Barcode Anything®
CCD and Wedge Wand

User's Guide

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THIS BARCODE ANYTHING® CCD AND WEDGE WAND USER'S GUIDE (PN 43997L) IS TO BE USED WITH THE FOLLOWING:

CCD MODEL# CF-2KBW
WEDGE WAND MODEL# CF-6W

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Chapter 1 — Introduction

General Introduction — CCD

CCD (Charged Coupled Device) readers are hand-held "NEAR CONTACT" scanners. CCDs scan automatically when approaching or pointing at a bar code label found on curved or irregular surfaces and perform especially well in high ambient light conditions. They are a cost-effective, effortless alternative to other scanning technologies.

Featuring state-of-the-art imaging technology, CCDs use the same sensor found in facsimile machines or video camcorders. The CCD images the bar code label, then converts the digital signals into data that the host computer can understand. By capturing the bar code image all at once, the CCD provides a fast, highly accurate read rate.

Miniature, surface mount electronics make up the CCD's solid-state construction. Because CCDs do not have any moving mechanical parts, they provide years of trouble-free operation.

General Introduction — Wedge Wand

The wedge wand reads by touching and scanning bar codes. Because of their size and ease of use, wedge wands are less expensive and lighter than any other bar code scanners. Scanning with the wedge wand is a simple matter of dragging the window (clear tip) of the wedge wand across the entire surface of the bar code, from beginning to end. Allow the tip of the wedge wand to touch the surface at a vertical or slight angle.

The wedge wand has been designed using the photo sensor principle. This model is a fully integrated module designed for applications requiring reflective sensing. The module contains a 655 nm visible LED emitter and a matched I.C. photo-detector.

The wedge wand can read at a fast, highly accurate rate and can read high density or any other bar codes on a flat, level surface.

Functionality

The CCD and wedge wand are pre-programmed and ready to use directly from the factory. No special programming or software is required prior to or following installation – you can simply take them out of the box and begin scanning and reading bar codes. Both are able to read Code 39 (standard or full ASCII), UPC/EAN/JAN (in all lengths and variations), Interleaved 2 of 5, Code 128, Codabar, MSI/Plessey, and Code 32.

Following installation and setup, as a bar code is scanned, its information will be decoded and "typed" into the computer at the cursor location as if the information were typed in using the keyboard. This process will occur whether you are at the DOS prompt or running word processing software.

Certain default settings are built into the CCD and wedge wand as you scan a bar code format. Should you wish to divert from these default settings, you can "program" the CCD and wedge wand to use other settings. This guide includes charts that can be used to configure the CCD and wedge wand should you want to read a code that is not included in the default settings

In most cases, it is not necessary to reprogram the CCD and wedge wand, but if you need to, detailed instructions are provided for you to make it as easy and painless as possible.

The CCD and wedge wand will NOT perform any database functions such as adding or removing inventory from your stock. The only function of the CCD and wedge wand is to read and interpret bar codes and "type" them into your computer.

Technical Data

Please refer to the following page for a listing of the main technical features of the CCD and wedge wand.

Main Technical Features

	CCD	Wedge Wand
Bar Code Width	80 mm	NA
Depth of Reading	0 to 25 mm	NA
Scan Rate	33 scans/sec	NA
CCD Resolution	2160 Pixels	NA
Images Sensor	High resolution Charged Coupled Devices (CCD)	NA
Light	Red LED array 660 nm	NA
PCS	0.45	NA
Bar Resolution	0.100 mm	0.100 mm
Interface	TTL, Keyboard Wedge	Keyboard Wedge
Compatibility	PC AT, PS/2	PC AT, PS/2
Reading Angle	0 to 90 degree	NA
Bar Code Selections	Code 11, Code 32, Code 39, Code 93, Code 128, Codabar, UPC-A, UPC-E, EAN-8, EAN-13, MSI/Plessey, CIP 39, Telepen, China Postal Code, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5	Code 11, Code 32, Code 39, Code 93, Code 128, Codabar, UPC-A, UPC-E, EAN-8, EAN-13, MSI/Plessey, CIP 39, Telepen, China Postal Code, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5

Configuration Chart

To program the CCD or wedge wand to read settings other than the defaults, turn to Chapter 3 – Configuration, beginning on page 15 and select the options as explained in each section.

Note: Starred (*) items indicate default settings.

The CCD reader and wedge wand are normally programmed as a keyboard wedge for IBM's AT and compatibles or PS/2 models.

Operation — CCD

To turn on the CCD, push the switch depress button located on the under side of the CCD. Red LED illumination will emit from the read window.

The CCD reads all bar code symbologies listed in Chapter 3 – Configuration.

Note: The CCD will not read any bar code that is wider than the read window.

