

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Welch Allyn 3800VHD-12* at our website: *Click HERE*

Welch Allyn®

IMAGETEAM™ 3800

Hand Held Linear Imager



User's Guide

Disclaimer

Welch Allyn® reserves the right to make changes in specifications and other information contained in this document without prior notice, and the reader should in all cases consult Welch Allyn to determine whether any such changes have been made. The information in this publication does not represent a commitment on the part of Welch Allyn.

Welch Allyn shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Welch Allyn, Incorporated.

© 1998 Welch Allyn, Inc. All rights reserved.

Data Collection Division Web Address: http://dcd.welchallyn.com

Table of Contents

Section 1 Getting Started

Section	*Page*
About This Manual	1–1
Unpacking the Scanner	1–1
Scanner Identification Label	1–2
Connecting the Scanner When Powered by Host (Keyboard Wedge)	1–3
Plug and Play	1–4

Section 2 Terminal Interfaces

Section	*Page*
Keyboard Wedge Connection	2–1
Terminal ID	2–2
Supported Terminals Chart	2–2
Keyboard Country	2–3
Keyboard Style	2–4
Keyboard Modifiers	2–5
Serial Port Connection	2–7
Baud Rate	2–8
RS-232 Word Length: Data Bits, Stop Bits, and Parity	2–9
RS-232 Handshaking	2–11
Wand Emulation Connection	2–12
Wand Emulation Transmission Rate	2–13
Wand Emulation Polarity	2–14
Wand Emulation Idle	2–14
Secondary Interface	2–15
Secondary Code 39 Wand Emulation	2–15
Secondary RS-232 Connection	2–15
Secondary Non Decoded Output Laser Emulation	2–16
Non Decoded Output Laser Emulation Transmission Rate	2–16
Non Decoded Output Laser Emulation Polarity	2–16
Non Decoded Laser Emulation Idle	2–17
Disabling the Secondary Interface	2–17
Secondary Trigger Mode	2–18

Section 3 Output

Section	*Page*
Scan Rate	3–1
Beeper Volume	3–1
Beeper Tone	3–2
Scan Voting	3–2
Reduce Quiet Zone	3–2
Reread Delay	3–3
Good Read Delay	3–3
Trigger Mode	3–4

Section 4 Data Editing

Section	*Page*
Points to Keep In Mind	4–1
To Add a Prefix or Suffix	4–2
To Clear One or All Prefixes or Suffixes	4–3
Prefix Selections	4–4
Suffix Selections	4–4
Function Code Transmit	4–6
Intercharacter Delay	4–7
Interfunction Delay	4–7
Intermessage Delay	4–8

Section 5 Data Formatting

Section	*Page*
Data Format Editor	5–1
Data Format Editor Commands	5–2
Data Format Editor	5–3
Data Formatter	5–4

Section 6 Symbologies

Section *Page*

Introduction 6–1

Industrial Symbology Selections

Codabar 6–2
Code 39 6–6
Interleaved 2 of 5 6–11
Code 2 of 5 6–13
IATA Code 2 of 5 6–14
Matrix 2 of 5 6–15
Code 11 6–16
Code 128 6–18

Retail Symbology Selections

UPC A 6–20
UPC E 6–23
EAN/JAN 13 6–26
EAN/JAN 8 6–28
China Post Code 6–30

Section 7 Visual Menu

Section *Page*

Visual Menu Operations 7–1
Temporary Visual Menu Configuration 7–1
Installing Visual Menu from the Web 7–2

Section 8 Interface Keys

Section *Page*

Keyboard Function Relationships 8–1
Supported Interface Keys 8–2

Section 9 Defaults

Section *Page*

Resetting the Factory Settings 9–1

Section 10 Specifications

Section *Page*

Product Specifications 10–1
Standard Cable Pinouts 10–2

Section 11 Customer Support

Section	*Page*
Obtaining Factory Service in the United States	11–1
Obtaining Factory Service in Europe	11–1
Obtaining Factory Service in Asia	11–2
Technical Support	11–2
Limited Warranty	11–3

Agency Compliance Statements
Programming Chart
Sample Bar Codes

Section 1 Getting Started

The IMAGETEAM™ 3800 is a high performance linear imaging scanner from Welch Allyn. The IT3800 marks a new performance level for hand held scanners. Linear imaging technology is defined by a bright and sharply focused aiming line, high resolution imaging, and fast reading speed. The IT3800 is comfortable to hold, easy to use, rugged, and excellent for all general scanning applications.

About This Manual

This User's Guide provides installation and programming instructions for the IMAGETEAM 3800. Product specifications, dimensions, warranty, and customer support information are also included.

Welch Allyn bar code scanners are factory programmed for the most common terminal and communications settings. If you need to change these settings, programming is accomplished by scanning the bar codes in this Guide.

Unpacking the Scanner

Open the carton. The shipping carton should contain:



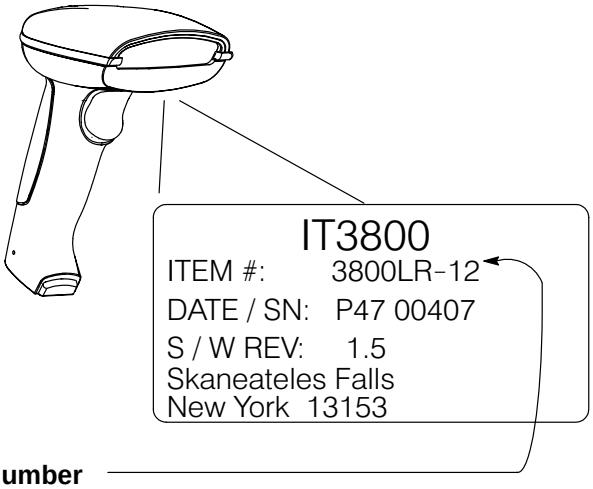
IMAGETEAM 3800
User's Guide



IMAGETEAM 3800
Scanner

- Check to make sure everything you ordered is present.
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.

Scanner Identification Label



Model Number
3800LR–12

Interface Option

Option	RS-232	Non Decoded	Wand Emulation	Keyboard Wedge
2	**X**	**X**	**X**	Various

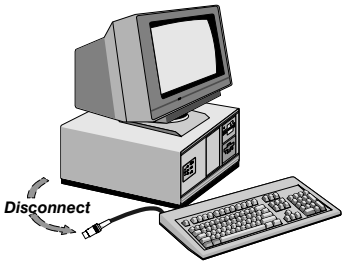
Trigger
1 = Manual Trigger with programmable auto trigger feature

Reading Distance
LR = Long Range

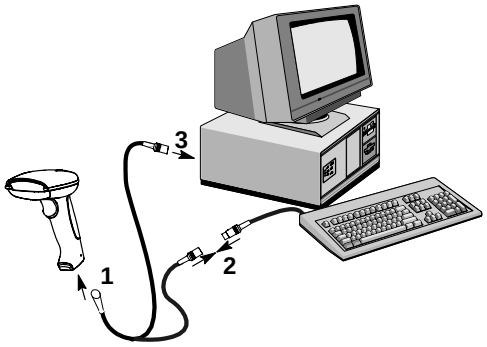
Connecting the Scanner When Powered by Host (Keyboard Wedge)

A scanner can be connected between the keyboard and PC as a “keyboard wedge,” plugged into the serial port, or connected to a portable data terminal in wand emulation or non decoded output mode. The following is an example of a keyboard wedge connection:

1. Turn off power to the terminal/computer.
2. Disconnect the keyboard cable from the back of the terminal/computer, as shown below.



3. Connect the appropriate interface cable to the scanner and to the terminal/computer.



4. Turn the terminal/computer power back on. The scanner will beep twice.
5. Verify the scanner operation by scanning a bar code from the back cover of this manual. The scanner will beep once.

The scanner is now connected and ready to communicate with your terminal/PC. You must program the scanner for your interface before bar code data can be transmitted to your terminal/PC. If you are using the scanner as a keyboard wedge, turn to page 2–1. If the scanner is connected via a serial port, turn to page 2–7. If this is a wand emulation application, turn to page 2–12, and for a non decoded output connection, turn to page 2–16.

Plug and Play

Plug and Play bar codes provide instant scanner set up for commonly used interfaces.

The most common interface is Keyboard Wedge. The following Keyboard Wedge bar code also programs a carriage return (CR) and line feed (LF) suffix.



Keyboard Wedge Interface for IBM PC AT and Compatibles
(Default)

For most laptops, scanning the Laptop Direct Connect bar code allows operation of the integral keyboard. The following Laptop Direct Connect bar code also programs a carriage return (CR) and line feed (LF) suffix.



