

USER'S MANUAL

FOR

ZB-2200A SERIES

ZB-1200R/ 2200R

RS- 232C SERIAL INTERFACE

ZB-1200K/ 2200K

**KEYBOARD EMULATION
INTERFACE**

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The manual can be used as keyboard emulation, RS- 232C serial interface, and CMOS serial interface.

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INTRODUCTION

The series CCD scanners can be configured by scanning a series of programming bar code labels. This allows the decoding option and interface protocols to be tailored to a specific application. The configuration is stored in non-volatile memory and cannot be changed by removing power from the scanner.

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

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

PROGRAMMING OPTIONS

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

DEFAULT PARAMETERS

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

DEFAULT VALUES OF OPERATING PARAMETERS

Function	Default Values
Scanning Mode Selection	Trigger Mode
Header And Trailer	None
Inter-Message Delay	None
Inter-Character Delay	None
Message/Block Mode Selection	Message
Send Command In Block Mode Communication	Carriage Return
Good Read Beeper Tone Selection	1KHz/ 60 mSec
Data Terminator	Enter/ Carriage Return

DEFAULT VALUES OF KEYBOARD EMULATION PARAMETERS

Function	Default Values
Key Board Type Selection	IBM PC/AT USA
Message Suffix	Enter/ Carriage Return

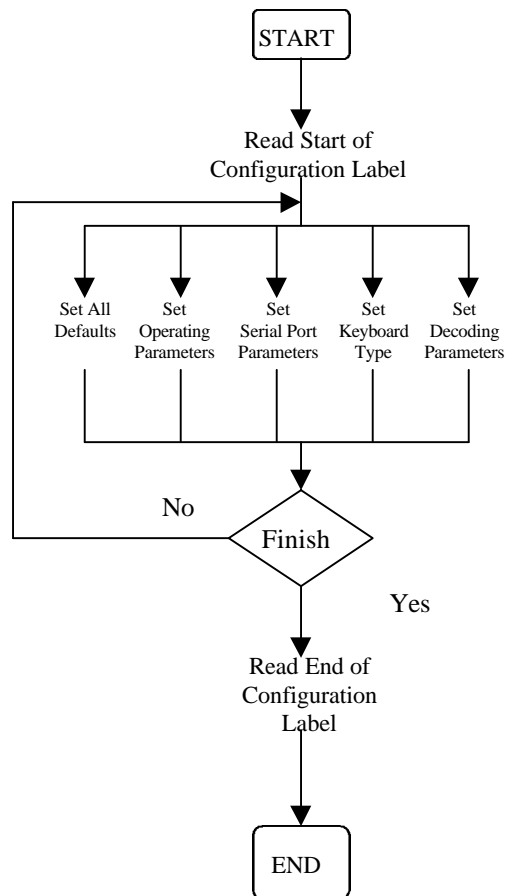
DEFAULT VALUES OF RS- 232C SERIAL COMMUNICATION PARAMETERS

Function	Default Values
Handshaking Protocol	None
ACK/NAK Response Time Setting	None
Baud Rate	9600
Data Bit	8
Stop Bit	1
Parity	Mark (None)
Message Suffix Selection	Carriage Return
Code Identifier Transmitting	Disable
Code 39 Bar Code Identifier Code	M
ITF 2 of 5 Bar Code Identifier Code	I
STD 2 of 5 Bar Code Identifier Code	H
UPC-E Bar Code Identifier Code	E
UPC-A Bar Code Identifier Code	A
EAN-13 Bar Code Identifier Code	F
EAN-8 Bar Code Identifier Code	FF
Codabar Bar Code Identifier Code	N
Code 128 Bar Code Identifier Code	K
Code 93 Bar Code Identifier Code	L
Post 2 Of 5 Bar Code Identifier Code	O

