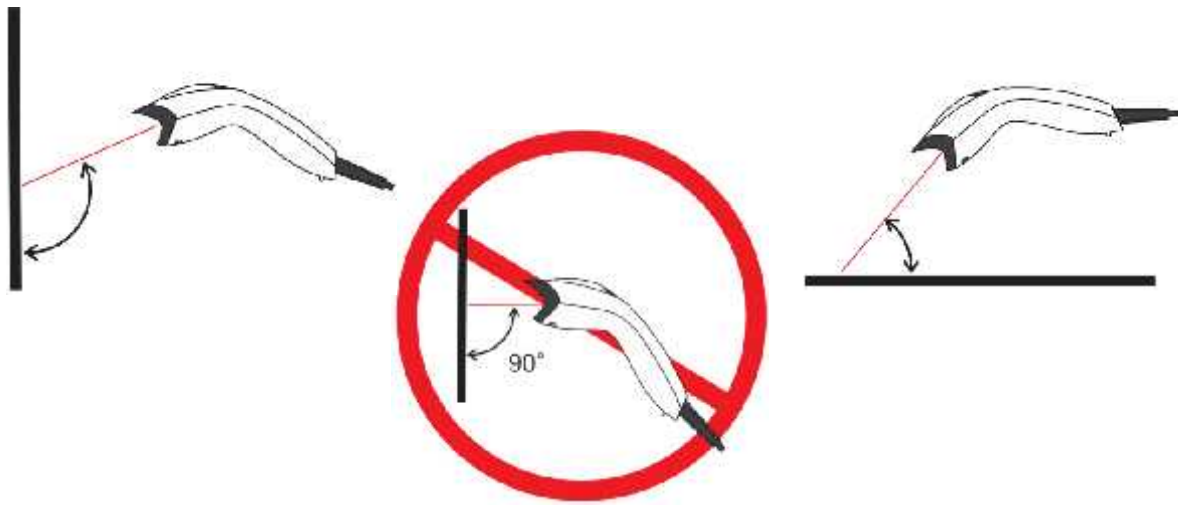
USB Port

Technical specification

Light Source:	Visible Laser Diode 650nm
Scan Precision:	0.10mm (4mil)
Scan Speed:	100 times/second
Scan Depth of field :	25-250mm (0.33.PCS90%)
Scan Angle:	□ 45º
Elevation Angle:	□ 60º
Input Voltage:	5V DC
Working electricity:	100mA
Humidity:	5% to 95% (With condesation)
Light intensity:	Daylight, 7000LUX
Minimum printing contrast:	30% UPC/EAN 100%

Scanning tips

Figure illustrates some tips to help get the best scanning results:
1. The scanner must be pointed at a slight angle to the bar code. Do not hold the scanner perpendicular to the bar code.
2. The laser beam must cross the entire bar code. The scanner cannot correctly read if the entire bar code is not scanned.



1. Cable connection

*USB interface scanner installation

Make sure that the scanner has the correct cable for your system. Connect the cable to the USB port of the PC or POS.