1. Touch the bar code label with the read window of the CCD.

2. Read within a distance of 0 to 1.5 cm (approximately 9/16 inches) from the bar code label.

3. Center the CCD read window over the bar code label for the fastest read.

4. The CCD will beep to indicate a good read.

5. A red LED indicator light will visually signal a good read.

Note: During the configuration process, if there is an "End" bar code you <u>must</u> scan it to successfully complete the configuration sequence; if there is not an "End" bar code then the configuration sequence does not require it.

When you scan a "Default" or "End" bar code during the configuration process, you will hear a beep, then a slight pause, then another beep. This final beep signals the configuration sequence has been completed successfully. If you try to scan a bar code after the sequence has been completed and no characters appear on your computer screen, scan "End". Again, listen for the beep-pause-beep.

Operation — Wedge Wand

The wedge wand is immediately capable of reading once it has been connected properly to the host computer. It can read all bar code formats listed in Chapter 3 – Configuration.

1. A red LED will be seen in the window when power is supplied to the wedge wand.

2. There is no bar code length limit as with other readers.

3. Holding the wedge wand vertically to the scanning surface, drag the tip of the wedge wand across the bar code from beginning to end, either left to right or right to left, with the tip of the wedge wand touching the surface.

4. Apply a moderate, even scan speed as you drag with the wedge wand — if you drag the wedge wand too fast, it will not read the entire bar code.

Note: During the configuration process, if there is an "End" bar code you must scan it to successfully complete the configuration sequence. A beep, then a slight pause, then another beep signals successful completion of the configuration process after you scan "End" or "Default". If you try to scan a bar code after the sequence has been completed and no characters appear on your computer screen, scan "End" and listen for the beep-pause-beep.

Keyboard Speed Settings

For some application programs and compatibles, the CCD and wedge wand may send data faster than the computer or application program can accept. This is called "keyboard buffer overrun." If data appears to be missing, random read errors occur, or the CCD locks up and will not scan, then experiment with the various keyboard timing options listed below. These options will change the data transmission rate from the CCD to the host computer.
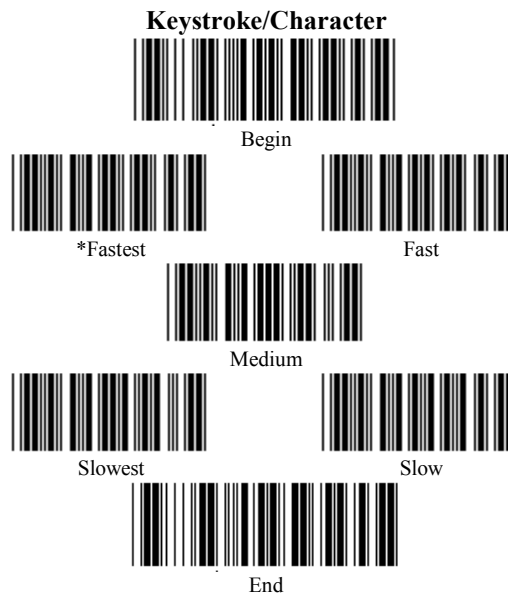
Keystroke/Character

Begin

*Fastest   Fast

Medium

Slowest   Slow

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

Prefix

Prefix is the data string automatically added prior to the bar code data during data transmission to the computer. Please see Set Prefix on page 40 for additional information.

Suffix

Suffix is the data string automatically added after the bar code data but before the termination character during data transmission to the computer. Please see Set Suffix on page 41 for additional information.

Wedge Interface (Wedge Wand Only)

The wedge wand is comprised of an intelligent decoder unit and a perfect-sensitization pen — in separate components. The wedge wand is compatible with virtually any application program accepting keyboard input.

Symbology Selection

The CCD and wedge wand auto-discriminate all bar code symbologies. However, they can also be programmed to read only one bar code symbology, thus preventing the wedge wand from wasting time looking for other possibilities. If your application uses only one symbology, then program the CCD and wedge wand to read only that symbology. This will allow you to achieve a faster read rate and reduce the possibility of read errors (see Chapter 3 – Configuration beginning on page 15).

Symbology Additions

If the CCD is not programmed to meet your specific requirements, you can easily add different bar code symbologies. Please consult the many options listed in Chapter 3 – Configuration, beginning on page 15 of this user's guide.

User Maintenance

1. Cleaning the read window (the tip of the wedge wand) is the only maintenance that is required.
2. Do not allow any abrasive material to touch the read window.
3. Remove any dirt particles with a damp cloth.
4. Clean the window using a soft cloth or cotton swab moistened with water.

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Chapter 2 — Installation

Keyboard Wedge Scanner (Part # 43995)

> # * * * WARNING * * *
> **Turn off the power to your computer and your main devices _before_ installing your CCD Bar Code Scanner.**

The CCD has a built-in intelligent decoder unit and interface to connect directly to the keyboard interface of the computer without the need for a separate decoder box. Scanned bar code labels will appear to the system as if the data was entered from the keyboard.

