User's Manual

LPN 1736
Omni-Directional Laser Scanner
25-ULPNMU01-02

Keyboard Wedge Interface
USB Interface
RS232 Interface

OPTICON
always scanning for new ID's
8 Olympic Drive
Orangeburg, NY 10962
Tel 800.636.0090
Fax 845.365.1251
www.opticonUSA.com

Contents

NOTICE

Opticon has taken every step to ensure that the information included in this manual is accurate; however we reserve the right to change any specification at any time without prior notice.

Getting Started

General Information

The LPN1736 Omni-Directional Laser Scanner projects a pattern of multiple scan lines making it ideal for convenient, hands-free scanning. To scan or read a bar code, simply place it within the scan pattern. There is no need to orient or position the bar code in order to achieve a good read. The scanner automatically recognizes most common bar code symbologies.

The LPN1736 supports the following interfaces

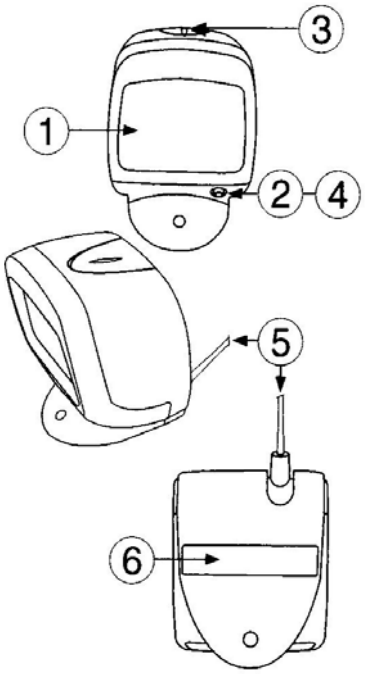
- Keyboard Wedge (PS2 or AT/XT)
- RS 232
- USB Type A

Unpacking

Remove the scanner from its packaging and inspect it for damage. Save the carton and packing material. If the scanner was damaged in transit, call the dealer or distributor from whom you purchased it. If you purchased it directly from Opticon, call Opticon Customer Service Dept. at 800-636-0090.

Parts of the Scanner

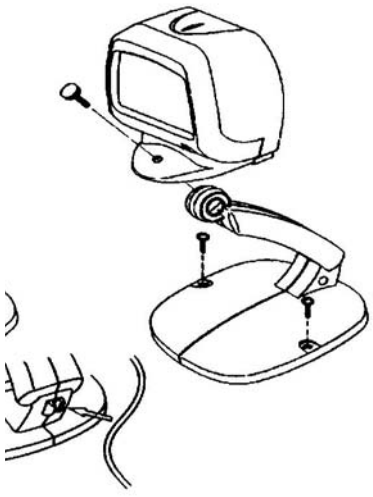
1. **Reading Window.** Present the bar code to this window to scan. Keep the window clean and never obstruct this window in any way.
2. **Trigger Button.** If the scanner is OFF, depressing this button turns it ON. If the scanner is in the "sleep mode" use this button to "wake up" the scanner.
3. **Good Read Indicator.** Indicators flashes when bar code has been successfully read. This feature can be inactivated if desired.
4. **Buzzer/Beeper.** Beeps to indicate when a bar code has been successfully read. Loudness is adjustable.
5. **Cable.** Connects scanner to your computer or host terminal.
6. **Label.** Contains Product Identification and Serial Number. Do not remove.



Attaching Scanner to Adjustable Stand

An adjustable mounting stand is provided for the LPN1736. The scanner can be use with or without this stand. The stand may make it more convenient to scan items of different sizes.

To mount the scanner to the stand, insert the plastic screw through the hole in the base of the scanner into the hole in the arm of the stand. Tighten. The cable clamp on the base can improve cable management.



Opticon Customer Service and Support

If you have any questions or need assistance with installing or programming your scanner call Opticon Customer Service Department at (800) 636-0090.

Before you call, record the model number of the scanner. This information is located on the label near the connector end of the cable. Please have the scanner available plus some bar codes to scan.

Programming Bar Codes

Opticon scanners are preprogrammed at the factory with default settings representing the settings most commonly used by our customers. In most applications, the scanner will work right out of the box without the need for additional programming.

If desired, you can change or program the settings of the scanner by reading special programming bar code symbols. These special bar codes are contained in this manual.

In order to read these special programming bar codes, the scanner must first enter the "programming mode". This is accomplished by scanning the following bar code symbol:

Start/Stop Programming Mode

Scanning this programming bar code puts the scanner into the programming mode. The scanner will beep continuously indicating that it is in programming mode. In this mode, the scanner will only read special programming bar codes. It will not read regular bar codes.

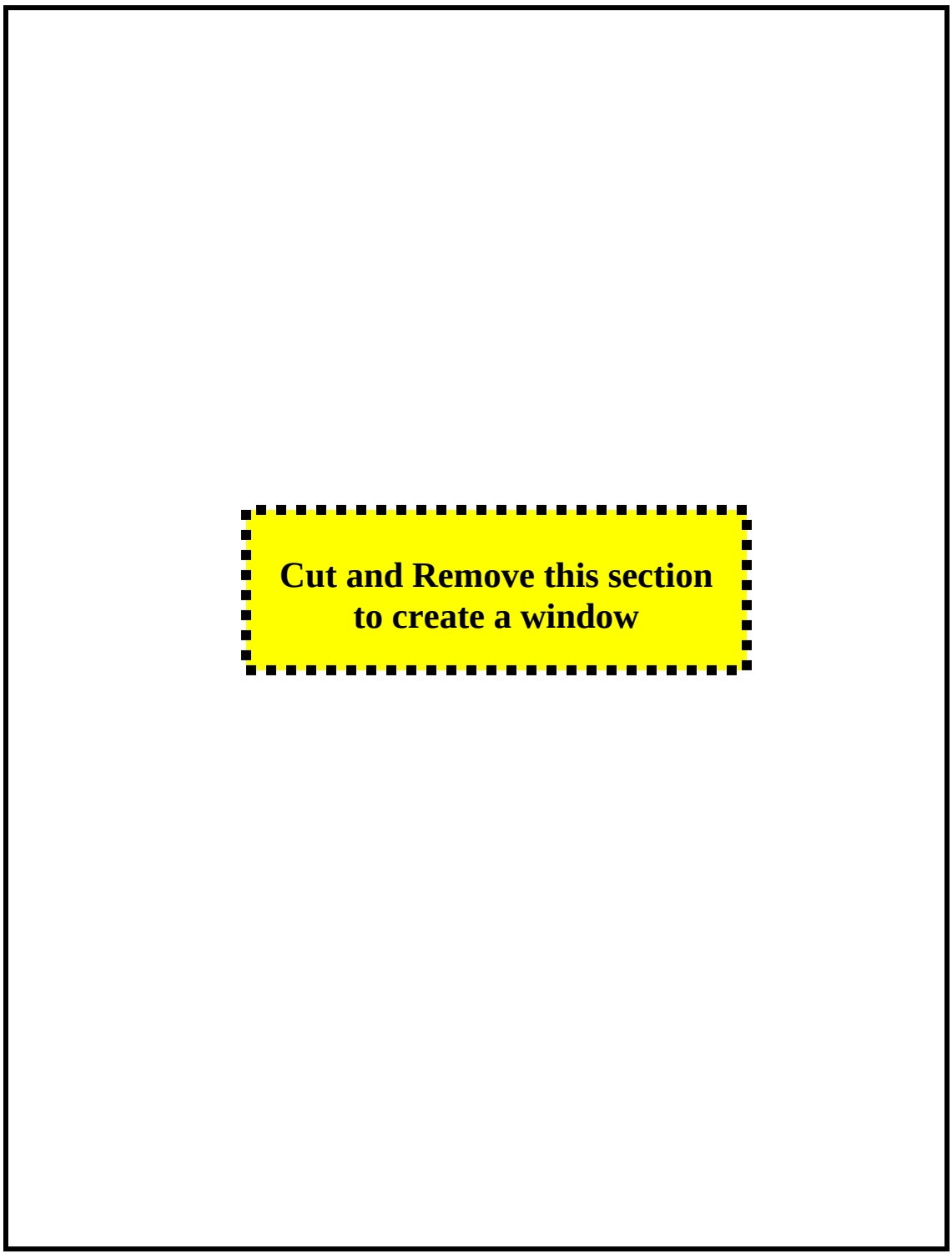
Now you can scan the specific programming bar code(s) you desire.

You will notice that there may be multiple programming bar codes on each page. Because the scanner is omni-directional, it is possible that the scanner may unintentionally read a different bar code than the one you desire. To prevent this, it is important that you cover all the programming bar codes other than the one you wish to scan. This can be accomplished by folding the page or covering the other bar codes with your hand or sheets of paper.

You can also make a Scanning Template using the diagram on the following page. Using a scissors or knife, cut out or remove the central section to create a window. Place this template over the page of programming bar codes to that the desired bar code is visible in the window but other bar codes are covered or hidden. In this way the scanner will only read the bar code it sees in the window.

When you have scanned all the specific programming bar codes you need, you must instruct the scanner to exit the programming mode. This is accomplished by scanning the "Start/Stop Programming" again. This instructs the scanner to exit the programming mode. The beeps will stop. The scanner is now ready to read regular bar codes.