DEFAULT VALUES OF DECODING PARAMETERS

Function		Default Value
Reading Codes Selection	Code 39	Enable
	ITF 2 of 5	Enable
	STD 2 of 5	Enable
	UPC/EAN/JAN	Enable
	Codabar	Enable
	Code 128	Enable
	Code 93	Disable
	Post 2 of 5 (Option)	Disable
Code 39	Italian Pharmac	Disable
	Codes	Standard
	Start/ Stop Character	Not Transmit
	Check Digit	Disable
Interleaved 2 of 5	Concatenation	Disable
	Length	10 Digits Fixed
STD 2 of 5	Check Digit	Disable
	Length	10 Digits Fixed
UPC/EAN/JAN	Format	All
	Addendum	Disable
	UPC-E= UPC-A	Disable
	UPC-A= EAN-13	Disable
	UPC-A Leading Digit	Transmit
	UPC-A Check Digit	Transmit
	UPC-E Leading Digit	Not Transmit
	UPC-E Check Digit	Not Transmit
	EAN-13 Check Digit	Transmit
	EAN-8 Check Digit	Transmit
Codabar	Start/ Stop Character	A,B,C,D
	FNC 2 Concatenation	Disable
Code 128	Check Digit	Calculate But Not Transmit
	Length	11 Digits Fixed
Post 2 of 5	Check Digit	Calculate and Transmit
	Transmit "A"	Disable

PROGRAM PROCEDURE USING BAR CODE MENUS





Start of Configuration

- The reading of this code turns all the parameters back to default values.
- When you intend to return your scanner to the default parameters, scan the "RESET" label first. Do not scan "Start of Configuration"!



RESET

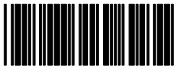
SCANNING MODE SELECTION



Trigger Mode



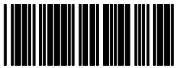
Auto Scan Mode



Repeat Mode



Alternate Mode



Momentary Mode



Testing Mode

HEADER AND TRAILER



Header



Trailer



Set

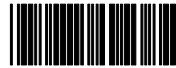
INTER-MESSAGE DELAY



Enable



Disable



100 mSec

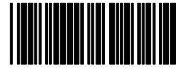


500 mSec

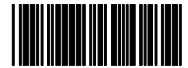


1 Second

INTER- CHARACTER DELAY



None



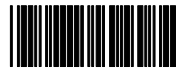
10 mSec



20 mSec



50 mSec



250 mSec



End of Configuration



Start of Configuration

MESSAGE/ BLOCK MODE SELECTION



Block



Message

SEND COMMAND IN BLOCK MODE COMMUNICATION



Store



Set

GOOD READ BEEPER TONE SELECTION



2 KHz/ 60 mSec



1 KHz/ 60 mSec



2 KHz/ 120 mSec



1 KHz/ 120 mSec



2 KHz/ 200 mSec



1 KHz/ 200 mSec



Disable

RS- 232C SERIAL COMMUNICATION PARAMETERS SETTING

HANDSHAKING PROTOCOL



None



RTS/ CTS



ACK/ NAK



Xon/ Xoff

ACK/NAK RESPONSE TIME SETTING



100 mSec



2 Sec



200 mSec



3 Sec



300 mSec



5 Sec



End of Configuration



Start of Configuration

ACK/NAK RESPONSE TIME SETTING (Cont' d)



500 mSec



Infinity



1 Sec

BAUD RATE



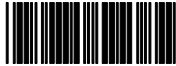
19200



9600



4800



2400



1200



600

DATA BIT

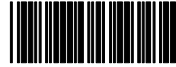


7

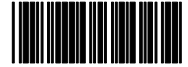


8

STOP BIT



1

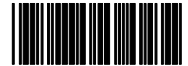


2

PARITY



Even



Odd



Mark (None)



Space

MESSAGE SUFFIX (FOR RS-232C ONLY)



None



ETX



Hor. Tab



EOT



End of Configuraton



Start of Configuration

MESSAGE SUFFIX (FOR RS-232C ONLY)

(Cont' d)



Line Feed



CR/ LF



Carriage Return

BAR CODE IDENTIFIER CODE ENABLE



Enable



Disable

BAR CODE IDENTIFIER CODE SETTING



UPC- E



UPC- A



EAN-13



EAN-8



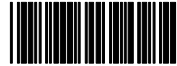
Standard 2 of 5



ITF 2 of 5



Codabar



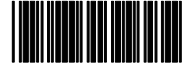
Code 128



Set



Code 39

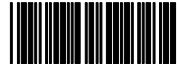


Post 2 of 5

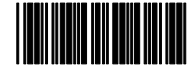


Code 93

KEYBOARD LANGUAGE AND TYPE SELECTION



IBM XT USA



IBM AT USA



IBM XT Germany



IBM AT Germany



IBM XT French



IBM AT French



End of Configuration



Start of Configuration

KEYBOARD LANGUAGE AND TYPE SELECTION (Cont' d)