A connection cable is provided for installation. The scanner is installed or "wedged" between the keyboard and the computer.

1. Make certain you use the correct converter cable for the keyboard wedge. There are two types of cables included:

Type	Part No.
PC/AT	43993
PS/2	43994

2. After the connections have been made (see Figure 1), turn on the computer. A beep indicates it is working and installation is completed.

The keyboard wedge connects as shown below (see Figure 1):

1. Connect #5 (D-Sub 6-pin male connector) to #2 (D-Sub 5-pin female connector). Then plug #5 into the host computer port.

2. Connect #4 (D-Sub 6-pin female connector) to #3 (D-Sub 5-pin male connector). Then plug #4 into the keyboard.

Note: *If your computer is a PC/AT model, you will not have to connect the 6-pin connectors to the 5-pin connectors; you can simply plug the D-Sub 5-pin male connector (#3) directly into the computer port and the D-Sub 5-pin female connector (#2) directly into the keyboard.*
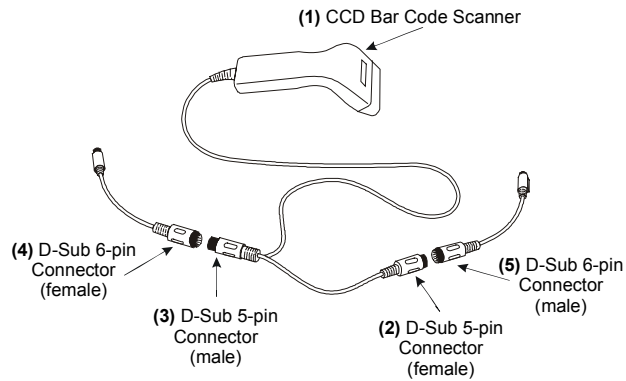
Figure 1: Connecting the Keyboard Wedge Scanner

Keyboard Wedge Cable (Part #43996)

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* * * WARNING * * *
**Turn off the power to your computer
and your main devices _before_ installing
your Wedge Wand.**

The keyboard wedge cable connects the
following (see Figure 2):

1. Wedge Wand

2. Decoder

3. Keyboard connection

4. Host computer keyboard port
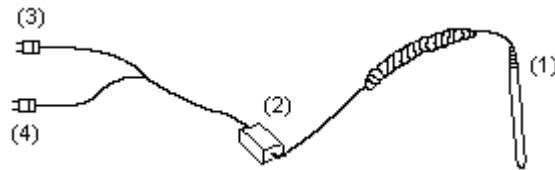
Figure 2: Connecting the Keyboard Wedge Cable

Keyboard Wedge Connector Pin Assignments

1. IBM PC/AT (Part # 43993)

Housing	Function	DSUB 9 (M)	DIN 5 (M)	DIN 5 (F)
1	VCC	9	5	5
2	GND	6	4	4
3	CLK (KB)	2		1
4	DAT (KB)	7 & 8		2
5	-	5	3	3
6	DAT (PC)	3	2	
7	CLK (PC)	1	1	

(M) = Male
(F) = Female

2. IBM PS/2 Models (Part # 43994)

Housing	Function	DSUB 9 (M)	DIN 6 (M)	DIN 6 (F)
1	VCC	9	4	4
2	GND	6	3	3
3	CLK (KB)	2		5
4	DAT (KB)	7 & 8		1
5	-	5	2	2
6	DAT (PC)	3	1	
7	CLK (PC)	1	5	

Chapter 3 — Configuration

Bar Code Controls & Configuration

Why you might need to configure the CCD or Wedge Wand

In order to enable the CCD and wedge wand to read any of the non-default settings for a bar code, they first must be configured. When the CCD and wedge wand are initially connected to your computer, it is not necessary to tell the CCD and wedge wand what type of bar code you would like them to read. Both have been pre-programmed at the factory to read Code 39 (standard or full ASCII), UPC/EAN/JAN (in all lengths and variations), Interleaved 2 of 5, Code 128, Codabar, MSI/Plessey, and Code 32.

If you would like the CCD and wedge wand to read only one bar code format, for example, or to use settings other than those set as the default, you will need to reprogram the settings. However, before you can reprogram the settings, you need to be familiar with the setup procedure. Following are two examples:

Example 1: Setup Code 39 Control

Begin	→	Place command to CCD
Code 39 ON	→	Turn on Code 39 decoding
Full ASCII	→	Code 39 Full ASCII mode selected
Verify checksum	→	Code 39 mode 43
End	→	Setting procedure completed
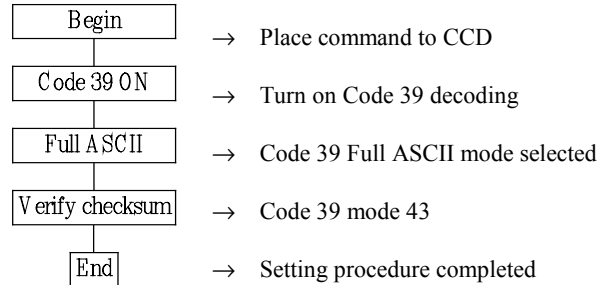
Note: *Please see page 23, which lists the bar codes that are used to complete the Code 39 Control configuration sequence.*