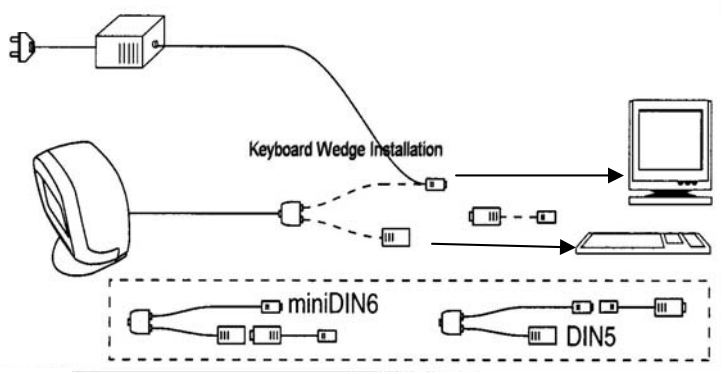
Scanning Template for Programming



Chapter 1
Keyboard Wedge Interface

This chapter contains information on setting up your scanner with a keyboard wedge interface. With this type of interface the scanner is "wedged" between a keyboard and the host computer or device. The scanner translates bar code information into keystrokes. The host computer accepts these keystrokes as if they were typed on the keyboard. The host computer does not know if keystrokes come from the keyboard or the scanner. It treats all information it receives as if it came from the keyboard.

Installing and Setting Up



Connect the scanner as shown in the diagram. The scanner can be configured to work with either an IBM AT/XT or PS2 computer and compatibles. AT is the default setting. Connect the AC power supply into an electrical outlet. Insert the plug on the line cord into the connector as show.

Reset All Defaults

Opticon scanners are preprogrammed at the factory with default settings representing the settings most commonly used by our customers. In most applications, the scanner will work right out of the box without the need for additional programming. At any time, you can return a scanner to the factory defaults by scanning the "Start/Stop Programming Mode" bar code, then scanning the "Reset All Defaults - Wedge" programming bar code, followed by scanning the "Start/Stop Programming Mode" bar code again.

Start/Stop Programming Mode

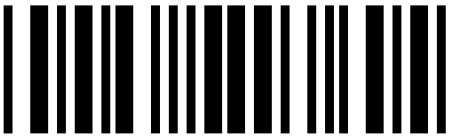
Scanning this programming bar code puts the scanner into the programming mode. The scanner will beep continuously indicating that it is in programming mode. In this mode the scanner will only read special programming bar codes. It will not read regular bar codes. Now you can scan the specific programming bar code(s) you desire. Finally scan the Start/Stop Programming again. This instructs the scanner to exit the programming mode. The beeps will stop. The scanner is now ready to read regular bar codes.

Keyboard Type Selection

Reset All Defaults to IBM AT Keyboard Wedge (UB)

The IBM AT style of keyboard is the default setting for this scanner. If your keyboard style is different scan the appropriate programming codes that follow:

XT Keyboard Wedge UA



PS2 Keyboard Wedge UC

Computer Type Selection

The keyboard wedge interface of the LPN1736 is set to operate with an IBM AT (or compatible) style of personal computer. If your personal computer is different, place the scanner in the programming mode and scan the appropriate programming bar codes.

IBM PC/XT (K0)

Macintosh (K4)

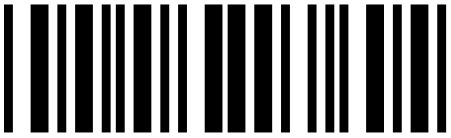
Intercharacter Delay

The scanner may send data faster than the computer or application program can accept it. This is called “keyboard buffer overrun”. If data appears to be missing, random read errors occur, or the scanner locks up and will not scan, experiment with the various keyboard timing options that follow;

No Delay (LA)
DEFAULT

No Delay (LA) is the **DEFAULT** setting

Delay = 1 (LB)



Delay = 2 (LC)

Delay = 3 (LD)

Delay = 4 (LE)

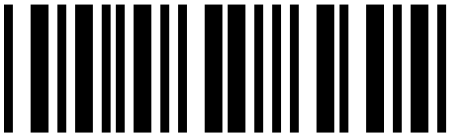
Delay = 5 (LF)

Delay = 6 (LG)

Delay = 7 (LH)

Delay = 8 (LI)

Delay = 9 (LJ)



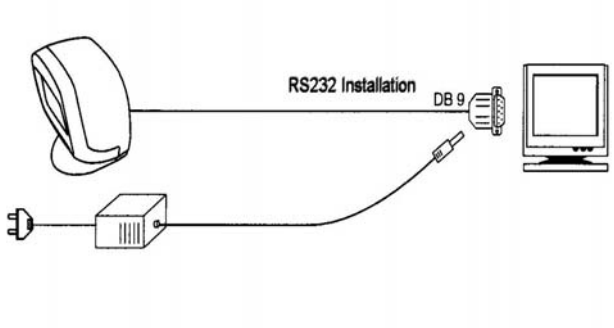
Delay = 10 (LK)

Chapter 2
RS232 Interface

This chapter contains information on setting up your scanner with an RS232 interface.

The RS232 scanner cable is terminated in a DB9 female connector. The external power supply (+5VDC) may be necessary. There is a power supply jack on the RS232 connector.

Installing and Setting Up



The installation is as follows:

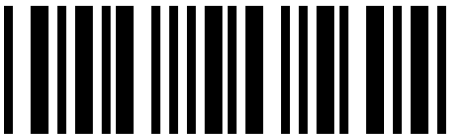
1. Plug the scanner into an RS232 port (such as COM 1) of the host PC. Insert the plug of the external power supply into the jack on the RS232 connector.
2. Connect the power supply into an electrical outlet. (110 VAC)
3. Turn on the power to the host computer. Make sure the communication parameters of the computer match those of the scanner. The scanner's default communications settings are: 9600 baud, 8 data bits, 1 stop bit, no parity, no handshaking

4. Be sure the PC is in a program or application (for example, WordPad) that will accept input from the serial port.

Reset All Defaults -- RS-232

Our scanners are shipped with factory default settings that represent the settings most commonly used by our customers. In most applications, the scanner will work right out of the box without the need for additional programming.

At any time you can return the scanner back to the factory default settings by scanning the "Reset All Defaults -RS232" programming bar code. Remember that before scanning any programming codes, you must put the scanner into the programming mode by scanning the Start/Stop Programming Mode bar code. You must also scan this bar code, to exit the programming mode.



(U2) Reset all Defaults

Reset All Defaults – RS232

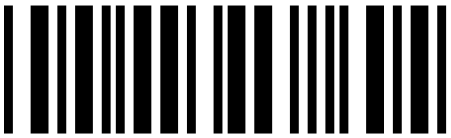
You can also reset the scanner to the factory defaults by typing the following sequence on the keyboard (Esc) U2 (CR)

RS-232C Communication Parameters

Handshaking Protocol

No Handshaking (P0)
DEFAULT

Handshaking Protocols . . . continued



ACK / NAK (P3)

Xon / Xoff (ZG)

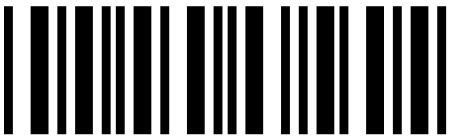
Flow Control Time

Unlimited (I0)
DEFAULT

Flow Control . . . Continued

Flow Control = 100ms (I1)

Flow Control = 100ms (I1)



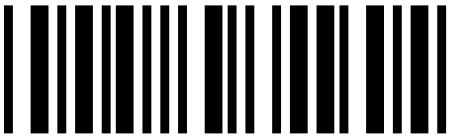
Flow Control = 200ms (I2)

Flow Control = 200ms (I2)

Flow Control = 400ms (I3)

Flow Control = 400ms (I3)

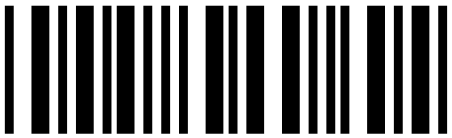
Baud Rate



Baud Rate = 19200 (K7)

Baud Rate = 19200 (K7)

Baud Rate = 9600 (K6) **DEFAULT**



Baud Rate = 9600 (K6)
DEFAULT

Baud Rate = 4800 (K5)

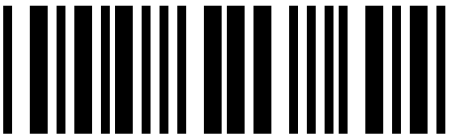
Baud Rate = 4800 (K5)

Baud Rate . . . continued

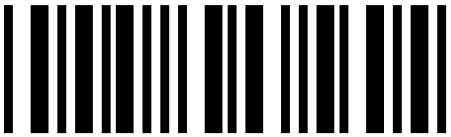
Baud Rate = 2400 (K4)

Baud Rate = 2400 (K4)

Baud Rate = 1200 (K3)



Baud Rate = 1200 (K3)



Baud Rate = 600 (K2)

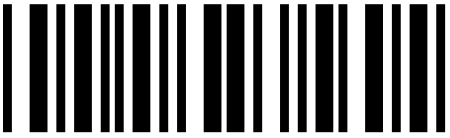
Baud Rate = 600 (K2)

Data Bits

7 Data Bits (L0)

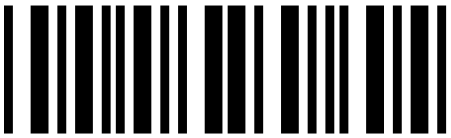
7 Data Bits (L0)

8 Data Bits (L1) **DEFAULT**



8 Data Bits (L1)
DEFAULT

Stop Bits



1 Stop Bit (L5)
DEFAULT

1Stop Bit (L5) **DEFAULT**

2 Stop Bits (L6)

2 Stop Bits (L6)

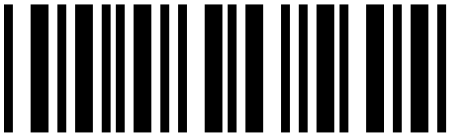
Parity

Even Parity (L3)

Even Parity (L3)

Odd Parity (L4)