Laptop Direct Connect

The RS-232 Interface bar code is used when connecting to the serial port of a PC or terminal. The following RS-232 Interface bar code also programs the parameters:

Option	**Setting**
Baud Rate	9600 bps
Parity	Even
Data Format	7 data bits, parity bit, 1 stop bit (8 bit data)



RS-232 Interface

The following Wand Emulation bar code sets the interface to Wand Emulation mode and translates bar code data as Code 39 symbology. It also programs the Transmission Rate to 25 inches per second, and Output Polarity to black high.



Wand Emulation (Code 39 Format) Interface

Section 2 Terminal Interfaces

Keyboard Wedge Connection

IMAGETEAM 3800 scanners are factory programmed for a keyboard wedge interface to an IBM PC AT with a USA keyboard. If this is your interface and you do not need to modify the settings, skip to Section 3 – Output.

If you have a different terminal and/or you want to make any keyboard wedge changes, scan the bar code below.



IBM PC AT and Compatibles
with CR, LF suffix

Terminal ID

If your interface is not a standard PC AT, refer to the Supported Terminals Chart below and locate the Terminal ID number for your PC. Scan the **Terminal ID** bar code below, then scan the numeric bar code(s) on the inside back cover of this manual to program the scanner for your terminal ID. Scan **Save** to save your selection.

For example, an IBM PS/2 terminal has a Terminal ID of 02. You would scan the **Terminal ID** bar code, then **0**, then **2** from the inside back cover, then **Save**. If you make an error while scanning the digits (before scanning Save), scan the Discard code on the back cover and scan the digits and the Save code again.



Terminal ID

Supported Terminals Chart

Terminal	Model(s)	Terminal ID
Heath Zenith	PC	90
HP	Vectra QS–16	03
IBM	PC XT	01
IBM	PS/2 25, 30	02
IBM	AT, PS/2 30–286, 50, 55SX, 60, 70, 70–061, 70–121, 80	03*
IBM Thinkpad	750	97
Olivetti	M19, M24, M28, M200	01
Olivetti	240, 250, 290, 380, P500	03
RS232 TTL		00
Wand Emulation		61



Save

Keyboard Country

Scan the **Program Keyboard Country** bar code below, then scan the numeric bar code(s) from the inside back cover, then the **Save** bar code to program the keyboard for your country. As a general rule, the following characters are not supported by the scanner for countries other than the United States:

@ | $ # { } [ ] = / ‘ \ < > ~



Program Keyboard Country

Country Code	Scan	Country Code	Scan
Belgium	1	Italy	5
Denmark	8	Norway	9
Finland	2	Spain	10
France	3	Switzerland	6
Germany/Austria	4	USA ***(Default)***	0
Great Britain	7		



Save

Keyboard Style

This programs keyboard styles, such as Caps Lock and Shift Lock. *Default = Regular.*

Regular is used when you normally have the Caps Lock key off.



***** Regular

Caps Lock is used when you normally have the Caps Lock key on.



Caps Lock

Shift Lock is used when you normally have the Shift Lock key on. (Not common to U.S. keyboards.)



Shift Lock

Automatic Caps Lock is used if you change the Caps Lock key on and off. The software tracks and reflects if you have Caps Lock on or off (AT and PS/2 only). This selection can only be used with systems that have an LED which notes the Caps Lock status.



Automatic Caps Lock

Emulate External Keyboard should be scanned if you do not have an external keyboard (IBM AT or equivalent), but should not be used for laptops. To connect the scanner to a laptop, use the Automatic Direct Connect selection on page 2–6.



Emulate External Keyboard

Keyboard Modifiers

This modifies special keyboard features, such as CTRL+ ASCII codes and Turbo Mode.

Control + ASCII Mode On – The scanner sends key combinations for ASCII control characters for values 00–1F. Refer to page 8–1 for CTRL+ ASCII Values. *Default = Off*



Control + ASCII Mode On



***** Control + ASCII Mode Off

Turbo Mode – The scanner sends characters to an IBM AT terminal faster. (For use with IBM AT only.) If the terminal drops characters, do not use Turbo Mode. *Default = Off*



Turbo Mode On



***** Turbo Mode Off

Numeric Keypad Mode – Sends numeric characters as if entered from a numeric keypad. *Default = Off*



Numeric Keypad Mode On



***** Numeric Keypad Mode Off

Automatic Direct Connect – Use this selection if you are using a laptop whose keyboard is disabled when you plug in the scanner. This selection can also be used if you have an IBM AT style terminal and the system is dropping characters. *Default = Off*



Automatic Direct Connect Mode On



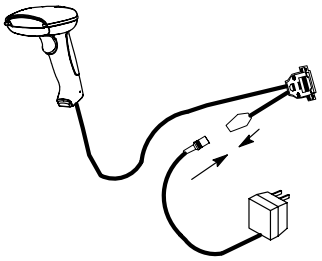
***** Automatic Direct Connect Mode Off

Serial Port Connection

All communication parameters between the scanner and terminal must match for correct data transfer through the serial port using RS-232 protocol. Scan the RS-232 Interface bar code to program the scanner for an RS-232 installation.

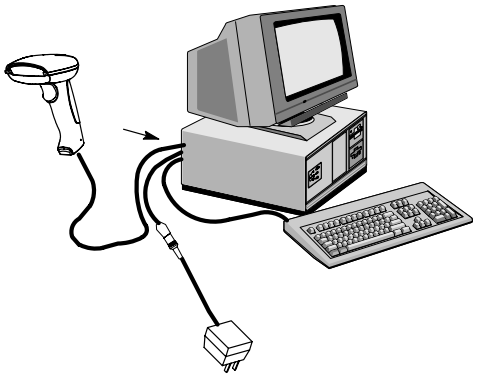
RS-232 Interface

1. Turn off power to the terminal/computer.
2. Connect the appropriate interface cable to the scanner, as shown below.



Note: For the scanner to work properly, you must have the correct cable for your type of terminal/computer.

3. Plug the serial connector into the serial port on the back of your computer/terminal, as shown below. Tighten the two screws to secure the connector to the port.



4. Plug the power pack into a power source.
5. Once the scanner has been fully connected, power up the terminal/computer.

Baud Rate

Baud Rate sends the data from the scanner to the terminal at the specified rate. The host terminal must be set for the same baud rate as the scanner.
Default = 9600.


300


600


1200


2400


4800


***** 9600


19200


38400

RS-232 Word Length: Data Bits, Stop Bits, and Parity

Data Bits sets the word length at 7 or 8 bits of data per character. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications which require use of the full ASCII set, select 8 data bits per character. *Default = 7.*

Stop Bits sets the stop bits at 1 or 2. *Default = 1.*

Parity provides a means of checking character bit patterns for validity. *Default = Even.*



***** 7 Data, 1 Stop, Parity Even



7 Data, 1 Stop, Parity None



7 Data, 1 Stop, Parity Odd



7 Data, 1 Stop, Parity Mark



7 Data, 1 Stop, Parity Space



7 Data, 2 Stop, Parity Even



7 Data, 2 Stop, Parity None



7 Data, 2 Stop, Parity Odd

RS-232 Word Length: Data Bits, Stop Bits, and Parity (continued)



7 Data, 2 Stop, Parity Mark



7 Data, 2 Stop, Parity Space



8 Data, 1 Stop, Parity Even



8 Data, 1 Stop, Parity None



8 Data, 1 Stop, Parity Odd



8 Data, 1 Stop, Parity Mark



8 Data, 1 Stop, Parity Space

RS-232 Handshaking

RS-232 handshaking is a set of rules concerning the exchange of data between serially communicating devices. *Default = RTS/CTS, XON/XOFF and ACK/NAK Off*



RTS/CTS On



***** RTS/CTS Off



XON/XOFF On



***** XON/XOFF Off



ACK/NAK On



***** ACK/NAK Off

Wand Emulation Connection

In Wand Emulation mode, the scanner decodes the bar code then sends data in the same format as a wand scanner. The Code 39 Format converts all symbologies to Code 39. The Same Code Format transmits UPC, EAN, Code 128 and Interleaved 2 of 5 without any changes, but converts all other symbologies to Code 39. These codes set the transmission rate to 25 inches per second and the output polarity to black, high. *Default = Code 39 Format.*



***** Code 39 Format



Same Code Format

Wand Emulation Transmission Rate

The Transmission Rate is limited by the terminal's ability to receive data without dropping characters. *Default = 25 inches/second.*



10



***** 25



40



80



120



150



200

Wand Emulation Polarity

The Polarity can be sent as standard with black bars high, or reversed with white bars high. *Default = Black High.*



***** Black High



White High

Wand Emulation Idle

The idle describes the state of the scanner when no data is being transmitted. When in Wand Emulation mode, you must set the scanner's idle state to match the idle state for the device to which the scanner is connected. *Default = Idle High*.