Example 2: Set Prefix

Begin	→ Place command to CCD
Prefix	→ Turn on Prefix setting
Appendix B "4" Appendix B "1"	} Create Prefix A
SET	→ Set up completed
End	→ Procedure completed
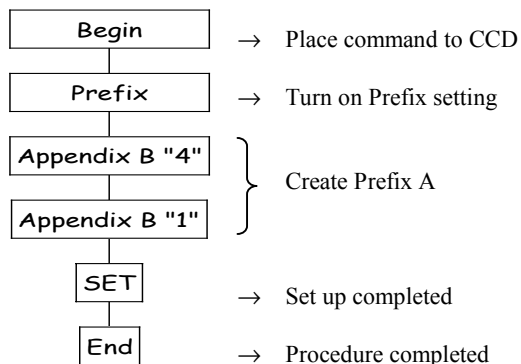
Note: Please see page 40, which lists the bar codes that are used to complete the Set Prefix configuration sequence.

The default settings (indicated by a "*" symbol) will be overwritten when the CCD is programmed. Detailed set-up parameters are provided on the following pages. All of the programmed settings will be stored in the EEPROM, which is retained all of the time.

Set Default Configuration

Begin

Default

All programmed settings will be returned to the manufacturer default setting after the scanning process.

List Configurations

Note: The below bar codes can be scanned individually and independently from those listed in Set Default Configuration above.

Other available options

Show configuration

Show version

Start up code

If the CCD's light is on but it does not seem to be reading, scan the "Start up code". This should reactivate the CCD.

Note: The Start up code listed above is for the CCD only.

Keyboard Wedge Setting

Begin

*On

Upper/Lower case

Upper   *Lower

End

Note: *To successfully complete the above*
configuration process, you must scan the "End"
bar code.

You can control the Caps Lock function by
engaging the Caps Lock key on your keyboard or
by programming the CCD as described above.
Programming the CCD enables you to override
the keyboard Caps Lock key, allowing the use
of lowercase or upper/lowercase characters
even when the Caps Lock key is engaged.

CCD Scanning Control

||||||||||||||||||||||||||
Begin

Type	LED Light	Bar Code
‖‖‖‖‖‖‖‖‖‖‖ Trigger pressed	On-with button pressed Off-with button depressed	One bar code
‖‖‖‖‖‖‖‖‖‖‖ *Trigger on	On-for 3 seconds Off-any bar code scanned	One bar code
‖‖‖‖‖‖‖‖‖‖‖ Trigger on/off	On-with button pressed, light on for 3 seconds Off-with button pressed again	One bar code
‖‖‖‖‖‖‖‖‖‖‖ LED on	On-all the time Off-never off	One bar code

‖‖‖‖‖‖‖‖‖‖‖
Trigger on 30 sec.
	On-for 30 seconds
	Off-automatically after 30
	  seconds or button pressed
	  again
		One bar code

‖‖‖‖‖‖‖‖‖‖‖
Trigger on 120 sec.
	On-for 120 seconds
	Off-automatically after 120
	  seconds or button pressed
	  again
		One bar code

Note: CCD Scanning Control is continued on the next page.

Continuous reading	On-all the time Off-never off or trigger off Safety time default value is 1 sec.	Same bar code Continuous read
Safety time setting	Scan "Begin"+"Safety time"+ "0"+"8"+"Set"+"End" Set value is 0.8 sec.	Safety time 0.8 sec.

End

Note: *To successfully complete the above configuration process, you must scan the "End" bar code.*