Odd Parity (L4)



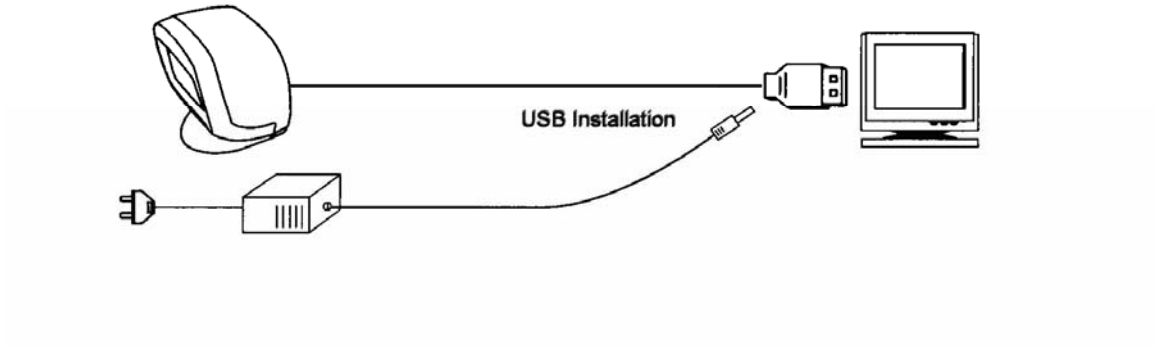
Mark No Parity (L2)
DEFAULT

Mark No Parity (L2) **DEFAULT**

Chapter 3
USB Interface

This chapter contains information on setting up your scanner with an USB interface.

The RS232 scanner cable is terminated in a Type A USB connector. The external power supply (+5VDC) is necessary. There is a pig tail adapter with the power supply jack leading to the USB connector



Plug the scanner into a USB port on your host computer. The PC must be running Windows 98 (or iMac Rev A) or higher. The computer will sense the presence of the scanner and load any required software driver.

Reset All Defaults - USB

Reset All Defaults USB (SU)

Reset all defaults - USB (SU)

Chapter 4
Programming the Scanner

General Information

This chapter contains information that allows you to easily change certain programmable parameters of the scanner. A specific parameter is set or changed by scanning one or more of the special programming bar codes in this manual. For each parameter, you can choose from a menu of options. When you scan the special bar code for specific menu options, the scanner retains the changes you have made. The changes are kept even if you disconnect the scanner or turn off power.

Chapter 5 contains the options and programming bar codes that allow you to change or select specific bar code symbologies.

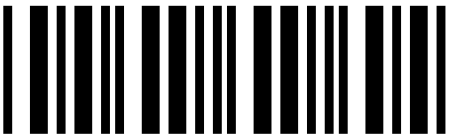
Chapter 6 contains the options and universal programming bar codes that control the general operation of the scanner regardless of the interface or the symbologies selected.

Chapter 7 includes miscellaneous commands and options that may be useful in some applications.

Step by Step

Programming is easy. Simply follow this sequence:

1. Scan the bar code for **"Start/Stop Programming Mode"** The scanner will emit a continual sequence of slow beeps indicating it is ready to be programmed. When in Programming Mode, the scanner can not read normal bar codes. It can only read the special bar codes found on the following pages.



Start/Stop Programming Mode

2. Select the desired parameter(s) from the menu and scan the associated programming bar code. Use the Scanning Template described earlier to cover unwanted bar codes to insure that only the desired bar code is scanned.

3. The scanner will beep once and the green light will flash. This indicates that the scanner has scanned the bar code. The scanner will continue to beep continuously indicating that it is still in the Programming Mode.

4. Scan the **"Start/Stop Programming Mode"** bar code. The scanner will stop beeping indicating that it is in the normal scanning mode and no longer in Programming Mode. The changes that you have made are saved in the scanner's memory.

When the scanner is in Programming Mode, you can change more than one parameter at a time. However, this may become confusing. Until you become proficient at programming, you may prefer to change only one parameter at a time and test that change before programming other changes.

We recommend that you keep a record of the changes you made to the scanner. At a later time you can reset these changes if needed.

What if you make a mistake?

Don't worry. If you are programming the scanner but are unsure of which parameters have been changed, scan the appropriate **Reset All Defaults** bar code for the type of interface you have. This bar code returns the scanner to the default settings that were installed at the factory. Scanning this bar code erases any change you made, including all changes that were made during previous programming.

Chapter 5
Programming Symbology Options

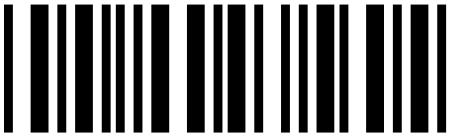
Enabling only a single symbology

Enable All Symbologies (A0)
DEFAULT

The scanner autodiscriminates among many bar code symbologies. If only one symbology is required, programming the scanner to read only that specific symbology may speed operation and eliminate potential read errors.

Enable only all UPC and EAN Codes (J0)

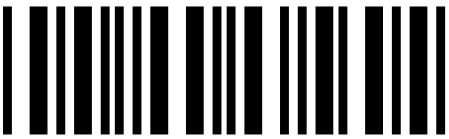
Enable Only All UPC/EAN (J0)



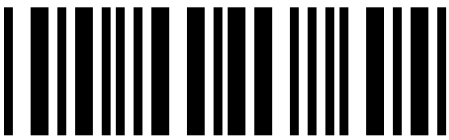
Enable UPC Only (J1)

Enable UPC only (J1)

Enable UPC+2 only (J2)



Enable UPC+2 only (J2)



Enable UPC+5 Only (J3)

Enable UPC +5 only (J3)

Enable EAN Only (J4)

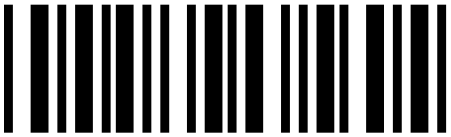
Enable EAN only (J4)

Enable EAN+2 only (J5)

Enable EAN+2 only (J5)

Enable EAN+5 Only (J6)

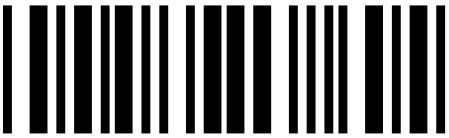
Enable EAN+5 only (J6)



Enable Code 39 Only (A2)

Enable only Code 39 (A2)

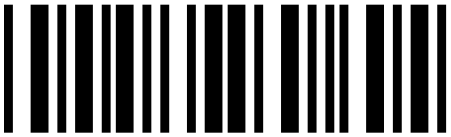
Enable only Codabar (A3)



Enable only Codabar (A3)

Enable Only Code 128 (A6)

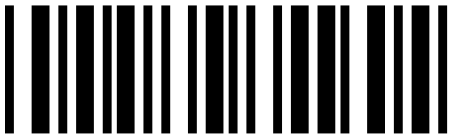
Enable only Code 128 (A6)



Enable Code 93 Only (A5)

Enable only Code 93 (A5)

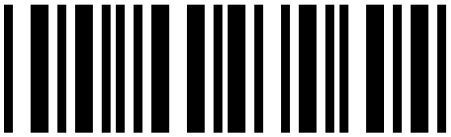
Enable only MSI/Plessey (A7)



Enable only MSI Plessey (A7)

Enable Only Industrial 2of 5 (J7)

Enable only Industrial 2of5 (J7)



Enable Only Interleaved 2of 5 (J8)

Enable only Interleaved 2of5 (J8)

Enable only IATA (A4)

Enable only IATA (A4)

Enabling an Additional Symbology

These programming bar codes will activate an additional symbology to the symbologies already activated

Add UPC (R1)

Add UPC

Add UPC+2 (R2)

Add UPC+2 (R2)

Add UPC+5 (R3)

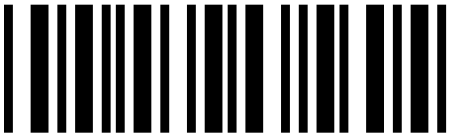
Add UPC+5 (R3)

Add EAN (R4)

These programming bar codes will activate an additional symbology to the symbologies already activated

Add EAN+2 (R5)

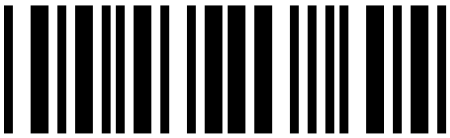
Add EAN+5 (R6)



Add Code 39 (B2)

Enable Code 39 (B2)

Add Codabar (B3)



Add Codabar (B3)

Add Industrial 2of5 (R7)

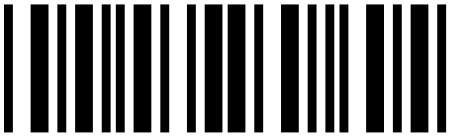
Add Industrial 2of5 (R7)

Add Interleaved 2of 5 (R8)

Add Interleaved 2of5 (R8)

Add Code 128 (B6)

Add Code 128 (B6)



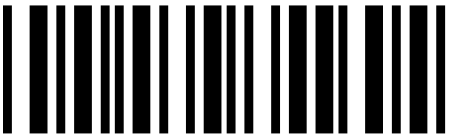
Add Code 93 (B5)

Add Code 93 (B5)

Add IATA (B4)

Add IATA (B4)

Add MSI / Plessey (B7)



Add MSI / Plessey (B7)

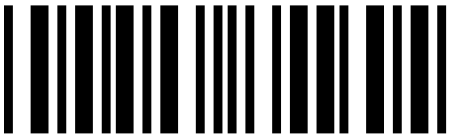
Setting Options for UPC-A

UPC-A Leading zero
Transmit Check Digit
(E2)

UPC-A No leading zero
Do not transmit Check Digit
(E5)