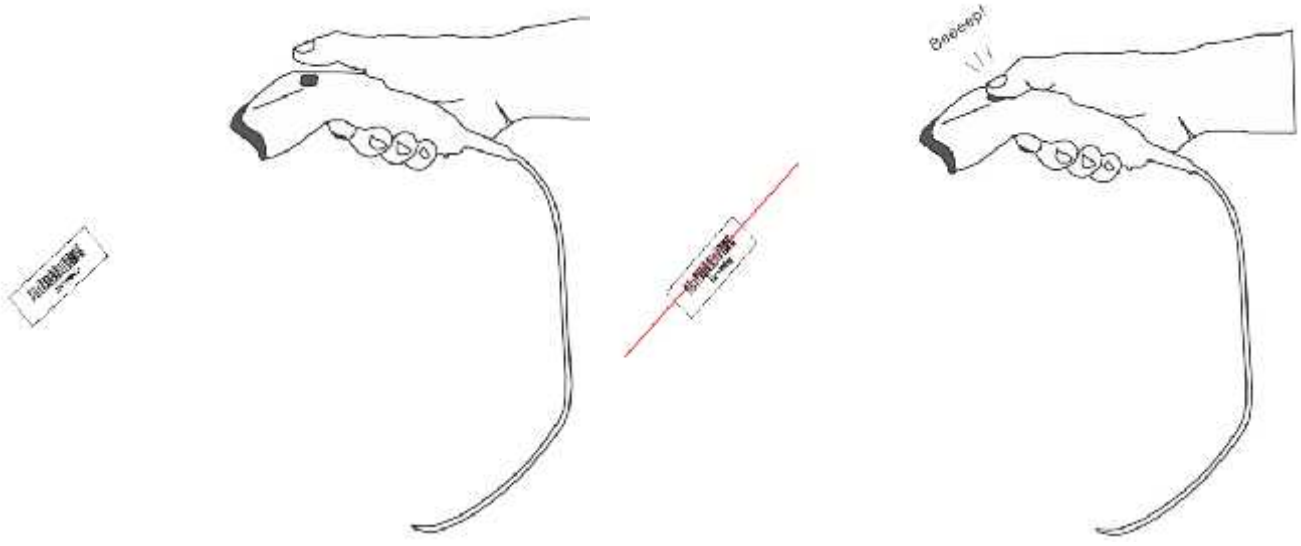
*RS-232C interface scanner installation

Make sure that there is a power supply to the scanner (If necessary). Some devices deliver power through serial port using SUB D9 connector on 9th pin (Chapter 20)
Connect the cable to the RS-232C port of the PC or POS. Make sure that host device should have communication program (Xcom, procomm, Hyperterminal) before transmitting data.

Note: Use only connection cables that are packed with LBR 100 scanner.

2. Scanner handling

Manual activation. Aim the scanner at the bar code. Press and hold the button down to activate scan and transmit the bar code. After successful reading of bar code audible feedback will indicate status, along with the light indication.



Right

Wrong

3. Setup procedure

The general procedure to program is as follows:

Scan the command symbol “Program”,
Scan one or more parameters,
Scan the command symbol “End” to close procedure.

Example 1. To set RS 232 parameters 9600,N,8,1 (Page 7 - 9)

Scan the barcode “Program”,
Scan “9600” “N” ”8” “1”,
Scan “End”.

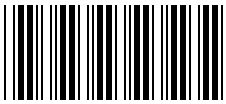
Example 2. To set additional digit for UPC/EAN (Page 28)

Scan “Program”,
Scan “Addenda 5 digit Enable”,
Scan “End”.

Program

3. Default setting

(*) denotes default setting



Default

4. Interface selection

USB *

RS – 232C

Wand Emulation

Reserved1

Reserved2

Reserved3

Reserved4

End

5. Keyboard interface

5 - 1. Device selection

IBM PC/XT

IBM PC/AT*

IBM PC/PS2

LAPTOP

5 - 2. Function code selection

Function key On*

Function key Off

Lower Case*

Upper Case

Num-Lock Off*

Num-Lock On

Program

5 - 3. Language

US*

German

French

UK

Swiss

Swedish

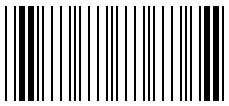
Japanese

Spanish

Norwegian

Italian

Universal


End

5 - 4. Scancode delay

 AT delay

 XT delay

Example: If scanner needs 15 ms of delay, scan “Program” “AT Delay” “1” “5” “AT Delay” “End”

 Keycode Fast Transmission*

 Keycode Slow Transmission

6. RS-232 Setting

6 - 1. Baud rate

 300 (600)

 1200

 2400

 4800

 9600*

 19200

 38400

Program

6 - 2. Parity

 Even

 Odd

 None*

6 - 3. Data bits

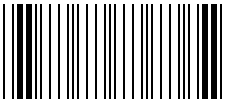
 7Bits

 8Bits*

6 - 4. Stop bit

 1Bit*

 2Bits



End

6 - 5. Hand shaking

 ACK/NAK On

 ACK/NAK Off*

 RTS/CTS On

 RTS/CTS Off*

 Wait Timeout

Example: If delay time of 30ms, is required, scan “Program” “Wait timeout” “3” “0” “Wait timeout” “End”.

Program

7. Wand emulation

7 - 1. Output level

Transmit Wand Emulation as Code 39*

7 - 2. Output polarity

White High

Black High*

7 - 3. Scan speed

Low(2ms)

Medium (1ms)

Fast (0,5ms)*

7- 4. Check digit

Check digit On

Check digit Off *

End

8. Data Format

8 - 1. Terminator

TAB(CR/LF)

Enter(CR)*

Return(LF)

None

8 - 2. Code ID

None*

User defined

Default

Example: If barcode ID for code39 (standard) defined as “U”, scan “Program” ”User defined” “Define Code ID” “Code39(standard)” “U” “Code39(standard)” “Define Code ID” “End”.