***** Idle High



Idle Low

Secondary Interface

By switching interface cables, the IT3800 scanner can communicate with a portable data terminal (secondary interface), in additional to the host terminal (primary interface).

The secondary interface can be programmed at any time.

Secondary Code 39 Wand Emulation

In Wand Emulation mode, the scanner decodes the bar code then sends data in the same format as a wand scanner. The Code 39 Format converts all symbologies to Code 39. The Same Code Format transmits UPC, EAN, Code 128 and Interleaved 2 of 5 without any changes, but converts all other symbologies to Code 39. These codes set the transmission rate to 25 inches per second and the output polarity to black, high. *Default = Code 39 Format.*



***** Wand Emulation
Code 39 Format



Wand Emulation
Same Code Format

Secondary RS-232 Connection

All communication parameters between the scanner and terminal must match for correct data transfer through the serial port using RS-232 protocol.

RS-232 programmable selections are used by both the primary and secondary interfaces. Changing an RS-232 parameter (e.g., baud rate or parity), while in primary *or* secondary mode will affect both interfaces.



RS-232 Interface

Secondary Non Decoded Output Laser Emulation

Use this selection when connecting to a secondary terminal with integral decoding. This also sets the transmission rate to 36 scans per second and the polarity to white high.



Non Decoded Output

Non Decoded Output Laser Emulation Transmission Rate

The Transmission Rate is limited by the terminal's ability to receive data without dropping characters. *Default = 36 scans/second.*



***** 36



100

Non Decoded Output Laser Emulation Polarity

The Polarity can be sent as standard with black bars high, or reversed with white bars high. *Default = White High.*



***** White High



Black High

Non Decoded Laser Emulation Idle

The idle describes the state of the scanner when no data is being transmitted. When in Non Decoded mode, you must set the scanner's idle state to match the idle state for the device to which the scanner is connected. *Default = High.*



Low



***** High

Disabling the Secondary Interface

You can temporarily disable the secondary interface, but still retain the secondary interface settings in the scanner's memory by scanning the Disable bar code below. To re-enable the secondary interface, scan the Enable bar code. *Default =Disable*.



***** Disable



Enable

Secondary Trigger Mode

Manual Trigger: You must press the scanner trigger to scan. When not scanning, idle power is maintained. *Default = Manual Trigger.*



***** Manual Trigger

Automatic Trigger: The scanner scans continuously at full power.



Automatic Trigger

Manual Trigger, Low Power: The scanner "sleeps," using only 5 microamps, until the trigger is pulled. When the trigger is pulled, the scanner wakes up and operates at reduced power until there is no triggering for the time set with the Low Power Time Out bar code. There is a short delay in operation when the scanner is first triggered, but there is no delay when operating in low power mode.

Low Power Time Out: Scan the Low Power Time Out bar code to change the time out duration. Then scan the time out duration (from 0–300 seconds) from the inside back cover and **Save**. *Default = 2 minutes.*

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Manual Trigger, Low Power



Low Power Time Out

Section 3 Output

Scan Rate

Adjusting the scan rate changes the current draw when scanning. (The standby current remains the same.) *Default = 270 s/s.*

Scan Speed	Standby	Scanning	Peak
270 s/s	125 mA	275 mA	300 mA
135 s/s	125 mA	180 mA	300 mA
67 s/s	125 mA	150 mA	300 mA



***** 270 s/s



135 s/s



67 s/s

Beeper Volume

Default = High.



***** High



Medium



Low



Off

Beeper Tone

Default = Normal.



***** Normal Beep



Short Bip

Scan Voting

This sets the number of times the same bar code has to be read before it is transmitted to the terminal. **Normal** uses the default values listed for the symbologies in the Default Charts in Section 9. **High** doubles the votes used below the threshold. *Default = Voting Normal.*



***** Voting Normal



Voting High

Reduce Quiet Zone

Reducing the quiet zone requirements below AIM guidelines makes it possible to read off–spec bar codes. This feature is effective with all symbologies. *Default = Don't Reduce Quite Zone.*



***** Don't Reduce Quiet Zone



Reduce Quiet Zone

Reread Delay

This sets the time period before the scanner can read the *same* bar code a second time. Setting a reread delay protects against accidental rereads of the same bar code. Longer delays are effective in minimizing accidental rereads at POS (point of sale). Use shorter delays in applications where repetitive bar code scanning is required. *Default = Short.*

Reread Delay only works when in automatic trigger mode (see page 3–4).



***** Short



Medium



Long



Extra Long

Good Read Delay

This sets the minimum amount of time before the scanner can read another bar code. *Default = No Delay.*



***** No Delay



Short Delay



Medium Delay



Long Delay

Trigger Mode

Default = Manual Trigger

Manual Trigger: You must press the scanner trigger to scan. When not scanning, idle power is maintained.



***** Manual Trigger

Automatic Trigger: The scanner scans continuously at full power.



Automatic Trigger

Manual Trigger, Low Power: The scanner "sleeps," using only 5 microamps, until the trigger is pulled. When the trigger is pulled, the scanner wakes up and operates at reduced power until there is no triggering for the time set with the Low Power Time Out bar code. There is a short delay in operation when the scanner is first triggered, but there is no delay when operating in low power mode.

Low Power Time Out: Scan the Low Power Time Out bar code to change the time out duration. Then scan the time out duration (from 0–300 seconds) from the inside back cover, and **Save**. *Default = 2 minutes.*

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Manual Trigger, Low Power

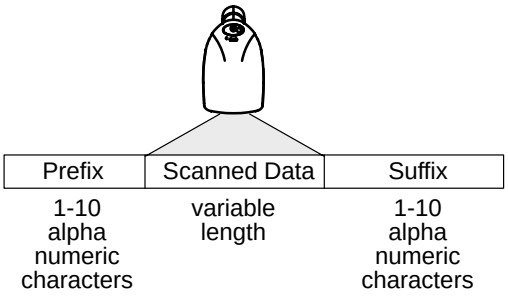


Low Power Time Out

Section 4 Data Editing

When a bar code is scanned, additional information is sent to the host computer along with the bar code data. This group of bar code data and additional, user-defined data is called a “message string.” The selections in this section are used to build the user-defined data into the message string.

Prefix and Suffix characters are data characters which can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. The following illustration shows the breakdown of a message string:



Points to Keep In Mind

- It is not necessary to build a message string. The selections in this chapter are only used if you wish to alter the default settings. *Default prefix = None. Default suffix = None*.
- A prefix or suffix may be added or cleared from one symbology or all symbologies.
- You can add any prefix or suffix from the ASCII chart (pg. 4–5), plus Code I.D. and Aim I.D.
- You can string together several entries for several symbologies at one time.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

To Add a Prefix or Suffix:

STEP 1. Scan the **Add Prefix** or **Add Suffix** symbol (pg. 4–4).

STEP 2. Determine the 2 digit Hex value from the Symbology Chart (pg. 4–5) for the symbology to which you want to apply the prefix or suffix.

STEP 3. Scan the 2 hex digits from the Programming Chart inside the back cover or scan **9**, **9** for all symbologies.

STEP 4. Determine the hex value from the Decimal to Hex to ASCII Conversion Chart (pg. 4–5) for the prefix or suffix you wish to enter.

STEP 5. Scan the 2 digit hex value from the Programming Chart inside the back cover.

Note: Repeat Steps 4 and 5 for every prefix or suffix character.

Note: To add the Code I.D., scan **5**, **C**, **8**, **0**.
To add AIM I.D., scan **5**, **C**, **8**, **1.**
To add a backslash (\), scan **5**, **C**, **5**, **C**.

STEP 6. Scan **Save** to exit and save, or scan **Discard** to exit without saving.

Repeat Steps 1–6 to add a prefix or suffix for another symbology.

Example 1: Add a Prefix of Code I.D. and STX for all symbologies

STEP 1. Scan **Add Prefix**.

STEP 2. Determine the 2 digit hex value from the Symbology Chart (pg. 4–5) for all symbologies.

STEP 3. Scan **9**, **9**, the hex value for all symbologies from the Programming Chart (inside back cover).

STEP 4. Scan **5**, **C**, **8**, **0** for Code I.D. and Scan **0**, **2** for STX from the Programming Chart (inside back cover).

STEP 5. Scan **Save** to exit and save, or scan **Discard** to exit without saving.

Example 2: Add a Suffix to a specific symbology

To send a CR (carriage return) Suffix for UPC only:

STEP 1. Scan **Add Suffix**.