UPC-A Leading zero
Not transmit Check Digit
(E4)

Setting Options for UPC-E



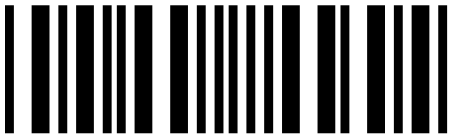
UPC-E no leading zero
Transmit Check Digit
(E7)

UPC-E no leading zero
Not transmit Check Digit
(E9)

UPC-E leading zero
Transmit Check Digit
(E6)

Setting Options for UPC-E . . . continued

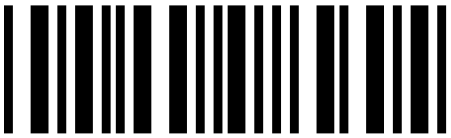
UPC-E Leading zero Not transmit Check Digit (E8)



UPC-E Transmit as is (6Q)

UPC-E Transmit as UPC-A (6P)

Setting Options for EAN-13 and EAN-8



EAN-13 Transmit Check Digit
(6K)

EAN-13 Not transmit Check Digit
(6J)

EAN-8 Transmit Check Digit
(6I)

Setting Options for EAN-13 / EAN-8 . continued

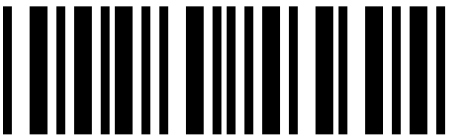
EAN-8 Not transmit Check Digit
(6H)

Enable ISBN
(IA)

Disable ISBN
(IB)

Setting Options for EAN-13 / EAN-8 . continued

Enable ISSN
(HO)



Disable ISSN
(HN)

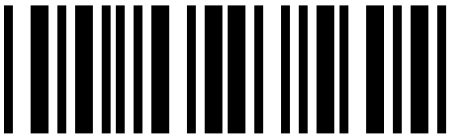
Setting Options for Code 39

Standard Code 39
(D5)
DEFAULT

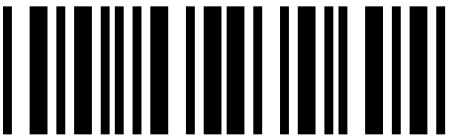
Full ASCII Code 39
(D4)

Transmit Start/Stop Characters
(D0)

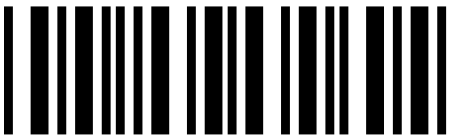
Setting Options for Code 39 …. continued



Do not transmit Start/Stop Character
(D1)



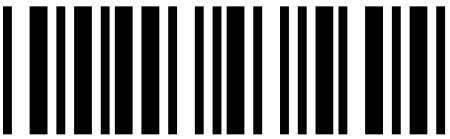
Do not transmit Check Digit
(D8)



Transmit Check Digit
(D9)
DEFAULT

Setting Options for Code 39 …. continued

Calculate Check Digit
(C0)



Do not calculate Check Digit
(C1)
DEFAULT

Setting Options for Codabar

Do not transmit Start/Stop Characters
(F0)
DEFAULT

Transmit Start/Stop as
ABCD/tn*E
(F1)

Transmit Start/Stop as
abcd/tn*e
(F2)

Setting Options for Codabar ….. continued

Transmit Start/Stop as
ABCD/ABCD
(F3)

Transmit Start/Stop as
abcd/abcd
(F4)

Setting Options for Code 128

There are no programmable settings for Code 128

Setting Options for Code 2of5

Do not calculate Check Digit
(G0)
DEFAULT

Calculate Check Digit
(G1)

Transmit Check Digit
(E0)
DEFAULT

Setting Options for Code 2of5 …. continued

Do not transmit Check Digit
(E1)

Minimum data: 1 Character
(GE)

Minimum data: 3 Characters
(GF)

Setting Options for Code 2of5 …. continued

Minimum data: 5 Characters
(GI)

Setting Options for MSI / Plessey

Not Check Digit
(4A)

Calculate Check Digit 1 =
Modulo 10
(4B)
DEFAULT

Calculate Check Digit 2 =
Modulo 10/Modulo 10
(4C)

Setting Options for MSI / Plessey …. continued

Calculate Check Digit 2 = Modulo 10/Modulo 11
(4D)

Do not transmit Check Digit
(4G)

Transmit Check Digit 1
(4E)

Setting Options for MSI / Plessey …. continued

Transmit Check Digit 1 & 2
(4F)

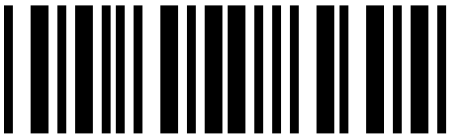
Setting Options for IATA

Do not calculate Check Digit
(4H)
DEFAULT

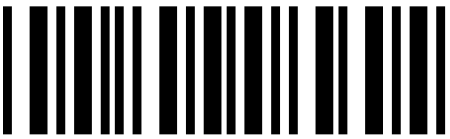
Check S/N only
(4I)

Check CPN, S/N
(4J)

Setting Options for IATA ….. continued



Check CPN,Airline and S/N
(4K)



Transmit Check Digit
(4L)
DEFAULT

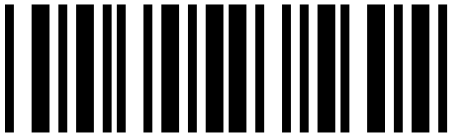
Do not transmit Check Digit 1
(4M)

Chapter 6
Universal Programming Options

These programming commands apply to all interfaces and symbologies

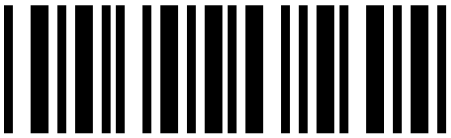
Redundant Decoding

No Redundacy
(X0)



Read 2 times
(X1)
DEFAULT

Redundant Decoding ….. Continued



Read 3 times
(X2)

Read 4 times
(X3)

Read Mode

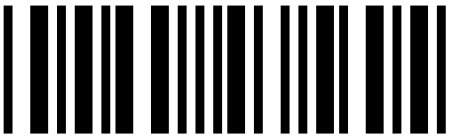
Single Read
(S0)

Multiple Read
(S1)
DEFAULT

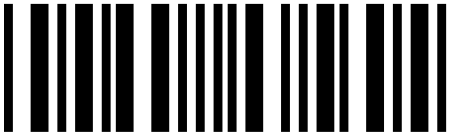
Continuous Read
(S2)

Beeper Options

Disable Beeper
(W0)



Single Tone Beeper
(W1)



High - Low Beeper
(W2)

Beeper Options …… continued

Low - High Beeper
(W3)

Beeper Duration: 50ms
(W7)

Beeper Duration: 100ms
(W4)

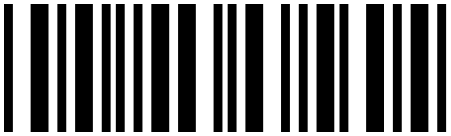
Beeper Options …… continued

Beeper Duration: 400ms
(W6)

Loudness: Maximum
(T0)
DEFAULT

Loudness: Loud
(T1)

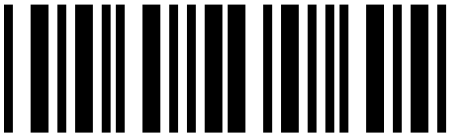
Beeper Options …… continued



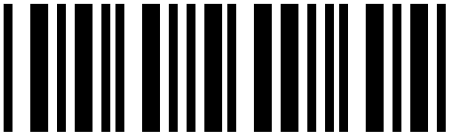
Loudness: Normal
(T2)

Loudness: Minimum
(T3)

Beeper Options …… continued



Beeper before transmission
(VY)



Beeper after transmission
(VZ)
DEFAULT

Prefix Options

A Prefix and/or a Suffix of up to 4 characters each can be appended to the decoded bar code data. The prefix is transmitted before the bar code data, the suffix, after.

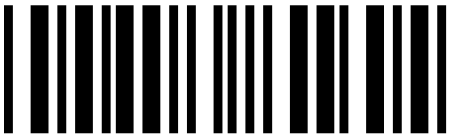
For units with an RS232 Interface, any of the 128 ASCII characters may be used as Prefix or Suffix.

For units with a Keyboard Wedge Interface, special keys supported by your keyboard can be used in the Prefix or Suffix.

A “Code Identifier: that identifies the type of symbology can also be used in the Prefix or Suffix.