IBM XT Italian



IBM XT Spanish



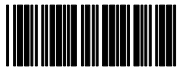
IBM XT Swedish



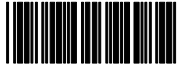
IBM XT UK



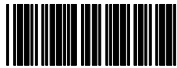
NEC 286/ 386 PC



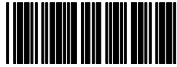
IBM 3472/ 3477 Terminal
(For Asian Area Only)



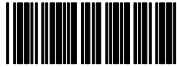
IBM AT Italian



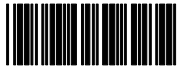
IBM AT Spanish



IBM AT Swedish



IBM AT UK



IBM 5550 Terminal



IBM 3472/ 3477 Terminal

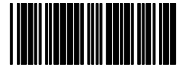


IBM 3196 Terminal



IBM PS2/ 30

MESSAGE SUFFIX (FOR KEYBOARD EMULATION USE)



None



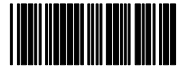
Field Exit



Hor. Tab



Field Advance

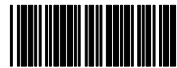


Enter



Return

READING CODES SELECTION



Code 39 Enable



Code 39 Disable



End of Configuration



Start of Configuration

READING CODES SELECTION (Cont' d)



Codabar Enable



Codabar Disable



UPC/ EAN/ JAN Enable



UPC/ EAN/ JAN Disable



ITF 2 of 5 Enable



ITF 2 of 5 Disable



STD 2 of 5 Enable



STD 2 of 5 Disable



Code 128 Enable



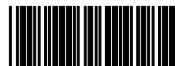
Code 128 Disable



Post 2 of 5



Post 2 of 5 Disable



Code 93 Enable



Code 93 Disable



Italian Pharmac Enable



Italian Pharmac Disable

CODE 39 PARAMETERS SETTING

CHARACTER SET



Standard Code 39



Full ASCII Code 39

START/STOP CHARACTER TRANSMISSION



Yes



No



End of Configuration



Start of Configuration

CODE 39 PARAMETERS SETTING (Cont' d)

CONCATENATION



On



Off

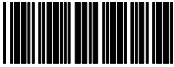
CHECK DIGIT



Calculate and Transmit



Calculate but not Transmit



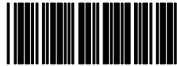
No

ITALIAN PHARMAC PARAMETERS SETTING

TRANSMIT "A" CHARACTER



Yes



No

INTERLEAVED 2 OF 5 PARAMETERS SETTING

LENGTH



Variable



Fixed



Set

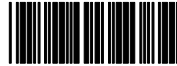
CHECK DIGIT



No



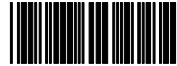
Calculate and Transmit



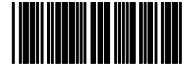
Calculate but not Transmit

POST 2 OF 5 PARAMETERS SETTING

LENGTH



Variable

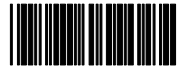


Fixed

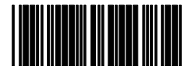


Set

CHECK DIGIT



Calculate and Transmit



Calculate but not Transmit



End of Configuration



Start of Configuration

STANDARD 2 OF 5 PARAMETERS SETTING

LENGTH



Fixed



Variable



Set

CHECK DIGIT



No



Calculate and Transmit



Calculate but not Transmit

UPC/EAN/JAN PARAMETERS SETTING

FORMAT



All



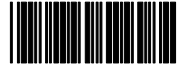
EAN- 8 and EAN- 13



UPC- A and EAN- 13



UPC- A and UPC- E



UPC- A



UPC- E



EAN-13



EAN-8

ADDENDUM



No



5 Characters

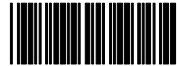


2 Characters

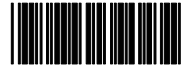


2 or 5 Characters

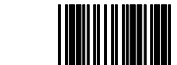
FORCE UPC- E TO UPC- A FORMAT



Yes



No



End of Configuration

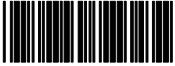


Start of Configuration

UPC/ EAN/ JAN PARAMETERS SETTING

(Cont' d)