Turn On Various Bar Code Formats

Begin

OFF		ON
	Code 39*	
	*Interleaved 2 of 5	
	*Industrial 2 of 5	
	*Matrix 2 of 5	
	Codabar*	
	EAN-13*/UPC-A*	
	EAN-8*	
	UPC-E*	
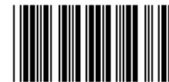
Note: Turn on Various Bar Code Formats is continued on the next page.
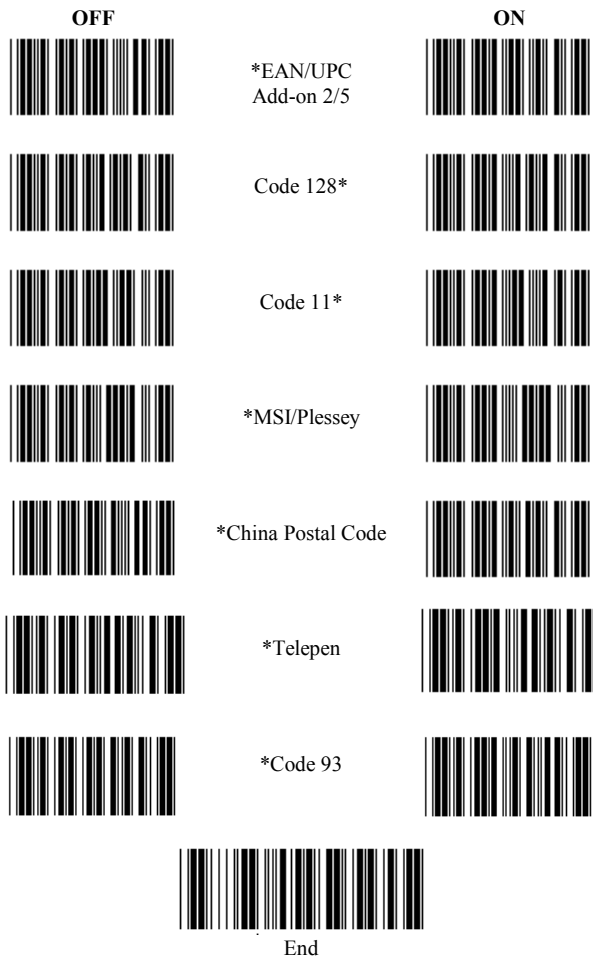
OFF		ON

OFF		ON
‖‖‖‖‖‖‖‖‖	*EAN/UPC Add-on 2/5	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	Code 128*	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	Code 11*	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	*MSI/Plessey	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	*China Postal Code	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	*Telepen	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	*Code 93	‖‖‖‖‖‖‖‖‖

‖‖‖‖‖‖‖‖‖‖‖‖‖
End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

Code 39 Control

||||||||||||||||||||||||||
Begin

|||||||||||||||| ||||||||||||||||
Off   *On

Code 32 Control

|||||||||||||||| ||||||||||||||||
*Off   On

CIP 39 Control

|||||||||||||||| ||||||||||||||||
*Off   On

|||||||||||||||| ||||||||||||||||
*Standard type   Full ASCII

Transmit start/stop character

|||||||||||||||| ||||||||||||||||
*No   Yes

Verify checksum

|||||||||||||||| ||||||||||||||||
*No   Yes

Transmit check character

|||||||||||||||| ||||||||||||||||
No   *Yes

||||||||||||||||||||||||||
End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

Interleaved 2 of 5 Control
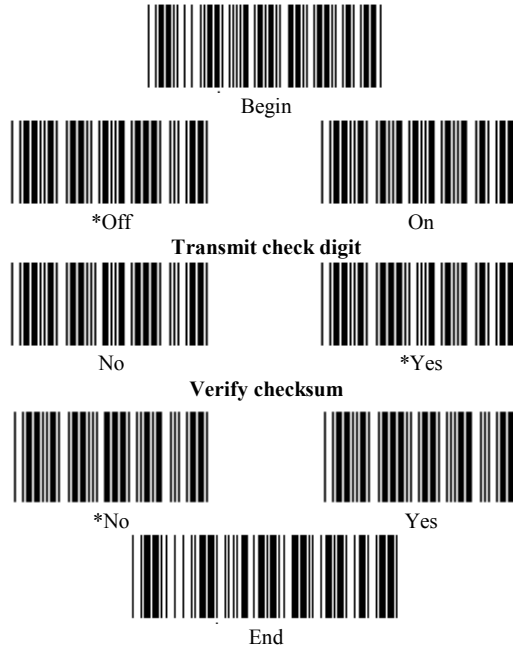
Begin

*Off   On

Transmit check digit

No   *Yes

Verify checksum

*No   Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

Industrial 2 of 5 Control

||||||||||||||||||||||||||||||

Begin

|||||||||||||||||||||||||||| ||||||||||||||||||||||||||||

*Off   On

Transmit check digit

|||||||||||||||||||||||||||| ||||||||||||||||||||||||||||

No   *Yes

Verify checksum

|||||||||||||||||||||||||||| ||||||||||||||||||||||||||||

*No   Yes

||||||||||||||||||||||||||||

Define Length

You may set up to 3 fixed bar code lengths if necessary. Please refer to the hexadecimal table in Appendix B on page 49, for example:

scan "0" "A" = 10
scan "0" "C" = 12
scan "0" "E" = 14

You will be able to read the industrial 2 of 5 code length which is equal to 10, 12, 14 (even) digits only.

||||||||||||||||||||||||||||

SET

To complete setup, please scan "SET"→"End"

||||||||||||||||||||||||||||

End

> ***Note:*** *To successfully complete the above configuration process, you must scan the "End" bar code.*

Matrix 2 of 5 Control

||||| (barcode)

Begin

||||| (barcode) ||||| (barcode)

*Off   On

Transmit check digit

||||| (barcode) ||||| (barcode)

No   *Yes

Verify checksum

||||| (barcode) ||||| (barcode)