To add a Prefix

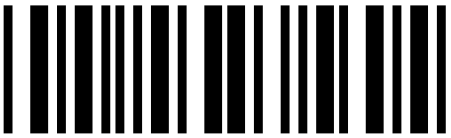
1. Scan the “Start/Stop Programming Mode” bar code to enter the programming mode.
2. Select the symbologies to which you wish to add the Prefix.
3. Scan the Direct Input Characters that you want in the Prefix
4. Scan the “Start/Stop Programming Mode” bar code



Clear All Prefixes
(MG)

Prefix Options …… continued

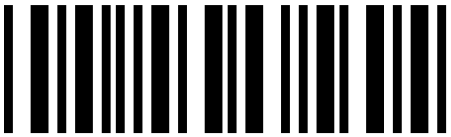
Add Prefix to All Symbologies
(RY)



Add Prefix to UPC-A
(N1)

Add Prefix to UPC-A plus all add-ons
(M0)

Prefix Options …… continued

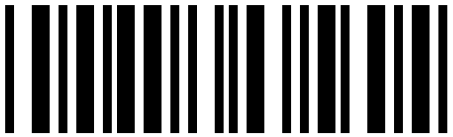


Add Prefix to UPC-E
(N2)

Add Prefix to UPC-E plus all Add-Ons
(M1)

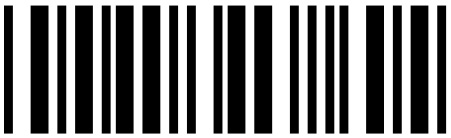
Add Prefix to EAN-13
(N3)

Prefix Options …… continued



Add Prefix to EAN-13 plus Add-Ons
(M2)

Add Prefix to EAN-8
(N4)



Add Prefix to EAN-8 plus Add-Ons
(M3)

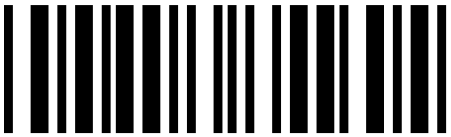
Prefix Options …… continued

Add Prefix to Code 39
(M4)

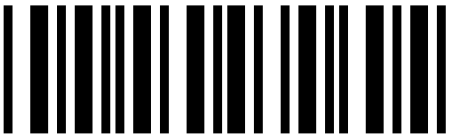
Add Prefix Codabar
(M5)

Add Prefix to Industrial 2of5
(M6)

Prefix Options …… continued



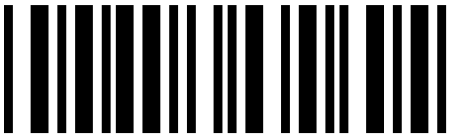
Add Prefix to Interleaved 2of5
(M7)



Add Prefix to IATA
(I8)

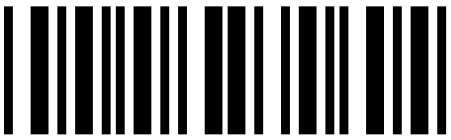
Add Prefix to Code 93
(M8)

Prefix Options …… continued



Add Prefix to Code 128
(M9)

Add Prefix to MSI/Plessey
(N0)



Add Prefix to Telepen
(L8)

Suffix Options

A Prefix and/or a Suffix of up to 4 characters each can be appended to the decoded bar code data. The prefix is transmitted before the bar code data, the suffix, after.

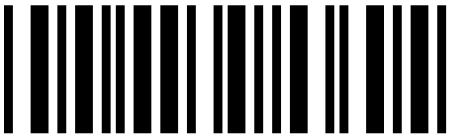
For units with an RS232 Interface, any of the 128 ASCII characters may be used as Prefix or Suffix.

For units with a Keyboard Wedge Interface, special keys supported by your keyboard can be used in the Prefix or Suffix.

A “Code Identifier: that identifies the type of symbology can also be used in the Prefix or Suffix.

To add a Suffix

5. Scan the “Start/Stop Programming Mode” bar code to enter the programming mode.
6. Select the symbologies to which you wish to add the Suffix.
7. Scan the Direct Input Characters that you want in the Suffix
8. Scan the “Start/Stop Programming Mode” bar code



Clear All Suffixes
(PR)

Sufffix Options …… continued

Add Suffix to All Symbologies
(RZ)

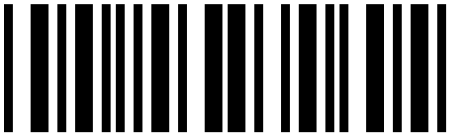
Add Sufffix to UPC-A
(N6)

Add Suffix to UPC-A plus all add-ons
(O0)

Suffix Options …… continued

Add Suffix to UPC-E
(N7)

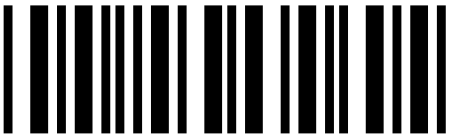
Add Suffix to UPC-E plus all Add-Ons
(O1)



Add Suffix to EAN-13
(N8)

Suffix Options …… continued

Add Suffix to EAN-13 plus Add-Ons
(O2)



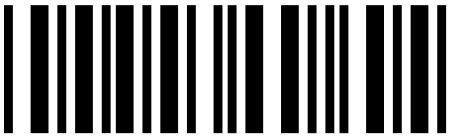
Add Suffix to EAN-8
(N9)

Add Suffix to EAN-8 plus Add-Ons
(O3)

Suffix Options …… continued

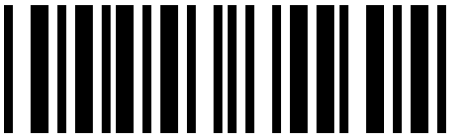
Add Suffix to Code 39
(O4)

Add Suffix to Codabar
(O5)

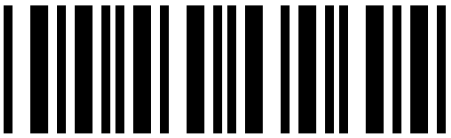


Add Suffix to Industrial 2of5
(O6)

Suffix Options …… continued



Add Suffix to Interleaved 2of5
(O7)



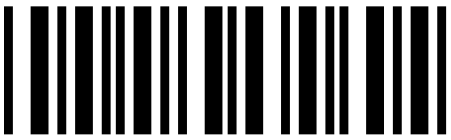
Add Suffix to IATA
(I9)

Add Suffix to Code 93
(O8)

Suffix Options …… continued

Add Suffix to Code 128
(O9)

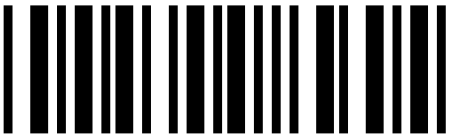
Add Suffix to MSI/Plessey
(N5)



Add Suffix to Telepen
(L9)

Direct Input -- Keyboard Keys

F1 Key
(8J)

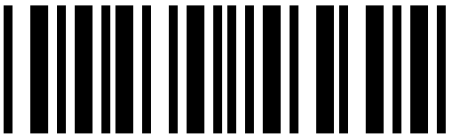


F2 Key
(8K)

F3 Key
(8L)

Direct Input -- Keyboard Keys …… continued

F4 Key
(8M)

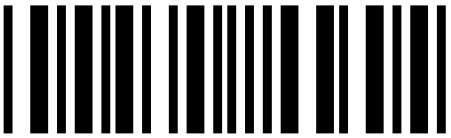


F5 Key
(8N)

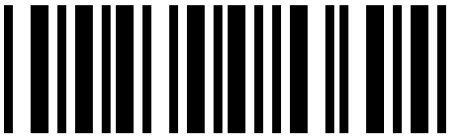
F6 Key
(8O)

Direct Input -- Keyboard Keys …… continued

F7 Key
(8P)

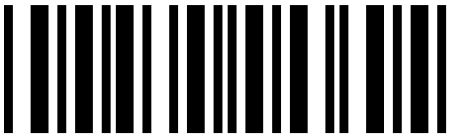


F8 Key
(8Q)

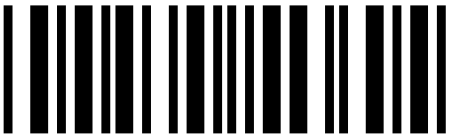


F9 Key
(8R)

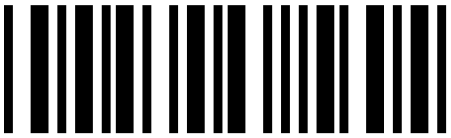
Direct Input -- Keyboard Keys …… continued



F10 Key
(8S)



F11 Key
(8T)



F12 Key
(8U)

Direct Input -- Keyboard Keys …… continued

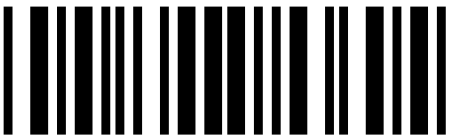
Backspace
(9X)

TAB
(7H)

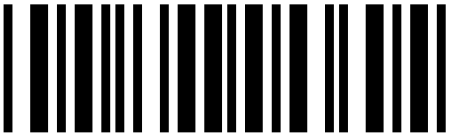
Carriage Return
(7I)

Direct Input -- Keyboard Keys …… continued

Enter (numeric pad)
(7Q)



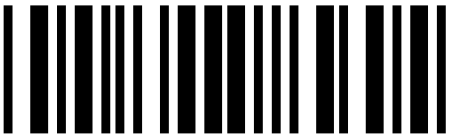
Enter make (alpha pad)
(7R)



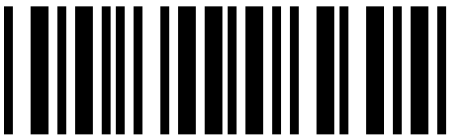
Enter make and break (alpha pad)
(7S)

Direct Input -- Keyboard Keys …… continued

ESC
(7J)



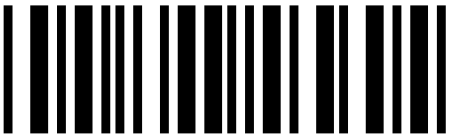
Arrow down
(7K)



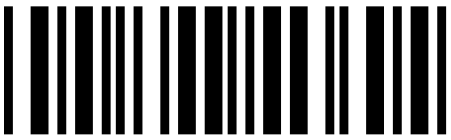
Arrow up
(7L)

Direct Input -- Keyboard Keys …… continued

Arrow right
(7M)



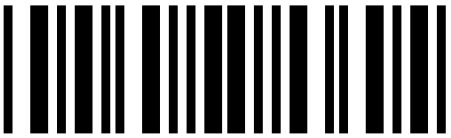
Arrow left
(7N)



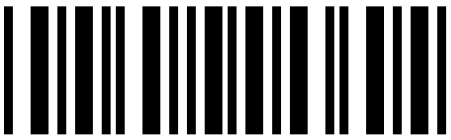
<DEL>
(7T)