STEP 2. Determine the 2 digit hex value from the Symbology Chart (pg. 4–5) for UPC.

STEP 3. Scan **6**, **3** from the Programming Chart (inside back cover).

STEP 4. Determine the hex value from the Decimal to Hex to ASCII Conversion Chart (pg. 4–5) for the CR (carriage return).

STEP 5. Scan **0**, **D** from the Programming Chart (inside back cover).

STEP 6. Scan **Save**, or scan **Discard** to exit without saving.

To Clear One or All Prefixes or Suffixes:

You can clear a single prefix or suffix, or clear all prefixes/suffixes for a symbology. When you Clear One Prefix (Suffix), the specific character you select is deleted from the symbology you want. When you Clear All Prefixes (Suffixes), all the prefixes or suffixes for a symbology are deleted.

STEP 1. Scan the **Clear One Prefix** or **Clear One Suffix** symbol.

STEP 2. Determine the 2 digit Hex value from the Symbology Chart (pg. 4–5) for the symbology from which you want to clear the prefix or suffix.

STEP 3. Scan the 2 digit hex value from the Programming Chart inside the back cover or scan **9**, **9** for all symbologies.

Your change is automatically saved.

Prefix Selections



Add Prefix



Clear One Prefix



Clear All Prefixes

Suffix Selections



Add Suffix



Clear One Suffix



Clear All Suffixes



Save



Discard

Symbology Chart

Symbology	Code ID	AIM ID	Hex Value	Symbology	Code ID	AIM ID	Hex Value
Codabar	a	F	61	IATA Code 2 of 5	f	R	66
Code 39	b	A	62	Code 11	h	H	68
UPC	c	E	63	Code 128	j	C	6A
EAN/JAN	d	E	64	Matrix 2 of 5	m	X	6D
Interleaved 2 of 5	e	I	65	China Postal	q	X	71
Code 2 of 5	f	S	66	*All Symbologies* †			*99*

† *Prefix/Suffix entries for specific symbologies override the All Symbologies selection. The All Symbologies selection is for Prefix/Suffix programming only.*

Decimal to Hex to ASCII Conversion Chart

DEC	Hex	ASCII	DEC	Hex	ASCII	DEC	Hex	ASCII	DEC	Hex	ASCII
0	00	NUL	32	20	SP	64	40	@	96	60	‘
1	01	SOH	33	21	!	65	41	A	97	61	a
2	02	STX	34	22	”	66	42	B	98	62	b
3	03	ETX	35	23	#	67	43	C	99	63	c
4	04	EOT	36	24	$	68	44	D	100	64	d
5	05	ENQ	37	25	%	69	45	E	101	65	e
6	06	ACK	38	26	&	70	46	F	102	66	f
7	07	BEL	39	27	’	71	47	G	103	67	g
8	08	BS	40	28	(	72	48	H	104	68	h
9	09	HT	41	29	)	73	49	I	105	69	i
10	0A	LF	42	2A	*	74	4A	J	106	6A	j
11	0B	VT	43	2B	+	75	4B	K	107	6B	k
12	0C	FF	44	2C	,	76	4C	L	108	6C	l
13	0D	CR	45	2D	–	77	4D	M	109	6D	m
14	0E	SO	46	2E	.	78	4E	N	110	6E	n
15	0F	SI	47	2F	/	79	4F	O	111	6F	o
16	10	DLE	48	30	0	80	50	P	112	70	p
17	11	DC1	49	31	1	81	51	Q	113	71	q
18	12	DC2	50	32	2	82	52	R	114	72	r
19	13	DC3	51	33	3	83	53	S	115	73	s
20	14	DC4	52	34	4	84	54	T	116	74	t
21	15	NAK	53	35	5	85	55	U	117	75	u
22	16	SYN	54	36	6	86	56	V	118	76	v
23	17	ETB	55	37	7	87	57	W	119	77	w
24	18	CAN	56	38	8	88	58	X	120	78	x
25	19	EM	57	39	9	89	59	Y	121	79	y
26	1A	SUB	58	3A	:	90	5A	Z	122	7A	z
27	1B	ESC	59	3B	;	91	5B	[	123	7B	{
28	1C	FS	60	3C	<	92	5C	\	124	7C	|
29	1D	GS	61	3D	=	93	5D	]	125	7D	}
30	1E	RS	62	3E	>	94	5E	^	126	7E	~
31	1F	US	63	3F	?	95	5F	_	127	7F	DEL

Function Code Transmit

When this selection is enabled and function codes are contained within the scanned data, the scanner transmits the function code to the terminal. Charts of these function codes are provided in Section 8, Supported Interface Keys. When the scanner is in keyboard wedge mode, the scan code is converted to a key code before it is transmitted.



* Enable



Disable

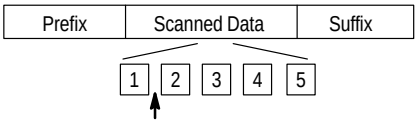
Some terminals drop information (characters) if data comes through too quickly. Intercharacter, interfunction, and intermessage delays slow the transmission of data, which increases data integrity.

Each delay is composed of a 5 millisecond step. You can program up to 99 steps (of 5 ms each).

Intercharacter Delay

This is a delay of up to 495 milliseconds (in multiples of 5) which is placed between the transmission of each character of scanned data. You can program up to 99 steps (of 5 ms each). Scan the Intercharacter Delay bar code below, then scan the number of steps, and the **SAVE** bar code from the inside back cover.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Intercharacter Delay

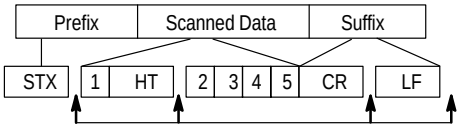


Intercharacter Delay

Interfunction Delay

This is a delay of up to 495 milliseconds (in multiples of 5) which is placed between the transmission of each segment of the message string. You can program up to 99 steps (of 5 ms each). Scan the Interfunction Delay bar code below, then scan the number of steps, and the **SAVE** bar code from the inside back cover.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Interfunction Delays

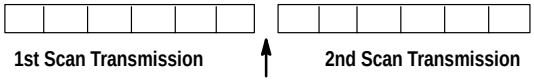


Interfunction Delay

Intermessage Delay

This is a delay of up to 495 milliseconds (in multiples of 5) which is placed between each scan transmission. You can program up to 99 steps (of 5 ms each). Scan the Intermessage Delay bar code below, then scan the number of steps, and the **SAVE** bar code from the inside back cover.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Intermessage Delay



Intermessage Delay

Section 5 Data Formatting

Data Format Editor

The Data Format Editor selections are used to edit scanned data. For example, you can use the Data Format Editor to insert characters at certain points in bar code data as it is scanned.

It is not necessary to use the Data Format Editor. A set of defaults for the data format is already programmed in the scanner. The selections in the following pages are used only if you wish to alter the default settings. *Default Data Format setting = none.*

If you have changed data format settings, and wish to clear all formats and return to the defaults, scan the **Default Data Format** code.

To Add a Data Format

STEP 1. Scan the **Enter Data Format** symbol (pg. 5–3).

STEP 2. **Terminal Type**
Refer to the Supported Terminals Chart (page 2–2) and locate the Terminal ID number for your PC. Scan three numeric bar codes on the inside back cover to program the scanner for your terminal ID (you must enter **3** digits). For example, scan **0 0 3** for an AT wedge.

STEP 3. **Code I.D.**
On pg. 4–5, find the symbology to which you want to apply the data format. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart.

STEP 4. **Length**
Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from the Programming Chart. (Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.)

STEP 5. **Editor Commands**
Refer to the Format Editor Commands Chart (page 5–2). Scan the symbols that represent the command you want to enter. 94 alphanumeric characters may be entered for each symbology data format.

STEP 6. Scan **Save** to save your entries.

Other Programming Selections

- **Clear One Data Format**
  This deletes one data format for one symbology. Scan the Terminal Type (000), Code I.D. and the length of the format you want to delete. That length data format for that symbology is deleted and all other formats are unaffected.
- **Save**
  This exits, saving any Data Format changes.
- **Discard**
  This exits without saving any Data Format changes.

Data Format Editor Commands

Send Commands

F1 Send all characters followed by "xx" key or function code, starting from current cursor position. ***Syntax = F1xx*** (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

F2 Send "nn" characters followed by "xx" key or function code, starting from current cursor position. ***Syntax = F2nnxx*** (nn stands for the numeric value (00-99) for the number of characters and xx stands for the hex value for an ASCII code. See Decimal to Hex to ASCII Conversion chart, page 4–5.)