*No   Yes

||||| (barcode)

Define Length

You may set up to 3 fixed bar code lengths if necessary. Please refer to the hexadecimal table in Appendix B on page 49, for example:

scan "0" "A" = 10
scan "0" "C" = 12
scan "0" "E" = 14

You will be able to read the Matrix 2 of 5 code length which is equal to 10, 12, 14 (even) digits only.

||||| (barcode)

SET

To complete setup, please scan "SET"→"End"

||||| (barcode)

End

> ***Note:*** *To successfully complete the above configuration process, you must scan the "End" bar code.*

Codabar/NW7 Control

Begin

Off	*On

Transmit Start/End

*No	Yes

Start/End Transmit type

ABCD/ABCD	ABCD/TN*E
*ABCD/abcd	ABCD/tn*e

Verify checksum

*No	Yes

Transmit check character

*No	Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

EAN-13 Control

Begin

Off

*On

Transmit check digit

No

*Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

UPC-A Control

Begin

Off   *On

Transmit check digit

No   *Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

EAN-8 Control

Begin

Off   *On

Transmit check digit

No   *Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

UPC-E Control

||||||||||||||||||||||||||||||

Begin

|||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||

Off   *On

Transmit check digit

|||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||

No   *Yes

||||||||||||||||||||||||||||||

End

Note: *To successfully complete the above configuration process, you must scan the "End" bar code.*

UPC/EAN Conversion

Begin

UPC/A to UPC-E Conversion

*Off   On

UPC-E to UPC-A Conversion

*Off   On

UPCA/EAN8 to EAN-13 Conversion

*Off   On

End

Note: To successfully complete the above
configuration process, you must scan the "End"
bar code.

Code 11 Control

||||||| (Begin barcode)

Begin

||||||| (Off barcode) ||||||| (On barcode)

*Off   On

Transmit check digit

||||||| (1 barcode) ||||||| (*2 barcode)

1   *2

Verify checksum

||||||| (No barcode) ||||||| (*Yes barcode)

No   *Yes

||||||| (End barcode)

End

Note: *To successfully complete the above configuration process, you must scan the "End" bar code.*

EAN-13 Control (Truncate)

Begin

Truncate leading digit

*No

Yes

Truncate leading 0

*No

Yes

End

Note: To successfully complete the above
configuration process, you must scan the "End"
bar code.

UPC-A Control (Truncate)

Begin
Truncate leading digit

*No   Yes

End

Note: To successfully complete the above
configuration process, you must scan the "End"
bar code.

EAN-8 Control (Truncate)

Begin
Truncate leading digit

*No   Yes

End

Note: To successfully complete the above configuration process, you must scan the "End" bar code.

UPC-E Control (Truncate)

||||||||||||||||||||||||||||

Begin
Truncate leading digit

||||||||||||||||||||||| |||||||||||||||||||||||

*No   Yes

|||||||||||||||||||||||||||||

End

Note: To successfully complete the above
configuration process, you must scan the "End"
bar code.

China Postal Code Control

||||||||||||||||||||||||
Begin

|||||||||||||||||||||||| ||||||||||||||||||||||||
*Off   On

Number of check digit

|||||||||||||||||||||||| ||||||||||||||||||||||||
No   *Yes

Verify check digit

|||||||||||||||||||||||| ||||||||||||||||||||||||
No   *Yes

||||||||||||||||||||||||
End

Note: *To successfully complete the above configuration process, you must scan the "End" bar code.*

End of Message Character Control

Begin

None

***CR**

LF

CR/LF

Space

Tab

Esc

Ctrl-C

End

Note: *To successfully complete the above configuration process, you must scan the "End" bar code.*

Set Prefix

Begin

Prefix

SET

End

You may add up to 10 characters as a prefix.

> **Note:** *To successfully complete the above configuration process, you must scan the "End" bar code.*

Example 3: Setting Prefix "A"

1. Scan "Begin".

2. Scan "Prefix".

3. Refer to Appendix C beginning on page 49 and note the Hex values for "A".

4. Go to Appendix B on page 49 and scan the corresponding values for "A", which are "4" and "1".

5. Scan "SET".

6. Scan "End".

Your bar code should now be preceded by an "A".

> **Note:** *The above example can also be used to set a suffix.*

Set Suffix

Begin

Suffix

SET

End

Please refer to Appendix C for a full list of available suffix strings.
You may add up to 10 characters as a suffix.

> ***Note:*** *To successfully complete the above configuration process, you must scan the "End" bar code.*
>
> For an example illustrating how to add a suffix or prefix, please see page 40.