Direct Input -- Keyboard Keys …… continued

<INSERT>
(VQ)



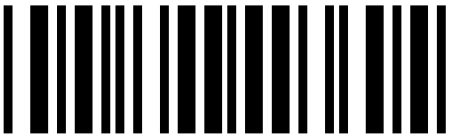
<HOME>
(VR)



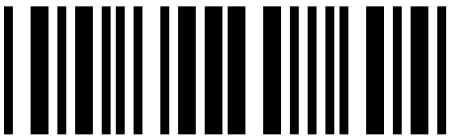
<END>
(VS)

Direct Input -- Keyboard Keys …… continued

Page up
(7O)

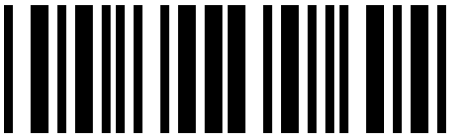


Page down
(7P)

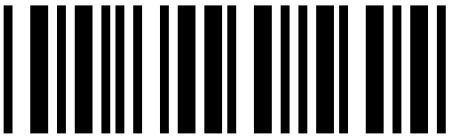


Left <Control>
(7W)

Direct Input -- Keyboard Keys …… continued



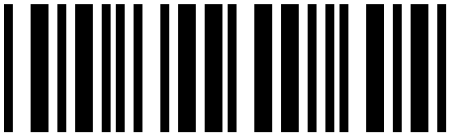
Left <Alt>
(7Y)



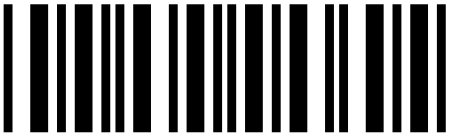
Right <Shift>
(7V)

Right <Control>
(7X)

Direct Input -- Keyboard Keys …… continued



Right <Alt>
(7Z)



CAPSLOCK
(9S)

Direct Input -- Character Keys

Space bar
(5A)

!
(5B)

“
(5C)

Direct Input -- Character Keys …… continued

#

(5D)

$

(5E)

%

(5F)

Direct Input -- Character Keys …… continued

&
(5G)

‘
(5H)

(
(5I)

Direct Input -- Character Keys …… continued

)

(5J)

*

(5K)

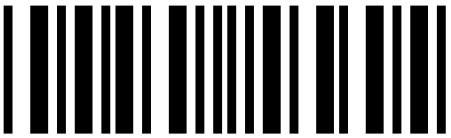
+

(5L)

Direct Input -- Character Keys …… continued

,

(5M)



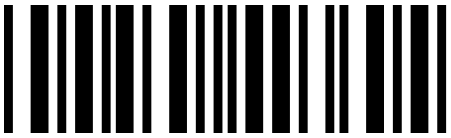
-

(5N)

.

(5O)

Direct Input -- Character Keys …… continued



/

(5P)

:

(6A)

;

(6B)

Direct Input -- Character Keys …… continued

<

(6C)

=

(6D)

>

(6E)

Direct Input -- Character Keys …… continued

?
(6F)

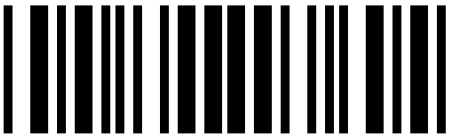
@
(6G)

[
(7A)

Direct Input -- Character Keys …… continued

\

(7B)



]

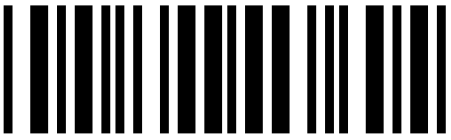
(7C)

^

(7D)

Direct Input -- Character Keys …… continued

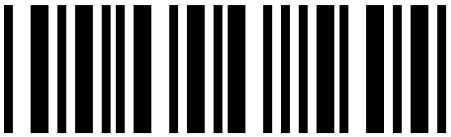
(7E)



(7F)

{
(9T)

Direct Input -- Character Keys …… continued



|

(9U)

}

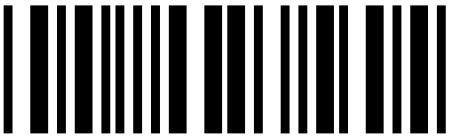
(9V)

~

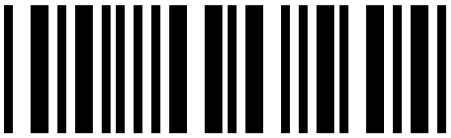
(9W)

Direct Input -- Numeric Characters

0
(Q0)



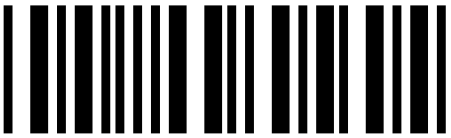
1
(Q1)



2
(Q2)

Direct Input -- Numeric Characters …continued

3
(Q3)

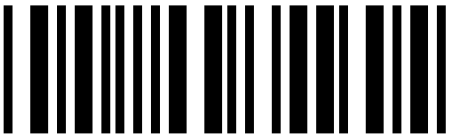


4
(Q4)

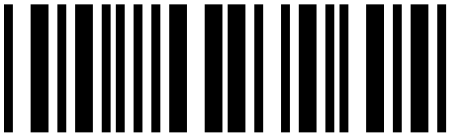
5
(Q5)

Direct Input -- Numeric Characters … continued

6
(Q6)

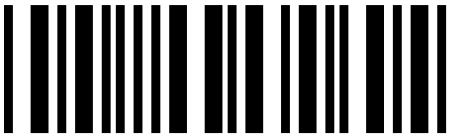


7
(Q7)



8
(Q8)

Direct Input -- Numeric Characters … continued



9
(Q9)

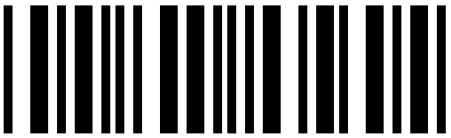
Direct Input -- Alpha Characters

A
(0A)

B
(0B)

Direct Input -- Alpha Characters …… continued

C
(0C)

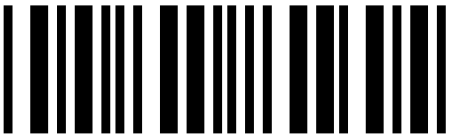


D
(0D)

E
(0E)

Direct Input -- Alpha Characters …… continued

F
(0F)



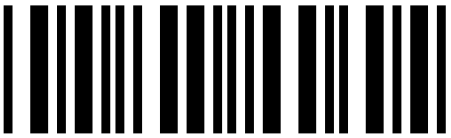
G
(0G)

H
(0H)

Direct Input -- Alpha Characters …… continued

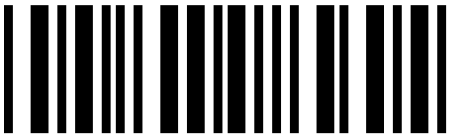
I

(0I)



J

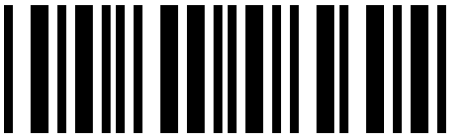
(0J)



K

(0K)

Direct Input -- Alpha Characters …… continued

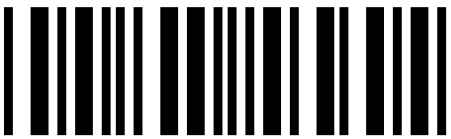


L

(0L)

M

(0M)



N

(0N)

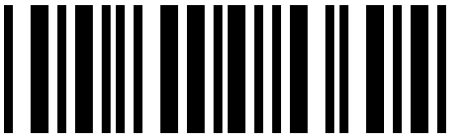
Direct Input -- Alpha Characters …… continued

O
(0O)

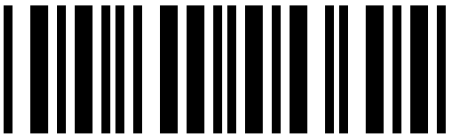
P
(0P)

Q
(0Q)

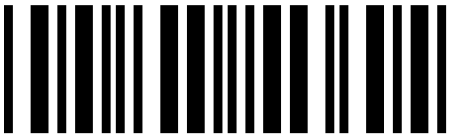
Direct Input -- Alpha Characters …… continued



R
(0R)

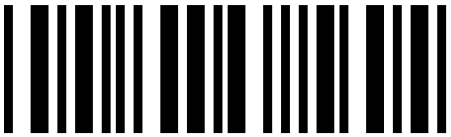


S
(0S)



T
(0T)

Direct Input -- Alpha Characters …… continued



U
(0U)

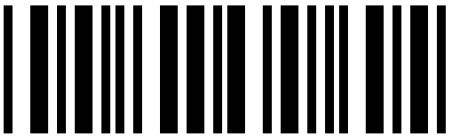
V
(0V)

W
(0W)

Direct Input -- Alpha Characters …… continued

X

(0X)



Y

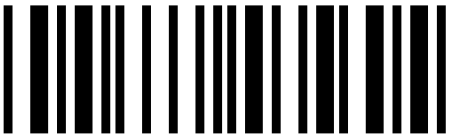
(0Y)

Z

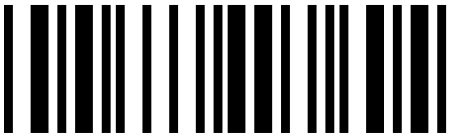
(0Z)

Direct Input -- Alpha Characters …… continued

a
($A)



b
($B)



c
($C)

Direct Input -- Alpha Characters …… continued

d
($D)

e
($E)

f
($F)

Direct Input -- Alpha Characters …… continued

g
($G)

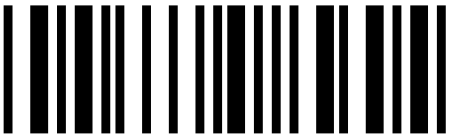
h
($H)

i
($I)

Direct Input -- Alpha Characters …… continued

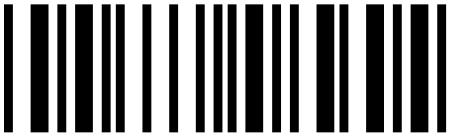
j

($J)



k

($K)

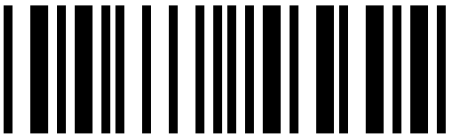


l

($L)

Direct Input -- Alpha Characters …… continued

m
($M)



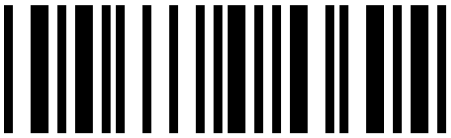
n
($N)

o
($O)

Direct Input -- Alpha Characters …… continued

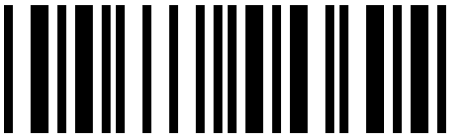
p
($P)

q
($Q)

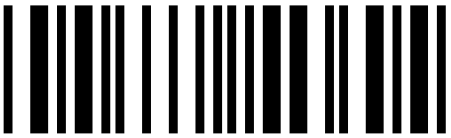


r
($R)

Direct Input -- Alpha Characters …… continued



s
($S)



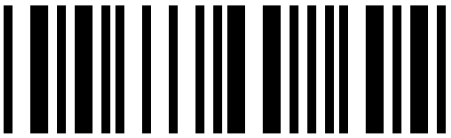
t
($T)

u
($U)

Direct Input -- Alpha Characters …… continued

v

($V)



w

($W)

x

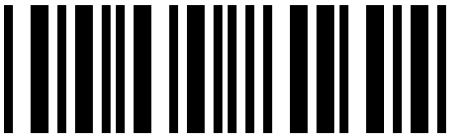
($X)

Direct Input -- Alpha Characters …… continued

y
($Y)

z
($Z)

Direct Input -- Control Characters

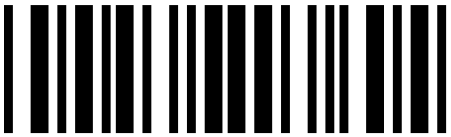


^@ (NULL)
(9G)

^A(SOH)
(1A)

^B(STX)
(1B)

Direct Input -- Control Characters .....continued



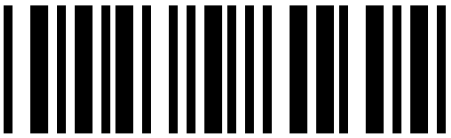
^C(ETX)
(1C)

^D(EOT)
(1D)

^E(ENQ)
(1E)

Direct Input -- Control Characters .....continued

^F(ACK)
(1F)



^G(BEL)
(1G)

^H(BS)
(1H)

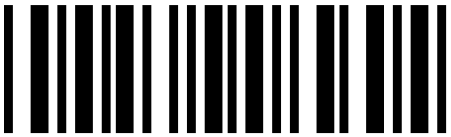
Direct Input -- Control Characters .....continued

^I(HT)
(1I)

^J(LF)
(1J)

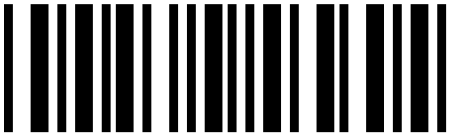
^K(VT)
(1K)

Direct Input -- Control Characters .....continued



^L(FF)
(1L)

^M(CRF)
(1M)

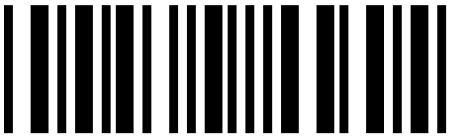


^N(SO)
(1N)

Direct Input -- Control Characters .....continued

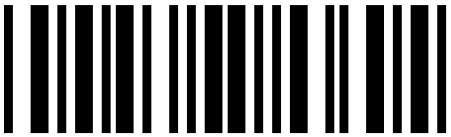
^O(SI)
(1O)

^P(DLE)
(1P)

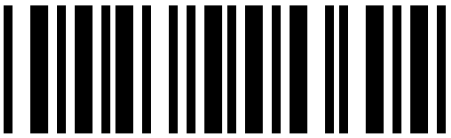


^Q(DC1)
(1Q)

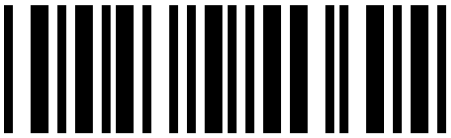
Direct Input -- Control Characters .....continued



^R(DC2)
(1R)

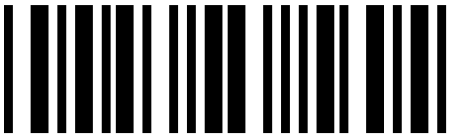


^S(DC3)
(1S)



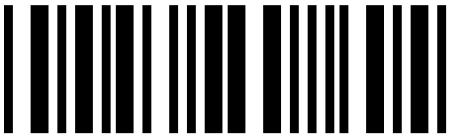
^T(DC4)
(1T)

Direct Input -- Control Characters .....continued



^U(NAK)
(1U)

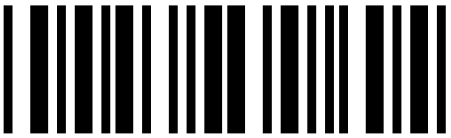
^V(SYN)
(1V)



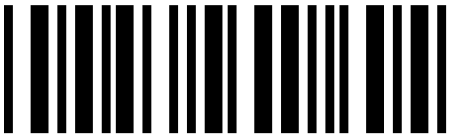
^W(ETB)
(1W)

Direct Input -- Control Characters .....continued

^X(CAN)
(1X)



^Y(EM)
(1Y)



^Z(SUB)
(1Z)

Direct Input -- Control Characters .....continued

^[(ESC)
(9A)

^\(FS)
(9B)

^](GS)
(9C)

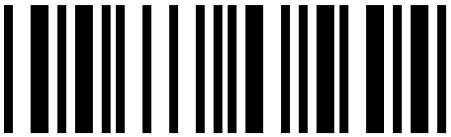
Direct Input -- Control Characters .....continued

^^(RS)
(9D)

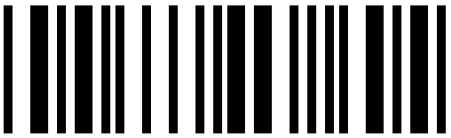
^_ (US)
(9E)

DEL (ASCII 127)
(9F)

Direct Input -- Code ID / Length



Code Identification
($2)



Code Length
($3)

Sleep Mode

The default setting of the LPN 1736 the laser diode and motor are “on” whenever power is applied to the scanner.

The scanner can be programmed to turn off the laser and the motor after a period of time with no scanning activity (no bar code presented for scanning).

This will place the scanner into a waiting or “Sleep Mode”, not into an Off mode. In this mode, the scanner is resting, waiting for a bar code to be presented for scanning. When a new bar code is placed into the scanning area, the scanner will sense its presence and wake up the scanner from its sleep mode to read the bar code.

The length of time before the scanner goes into the sleep mode can be programmed. It can be set for a period of between 10 seconds to 1 hour.

The sequence to program the scanner so that it enters a Sleep Mode is shown below. You need to scan the required programming bar codes in the sequence shown. These programming bar codes are on the following pages.

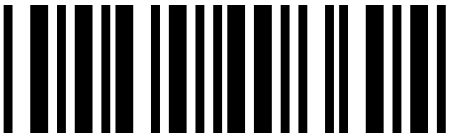
1. Start / Stop Programming Mode (ZZ)
2. Enable Trigger (S8)
3. Set Read Time to Indefinite (YM)
4. Turn on Auto Trigger (+I)
5. Disable Motor when Idle (4Z)
6. Set Auto Shut-off Time ([BBB)
7. Enter Desired Shut-off Time (in seconds, e.g, 1 hours = 3600) using Direct Input Number bar codes
8. Start / Stop Programming Mode

For an RS232 interface, you can also program the scanning for sleep mode by transmitting the following command codes in the sequence shown

<ESC> <**S8**> <CR>
<ESC> <**YM**> <CR>
<ESC> <**+I**> <CR>
<ESC> <**4Z**> <CR>
<ESC> <**[BBB**> <**Q3**><**Q6**> <**Q0**> <**Q0**> <**Q0**> <CR>
<ESC> <**Z2**> <CR>

Setting Sleep Period to One Hour

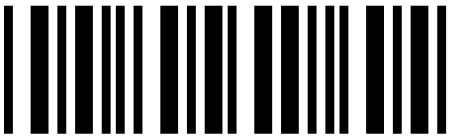
Enable Trigger
(S8)



Readtime: Indefinite
(YM)

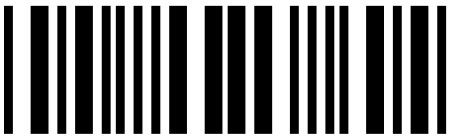
Trigger Sensitivity = Avg
(+I)

Setting Sleep Period to One Hour…continued



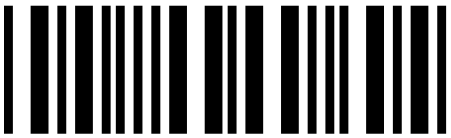
Disable Motor When Idle
(4Z)

Set Auto Shut Off Time
(BBB)



Direct Input: 3
(Q3)

Setting Sleep Period to One Hour…continued



Direct Input: 6
(Q6)

Direct Input: 0
(Q0)

Direct Input: 0
(Q0)

Adjust Auto Sensor

Auto Trigger = Avg. Setting (+I)

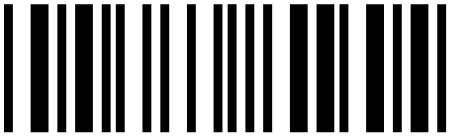
DEFAULT

The following bar code (+H) allows the auto sensor to compensate for a white or extremely light colored work surface and a dark area surrounding the bar code.