F3 Send up to but not including "ss" character (Search and Send) starting from current cursor position, leaving cursor pointing to "ss" character followed by "xx" key or function code. ***Syntax = F3ssxx*** (ss and xx both stand for the hex values for ASCII codes, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

F4 Send "xx" character "nn" times (Insert) leaving cursor in current cursor position. ***Syntax = F4xxnn*** (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5, and nn is the numeric value (00-99) for the number of times it should be sent.)

Move Commands

F5 Move cursor ahead "nn" characters from current cursor position. ***Syntax = F5nn*** (nn stands for the numeric value (00-99) for the number of characters the cursor should be moved ahead.)

F6 Move cursor back "nn" characters from current cursor position. ***Syntax = F6nn*** (nn stands for the numeric value (00-99) for the number of characters the cursor should be moved back.)

F7 Move cursor to the beginning of the data string. ***Syntax = F7.***

Search Commands

F8 Search ahead for "xx" character from current cursor position, leaving cursor pointing to "xx" character. ***Syntax = F8xx*** (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

F9 Search back for "xx" character from current cursor position, leaving cursor pointing to "xx" character. ***Syntax = F9xx*** (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

Miscellaneous Commands

FA Leading zero suppress on. Suppress leading zeroes from current cursor position until first non–zero character. ***Syntax = FA.***

FB Suppress all occurences of up to 32 different characters, starting at the current cursor position, as the cursor is advanced by other commands. When the FC command is encountered, the suppress function is terminated. The cursor is not moved by the FB command. **Syntax = FBNNXXYY . .ZZ** where NN is a count of the number suppress characters in the list and XXYY .. ZZ is the list of characters to be suppressed. (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

FC Disable suppress filter and clear all suppressed characters. ***Syntax = FC.***

FE Compare character in current cursor position to the character "xx." If characters are equal, increment cursor. If characters are not equal, no format match. ***Syntax = FExx*** (xx stands for the hex value for an ASCII code, see Decimal to Hex to ASCII Conversion chart, page 4–5.)

Data Format Editor



Enter Data Format



Default Data Format



Clear One Data Format



Clear All Data Formats



Save



Discard

Data Formatter

When Data Formatter is turned off, the bar code data will be output to the host as read (including prefixes and suffixes). Choose one of the following options. *Default = Data Formatter On.*



***** Data Formatter On



Data Formatter Off

When Data Formatter is required, all input data must conform to an edited format or the Imager will not transmit the input data to the host device.



Data Format Required

Section 6 Symbologies

Introduction

Use this section to program the scanner for Industrial and Retail Symbology selections.

This programming section contains the following menu selections:

- Codabar
- Code 39
- Interleaved 2 of 5
- Code 2 of 5
- IATA Code 2 of 5
- Matrix 2 of 5
- Code 11
- Code 128
- UPC
- EAN/JAN
- China Postal Code

Industrial Symbology Selections

Codabar

<Default All Codabar Settings>



Codabar



***** On

Off



Start / Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*



Transmit

***** Don't Transmit



Codabar, *continued*

Check Character

Codabar check characters are created using different “modulos.” You can program the scanner to read only Codabar bar codes with Modulo 10 or Modulo 16 check characters. *Default = No Check Character.*

When Check Character is set to Validate and Transmit, the scanner will only read Codabar bar codes printed with a check character, and will transmit this character at the end of the scanned data.

When Check Character is set to Validate, but Don’t Transmit, the unit will only read Codabar bar codes printed ***with*** a check character, but will not transmit the check character with the scanned data.



***** No Check Character



Validate Modulo 10 and Transmit



Validate Modulo 16 and Transmit

Validate Modulo 10, but Don’t Transmit



Validate Modulo 16, but Don’t Transmit



Codabar, *continued*

Concatenation

Codabar supports symbol concatenation. When you ***Enable*** concatenation, the scanner looks for a Codabar symbol having a "D" start character, adjacent to a symbol having a "D" stop character. In this case the two messages are concatenated into one with the "D" characters omitted. *Default = On.*

Codabar



Select ***Require*** to prevent the scanner from decoding a lone Codabar symbol.

Concatenation



***** On

Off





Require

Codabar, *continued*

Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters. Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters. Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 2–60.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =60)



Code 39

<*Default All Code 39 Settings*>



Code 39



***** On

Off



Start / Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*



Transmit

***** Don't Transmit



Code 39, *continued*

Check Character

When Check Character is set to Validate, but Don't Transmit, the unit will only read Code 39 bar codes printed ***with*** a check character, but will not transmit the check character with the scanned data.

When Check Character is set to Validate and Transmit, the scanner will only read Code 39 bar codes printed with a check character, and will transmit this character at the end of the scanned data. *Default = No Check Character.*



***** No Check Character

Validate, but Don't Transmit





Validate and Transmit

Code 39, *continued*

Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 0–48.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =0)



Maximum (Default =48)

Code 39 Append

This function allows the scanner to append the data from several Code 39 bar codes together before transmitting them to the host computer. When this function is enabled, the scanner stores those Code 39 bar codes that start with a space (excluding the start and stop symbols), and does not immediately transmit the data. The scanner stores the data in the order in which the bar codes are read, deleting the first space from each. The scanner transmits the appended data when it reads a Code 39 bar code that starts with a character other than a space. *Default = On.*



***** On

Off



Code 39, *continued*

Full ASCII

If Full ASCII Code 39 decoding is enabled, certain character pairs within the bar code symbol will be interpreted as a single character. For example: $V will be decoded as the ASCII character SYN, and /C will be decoded as the ASCII character #. *Default = On.*

FULL ASCII Code 39 CHART

NUL	%U	DLE	$P	SP	SPACE	0	0	@	%V	P	P	‘	%W	p	+P
SOH	$A	DC1	$Q	!	/A	1	1	A	A	Q	Q	a	+A	q	+Q
STX	$B	DC2	$R	”	/B	2	2	B	B	R	R	b	+B	r	+R
ETX	$C	DC3	$S	#	/C	3	3	C	C	S	S	c	+C	s	+S
EOT	$D	DC4	$T	$	/D	4	4	D	D	T	T	d	+D	t	+T
ENQ	$E	NAK	$U	%	/E	5	5	E	E	U	U	e	+E	u	+U
ACK	$F	SYN	$V	&	/F	6	6	F	F	V	V	f	+F	v	+V
BEL	$G	ETB	$W	’	/G	7	7	G	G	W	W	g	+G	w	+W
BS	$H	CAN	$X	(	/H	8	8	H	H	X	X	h	+H	x	+X
HT	$I	EM	$Y	)	/I	9	9	I	I	Y	Y	i	+I	y	+Y
LF	$J	SUB	$Z	*	/J	:	/Z	J	J	Z	Z	j	+J	z	+Z
VT	$K	ESC	%A	+	/K	;	%F	K	K	[	%K	k	+K	{	%P
FF	$L	FS	%B	,	/L	<	%G	L	L	\	%L	l	+L	|	%Q
CR	$M	GS	%C	–	–	=	%H	M	M	]	%M	m	+M	}	%R
SO	$N	RS	%D	.	.	>	%I	N	N	^	%N	n	+N	~	%S
SI	$O	US	%E	/	/O	?	%J	O	O	_	%0	o	+O	DEL	%T

Character pairs /M and /N decode as a minus sign and period respectively. Character pairs /P through /Y decode as 0 through 9.



***** On

Off



Interleaved 2 of 5

<Default All Interleaved 2 of 5 Settings>



Interleaved 2 of 5



***** On

Off



Check Digit

When Check Digit is set to Validate, but Don't Transmit, the unit will only read Interleaved 2 of 5 bar codes printed ***with*** a check character, but will not transmit the check digit with the scanned data.