Buzzer Control
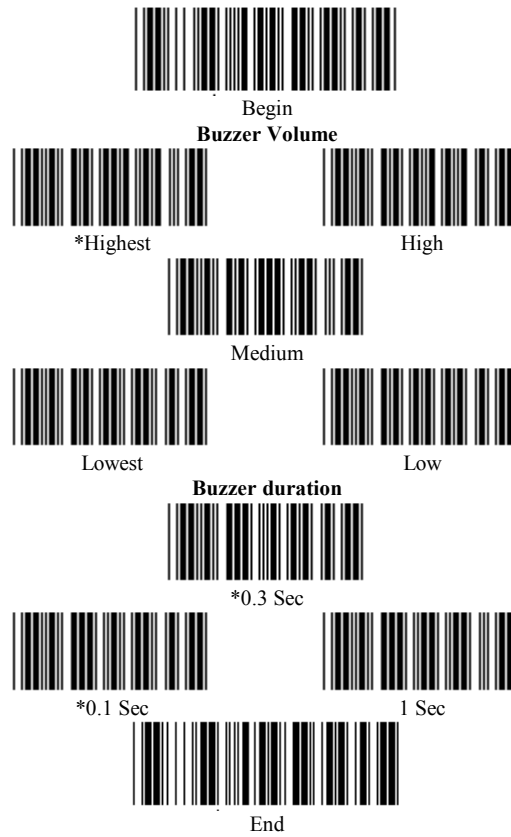
‖‖‖‖‖‖‖‖‖‖‖‖‖

Begin

Buzzer Volume

‖‖‖‖‖‖‖‖‖‖   ‖‖‖‖‖‖‖‖‖‖

*Highest   High

‖‖‖‖‖‖‖‖‖‖

Medium

‖‖‖‖‖‖‖‖‖‖   ‖‖‖‖‖‖‖‖‖‖

Lowest   Low

Buzzer duration

‖‖‖‖‖‖‖‖‖‖

*0.3 Sec

‖‖‖‖‖‖‖‖‖‖   ‖‖‖‖‖‖‖‖‖‖

*0.1 Sec   1 Sec

‖‖‖‖‖‖‖‖‖‖

End

Note: To successfully complete the above
configuration process, you must scan the "End"
bar code.

Appendix A

Troubleshooting

A. If the LEDs do not light up after you have followed the previous instructions:

1. Check to make sure there is power to the system.

2. Was power to the host system turned off during CCD installation?

3. Check for loose cable connections.

B. If the LEDs light up, but the CCD does not read or outputs random characters on the screen:

1. Is the CCD programmed for the correct settings below?

    - Computer Type selection

      (was the computer rebooted after programming the CCD?)

    - Keyboard Speed Setting

      (slowing down data transmission is necessary for some compatibles and application programs)

    - Are you using a dedicated file server?

      (non-dedicated file servers may cause problems for a wedge interface)

C. Are the bar code labels readable?

   1. Does the label meet bar code symbology specifications?

   2. Does the CCD read other types of bar code labels?

   3. Is the label wider than the read window?

D. The CCD is working correctly, but outputs random characters:

   1. Shut down the software application program properly.

   2. Reboot the system by:

      - Pressing CTRL-ALT-DEL at the same time.

      - Pressing the reset button.

      - Turning the system off then back on.

Factory Service

Call Zebra Technologies Corporation's Customer Service department for the factory service center nearest you. If a CCD must be returned and you purchased your wedge wand from Zebra Technologies Corporation, call the service department and request a Returned Merchandise Authorization (RMA) number. Returned merchandise will not be accepted without the RMA number on the outside of the carton. If the CCD was purchased from a vendor other than Zebra Technologies Corporation, you will need to contact the vendor for repair or replacement. Whatever policies or procedures were in force at the time of purchase from third party vendors will determine how and under what circumstances the repair will be made.

Zebra Technical Support

If you have any questions on the operation of the CCD or wedge wand, you can contact Zebra's Technical Support department via any of the following methods:

Phone: 847.913.2259

Fax: 847.913.2578

Web site: http://support.zebra.com

Zebra's Technical Support staff are highly trained and are available Monday through Friday from 7:15 a.m. to 5:30 p.m. (CST).

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Appendix B — Hexadecimal Table

0	(barcode)	**9**	(barcode)
1	(barcode)	**A**	(barcode)
2	(barcode)	**B**	(barcode)
3	(barcode)	**C**	(barcode)
4	(barcode)	**D**	(barcode)
5	(barcode)	**E**	(barcode)
6	(barcode)	**F**	(barcode)
7	(barcode)	**SET**	(barcode)
8	(barcode)		

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Appendix C — Hex and Numeric Table