Auto Trigger = Bright/Dark (+H)

`

The auto sensor can be adjusted to compensate for dark colored work surface and a white or light color area surrounding the bar code.



Auto Sensor = Dark/Bright (+G)

Motor Speed in Sleep Mode

In the default setting, when the scanning is in the Sleep Mode, the motor is Off.

To provide a faster “wake up” when an object is sensed, the motor can be set to run at normal speed or at half speed. At either speed the laser is Off.

To allow the motor to continue running at normal speed, ignore the “Disable Motor When Idle” programming command in the sleep mode programming sequence.

To allow the motor to continue running at half speed, use the following programming command instead of the “Disable Motor When Idle”(4Z) command in the sleep mode programming sequence.

Motor at ½ Speed When Idle (BBA)

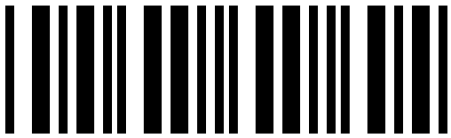
Appendix A

Start / Stop Programming Bar Code

Opticon scanners are preprogrammed at the factory with default settings representing the settings most commonly used by our customers. In most applications, the scanner will work right out of the box without the need for additional programming.

If desired, you can change or program the settings of the scanner by reading special programming bar code symbols. These special bar codes are contained in this manual.

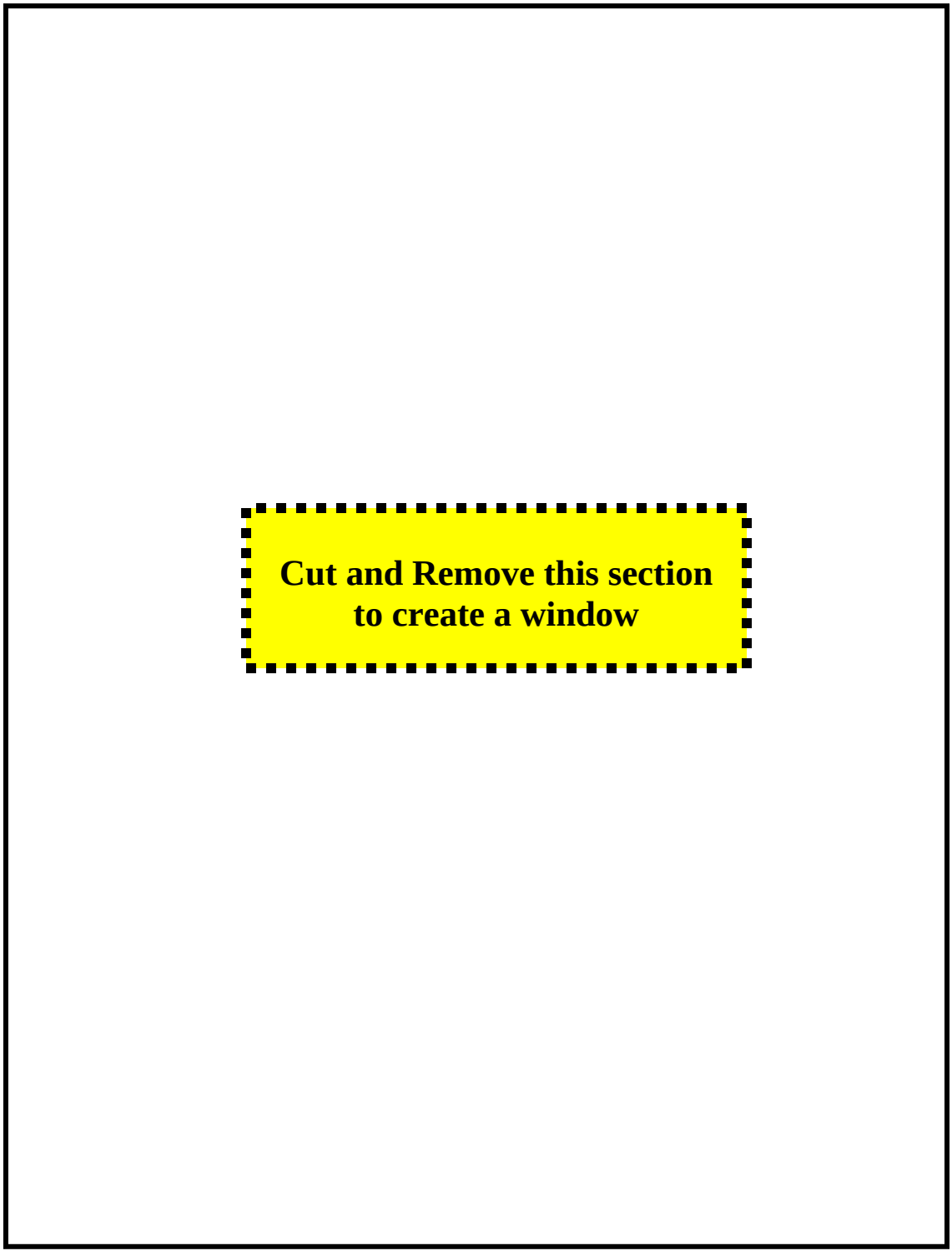
In order to read these special programming bar codes, the scanner must first enter the "programming mode". This is accomplished by scanning the following bar code symbol:



Start/Stop Programming Mode

Scanning this programming bar code puts the scanner into the programming mode. The scanner will beep continuously indicating that it is in programming mode. In this mode the scanner will only read special programming bar codes. It will not read regular bar codes.

Appendix B Scanning Template for Programming

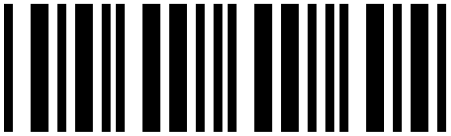


Appendix C Default Settings

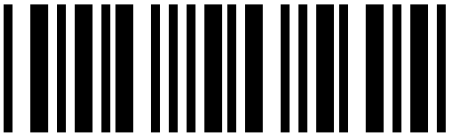
Symbologies	All Symbologies	Enabled
	UPC	Enabled
	UPC +2, +5	Disable
	EAN	Enabled
	EAN 8	Enabled
	EAN 13	Enabled
	EAN 8/13 +2	Disable
	EAN 8/13+5	Disable
	Code 39	Enabled
	Code 128	Enabled
	Code 93	Enabled
	Industrial 2of5	Enabled
	Interleaved 2of5	Enabled
	Codabar	Enabled
	MSI / Plessey	Enabled
	IATA	Enabled
	Trioptics	Enabled
UPC-A / -E	Transmit Check Digit	On
EAN-8 / -13	Transmit Check Digit	On
Code 39	Standard Code 39	On
	Transmit Start/Stop Characters	Off
	Calc Check Digit	Off
	Transmit Check Digit	On
	Read 1 digit	On
I 2of 5	Calculate Check Digit	Off
	Minimum Length	5 Char.
	Transmit Check Digit	On
Codabar	Transmit Start/Stop Characters	Off
	Calculate Check Digit	Off
	Transmit Check Digit	On
MSI/Plessey	Calculate Check Digit 1	On
	Transmit Check Digit	On
IATA	Calculate Check Digit	Off
	Transmit Check Digit	On
AutoShut-Off	AutoShut-Off	Off
Wedge	AT Keyboard	Default
	Intercharacter Delay	10 msec
RS232 Interface	Baud Rate	9600
	No. of Data Bits	8
	No. of Stop Bits	1
	Flow Control	Unlimited
	Handshaking	None
Redundant Reads before Transmit	Read Twice	On

Appendix D Settings for Ruby VeriFone

Scanners for use with VeriFone Ruby SuperSystems are preprogrammed at the factory with the correct default settings. In the unlikely situation that these default settings are lost or changed, they can be re-established. Scanning the following programming bar codes in sequence will activate the required settings.



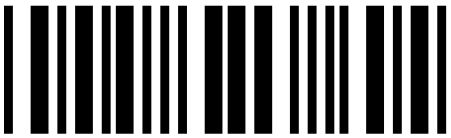
Start/Stop Programming Mode
(ZZ)



Default
(U2)

Transmit UPC E as UPC A
(6P)

Settings for Ruby VeriFone – continued



1200 Baud
(K3)

No Handshaking
(P0)

Add Prefix for UPC A
(N1)

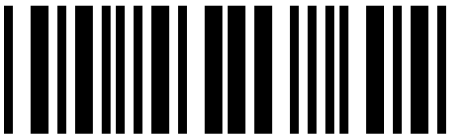
Settings for Ruby VeriFone – continued

Prefix = A
(0A)

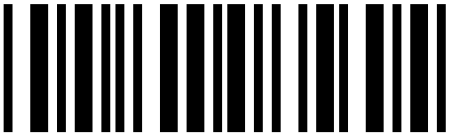
Add Prefix for EAN 8
(N4)

Prefix = A
(0A)

Settings for Ruby VeriFone – continued



Set Prefix for EAN 13
(N3)



Prefix for EAN 13 = A
(0A)

Start/Stop Programming Mode
(ZZ)

LPN1736 Manual Update- September 13, 2005