When Check Digit is set to Validate and Transmit, the scanner will only read Interleaved 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. *Default = No Check Digit.*



***** No Check Digit

Validate, but Don't Transmit





Validate and Transmit

Interleaved 2 of 5, *continued*

Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 2–80.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =80)



Industrial Symbology Selections

Code 2 of 5

<Default All Code 2 of 5 Settings>



2 of 5



***** On

Off



Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 1–48.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =48)



Industrial Symbology Selections

IATA Code 2 of 5

<Default All Code IATA 2 of 5 Settings>



IATA 2 of 5



***** On

Off



Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 1–48.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =48)



Industrial Symbology Selections

Matrix 2 of 5

<Default All Matrix 2 of 5 Settings>



Matrix 2 of 5



***** On

Off



Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 1–80.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =80)



Code 11

<*Default All Code 11 Settings*>



Code 11



***** On

Off



Check Digits Required

This option sets whether 1 or 2 check digits are required with Code 11 bar codes. *Default = Two Check Digits.*



One Check Digit

***** Two Check Digits



Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 1–80.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =80)



Industrial Symbology Selections

Code 128

<Default All Code 128 Settings>



Code 128



* On

Off



Function Character Transmit

If function characters are turned off, function codes are not sent with bar code data. Refer to Hex ASCII Conversion Chart on page 4–5 for function codes. *Default =Off.*



On

* Off



<GS> Substitution

When enabled, the scanner substitutes a <GS> for Function Character 1 when decoding EAN 128. *Default =Off.*



On

* Off



Code 128, *continued*

Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 0–80.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =0)

Maximum (Default =80)



Retail Symbology Selections

UPC A

<Default All UPC A Settings>



UPC A



* On

Off



Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



* On

Off



Number System

The numeric system digit of a UPC symbol is normally transmitted, but the unit can be programmed so it will not transmit it. *Default = On.*



* On

Off



UPC A, *continued*

Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC A data.
Default = Off for both 2–Digit and 5–Digit Addenda.

2–Digit Addenda



On

* Off



5–Digit Addenda



On

* Off



UPC A, *continued*

Addenda Required

When Addenda Required is set to on, the scanner will only read UPC A bar codes that have addenda. *Default = Off.*

Addenda Required



On

* Off



Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. *Default = On.*



* On

Off



Retail Symbology Selections

UPC E

<Default All UPC E Settings>



Most UPC bar codes lead with the 0 number system. For these codes, use the UPC E0 selection. If you need to read codes that lead with the 1 number system, use the UPC E1 selection. *Default = On (UPC E0) and Off (UPC E1).*

UPC E0



***** On

Off



UPC E1



On

***** Off



UPC E Expand

UPC E Expand expands the UPC E code to the 12 digit, UPC A format. *Default = Off.*



On

***** Off



UPC E, *continued*

Check Digit

Check Digit specifies whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



***** On

Off



Number System

The numeric system digit of a UPC symbol is normally transmitted, but the unit can be programmed so it will not transmit it. *Default = On.*



***** On

Off



Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC E data.
Default = Off for both 2–Digit and 5–Digit Addenda.

2–Digit Addenda



On

***** Off



5–Digit Addenda



On

***** Off



UPC E, *continued*

Addenda Required

When Addenda Required is set to on, the scanner will only read UPC E bar codes that have addenda. *Default = Off.*



On

* Off



Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. *Default = On.*



* On

Off



EAN/JAN 13

<Default All EAN/JAN 13 Settings>



EAN/JAN 13



***** On

Off



Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



***** On

Off



Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN 13 data. *Default = Off for both 2–Digit and 5–Digit Addenda.*

2–Digit Addenda



On

***** Off



EAN/JAN 13, *continued*

5–Digit Addenda



On

* Off



Addenda Required

When Addenda Required is set to on, the scanner will only read EAN/JAN 13 bar codes that have addenda. *Default = Off.*



On

* Off



Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. *Default = On.*



* On

Off



ISBN Enable

This symbology allows the scanner to read ISBN codes on books. *Default = Off.*



On

* Off



EAN/JAN 8

<Default All EAN/JAN 8 Settings>



EAN/JAN 8



* On

Off



Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*



* On

Off



Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN 13 data. *Default = Off for both 2–Digit and 5–Digit Addenda.*

2–Digit Addenda



On

* Off



EAN/JAN 8, *continued*

5–Digit Addenda



On

* Off



Addenda Required

When Addenda Required is set to on, the scanner will only read EAN/JAN 13 bar codes that have addenda. *Default = Off.*

Addenda Required



On

* Off



Addenda Separator

Default = On.



* On

Off



China Post Code

<Default All China Post Code Settings>



China Post Code



On

* Off



Message Length

The message length selection is used to set the valid reading length of the bar code. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9–20 characters.
Min. length = 09 Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15 Max. length = 15

For a value other than the minimum and maximum message length defaults, scan the bar codes below and then scan the 2–digit value and Save bar codes on the Programming Chart inside back cover. Minimum and Maximum Lengths = 0–80.

Note: If you make an error while scanning the digits (before scanning Save), scan **Discard** on the back cover and scan the correct digits and **Save** again.



Minimum (Default =4)

Maximum (Default =80)



Section 7 Visual Menu

Visual Menu Introduction

Visual Menu provides the ability to configure a scanning device by connecting the scanner to the com port of a PC. Visual Menu allows you to download upgrades to a scanner's firmware, change programmed parameters, and create and print programming bar codes. Using Visual Menu, you can even set up the configuration for a scanner which is not attached to your PC. This enables one expert user to establish the configuration settings for all the devices your company uses, then save these configuration files for others. A configuration file can be e-mailed or, if you prefer, an expert user can create a bar code (or series of bar codes) which contains all the customized programming parameters, and mail or fax the bar code(s) to any location. Users in other locations can scan the bar code(s) to load in the customized parameters.

To communicate with a scanner, Visual Menu requires that the PC have at least one available serial communication port and an RS-232 cable to connect the port to the device. A power supply, which plugs into the cable, is also required.

Visual Menu Operations

The Visual Menu program performs the following operations:

- Displays all configuration data, and saves the information to a file on your PC.
- Configures the device to meet your specific requirements. Visual Menu has all the programming parameters which are available via programming bar codes in this User's Guide.
- Creates and prints a clone bar code which contains the program and configuration data from one device. This bar code can then be used to program additional devices with the same parameters.
- Selects a device from a list, then performs offline or online file configuration for that device.

Temporary Visual Menu Configuration

For quick download communication configuration, scan the **Visual Menu** bar code to temporarily configure the scanner for Visual Menu settings.



Visual Menu

Installing Visual Menu from the Web

1. Access the Welch Allyn DCD web site at http://dcd.welchallyn.com.
2. Click on the **Support** button, then click on the **Software Download** button.
3. When prompted, enter the user name: ***pumpkin***
   and the password: ***pie***
4. Locate the listing for **Visual Menu**. Click on the yellow **Download** button.
5. When prompted, select **Save File**, and save the files to the **c:\windows\temp** directory.
6. Once you have finished downloading the file, exit the web site.
7. Using Explorer, go to the **c:\windows\temp** file.
8. Double click on the **Visualmenu.exe** file. Follow the screen prompts to install the Visual Menu program.
9. To start Visual Menu, from the Start Menu click on **Programs**, **Visual Menu**, **Visual Menu**.

Note: If you wish, you can create a shortcut to the Visual Menu executable on your desktop.

Section 8 Interface Keys

Keyboard Function Relationships

The following Keyboard Function Code and Hex/ASCII Value relationships apply to all terminals that can be used with the scanner.

Function Code	HEX/ASCII Value
NUL	00
SOH	01
STX	02
ETX	03
EOT	04
ENQ	05
ACK	06
BEL	07
BS	08
HT	09
LF	0A
VT	0B
FF	0C
CR	0D
SO	0E
SI	0F
DLE	10
DC1	11
DC2	12
DC3	13
DC4	14
NAK	15
SYN	16
ETB	17
CAN	18
EM	19
SUB	1A
ESC	1B
FS	1C
GS	1D
RS	1E
US	1F

Supported Interface Keys

Supported Interface Keys		IBM AT/XT and PS/2 Compatibles, WYSE PC/AT	IBM XTs and Compatibles
NUL	00	Reserved	Reserved
SOH	01	Enter (KP)	CR/Enter
STX	02	Cap Lock	Caps Lock
ETX	03	ALT make	Reserved
EOT	04	ALT break	Reserved
ENQ	05	CTRL make	Reserved
ACK	06	CTRL break	Reserved
BEL	07	CR/Enter	CR/Enter
BS	08	Reserved	Reserved
HT	09	Tab	Tab
LF	0A	Reserved	Reserved
VT	0B	Tab	Tab
FF	0C	Delete	Delete
CR	0D	CR/Enter	CR/Enter
SO	0E	Insert	Insert
SI	0F	Escape	Escape
DLE	10	F11	Reserved
DC1	11	Home	Home
DC2	12	Print	Print
DC3	13	Back Space	Back Space
DC4	14	Back Tab	Back Tab
NAK	15	F12	Reserved
SYN	16	F1	F1
ETB	17	F2	F2
CAN	18	F3	F3
EM	19	F4	F4
SUB	1A	F5	F5
ESC	1B	F6	F6
FS	1C	F7	F7
GS	1D	F8	F8
RS	1E	F9	F9
US	1F	F10	F10

* IBM 3191/92, 3471/72, 3196/97, 3476/77, DDC 3596, Telex (all models), Harris H180/190 with 122 key keyboards

Section 9 Defaults

Resetting the Factory Settings

If you aren't sure what programming options are in your scanner, or you've changed some options and want the factory settings restored, scan the ***Factory Default Settings*** bar code below.