DEC		PC	ASCII	DEC	HEX	PC & ASCII
0	00	(Null)	NULL	37	25	%
1	01	☺	SOH	38	26	&
2	02	☻	STX	39	27	'
3	03	™	ETX	40	28	(
4	04	∇	EOT	41	29	)
5	05	∃	ENQ	42	2A	*
6	06	∠	ACK	43	2B	+
7	07	1	BEL	44	2C	,
8	08	▫	BS	45	2D	-
9	09	6	HT	46	2E	.
10	0A	4	LF	47	2F	/
11	0B	Ψ	VT	48	30	0
12	0C	Ξ	FF	49	31	1
13	0D	♪	CR	50	32	2
14	0E	♫	SO	51	33	3
15	0F	●	SI	52	34	4
16	10	│	DLE	53	35	5
17	11	☐	DC1	54	36	6
18	12	↨	DC2	55	37	7
19	13	‼	DC3	56	38	8
20	14	κ	DC4	57	39	9
21	15	●	NAK	58	3A	:
22	16	●	SYN	59	3B	;
23	17	↕	ETB	60	3C	<
24	18	↑	CAN	61	3D	=
25	19	↓	EM	62	3E	>
26	1A	→	SUB	63	3F	?
27	1B	←	ESC	64	40	@
28	1C	.	FS	65	41	A
29	1D	↔	GS	66	42	B
30	1E	⌐	RS	67	43	C
31	1F	⌐	US	68	44	D
32	20			69	45	E
33	21	!		70	46	F
34	22	N		71	47	G
35	23	#		72	48	H
36	24	$		73	49	I

DEC		PC & ASCII	DEC	HEX	PC & ASCII
74	4A	J	113	71	q
75	4B	K	114	72	r
76	4C	L	115	73	s
77	4D	M	116	74	t
78	4E	N	117	75	u
79	4F	O	118	76	v
80	50	P	119	77	w
81	51	Q	120	78	x
82	52	R	121	79	y
83	53	S	122	7A	z
84	54	T	123	7B	{
85	55	U	124	7C	|
86	56	V	125	7D	}
87	57	W	126	7E	~
88	58	X	127	7F	
89	59	Y	128	80	Ç
90	5A	Z	129	81	ü
91	5B	[	130	82	é
92	5C	\	131	83	â
93	5D	]	132	84	ä
94	5E	^	133	85	à
95	5F	_	134	86	å
96	60	`	135	87	ç
97	61	a	136	88	ê
98	62	b	137	89	ë
99	63	c	138	8A	è
100	64	d	139	8B	ï
101	65	e	140	8C	î
102	66	f	141	8D	ì
103	67	g	142	8E	Ä
104	68	h	143	8F	Å
105	69	i	144	90	É
106	6A	j	145	91	•
107	6B	k	146	92	Æ
108	6C	l	147	93	Ô
109	6D	m	148	94	ö
110	6E	n	149	95	Ò
111	6F	o	150	96	û
112	70	p	151	97	ù

DEC		PC & ASCII	DEC	HEX	PC & ASCII
152	98	ÿ	**190**	BE	.
153	99	Ö	**191**	BF	.
154	9A	Ü	**192**	C0	.
155	9B	¢	**193**	C1	.
156	9C	£	**194**	C2	.
157	9D	¥	**195**	C3	.
158	9E	Pts	**196**	C4	.
159	9F	ƒ	**197**	C5	.
160	A0	á	**198**	C6	.
161	A1	í	**199**	C7	.
162	A2	ó	**200**	C8	.
163	A3	ú	**201**	C9	.
164	A4	ñ	**202**	CA	.
165	A5	Ñ	**203**	CB	.
166	A6	●	**204**	CC	.
167	A7	●	**205**	CD	5
168	A8	¿	**206**	CE	.
169	A9	.	**207**	CF	.
170	AA	.	**208**	D0	.
171	AB	½	**209**	D1	.
172	AC	¼	**210**	D2	.
173	AD	¡	**211**	D3	╙
174	AE	«	**212**	D4	╘
175	AF	»	**213**	D5	╒
176	B0	░	**214**	D6	╓
177	B1	▒	**215**	D7	.
178	B2	▓	**216**	D8	╪
179	B3	.	**217**	D9	.
180	B4	.	**218**	DA	.
181	B5	.	**219**	DB	█
182	B6	.	**220**	DC	▄
183	B7	.	**221**	DD	▌
184	B8	.	**222**	DE	▐
185	B9	.	**223**	DF	▀
186	BA	.	**224**	E0	α
187	BB	.	**225**	E1	β
188	BC	.	**226**	E2	Γ
189	BD	.	**227**	E3	π

DEC		PC & ASCII	DEC	HEX	PC & ASCII
228	E4	Σ			
229	E5	σ			
230	E6	μ			
231	E7	Y			
232	E8	Φ			
233	E9	θ			
234	EA	Ω			
235	EB	δ			
236	EC	∞			
237	ED	ψ			
238	EE	ε			
239	EF	∩			
240	F0	≡			
241	F1	6			
242	F2				
243	F3				
244	F4	∫			
245	F5	∫			
246	F6	4			
247	F7	≈			
248	F8	7			
249	F9	2			
250	FA	Z			
251	FB	≤			
252	FC	η			
253	FD	²			
254	FE	5			
255	FF	(Bland)			

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