Program

8 – 3. Code ID Setting

 Define Code ID

 Code 39(M) (Full ASCII)

 Code 39(M) (Standard)

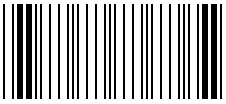
 EAN – 13(F)

 UPC – A(A)

 EAN – 8(F)

 UPC – E (E)

 Code 93(L)


End

 Codabar (N)

 Code 128 (K)

 I 2 of 5 (I)

 S 2 of 5 (H)

 D 2 of 5 (H)

 M 2 of 5 (H)

 China postage (C)

 Code 3 of 5 (P)

 MSI/Plessey (O)

 Code 11 (J)

Program

8 - 4. Custom setting

 Single edit mode

 Select from left

 Select from right

 Custom mode Enable

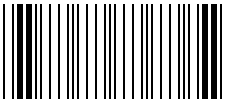
Example: If 5 digits from the left are required, scan “Program” “Single edit mode” “Select from left” “0” “5” “Select from left” “Single edit mode” “Custom mode enble” “End”.

 Custom mode Disable*

 Full data editing Disable

 Full data editing Enable

Example: If 5 digits from the second position are required scan as follows, “Program” “Full editing Enable” “0” “2” “.” “0” “5” “Full editing Enable” “Custom modem Disable” “End”.


End

8 - 5. Data length


Exclude*


Include

8 - 6. Preamble/Postamble


Preamble


Postamble

Example: If preamble “SN” before data is required, scan “Program” “Preamble” “S” “N” “Preamble” “End”.


Reserved1


Reserved2


Reserved3

Program

9. Barcode setting

9 - 1. Code39

Code 39 Enable*

Code 39 Disable

Full ASCII Code 39*

Standard Code 39

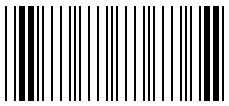
Code 32 Enable

Code 32 Disable*

Verify Check & Transmit

Verify Check & Not Transmit

Not Verify Check*



End

9 - 2. Interleaved 2 of 5

 I 2 of 5 Enable*

 I 2 of 5 Disable

 Fix Length On

 Fix Length Off*

 1st Dig. Suppress

 Last Dig. Suppress

 No Suppress*

Example: If barcode length needs to be fix, scan “Program“ “Fix Length On“ “End“ and scan barcode that you apply twice.

Programming

Program

 I 2 of 5 Verify Check & Transmit

 I 2 of 5 Verify Check & Not Transmit

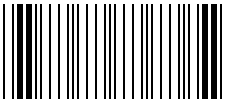
 I 2 of 5 Not Verify Check*

 Code 3 of 5 Enable

 Code 3 of 5 Disable*

 Code 3 of 5 Transmit Check

 Code 3 of 5 Not Transmit Check*



End

9 - 3. Standard 2 od 5

 S 2 of 5 Enable

 S 2 of 5 Disable*

 Fix Length On

 Fix Length Off*

 Verify Check & Transmit

 Verify Check & Not Transmit

 Not Verify Check*

Program

9 - 4. Industrial 2 od 5

 D 2 of 5 Enable

 D 2 of 5 Disable*

 Fix Length On

 Fix Length Off*

 Verify Check & Transmit

 Verify Check & Not Transmit

 Not Verify Check*

End

9 - 5. Matrix 2 od 5

M 2 of 5 Enable

M 2 of 5 Disable*

Fix Length On

Fix Length Off*

Verify Check & Transmit

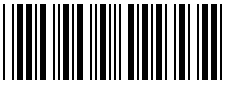
Verify Check & Not Transmit

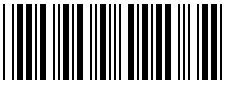
Not Verify Check*

Program

9-6. China postage

 China postage Enable

 China postage Disable*

 Fix Length On

 Fix Length Off*

 Verify Check & Transmit

 Verify Check & Not Transmit

 Not Verify Check*

End

9 - 7. Code 128

Code 128 Enable*

Code 128 Disable

EAN - 128 Enable

EAN - 128 Disable*

EAN - 128 Separator set

Check digit Enable*

Check digit Disable

9 - 8. Code 93

Code93 Enable*

Code 93 Disable

Program

9 - 9. UPC – A

 UPC – A Enable*

 UPC – A Disable

 Leading Digit On*

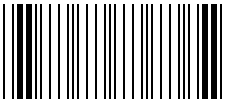
 Leading Digit Off

 Add Leading Zero On

 Add Leading Zero Off*

 Transmit Check Digit*

 Not Transmit Check Digit


End

9 - 10. UPC - E


UPC - E Enable*


UPC - E Disable


Leading Digit On*


Leading Digit Off


Transmit Check Digit*


Not Transmit Check Digit


Zero Expansion On


Zero Expansion Off*

Program

9 - 11. EAN - 8

EAN – 8 Enable*

EAN – 8 Disable

Leading Digit On*

Leading Digit Off

Transmit Check Digit*

Not Transmit Check Digit

End

9 - 12. EAN - 13

EAN - 13 Enable*

EAN - 13 Disable

Leading Digit On*

Leading Digit Off

Transmit Check Digit*

Not Transmit Check Digit

ISBN Enable

ISBN Disable*

Program

9 - 13. UPC / EAN Supplements

 Addenda 2 Digit Enable

 Addenda 2 Digit Disable*

 Addenda 5 Digit Enable

 Addenda 5 Digit Disable*

 ISBN Addenda Enable

 ISBN Addenda Disable*

 Space Separator Enable

 Space Separator Disable*

 Transmit if Present

 Must Present

End

9 - 14. Codabar

Codabar Enable*

Codabar Disable

Not Transmit Start & Stop

Transmit Start & Stop ABCD*

Transmit Start & Stop TN*E

Verify check & Transmit

Verify check & Not Transmit

Not Verify check*

Program

9 - 15. MSI / Plessesy

 Code MSI Enable*

 Code MSI Disable

 Code Plessey Enable*

 Code Plessey Disable

 Transmit Check Digit

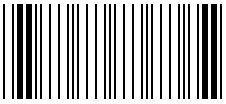
 Not Transmit Check Digit*

 MSI Check Digit MOD 10*

 MSI Check Digit MOD 11

 MSI Check Digit MOD 1010

 MSI Check Digit MOD 1110



End

10. Reading mode

Trigger On/Off *

Normal Auto-Trigger

Light Toggle – Auto Trigger

Object Detection

Light flashing

Twice checking

Testing

11. Redundancy

None*

2 Times

3 Times

4 Times

Program

12. Beep tones

 None

 Low

 Medium

 High*

 Beep duration short

 Beep duration medium

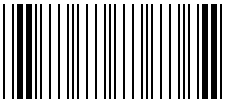
 Beep duration long

 Beep tone adjust

Example: If beep tone of 230us is required, scan “Program“ pa “ Beep tone adjust“ “2“ “3“ “ Beep tone adjust“ “End“.

 Power on beep Enable *

 Power on beep Disable



End

13. Intercharacter delay

 None*

 1 ms

 5ms

 10ms

 20ms

 50ms

 100ms

Program

14. Intermessage delay

 None *

 50ms

 200ms

 500ms

 1sec

 2sec

End

15. Set max. & min. Length

Set Max & Min

Code 39 (1~64)

Code 128 (4~64)

Code 93 (4~64)

Codabar (4~64)

I 2 of 5 (4~64)

S 2 of 5 (4~64)

D 2 of 5 (4~64)

Example: If max Length of code 39 isto be set 15 digits, scan “Program“ “Set Max & MIn“ “Code39(1~64)“ “Max“ “1“ “5“ “Max“ “ Set Max & Min“ “End“.

Program

 M 2 of 5 (4~64)

 Code 3 of 5 (6~7)

 MSI/Plessey (4~64)

 Code 11 (4~64)

 China postage (6~64)

 Max

 Min

End

16. Barcode space setting

6X*

8X

10X

12X

14X

15X

Program

17. Minimum bar numbers

 5

 10

 15*

 20

 25

 30

 40

 50

End

18. Show status

Display the edition Information

(If want to display the edition Information, please scan “Program“ “Display the edition Information“ “End“)

Reserved1

Reserved2

Reserved3

Reserved4

Reserved5

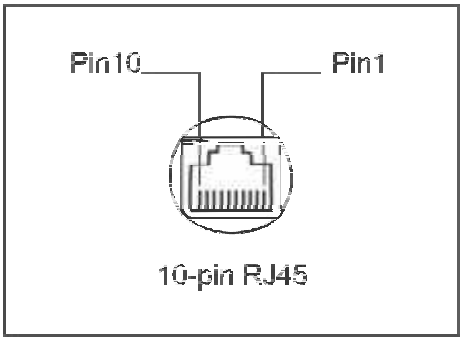
Reserved6

Reserved7

19. Appendix

19 – 1. Pin assignment

RJ45 connector



RJ45 pins	Function
1	Barkod Tx (TTL)
2	Barkod Rx (TTL)
3	--
4	GND
5	PC D+ (USB)
6	PC D- (USB)
7	+5V DC
8	--
9	--
10	--

Appendix

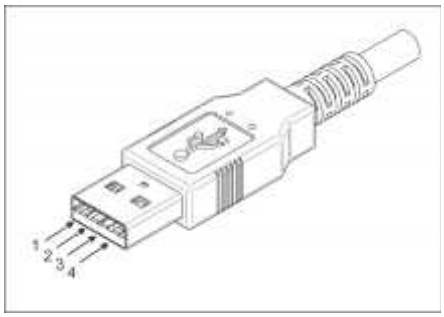
Note:

For LBR100 must only use specificated cabels for connecting which are inside the package. LBR100U – USB A tip to RJ45

LBR100R – SUB DB9 tip na RJ45 with dc connector

Connector for external supply (Regulated +5Vdc / 300mA)

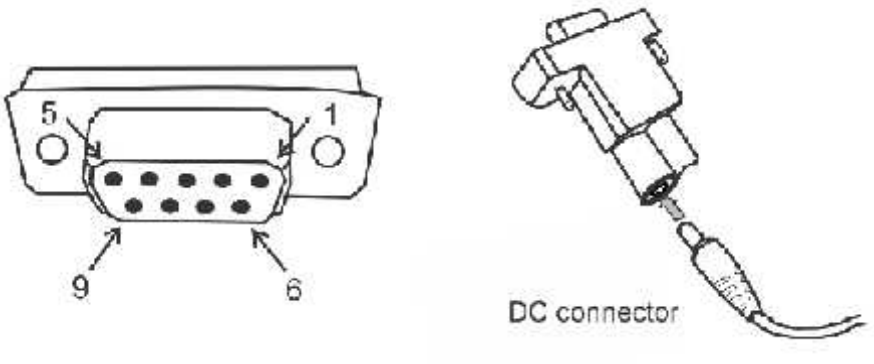
USB A tip



USB pins	Function
1	Vbus
2	D-
3	D+
4	GND

Appendix

SUB DB9 connector



SUB D9 pins	Function
1	--
2	PC Rx
3	PC Tx
4	--
5	GND
6	--
7	--
8	--
9	+5V DC

Note:

Power supply of Bacode Scanner LBR100, AC/DC adapter +5Vdc/300mA, plug on DC connector which is placed on SUB DB9 connector housing. Pin 9 on SUB DB9 connector give's +5V. Some Electronic cash registers provide +5V on pin 9 of the serial port connector, in that case the AC/DC is not needed.

Appendix

20 – 2. 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

Appendix

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

20 – 3. FULL ASCII TABLE

!

“

#

$

%

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Appendix

0

1

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?

Appendix

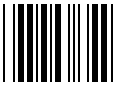
@

A

B

C

D



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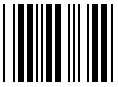

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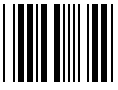

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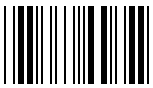

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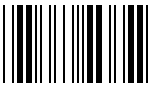


t

u

v

w

x

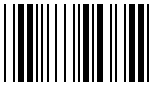
y

z

{

|

}



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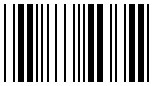


DEL

Appendix

NUL

SOH

STX

ETX

EOT

ENQ

ACK

BEL

BS

HT

LF

VT

FF

CR

SO

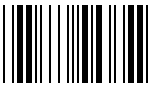
SI

Appendix

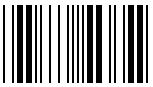
DLE

DC1

DC2



DC3



DC4

NAK

SYN

ETB

CAN

EM

SUB

ESC

FS

GS

RS

US

SP

F1(@A)

F2(@B)

F3(@C)

F4(@D)

F5(@E)

F6(@F)

F7(@G)

F8(@H)

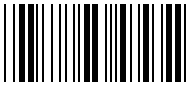
F9(@I)

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)

Return(&O)

CTRL ON(&P)

CTRL OFF(&Q)

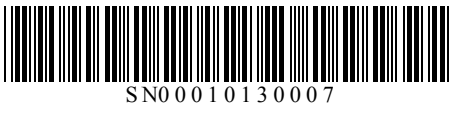
ALT ON(&R)

ALT OFF(&S)

SHIFT ON(&T)

SHIFT OFF(&U)

Sample bar Codes



Code 39

Codabar

Interleaved 2 of 5

MSI/Plessey

UPC – A with 5

EAN – 13 with 5

HCP d.o.o.

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