Factory Default Settings

The following chart lists the factory default settings (indicated by an asterisk (*****) on the programming pages).

Parameter	***Default***	***Page***
Terminal I.D.	03	2–2
Keyboard Country	USA	2–3
Keyboard Style	Regular	2–4
Keyboard Modifiers	Control+ASCII Off	2–5
	Turbo Off	2–5
	Numeric Keypad Off	2–5
	Auto Direct Connect Off	2–6
RS-232 Selections		
Baud Rate	9600 bps	2–8
RS-232 Word Length Data Bits, Stop Bits, and Parity	7 Data 1 Stop Even Parity	2–9
RS–232 Handshaking	RTS/CTS off XON/XOFF off ACK/NAK off	2–11
Wand Emulation Selections		
Wand Emulation Connection	Code 39 Format	2–12
Wand Emulation Transmission Rate	25 inches/second	2–13
Wand Emulation Polarity	Black High	2–14
Wand Emulation Idle	High	2–14

Parameter	Default	Page
Secondary Interface Selections		
Code 39 Wand Emulation	Code 39 Format	2–15
Non Decoded Output Laser Emulation Transmission Rate	36 inches/second	2–16
Non Decoded Output Laser Emulation Polarity	White High	2–16
Non Decoded Laser Emulation Idle	High	2–17
Disabling the Secondary Interface	Disabled	2–17
Secondary Trigger Mode	Manual Trigger, Low Power Timeout 2 minutes	2–18
Output Selections		
Scan Rate	270 scans/second	3–1
Beeper Volume	High	3–1
Beeper Tone	Normal	3–2
Scan Voting	Voting Normal	3–2
Quiet Zone	Don't Reduce	3–2
Reread Delay	Low	3–3
Good Read Delay	No Delay	3–3
Trigger Mode	Manual	3–4
Data Editing Selections		
Prefix	None	4–1
Suffix	None	4–1
Data Formatter Selections		
Data Formatter	On/None	5–4
Codabar Selections		
Codabar	On	6–2
Start/Stop	Don't Transmit	6–2
Check Character	Not Required	6–3
Concatenation	On	6–4
Message Length	Min 4, Max 60	6–5
Voting Threshold	10	
Votes At or Above Threshold	2	
Votes Below Threshold	4	

Parameter	Default	Page
Codabar, continued		
Codabar	On	6–6
Start/Stop	Don't Transmit	6–6
Check Character	Not Required	6–7
Message Length	Min 0, Max 48	6–8
Code 39 Selections		
Code 39 Append	On	6–9
Full ASCII	On	6–10
Voting Threshold	10	
Votes At or Above Threshold	2	
Votes Below Threshold	4	
Interleaved 2 of 5 Selections		
Interleaved 2 of 5	On	6–11
Check Digit	Not Required	6–11
Message Length	Min 4, Max 80	6–12
Voting Threshold	10	
Votes At or Above Threshold	3	
Votes Below Threshold	5	
Code 2 of 5 Selections		
Code 2 of 5	On	6–13
Message Length	Min 4, Max 48	6–13
Voting Threshold	10	
Votes At or Above Threshold	3	
Votes Below Threshold	5	
IATA Code 2 of 5 Selections		
IATA Code 2 of 5	On	6–14
Message Length	Min 4, Max 48	6–14
Voting Threshold	10	
Votes At or Above Threshold	3	
Votes Below Threshold	5	
Matrix 2 of 5 Selections		
Matrix 2 of 5	On	6–15
Message Length	Min 4, Max 48	6–15
Voting Threshold	10	
Votes At or Above Threshold	3	
Votes Below Threshold	5	

Parameter	Default	Page
Code 11 Selections		
Code 11	On	6–16
Check Digits Required	2	6–16
Message Length	Min 4, Max 80	6–17
Voting Threshold	10	
Votes At or Above Threshold	2	
Votes Below Threshold	4	
Code 128 Selections		
Code 128	On	6–18
Function Character Transmit	Off	6–18
<GS> Substitution	Off	6–18
Message Length	Min 0, Max 80	6–19
Voting Threshold	10	
Votes At or Above Threshold	2	
Votes Below Threshold	4	
UPC A		
UPC A	On	6–20
Check Digit	On	6–20
Number System	On	6–20
2-Digit Addenda	Off	6–21
5-Digit Addenda	Off	6–21
Addenda Required	Off	6–22
Addenda Separator	On	6–22
Votes Required	2	
UPC E		
UPC E0	On	6–23
UPC E1	Off	6–23
UPC E Expand	Off	6–23
Check Digit	On	6–24
Number System	On	6–24
2-Digit Addenda	Off	6–24
5-Digit Addenda	Off	6–24
Addenda Required	Off	6–25
Addenda Separator	On	6–25
Votes Required	2	

Parameter	Default	Page
EAN/JAN 13		
EAN/JAN 13	On	6–26
Check Digit	On	6–26
2-Digit Addenda	Off	6–26
5-Digit Addenda	Off	6–27
Addenda Required	Off	6–27
Addenda Separator	On	6–27
ISBN Enable	Off	6–27
Votes Required	2	
EAN/JAN 8		
EAN/JAN 8	On	6–28
Check Digit	On	6–28
2-Digit Addenda	Off	6–28
5-Digit Addenda	Off	6–29
Addenda Required	Off	6–29
Addenda Separator	On	6–29
Votes Required	2	
China Post Code		
China Post Code	Off	6–30
Message Length	Min 4, Max 80	6–30
Voting Threshold	10	
Votes At or Above Threshold	3	
Votes Below Threshold	5	

Section 10 Specifications

Product Specifications

Dimensions

Height	6.0 inches (15.2 cm)
Length	5.3 inches (13.5 cm)
Weight	6.3 ounces (179.2 g)
Width	3.1 inches (7.9 cm)
Light Source	630 nm visible red LED
Reading Distance	From 1 in. (2.5 cm) to 8 in. (20.3 cm) on medium density codes
Reading Width	5 in. (12.7 cm) code width at 7 in (17.8 cm) distance
Resolution	5 mil at 3.5 in. (8.9 cm) distance
Scan Rate	Programmable to 270 scans per second
Skew Angle	±30 degrees
Pitch Angle	±15 degrees
Horizontal Velocity	5 inches (12.7 cm) per second
Minimum Reflectance Difference	30%
Decode Rate	270 decodes per second
Power Requirements	5VDC ±10% at scanner

Current Draw

@270 s/s	275 mA Scanning; 125 mA Standby; 5 microA Low Power; 300 mA In-Rush
@67 s/s	150 mA Scanning; 125 mA Standby; 5 microA Low Power; 300 mA In-Rush

Temperature Ranges

Operating	32° F to +122° F (0° C to +50° C)
Storage	–40° F to +140° F (–40° C to +60° C)
Humidity	0 to 95% non-condensing
Mechanical Shock	Operational after 25 drops from 5 feet (1.53 m) to concrete
Vibration	Withstands 5G peak from 20 to 300 Hz
ESD Sensitivity	15 kV to any external surface
Agency Compliance	FCC Class B, CE EMC Class B, CE Low Voltage Directive, IEC60825-1 LED Safety: Class 1, UL, cUL, TÜV Certified to EN60950

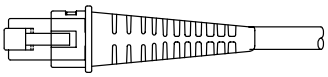
Standard Cable Pinouts

Laser Output only
3800LR-12
(Laser Compatible Bar Image)

Conventional laser data format is provided at the modular connector in the scanner handle.

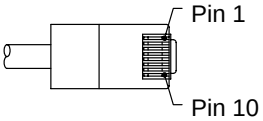
Interface cables are terminated with a 10 pin modular plug (P1) and a 9 pin Type D (squeeze to release) connector (P2) that is compatible with all Welch Allyn terminals. See chart below.

P1

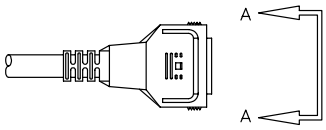


10 Pin Modular Plug

P1 connects to the scanner handle.

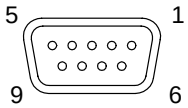


P2



9 Pin Type D Female

P2 connects to your terminal.