FORCE UPC- A TO EAN- 13 FORMAT

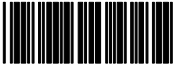


Yes



No

TRANSMIT UPC- A LEADING CHARACTER



Yes



No

TRANSMIT UPC- A CHECK DIGIT



Yes



No

TRANSMIT UPC- E LEADING CHARACTER

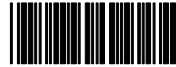


Yes



No

TRANSMIT UPC- E CHECK DIGIT



Yes



No

TRANSMIT EAN- 13 CHECK DIGIT

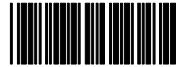


Yes



No

TRANSMIT EAN- 8 CHECK DIGIT



Yes



No

CODABAR/ MONARCH PARAMETERS SETTING

START/ STOP CHARACTER TRANSMISSION



No



A, B, C, D



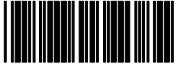
End of Configuration



Start of Configuration

CODABAR/ MONARCH PARAMETERS SETTING (Cont' d)

START/ STOP CHARACTER TRANSMISSION



DC1~ DC4



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

CODE 128 PARAMETERS SETTING

FNC 2 CONCATENATION

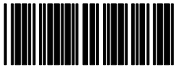


Enable

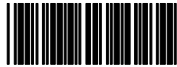


Disable

CHECK DIGIT



No



Calculate and Transmit



Calculate but not Transmit

BAR CODE LENGTH SETTING



Maximum



Minimum



Set

CAPITAL LOCK SETTING



On



Off

- You do not have to scan "Start of Configuration" in advance, when you intend to scan the label "Show Version."



Show Version

ISBN CODE SETTING



Enable

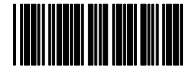


Disable

ISSN CODE SETTING



Enable



Disable



End of Configuration

APPENDIX A

CODE 39 FULL ASCII CODE TABLE

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

















APPENDIX A

CODE 39 FULL ASCII CODE TABLE

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

















APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
Start of Configuration		
		
NUL		LF
		
		
SOH		VT
		
	ACK	
		
STX		FF
		
	BEL	
		
ETX		CR
		
	BS	
		
EOT		SO
		
	HT	

















APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
SI		EM
		
	DC4	
		
DLE		SUB
		
	NAK	
		
DC1		ESC
		
	SYN	
		
DC2		FS
		
	ETB	
		
DC3		GS
		
	CAN	
<hr/>		
		
		End of Configuration

















APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
Start of Configuration		
		
RS		(
		
#		
		
US)
		
\$		
		
SP		*
		
%		
		
!		+
		
&		
		
"		,
		
.		

















APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
-		7
		
	2	
		
.		8
		
	3	
		
/		9
		
	4	
		
0		:
		
	5	
		
1		;
		
	6	
<hr/>		
		
		End of Configuration

















APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
Start of Configuration		
		
<		F
		
=	A	G
		
>	B	H
		
?	C	I
		
@	D	J
		
	E	

APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
K		U
		
	P	
		
L		V
		
	Q	
		
M		W
		
	R	
		
N		X
		
	S	
		
O		Y
		
	T	
		
		End of Configuration

APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

Start of Configuration		
Z		d
-	'	e
l	a	f
\	b	g
^	c	h










APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

i		s
n	t	
j	o	u
k	p	v
l	q	w
m	r	
<hr/>		
		End of Configuration














APPENDIX B

CODE 39 FULL ASCII BAR CODE TABLE

		
Start of Configuration		
		
x	~	
		
y	{	DEL
		
z		
		
	}	

APPENDIX C

FUNCTION KEY EMULATION

	
F1	F9
	
F2	F5
	
F3	F6
	
F4	F7
	
	F8
	
	F10
	
	F11
	
	F12
	
End of Configuration	



Start of Configuration

STD 2 OF 5 CONVERTS TO IATA



Enable



Disable



End of Configuration