View A–A

P1	*Signal*		*Function*	P2
9	SOS		Start of Scan	1
6	Data		Digital Bar Code Data Output	2
1	Good Read		Turn on Good Read LED or Beeper	3
7	+5VDC		5 Volt Power Connection ♦	9
2	Trigger		Trigger Signal to Decoder	5
3	Enable		Laser Enable	6
4	Ground		Supply Ground	7
	N/C	Braid	Cord Shield	8
			N/C ♦	4

♦ *Pins 4 and 9 are populated depending on power supply voltage option.*

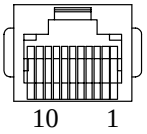
Note: *Some decoders may have +12V on pins 4 or 9.* ***Connect to +5VDC ONLY!***

Standard Cable Pinouts

Keyboard Wedge

Decoded output data format provided at 10 pin RJ41 modular connector (in scanner handle). See chart below.

10 Pin RJ41 Modular Connector



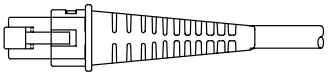
P1	*Signal*	*Function*
2	N/C	Cord Shield
3	Prog 1	
4	Ground	Supply Ground
5	Tclock	Terminal Clock
6	Tdata	Terminal Data
7	+5VDC	5 Volt Power Connection
8	Kdata	Keyboard Data
9	Kclock	Keyboard Clock

Standard Cable Pinouts

Wand Emulation
3800LR-12

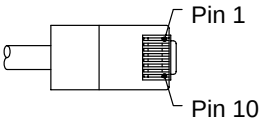
Conventional wand data format provided at 10 pin RJ41 modular connector (in scanner handle). See chart below.

P1

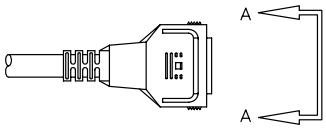


10 Pin Modular Plug

P1 connects to the scanner handle.

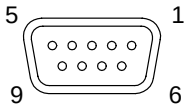


P2



9 Pin Type D Female

P2 connects to your terminal.



View A–A

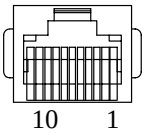
P1	*Signal*	*Function*	P2
2	N/C	Cord Shield	8
3	Prog 1	Tied to 5 Volt Power	
4	Ground	Supply Ground	7
6	Barcode	Bar Code Data Output	2
7	+5VDC	5 Volt Power Connection	4

Standard Cable Pinouts (Primary Interface Cables)

RS–232
3800LR-12

Decoded output data format provided at 10 pin RJ41 modular connector (in scanner handle). See chart below.

10 Pin RJ41 Modular Connector



P1	*Signal*	*Function*
2	Braid	Cord Shield
3	Prog	Tied to 5 Volt Power
4	Ground	Supply Ground
5	RXD	Receive Data – Serial Data to Scanner
6	TXD	Transmit Data – Serial Data from Scanner
7	+5VDC	5 Volt Power Connection
8	RTS	Request to Send Data
9	CTS	Clear to Send Data

Section 11 Customer Support

Obtaining Factory Service in the United States

Welch Allyn provides service for all its products through a service center located at its manufacturing facilities in Skaneateles, New York. To obtain warranty or non–warranty service, return the unit to Welch Allyn (postage paid) with a copy of the dated purchase record attached.

Please contact the Welch Allyn Product Service Department at the address/telephone number listed below to obtain a Return Material Authorization number (RMA #).

Welch Allyn, Inc.

Data Collection Division
Product Service Department
4619 Jordan Road
P.O. Box 187
Skaneateles Falls, New York 13153–0187

Product Service Department
Telephone: (315) 685–4278 *or* 685–4360
Fax: (315) 685–4156

Obtaining Factory Service in Europe

For service in Europe, please contact your Welch Allyn representative (at appropriate address below) or your local distributor.

Welch Allyn, Ltd.

Block 1, Bracken Business Park
Sandyford
Co Dublin
Ireland

Telephone: Int+353–1295–0750
Fax: Int+353–1295–6353

U. K. Office

Dallam Court Dallam Lane
Warrington, Cheshire WA2 7LT
England

Telephone: Int+44 1925 240055
Fax: Int+44 1925 631280

Obtaining Factory Service in Asia

For service in Asia, please contact your Welch Allyn representative (at address below) or your local distributor.

Welch Allyn, Hong Kong Office

10/F Tung Sun Commercial Centre
194–200 Lockhart Road
Wanchai, Hong Kong

Telephone: Int+852–2511–3050 *or* 2511–3132
Fax: Int+852–2511–3557

Technical Support

If, after reviewing the Troubleshooting Section, you still need assistance installing or troubleshooting your scanner, please call your Distributor or the nearest Welch Allyn technical support office.

North America:

Telephone: (315) 685–2476 (8am to 6pm EST)

Europe:

United Kingdom
Telephone: Int+44 1925 240055
Ireland
Telephone: Int+353–1216–0070

Asia:

Telephone: Int+852–2511–3050 *or* 2511–3132

Limited Warranty

Welch Allyn, Inc., hereby warrants its products to be functional and free from manufacturing defects at the time of delivery. Welch Allyn, Inc. further warrants that it will replace or repair, at its option, any unit that fails to perform according to Welch Allyn's published specifications during a period of three (3) years from the time of shipment by Welch Allyn, Inc. to the user at the time it is purchased from any of Welch Allyn Inc.'s Authorized Distributors. Any attempt on the part of the user to disassemble or service the equipment shall void the warranty.

The warranty does not apply to product which have been damaged by improper handling, shipping, or misuse. The warranty does not apply, if, in the sole opinion of Welch Allyn, Inc., the unit has been damaged by accident, misuse, neglect, improper shipping and handling. Since the unit is sensitive to static, the responsibility to protect it from static damage is solely that of the user. The warranty is valid only if the unit or scanner has not been tampered with or serviced by any party unauthorized by Welch Allyn, Inc. as a repair facility.

THE WARRANTIES SET FORTH HEREIN ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE BUYER ACKNOWLEDGES THAT NO OTHER REPRESENTATIONS WERE MADE OR RELIED UPON WITH RESPECT TO THE QUALITY AND FUNCTION OF THE BOARD AND SCANNER HEREIN SOLD.

In no event shall Welch Allyn, Inc. or its resellers be liable for any loss, inconvenience or damage whether direct, incidental, consequential or otherwise, and whether caused by negligence or other fault resulting from the breach of any express warranty except as set forth herein. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state or country to country.

Agency Compliance Statements

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Class B Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Caution: Any changes or modifications made to this device that are not expressly approved by Welch Allyn, Inc. may void the user's authority to operate the equipment.

Note: To maintain compliance with FCC Rules and Regulations, cables connected to this device must be *shielded* cables, in which the cable shield wire(s) have been grounded (tied) to the connector shell.

Canadian Notice

This equipment does not exceed the Class B limits for radio noise emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

CE

The CE mark on the product indicates that the system has been tested to and conforms with the provisions noted within the 89/336/EEC Electromagnetic Compatibility Directive and the 73/23/EEC Low Voltage Directive.

For further information, please contact:

Welch Allyn Ltd.
Block 1, Bracken Business Park
Sandyford
Co Dublin
Ireland

or

Welch Allyn Ltd.
1st Floor
Dallam Court Dallam Lane
Warrington, Cheshire WA2 7LT
England

Welch Allyn shall not be liable for use of our product with equipment (i.e., power supplies, personal computers, etc.) that is not CE marked and does not comply with the Low Voltage Directive.

UL and cUL Statement

UL listed UL1950 and CSA 22.2 No.950. cUL listed UL1950 and CSA 22.2 No 950.

LED Safety Statement

This device has been tested in accordance with EN60825–1 LED safety, and has been certified to be under the limits of a Class 1 LED device.

TÜVStatement

TÜV or GS marked to EN60950 and EN60825–1.

C–TIC Statement

Conforms to AS/NZS 3548.

Programming Chart


0


1


2


3


4


5


6


7


8


9


A


B


C


D


E


F


Save


Discard

Sample Bar Codes

Code 39



TEST–SHEET

Matrix 2 of 5



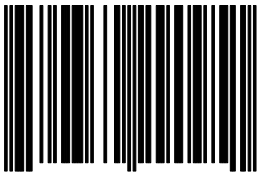
6543210

Code 128



CODE 128

EAN 13



9 780330 290951

Code 2 of 5



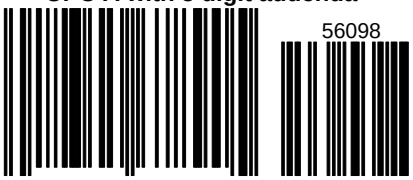
123456

Interleaved 2 of 5



1234567890

UPC A with 5 digit addenda



56098

0 12345 67890 5

WelchAllyn®

Data Collection Division
4619 Jordan Road
P.O. Box 187
Skaneateles Falls, New York 13153–0187

3800/DO/UG Rev B

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP