SCANTEAM® 5700

Decoded Output

User's Guide

HAND HELD® PRODUCTS

a WelchAllyn® affiliate

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.

Web Address: http://dcd.welchallyn.com

Statement of Agency Compliance

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.

C.S.A. Statement

This product must be used with a certified Class 2 power supply or be powered by a certified SELV (Safety Extra Low Voltage) output.

CDRH Statement

This product complies with 21 CFR Part 1040. This product is a Class II (Class IIIa for 5700ALR) laser product with a maximum output of 1.0 mW (1.5 mW for 5700ALR) at 650 nanometers and continuous wave.

Statement of Agency Compliance

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.
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.

Patents

The SCANTEAM 5700 product is covered by one or more of the following U.S. Patents:

4,360,798; 4,369,361; 4,387,297; 4,496,831; 4,593,186; 4,603,262; 4,607,156; 4,652,750; 4,673,805; 4,736,095; 4,816,660; 4,845,350; 4,896,026; 4,923,281; 4,992,717; 5,017,765; 5,047,617; 5,113,445; 5,140,144; 5,149,950; 5,168,148; 5,168,149; 5,180,904; 5,247,162; 5,250,792; 5,262,627;5,280,163; 5,280,164; 5,304,786; 5,304,788; 5,367,151; 5,373,148; 5,396,053; 5,408,081; 5,410,139; 5,436,440; 5,468,949; 5,479,000, 5,942,741.

Other U.S. and foreign patents pending.

TABLE OF CONTENTS

Section 4 Symbology Menu

Section 5 Firmware Utility Menu

Section 6 Supported Interface Keys

Section 7 Product Specifications and Pinouts

Section 8 Maintenance and Troubleshooting

Section 9 Customer Service

Default Charts

Programming Chart (inside back cover)

Sample Bar Codes (back cover)

Introduction

Your scanner provides high value performance in an economical, durable solution for a wide variety of bar code data collection applications. The scanner contains Welch Allyn's Instant Interface module, which integrates aggressive ("snappy") decoding, advanced data editing and formatting capabilities, and multiple interface connectivity.

The scanner recognizes and decodes 14 industry-standard bar code symbologies.

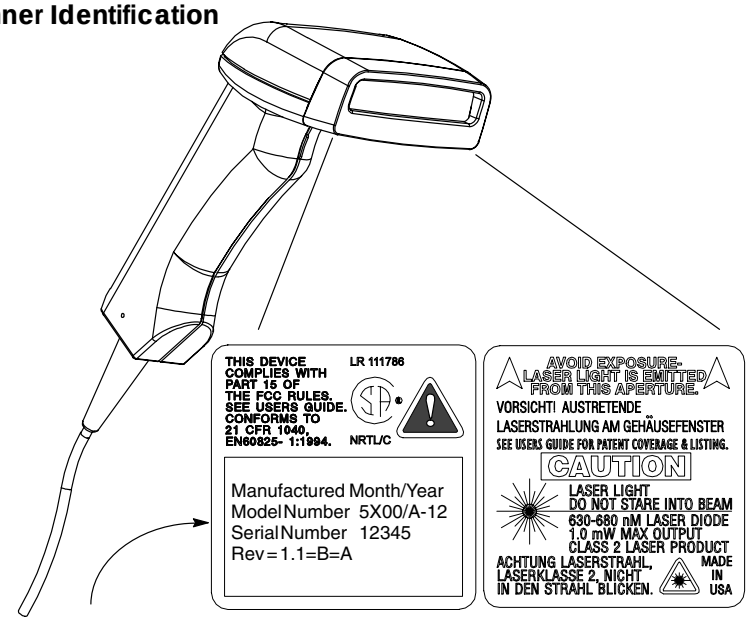
The scanner can be programmed for many communications parameters and input/output protocols compatible to the host. Programming is accomplished by using the single programming bar codes in this menu. Use this chapter to program your laser scanner to work with your terminal/computer.

This programming section contains the following:

- Getting Started Information
- Plug and Play Selections
- Terminal Interface Selections
- Main Menu Selections
- Dual Interface Selections

Getting Started

Scanner Identification



SCANTEAM 5700 Identification Label

Model Number 5X00/A–12
❶ ❷❸

Engine Type ❶
A = Increased Performance
HD = High Density
ALR = Advanced Long Range

AutoTrigger Option ❷
0 = Hands Free AutoTrigger Feature Not Included
1 = Hands Free AutoTrigger Feature Included

Interface Option ❸

Option	IBM 4683	OCIA OCR	Bar Image Laser Out	Wand Emulation	TTL RS–232	True RS–232	Keyboard Wedge	RS–232 Wedge
0*			•					
1	•	•	•	•	•		Various	
2			•	•	•		Various	
3						•	DEC *Only*	•
4**			•					

* Operates only from +5V power source for 5700/A.
** Operates only from either +5 or +12V power.

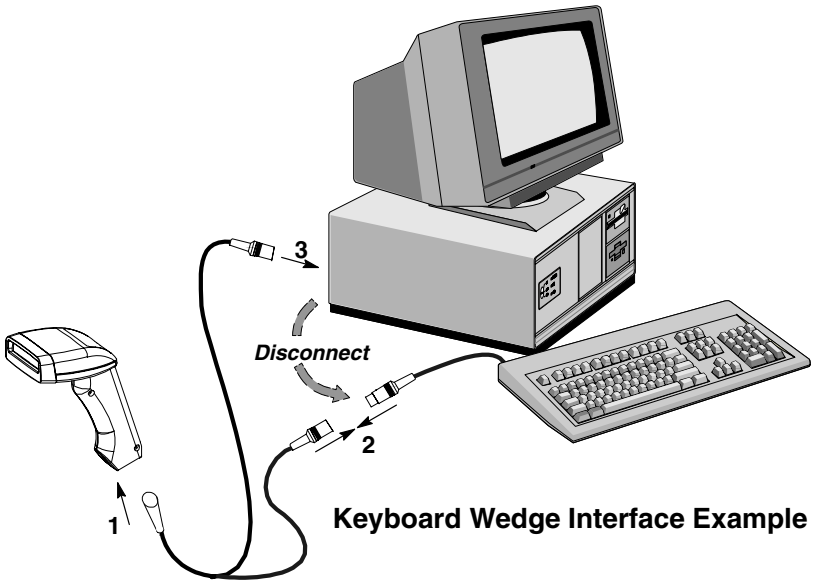
Getting Started

Connecting the Scanner

Install the scanner by following the steps shown below:

❶ Turn off the power to the host system.

❷ Connect the interface cable to the scanner and to the terminal/computer.



Keyboard Wedge Interface Example

(Cable, Keyboard, and Terminal will vary.)

❸ Turn on the power to the host system.

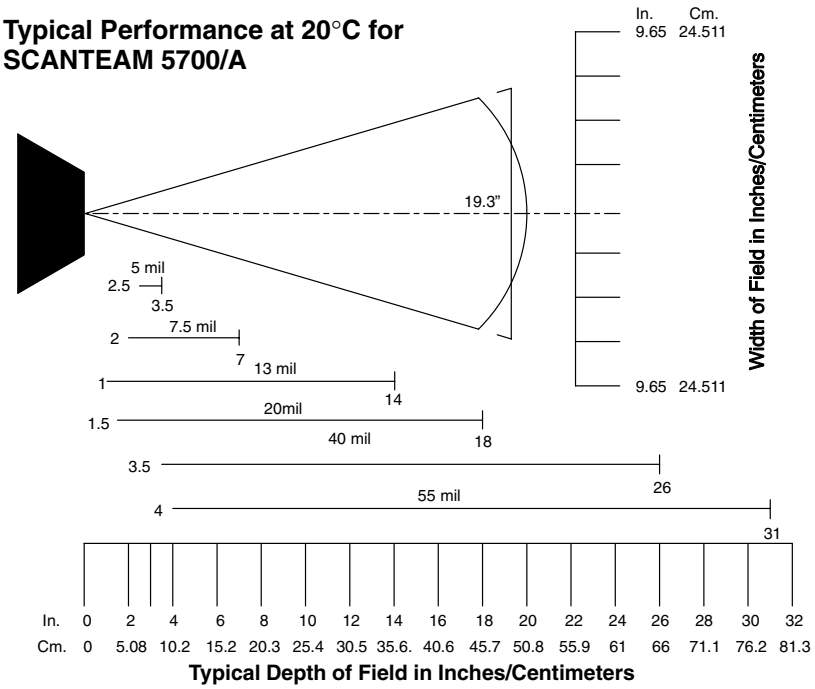
❹ Program your scanner to work with your terminal or computer by scanning the Terminal Set–Up Codes. Either scan the Plug and Play codes (Pages 1–7 to 1–10) or use the Supported Terminal list (Pages 1–11 to 1–12) to determine your terminal's Terminal ID.

With Plug and Play programming, you connect the scanner and scan *only* one bar code to program the scanner to work with a designated interface, including any required prefixes and suffixes.

❺ To determine if your scanner is set up correctly, scan one of the sample bar codes on the back cover of this guide.

Scan Maps

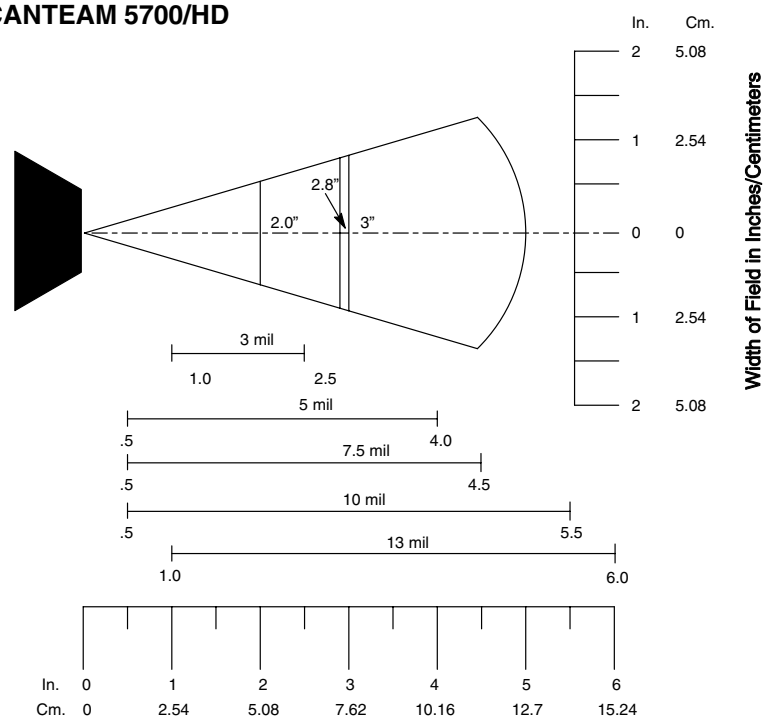
Typical Performance at 20°C for SCANTEAM 5700/A



Typical Depth of Field in Inches/Centimeters

Scan Maps

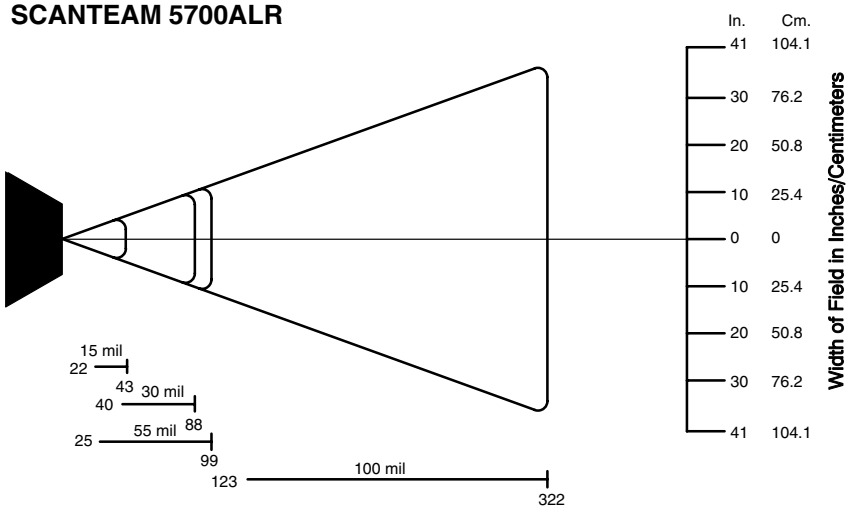
Typical Performance at 20°C for SCANTEAM 5700/HD

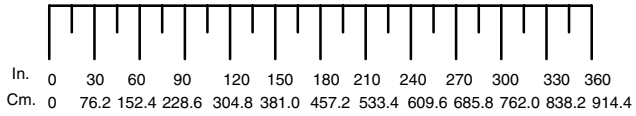


Typical Depth of Field in Inches/Centimeters

Scan Maps

Typical Performance at 20°C for SCANTEAM 5700ALR





Typical Depth of Field in Inches/Centimeters

70 mil retroreflective – 68” (172.7 cm) – 13.5’ (411.5 cm)

100 mil retroreflective – 82” (208.3 cm) – 17.5’ (533.4 cm)

Plug and Play Selections

IBM PC, Wand Emulation Interface

IBM PC AT and Compatibles Interface (Default)
(also PS/2 30-286, 50, 55SX, 60, 70, 70-061, 70-121, 80)

IBM PS/2 and Compatibles Interface
(for PS/2 25, 30 models)

IBM PC XT and Compatibles Interface

*These bar codes **also** program a carriage return (CR) suffix.*

Wand Emulation (Code 39 Format) Interface

Wand Emulation (Same Code Format) Interface †

† Supports Code 39, UPC, EAN, Code 128, Interleaved 2 of 5, and Codabar. All other codes output as Code 39.

*These bar codes **also** program the following parameters:*

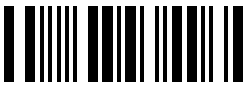
Programmable Option	Setting
Transmission Rate	20 inches per second
Output Polarity	Black High

Plug and Play Selections

IBM 4683 Interface

IBM 4683 Port 5B Interface

IBM 4683 Port 9B HHBCR–1 Interface



IBM 4683 Port 9B HHBCR–2 Interface

IBM 4683 Port 17 Interface

*These bar codes **also** program the following parameters:*

Symbology	Suffix	Symbology	Prefix
EAN 8	0C	Code 39	00 0A 0B
EAN 13	16	I 2 of 5	00 0D 0B
UPC A	0D	Code 128	00 18 0B
UPC E	0A		

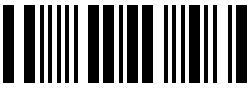
Plug and Play Selections

OCIA Interface

Spectra-Physics OCIA Interface

*The bar code above **also** programs the following parameters:*

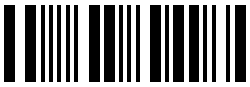
Symbology	Suffix	Symbology	Prefix
EAN 8	06 06	UPC A	01
EAN 13	06	UPC E	05



NCR OCIA Short Form Format (Eight Bit) Interface

*The bar code above **also** programs the following parameters:*

Symbology	Suffix	Symbology	Prefix
EAN 8	0F 0F	UPC A	0A
EAN 13	0F	UPC E	0E



NCR OCIA Long Form Format (Nine Bit) Interface

*The bar code above **also** programs the following parameters:*

Symbology	Suffix	Symbology	Prefix
EAN 8	46 46	Code 39	42 31
EAN 13	46	I 2 of 5	42 32
UPC A	41	Code 128	42 33
UPC E	45		

Nixdorf OCIA Interface

*This bar code above **also** programs the following parameters:*

Symbology	Prefix
EAN/UPC with Addenda	44 4B
Code 39	44 49
I 2 of 5	44 48
2 of 5	44 47
Code 128	44 4A

Plug and Play Selections

OCR, RS232 Interface

Fujitsu OCR Interface

*The bar code above **also** programs the following parameters:*

Symbology	Suffix	Symbology	Prefix
EAN 8	17	UPC A	17
EAN 13	17	UPC E	17
I 2 of 5	03 (*Application Dependent*)		

IBM OCR (Port 21) Interface

*The bar code above **also** programs the following parameters:*

Symbology	Suffix	Symbology	Prefix
EAN 8	0C	UPC A	0D
EAN 13	16	UPC E	0A
Code 128	1D		

RS-232 Interface

*The bar code above **also** programs the following parameters:*

Programmable Option	Setting
Baud Rate	9600 bits per second
Parity	even
Data Format	7 data bits, parity bit, 1 stop bit (8 Bit Data)

End of "Plug and Play" programming...

Terminal Interface Selections

If your terminal is not one of the Plug and Play options, you must program one of the terminals listed below. To program the terminal interface, scan the Program Terminal Interface bar code below, then scan the appropriate two digit Terminal I.D. code from the Programming Chart on the inside back cover of this manual.

Program Terminal Interface

Supported Terminals

Terminal	Model(s)	Terminal I.D.
ADI	1496	72
Apple Desktop Bus ADB	MAC Classic, SE SE30, II (All)	49
Bull	BDS–7 (HDS–7)	35
Burroughs	B25	75
Decision Data	DDC3596, 3597	30
DEC	VT–220, 320, 330, 340 420	04
Esprit	200, 400	05
Falco	5220	47
Heath Zenith	PC	90
HP	700/44, 700/92, 700/94, 700/96, 700/98	20
HP	700/60	79
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	4683, 4684	51
IBM 102 Key	3151, 3161, 3162, 3163, 3191, 3192, 3196, 3197, 3471, 3472, 3476, 3477	06
IBM 122 Key	3179–1, 3191, 3192, 3471, 3472, 3194	07
IBM 122 Key	3196, 3197, 3476, 3477, 3486, 3488, 3482	08
IBM 122 Key	3180	24

* = Default

Terminal Interface Selections

Supported Terminals

Terminal	Model(s)	Terminal I.D.
ICL	300	77
IDEAS		08
ITT	9271	07
Lee Data	IIS	07
Link	MC–5	18
Mac		49
OCIA		52
OCR		53
Olivetti	M19, M24, M28, M200	01
Olivetti	240, 250, 290, 380, P500	03
Qume ANSI	QVT 61, 62, 70, 191, 321, 322	82
Qume ASCII	QVT 31, 51, 61, 62, 70, 191	74
Qume Enhanced PC	QVT 61, 62, 70, 82, 191, Qx15	38
RS232 True		00
RS232 TTL		00
Serial Wedge		50
Siemens 9758	(German Only)	34
Stratus	V103	14
Televideo	955, 965	36
Telex 88 Key	078A, 078, 79, 80, 191, 196, 1191, 1192, 1471, 1472, 1476	25
Telex 102 Key	078A, 078, 79, 80, 191, 196, 1191, 1192, 1471, 1472, 1476	45
Telex 122 Key	078A, 078, 79, 80, 191, 196, 1191, 1192, 1471, 1472, 1476	46
Wand Emulation		61
WYSE	WY–30	13
WYSE	WY–85/185	16
WYSE ANSI	WY 60, 120, 150, 160	15
WYSE ASCII	WY 60, 120, 150, 160, 99GT	14
WYSE Enhanced PC	WY 60, 120, 150, 160	18

Main Menu Selections

Reset Factory Settings

Scanning the ***Factory Default Settings*** bar code resets the scanner to the original factory settings, clearing any programming changes you may have made.

Factory Default Settings

Status Check

Scan the ***Show Software Revision*** bar code to transmit the software revision level to the host terminal. The software revision will be printed out as "WA34310XXX." (The "X's" will vary according to the firmware ID.)

Show Software Revision

Quick Suffix Selections

If your application requires it, scan the ***Program Carriage Return Suffix*** bar code to program a carriage return (CR) suffix for all enabled bar code symbologies. **Scanning this bar code clears all previously programmed prefixes and suffixes.**

Scan the ***Clear Bar Code Suffix*** bar code to disable (or clear) all previously programmed prefixes and suffixes (e.g., the carriage return suffix).

Program Carriage Return Suffix

Clear Bar Code Suffix

Dual Interface

Scanner models 5700–X1 and 5700/X–X2 support the dual interface option allowing you to connect to two different terminals by switching interface cables. This option supports interfaces common to portable data terminals.

Dual Interface Programming Instructions

To program the scanner for secondary interface, follow the steps below. ***(Dual Interface single scan programming codes are shown on the following pages.)***

❶ While the scanner is connected to the primary terminal interface, scan one of the single bar codes on 1–15 to enable the secondary interface.

❷ Disconnect the primary interface cable from the scanner and attach the secondary interface cable.

❸ Attach the secondary interface cable to the secondary terminal and power up the terminal.

❹ Program the desired programmable selections for the secondary interface.

Dual Interface Programming Notes:

- To change the secondary interface from one selection to another (e.g., from HHLC to RS-232), the scanner must be reconnected to the primary interface, and then reprogrammed for the new secondary interface. Connect the scanner to the primary interface cable. Follow steps 1–4 above.
- Scanning "Plug and Play" bar codes (single scan terminal selection bar codes), or changing the terminal type does not affect Dual Interface settings.
- 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.
- The Switch Power feature is a low power sleep mode which is automatically enabled when the secondary interface cable is attached and the unit is programmed for a second interface. The option is enabled when the unit is shipped.

Note: *Dual Interface selection is not available if the scanner is programmed for an HP terminal with a Terminal I.D. of 20 or 79, or for a WYSE terminal with a Terminal I.D. of 13–18.*

† ***Note:*** *Section 2 contains information about Dual Interface Prefix/Suffix programming.*

Dual Interface Selections

Code 39 Wand Emulation Selection

✱ Code 39 Wand Emulation Selection

Same Code Wand Emulation Selection

Same Code Wand Emulation Selection †

RS-232 Selection

RS-232 Selection

Laser Emulation Selection

Laser Emulation Selection

Note: *5700–X3 units do not support Dual Interface.*

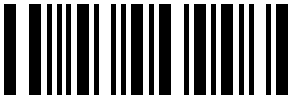
† Supports Code 39, UPC, EAN, Code 128, Interleaved 2 of 5, and Codabar. All other codes output as Code 39.

Dual Interface Selections

Dual Interface Enable/Disable Selection

Dual Interface Disable Selection lets you temporarily disable the dual interface selection, while retaining your secondary interface setup in memory. If you want to enable the secondary interface again, scan the Enable Dual Interface bar code below.

Enable



✱ Disable

Switched Power Mode Selections

When this feature is enabled, the unit consumes less than 50 uA from its power line when the trigger is not pulled. When the trigger is pulled, it consumes normal power. This feature is used for battery powered devices to save power. If power savings is not an issue and speed is, disable this feature for better performance.

✱ Switched Power (Low Power) Mode

Constant Power Mode

Laser Emulation Power Up Delay Selection

Scan the Laser Emulation Power Up Delay bar code to delay full power up. This allows the PDT terminal to power up on scanner trigger. The PDT powers down between scans, greatly extending battery life.

Scan two of the Numeric Bar Codes on the Programming Chart (inside back cover) to set the delay to any value between 00 and 99. 00–99 is the multiplier (x5ms).

Power Up Delay

Introduction

Use this chapter to program the output parameters for the Hand-Held Laser Scanner.

This programming section contains the following menuing selections:

- Prefix and Suffix
- Output
- Serial Communication (RS-232)
- Data Formatter

Prefix / Suffix Selections

Primary Interface Prefix and Suffix

The scanner transmits a decoded message after every successful bar code read. Prefix and Suffix characters are data characters you may assign to be sent before and after the transmitted bar code data.

Transmitted data frame –>

Prefix	Bar Code Message	Suffix

Characters for the Prefix and Suffix are selected by their hexadecimal ASCII value, up to 12 characters each. Prefix and Suffix characters may be sent for a specific symbology, or may be sent with all bar code scans.
Default Prefix = none. Default Suffix = none.

Programming Steps to Add a Primary Interface Prefix / Suffix:

❶ To add a Prefix, scan the ***Add Primary Prefix*** programming bar code.
To add a Suffix, scan the ***Add Primary Suffix*** programming bar code.

❷ Refer to the Symbology Chart (page 2–7) to find the Hex value that represents the symbology(s) you want transmitted with one or more Prefixes or Suffixes. Scan the two digits on the Programming Chart (on the inside of the back cover of this menu).

❸ Refer to the Hex ASCII Chart (page 2–7) to find the Hex value that represents the ASCII characters you wish to transmit with the bar code data. Use the Programming Chart (inside back cover) to scan the alphanumeric combination that represents the ASCII characters.

❹ To complete Prefix / Suffix programming, scan either:

- ***Save Current Prefix or Suffix Changes***† programming bar code. This exits, saving the Prefix / Suffix selections you just assigned.
- ***Discard Current Prefix or Suffix Changes*** programming bar code. This exits without changing the Prefix / Suffix.

† You may also start scanning bar codes; your Prefix / Suffix selections will be saved.

Programming Steps to Clear (or Delete) One Prefix / Suffix Entry:

❶ To clear the Prefix entry for a specific symbology, scan the ***Clear One Primary Prefix*** programming bar code.
To clear the Suffix entry for a specific symbology, scan the ***Clear One Primary Suffix*** programming bar code.

❷ Refer to the Symbology Chart to find the Hex value representing the symbology's entry you want cleared. Scan the two digits on the Programming Chart (on the inside of the back cover of this menu).

❸ You don't need to scan ***Save Current ... Changes*** or ***Discard Current ... Changes*** programming bar codes to complete programming.

Other Programming Selections: Scanning the ***Clear All Primary Prefixes*** or ***Clear All Primary Suffixes*** bar code deletes all Primary Prefix or Suffix selections. You don't need to scan the ***Save Current ... Changes*** or ***Discard Current ... Changes*** programming bar code to complete programming.

Note: *Prefix / Suffix programming examples may be found on page 2–6.*

Prefix / Suffix Selections

Primary Interface Prefix Selection

Add Primary Prefix ‡

Clear All Primary Prefixes

Clear One Primary Prefix ‡

Primary Interface Suffix Selection

Add Primary Suffix ‡

Clear All Primary Suffixes

Clear One Primary Suffix ‡

Exit Selection for Prefix / Suffix

Save Current Prefix or Suffix Changes

Discard Current Prefix or Suffix Changes

‡ One or more two-digit numbers are required after scanning this programming bar code. Please scan your selection on the Programming Chart (inside back cover).

Prefix / Suffix Selections

Secondary (Dual) Interface Prefix and Suffix

The scanner will transmit a decoded message after every successful bar code read. Prefix and Suffix characters are data characters you may assign to be sent before and after the transmitted bar code data.

Transmitted data frame –>

Prefix	Bar Code Message	Suffix

Characters for the Prefix and Suffix are selected by their hexadecimal ASCII value, up to 12 characters each. Prefix and Suffix characters may be sent for a specific symbology, or may be sent with all bar code scans.
Default Prefix = none. Default Suffix = none.

Programming Steps to Add a Secondary (Dual) Interface Prefix / Suffix:

❶ To add a Prefix, scan the ***Add Secondary Prefix*** programming bar code.
To add a Suffix, scan the ***Add Secondary Suffix*** programming bar code.

❷ Refer to the Symbology Chart (page 2–7) to find the Hex value that represents the symbology(s) you want transmitted with one or more Prefixes or Suffixes. Scan the two digits on the Programming Chart (on the inside of the back cover of this menu).

❸ Refer to the Hex ASCII Chart (page 2–7) to find the Hex value that represents the ASCII characters you wish to transmit with the bar code data. Use the Programming Chart (inside back cover) to scan the alphanumeric combination that represents the ASCII characters.

❹ To complete Prefix / Suffix programming, scan either:

- ***Save Current Prefix or Suffix Changes***† programming bar code. This exits, saving the Prefix / Suffix selections you just assigned.
- ***Discard Current Prefix or Suffix Changes*** programming bar code. This exits without changing the Prefix / Suffix.

† You may also start scanning bar codes; your Prefix / Suffix selections will be saved.

Programming Steps to Clear (or Delete) One Prefix / Suffix Entry:

❶ To clear the Prefix entry for a specific symbology, scan the ***Clear One Secondary Prefix*** programming bar code.
To clear the Suffix entry for a specific symbology, scan the ***Clear One Secondary Suffix*** programming bar code.

❷ Refer to the Symbology Chart to find the Hex value representing the symbology's entry you want cleared. Scan the two digits on the Programming Chart (on the inside of the back cover of this menu).

❸ You don't need to scan ***Save Current ... Changes*** or ***Discard Current ... Changes*** programming bar codes to complete programming.

Other Programming Selections: Scanning the ***Clear All Secondary Prefixes*** or ***Clear All Secondary Suffixes*** bar code deletes all Secondary Prefix or Suffix selections. You don't need to scan the ***Save Current ... Changes*** or ***Discard Current ... Changes*** programming bar code to complete programming.

Note: *Prefix / Suffix programming examples may be found on page 2–6.*

Prefix / Suffix Selections

Secondary Interface Prefix Selection

Add Secondary Prefix ‡

Clear All Secondary Prefixes

Clear One Secondary Prefix ‡

Secondary Interface Suffix Selection

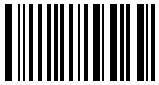
Add Secondary Suffix ‡

Clear All Secondary Suffixes

Clear One Secondary Suffix ‡

Exit Selection for Prefix / Suffix

Save Current Prefix or Suffix Changes



Discard Current Prefix or Suffix Changes

‡ One or more two-digit numbers are required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Prefix / Suffix Selections

Prefix and Suffix Examples

Example 1: Add Suffix for Specific Symbology

You want to send a CR (carriage return) Suffix for UPC only.

- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value of UPC is "63". Scan **6** and **3** on the Programming Chart (inside back cover).
- A "CR" is equivalent to "0D" (see the Hex ASCII Chart). Scan **0** and **D** on the Programming Chart.
- Scan the ***Save Current Suffix Changes*** Exit Selection bar code.

Example 2: Add Suffix for *ALL* Symbologies

You want to send a CR (carriage return) Suffix for all symbologies.

- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value for All Symbologies is "99". Scan **9** and **9** on the Programming Chart.
- A "CR" is equivalent to "0D". Scan **0** and **D** on the Programming Chart.
- Scan the ***Save Current Suffix Changes*** Exit Selection bar code.

Example 3: Add Prefix for Specific Symbology / Suffix for *ALL* Symbologies

You want to send a HT (tab) Prefix for UPC only and a CR / LF (carriage return / line feed) Suffix for all symbologies.

- Scan the ***Add Prefix*** Prefix Selection bar code.
- The Symbology Chart indicates that the Hex value of UPC is "63". Scan **6** and **3** on the Programming Chart.
- An "HT" is equivalent to "09". Scan **0** and **9** on the Programming Chart.
- Scan the ***Add Suffix*** Suffix Selection bar code.
- The Symbology Chart indicates that the Hex value for All Symbologies is "99". Scan **9** and **9** on the Programming Chart.
- A "CR" is equivalent to "0D" and an "LF" is "0A". Scan **0**, **D**, **0**, and **A** on the Programming Chart.
- Scan the ***Save Current Prefix / Suffix Changes*** Exit Selection bar code.

Example 4: To Clear a Specific Prefix Entry

You've programmed the scanner to send a CR / LF (carriage return / line feed) Prefix for all symbologies (Hex value, 99). This is one Prefix entry. You've also programmed a "#" Prefix for UPC (Hex, 63). You decide that you want to clear the UPC entry, but not the Prefix entry for all symbologies.

- Scan the ***Clear Specific Prefix*** Prefix Selection bar code.
- The Symbology Chart indicates that the Hex value for UPC is "63". Scan **6** and **3** on the Programming Chart.

Prefix / Suffix Selections

Symbology Chart					
Symbology	**Code ID †**	**Hex Value**	**Symbology**	**Code ID †**	**Hex Value**
Codabar	a	61	Code 11	h	68
Code 39	b	62	Code 93	i	69
UPC	c	63	Code 128	j	6A
EAN	d	64	Matrix 2 of 5	m	6D
Interleaved 2 of 5	e	65	Plessey	n	6E
Code 2 of 5	f	66	*All Symbologies*		99
MSI	g	67	*(Prefix/Suffix Programming **only**.)*		

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

Note: *Prefix / Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.*

Note: *Adding a Prefix or a Suffix appends that Prefix / Suffix to any existing entries for the symbology(s) you've chosen. For example, if you've already programmed and saved a CR / LF (carriage return / line feed) and add a "#" Prefix, the "#" will be sent after the CR / LF.*

*If you add a Prefix / Suffix but want existing entries cleared, you'll need to use the **Clear Specific Prefix / Suffix** programming selection first. Then use the **Add Prefix / Suffix** programming selection to program your new Prefix / Suffix.*

Output Selections

✱ *Default All Output Settings* ✱

Beeper Volume Selection

Off

Low

Medium

✱ High

Output Delays Selection

This selection provides control of the time delays between data output by the scanner to the host terminal. The actual delay is 5 milliseconds multiplied by the programmed value (00 – 99). *Default = 00.*

Intercharacter Delay is the time delay between data characters output by the scanner to the host terminal.

Interfunction Delay is the time delay between function (key) codes output by the scanner to the host terminal.

Intermessage Delay is the time delay between data messages or records output by the scanner to the host terminal.

Example: You need a 45 millisecond delay. Scan the ***Intercharacter Delay*** bar code. Then scan "0" and "9" on the Programming Chart (09 x 5ms = 45 ms).

Intercharacter Delay (x5mS) ‡

Interfunction Delay (x5mS) ‡

Intermessage Delay (x5mS) ‡

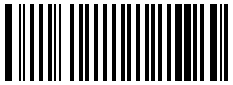
‡ A two-digit number is required after scanning this programming bar code. Please scan your selection on the Programming Chart (inside back cover).

Output Selections

Reread Delay Selection

This selection allows you to set a time period that must pass before the scanner can read the *same* bar code again. 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) terminals. Use shorter delays in applications where repetitive bar code scanning is required.

✱ Low (175 milliseconds)



Medium (450 milliseconds)

High (1.0 second)

Extra High (2.0 seconds)

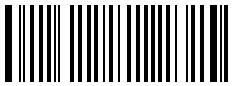
Good Read Delay Selection

This selection allows you to set a time period that must pass before the scanner can read another bar code. Some terminals require a slower read rate. By setting a good read delay, you can ensure a good read.

✱ None

Low (500 milliseconds)

Medium (1.0 second)



High (1.5 second)

Laser Voting Selection

When Laser Voting is enabled, the scanner requires three (3) identical, consecutive scans before the bar code data will be accepted and transmitted to the terminal. When this selection is disabled, the bar code data will be transmitted following one (1) valid scan.

Enable

✱ Disable

Output Selections

Buffered Scans Selection

When enabled, this selection allows the scanner to accept a second scan while the current scan is transmitted to the host terminal (buffering of scanned data). When disabled, the scanner cannot accept additional scans until the current scan is transmitted to the host. *Default = Enable.*

✱ Enable

Disable

Code I.D. Transmit Selection

This allows you to enable or disable transmission of a Code I.D. before the decoded bar code symbology. (See the Symbology Chart on page 2–7 for the single character code that identifies each symbology.)

Enable

✱ Disable

AIM I.D. Transmit Selection

This selection allows you to enable or disable transmission of an AIM I.D. before the decoded bar code symbology. (See AIM Guidelines on Symbology Identifiers for more information on the AIM symbology ID characters.) *Default = Disable.*

Enable

✱ Disable

Function Code Transmit Selection

When this selection is enabled, and function codes are contained within the scanned data, the scanner transmits the key code (which corresponds to the decoded ASCII function code) to the terminal. ASCII function codes are represented by the HEX values 00–1F. (Charts of these function codes are shown in Section 6, Supported Interface Keys.)

✱ Enable

Disable

Serial Communication Settings

✱ *Default All Serial Communication Settings* ✱

CTS Check Selection

This selection allows you to select the software programming feature that checks for a CTS signal, if your application does not have a CTS I/O line. *Default = Disable.*

Enable

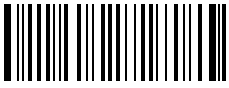
✱ Disable

Baud Rate Selection

This selection sets the baud rate from 300 bits per second to 38,400 bits per second. Programming baud rate causes the data to be sent at the specified rate. The host terminal must be set up for the same baud rate as the scanner, to ensure reliable communication. *Default = 9600 bps.*

300

600



1200

2400

4800

✱ 9600

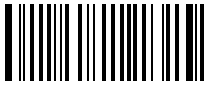
19200

38400

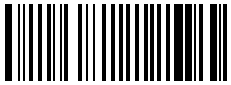
Serial Communication Settings

RS-232 Word Length Selection

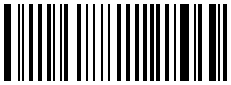
This selection allows you to set the RS-232 word length at seven or eight bits of data per character. The number of start and stop bits is fixed at one each. If an application requires only ASCII Hex characters 0 through 7F decimal (text, digits, and punctuation), select 7 data bits. For applications requiring use of the full ASCII set, select 8 data bits per character.



✱ 7 Data, 1 Stop



7 Data, 2 Stop



8 Data, 1 Stop

Parity Selection

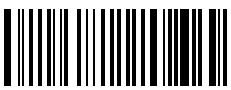
This selection provides a means of checking character bit patterns for validity. The scanner can be configured to operate under Even, Odd, Mark / None, or Space parity options. The host terminal must be set up for the same parity as the scanner, to ensure reliable communication.

None

Mark

Space

Odd



✱ Even

Serial Communication Settings

Protocol Selection

This selection allows you to program the scanner for the protocol required by your application. The protocol is a set of rules concerning the exchange of data between serially communicating devices. The scanner supports Record, Xon / Xoff, and Ack / Nak protocols when receiving data from an RS-232 device.

✱ Record

Xon / Xoff

Ack / Nak

Serial Wedge Output Selection

This selection allows you to select the serial output direction required by your application. P1 and P2 are serial wedge designations printed on the serial wedge cable. Usually, one goes to the host and one goes to the terminal, depending on your specific application and the serial wedge cable.

Note: *Serial Wedge programming is for scanner model –X3* ***only!*** *The scanner must also be in Serial Wedge mode (Terminal I.D. 50).*

✱ To P1

To P2

To P1 and P2

Data Formatter Selections

Data Format Editor

This selection provides editing of all input (scanned) data. All Industrial and Retail symbologies can be formatted. You may scan the ***Clear Data Format*** bar code if you are **certain** you want to delete or clear all formats.

To make Data Format Editor selections, you must know the terminal type, code I.D., code length, and editor commands your application requires. Use the Alpha-numeric bar codes (inside back cover) to scan these options.

Use the Data Format Editor by following the steps below:

❶ Scan the ***Enter Data Format*** bar code.

❷ **Terminal Type**
Scan two bar codes that represent the terminal type (00-99†, see page 1–11 for Terminal I.D. list.)

❸ **Code I.D.**
Refer to the Symbology chart (page 2–7), then scan two bar codes from the "Hex Value" column that represent the Code I.D. of the symbology you want formatted. ("All Symbologies" – hex value 99 – is not supported by Data Formatter.)

❹ **Length**
Scan two numeric bar codes (inside back cover) for the bar code length you require (00-99†). Be sure to include spaces.

❺ **Editor Command Sequences**
Refer to the Format Editor Commands chart (page 2–16). Scan two bar codes that represent the command you need.

❻ **End Format (FF)**
Scan "F" ***twice*** to end Data Format Editor programming.

† 99 is the Universal number, indicating all terminals and all code lengths.

Data Formatter Selections

Status Check

Scan the ***Show Formats*** bar code to transmit the existing Data Format Editor formats. One format per line will be printed out.

Show Formats

Require Data Format

When disabled, the bar code data will be output to the host as scanned (including prefixes and suffixes). When enabled, all input data must conform to an edited format or the scanner will not transmit the input data to the host device.

Enable

✱ Disable

Data Format Editor

See pages 2–14 and 2–16 through 2–17 for a description of this selection and examples.

Enter Data Format

Clear All Data Formats

Data Formatter Selections

Format Editor Commands Chart

Send Commands

F1 Send all characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F1XX*** *(XX = HEX ASCII character or function code 00–FE HEX).*

F2 Send "NN" characters followed by "XX" key or function code, starting from current cursor position. ***Syntax = F2NNXX*** *(NN = number of characters 00–99 DEC, XX = HEX ASCII character or function code 00–EF HEX).*

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 = HEX ASCII Character 00–7F HEX, XX = HEX ASCII character 00–7F HEX).*

F4 Send "XX" character "NN" times (Insert) leaving cursor in current cursor position. ***Syntax = F4XXNN*** *(XX = HEX ASCII character 00–7F HEX, NN = number of characters 00–99 DEC).*

Move Commands

F5 Move cursor ahead "NN" characters from current cursor position. ***Syntax = F5NN*** *(NN = number of characters 00–99 DEC).*

F6 Move cursor back "NN" characters from current cursor position. ***Syntax = F6NN*** *(NN = number of characters 00–99 DEC).*

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 = HEX ASCII character 00–7F).*

F9 Search back for "XX" character from current cursor position, leaving cursor pointing to "XX" character. ***Syntax = F9XX*** *(XX = HEX ASCII character 00–7F).*

Miscellaneous Commands

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

FB Suppress "XX" character(s) (up to three) starting from current cursor position until suppress disable command "FC" or end of format. ***Syntax = FBXXFB, FBXXXXFB, FBXXXXXXFB*** *(XX = ASCII character 00–7F).*

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 = HEX ASCII character 00 –7F).*

Data Formatter Selections

Data Formatter Example

You are using an IBM PC AT and are scanning a UPC A bar code with a five digit addenda (shown below). The bar code has a total of 18 characters, including the number system, the check digits, and a space between the main bar code data and the addenda bar code data.

UPC A with 5 digit addenda

For your application, you don't want the space between the main bar code data and the addenda bar code data transmitted. You also want the bar code data followed by a carriage return (CR).

Refer to the Format Editor Commands Chart on page 2–16 to format the following example. The programming bar codes on pages 2–15, and the alpha-numeric bar codes on the inside back cover are used to program the data formatter.

- Scan the ***Enter Data Format*** bar code (page 2–15).
- Scan the ***03*** bar codes for PC AT Terminal Type.
- Scan the ***63*** bar codes, the Hex value for UPC symbology.
- Scan the ***18*** bar codes for the bar code length.

The following are the Editor Command Sequences:

- Scan the ***FB*** (suppress characters command) bar codes, scan ***20*** (the Hex value for a space), and then scan ***FB*** to frame (complete) the command.
- Scan the ***F7*** bar codes to move the cursor back to the beginning of the bar code data.
- Scan the ***F1*** and ***0D*** bar codes to send all the characters followed by a carriage return (CR= 0D in Hex value).
- Scan the ***FF*** bar codes to end Format Editor selection.

Data Formatter Selections

Introduction

Use this chapter to program the Hand-Held Laser Scanner for General Operating features.

This programming section contains the following menuing selections:

- Laser Options
- Wand Emulation
- Country Code
- Keyboard

Laser Options

Marker Beam Selection

When enabled, the scanner shows a marker or locator beam before the red scan line opens across a bar code and the scanning process begins. The marker beam, emitted by centering the optical scan mirror, appears as a bright spot of illumination that serves as an aiming guide when bar code targets are at a distance from the scanner. ***Note:*** *Applies only to the 5700ALR product.*

On

✱ Off

AutoTrigger Selection †

When enabled, this programming selection allows auto-triggering with the optional Scan Stand. The Scan Stand provides hands-free operation in any application where a great number of bar code entries is required. ***Note:*** *Does not apply to the 5700ALR product.*

Note: *The scanner must be ordered with the AutoTrigger configuration.*

✱ Enable

Disable

† This programming feature is available *only* if you have purchased scanner models 5700/A–1X (refer to Sales Configuration Worksheet).

Wand Emulation Selections

Transmission Rate Selection

This programming selection sets the transmission rate from 10 ips (inches per second) to 300 ips if the scanner is in Wand Emulation mode. Programming the transmission rate causes the data to be sent at the specified rate. The programmed transmission rate must be compatible with the device receiving the bar code data. *Default = 25 ips (inches per second).*

10

✱ 25

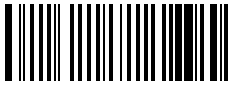
40

80

120

150

200



300

Wake Up Pulse Selection

This selection provides a “wake up” pulse on the sync line from the scanner to a portable terminal. This feature extends battery life of the portable terminal by waking up the terminal only when data is ready to be sent. Bar code data follows the wake up pulse after a 0.2 second delay. *Default = Disable.*

Enable

✱ Disable

Output Polarity Selection †

This selection allows you to set the output logic convention for the digital output. The choices are White High (“Laser” output) and Black High.
Default = Black High.

White High

✱ Black High

† In Laser Emulation mode, the default polarity is White High. In Wand Emulation mode, the default polarity is Black High.

Country Code Selections

Foreign Keyboard Selection

This programming selection allows you to re-map the keyboard layout for the selected country. As a general rule, the following characters are not supported by the scanner for countries other than the United States:

@ | $ # { } [ ] = / ‘ \ < > ~

✱ United States

Belgium

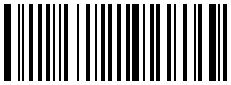
Denmark, Finland, Norway, Sweden

France

Germany, Austria

Italy

Switzerland



United Kingdom

Denmark (*Wyse only*)

Norway (*Wyse only*)

Keyboard Selections

AT Direct Connect Selection

This selection allows you to connect the scanner directly to your terminal. No keyboard is necessary when this selection is enabled.
Default = Disable.

Note: *A direct connect cable is optional (versus "Y" cable) and may be ordered from your distributor.*

Note: *The following Enable and Disable programming bar codes apply to SCANTEAM 5700 software prior to software revision level 2.0.*

Enable

✱ Disable

NCR 7052 Keypad Selection †

This selection allows you to program the scanner to transmit the proper keycodes when interfacing with a telephone, calculator, or PC AT type numeric keypad layout. Choose the keypad layout that defines your keypad layout.
Default = Layout 1 (Telephone).

Note: *NCR 7052 Keypad applies to the 5700–X1 models only.*

✱ Layout 1 (Telephone)

Layout 2 (Calculator)

Layout 3 (PC AT)

† NCR 7052 applies to –X1 units only.

Keyboard Selections

Keyboard Style Selections

Keyboard Style

Note: *The Keyboard Style Table below applies the SCANTEAM 5700 software prior to software revision level 2.0.*

This programming selection allows you to program the scanner to support special keyboard features, such as CAPS LOCK, SHIFT LOCK, Data Entry, and CTRL+ codes. These special keyboard features are shown in the chart below. *Default = Style A.*

Keyboard Style

(If terminal is not listed, then no secondary type keyboard is supported.)

Terminal	Style A	Style B	Style C	Style D	Style E
IBM PC/XT	XT	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
IBM PC/AT	AT	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
IBM PS2 (50–80)	NORM	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
HDS 2000, 3200	T/W	"CTRL +"			
IBM 3180 (122 Key)	T/W	D/E			
COMTERM 6178	T/W	D/E			
TELEX (88 Key)	T/W	D/E			
SIEMENS 9758	NORM	CAPS LOCK			
NCR 7052	34Key	56 Key	122 Key Caps On	122 Key Caps Off	
DEC	Norm	"CTRL +"	MAKE / BREAK		

† ASCII function codes (00–1F) are sent to the terminal via a "CTRL+" sequence (i.e., 'CR'=CTRL+M)

✱ Style A

Style B

Style C

Style D

Style E

Keyboard Selections

Keyboard Style Selections

Keyboard Style Selections

Note: *The Keyboard Style programming bar codes below apply to the SCANTEAM 5700 software revision level 2.0 or greater.*

This programming selection allows you to program special keyboard features, such as Caps Lock and Shift Lock.

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

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

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

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.

Emulate External Keyboard should be scanned if you do not have an external keyboard (IBM AT or equivalent).

✱ Regular

Caps Lock

Automatic Caps Lock

Shift Lock

Emulate External Keyboard

Keyboard Selections

Keyboard Style Modifiers

Keyboard Style Modifiers

This programming selection allows you to program special keyboard features, such as CTRL+ codes and Turbo Mode.

Default All – This sets all Keyboard Style Modifiers to their default states (Control + ASCII Mode Off, Turbo Mode Off, Numeric Keypad Mode Off).

Control + ASCII Mode On – If you scan this selection, the scanner sends key combinations for ASCII control characters for values 00–1F. Refer to page 6–1 for CTRL+ Values. *Default = Off*

Turbo Mode – Selecting Turbo Mode On, (for the IBM AT only), programs the scanner to send characters to the terminal faster. *Default = Off*

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

Automatic Direct Connect – When Emulate External Keyboard has been selected (page 3–7), Automatic Direct Connect Mode keeps the integrated keyboard from becoming permanently disabled. *Default = Off*

Note: *This selection disabled the keyboard for the entire duration of the bar code transmission.*

Default All

Control + ASCII Mode On

✱ Control + ASCII Mode Off

Turbo Mode On

✱ Turbo Mode Off

Numeric Keypad Mode On

✱ Numeric Keypad Mode Off

Automatic Direct Connect Mode On

✱ Automatic Direct Connect Mode Off

Introduction

Use this chapter to program the Hand-Held Laser Scanner for Industrial and Retail Symbology selections.

This programming section contains the following menuing selections:

- Codabar Selections.
- Code 39 Selections.
- Code 93 Selections.
- Interleaved 2 of 5 Selections.
- Code 2 of 5 Selections.
- Matrix 2 of 5 Selections.
- Code 11 Selections.
- Code128 Selections.
- Code 16K Selections.
- Code 49 Selections.
- EAN Selections.
- UPC Selections.
- MSI Selections.
- Plessey Selections.

Industrial Symbology Selections

✱ *Default All Codabar Settings* ✱

Codabar Selection

Codabar

✱ On

Off

Start / Stop Characters

Transmit

✱ Don't Transmit

Decoding

✱ Adaptive

Traditional

Message Length

Minimum ‡

Maximum ‡

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

Codabar Selection, *continued*

Check Character

✱ No Check Character

Validate, But Don't Transmit

Validate, And Transmit

Concatenation

Codabar supports symbol concatenation. When you ***Allow*** concatenation, the reader will look 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.

Codabar

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

Concatenation

Don't Allow (Concatenation Off)

✱ Allow

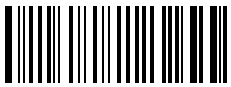
Require

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

✱ *Default All Code 39 Settings* ✱

Code 39 Selection



✱ On

Code 39

Off

Transmit

Start / Stop Characters

✱ Don't Transmit

✱ Enable

Full ASCII

Refer to the Full ASCII Chart on page 4–6.

Disable

Enable

Append

✱ Disable

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

Code 39 Selection, *continued*

✱ Adaptive

Decoding

Traditional

Minimum ‡

Message Length

Maximum ‡

Check Character

✱ No Check Character

Validate, But Don't Transmit

Validate, And Transmit

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

✱ *Default All Code 93 Settings* ✱

Code 93 Selection

✱ On

Code 93

Off

Minimum ‡

Message Length

Maximum ‡

FULL ASCII 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	_	%O	o	+O	DEL	%T

† This chart is used for encoding the above characters in Full ASCII when using Code 39 bar codes. For example, to get a “<”, encode %G (which is 25 47 on the Hex ASCII chart in the Prefix / Suffix Programming section).

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Industrial Symbology Selections

✱ *Default All Interleaved 2 of 5 Settings* ✱

Interleaved 2 of 5 Selection

Interleaved 2 of 5

✱ On

Off

Decoding

✱ Adaptive

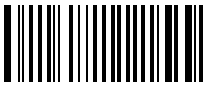
Traditional

Message Length

Minimum ‡

Maximum ‡

Check Digit



✱ No Check Digit

Validate, But Don't Transmit

Validate, And Transmit

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

✱ *Default All Matrix / Code 2 of 5 Settings* ✱

Code 2 of 5 Selection

✱ On

Code 2 of 5

Off

Minimum ‡

Message Length

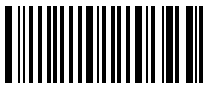
Maximum ‡

Matrix 2 of 5 Selection

✱ On

Matrix 2 of 5

Off



Minimum ‡

Message Length

Maximum ‡

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

✱ *Default All Code 11 / Code 128 Settings* ✱

Code 11 Selection

Code 11

✱ On

Off

Check Digits Required

✱ 2 Check Digits

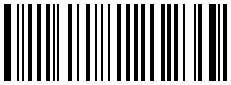
1 Check Digit

Message Length

Minimum ‡

Maximum ‡

Code 128 Selection



Code 128

✱ On

Off

Message Length

Minimum ‡

Maximum ‡

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Industrial Symbology Selections

Code 128 Function Character Selection

When Code 128 Function Character is enabled, the scanner can substitute a <GS> for function character 1. To enable the <GS> substitution, you must scan the Code 128 Function Character On bar code, and the <GS> Substitution On bar code.

Note: For complete Code 128 support, the AIM ID Transmit selection should also be enabled. Refer to page 2–10.

On

Code 128 Function Character

✱ Off

On

<GS> Substitution

✱ Off

Industrial Symbology Selections

✱ *Default All Code 16K / Code 49 Settings* ✱

Code 16K Selection †

On

Code 16K

✱ Off

Minimum ‡

Message Length

Maximum ‡

Code 49 Selection †

On

Code 49

✱ Off

Minimum ‡

Message Length

Maximum ‡

† Not in standard product. Contact your Welch Allyn Sales Coordinator.

‡ A two-digit number is required after scanning this programming bar code. (16K may accept a 3–digit number.) Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Retail Symbology Selections

✱ *Default All EAN / UPC Settings* ✱

EAN Selection

✱ On

EAN / JAN 13

Off

✱ On

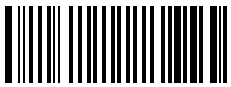
EAN / JAN 8

Off

✱ Transmit

Check Digit

Don't Transmit



Enable

ISBN

✱ Disable

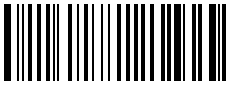
Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Retail Symbology Selections

✱ *Default All UPC / EAN Settings* ✱

UPC Selection

UPC A



✱ On

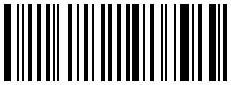
Off

UPC E0

✱ On

Off

UPC E1



On

✱ Off

Check Digit

✱ Transmit

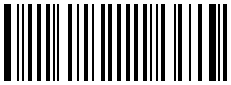
Don't Transmit

Number System

✱ Transmit

Don't Transmit

Version E Expand



Expand

✱ Don't Expand

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

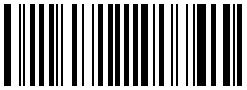
Retail Symbology Selections

Require

EAN / UPC Addenda

✱ Don't Require

Note: The EAN/UPC Addenda Format bar codes below apply to software revision level 2.0 and greater.



No Space

EAN / UPC Addenda Format

✱ Space

EAN Addenda Selection

Enable

Two Digit Addenda

✱ Disable

Enable

Five Digit Addenda

✱ Disable

UPC Addenda Selection

Enable

Two Digit Addenda

✱ Disable

Enable

Five Digit Addenda

✱ Disable

Retail Symbology Selections

✱ *Default All MSI & Plessey Settings* ✱

MSI Selection

On

MSI

✱ Off

Minimum ‡

Message Length

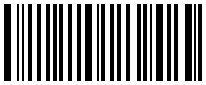
Maximum ‡

Plessey Selection

On

Plessey

✱ Off



Minimum ‡

Message Length

Maximum ‡

‡ A two-digit number is required after scanning this programming bar code. Scan your selection on the Programming Chart (inside back cover).

Programming Tip: If a symbology will not be used, we recommend turning it off to minimize the chance of a misread.

Introduction

The scanner's internal operational firmware is contained in a "Flash EEPROM" (a programmable / erasable ROM – Read Only Memory). This enables you to download new firmware upgrades, without opening the scanner or changing a chip (IC). A download kit that includes the software (in DOS or Windows versions) and an instruction manual is available from your sales distributor.

The scanner also has a special "cloning" capability. Cloning provides a quick, convenient way to re-program installed scanners from a master unit containing new or updated firmware, eliminating the need to use a PC for each serial download. After upgraded firmware is downloaded into the master unit, the master may be used to program other scanners. (A cloning cable is used, and may be ordered from your distributor.)

This programming section contains the following menuing selections:

- Downloading Utility.
- Uploading Utility.
- Cloning Utility.
- Temporary Serial Communication Configuration.

Firmware Utilities

Downloading Utility

Scanning the ***Download New Firmware*** bar code prepares the scanner to be downloaded with new firmware. New firmware is downloaded by using the Quick*Load application software (in the download kit). Quick*Load can perform firmware uploads (reading the device's memory) and downloads (writing to the device's memory). The Quick*Load application will prompt you to scan the symbol (shown below) at the appropriate time.

Download New Firmware

Uploading Utility

Scanning the ***Memory Upload*** bar code sends the entire contents of ROM to the host terminal. The data is transmitted serially, as INTEL-formatted ASCII text strings, at 19,200 baud, no parity, 8 data bits, and 1 stop bit.

Memory Upload

Firmware Utilities

Cloning Utility

Scanning the ***Clone Master*** bar code will transfer the firmware contents of the "master" unit to the "destination" or installed unit. First, you must follow the steps below to initiate the cloning procedure:

1) Connect the destination (installed) unit to one of the 8 pin modular connectors on the cloning cable.
2) Connect the master unit (containing the new or updated software) to the remaining 8 pin modular connector on the cloning cable.
3) Make sure that both units are powered ***On***, and then scan the ***Clone Destination*** bar code with the destination unit.

Clone Destination

4) Now scan the ***Clone Master*** bar code with the master unit.

Clone Master

5) The master unit will start transferring its firmware contents to the installed / destination unit.
6) When cloning is complete, the master unit will double beep. This process takes about 30 seconds.

Temporary Serial Communication Configuration

For quick download communication configuration, scan the ***W + A*** bar code to temporarily configure the scanner for 9600 baud rate, no parity, 8 data bits, and 1 stop bit. Standard receive (RX) and transmit (TX) voltages are also selected. RTS / CTS handshaking is disabled. This change is *temporary.* The next time the scanner is powered down and then up, its serial communication settings are restored to the programmed settings.

W + A

Firmware Utilities

Keyboard Function Relationships

The following Keyboard Function Code, Hex/ASCII Value, and Full ASCII "CTRL"+ relationships apply to all terminals that can be used with the Hand-Held Decoded Output Laser scanner.

Function Code	HEX/ASCII Value	Full ASCII "CTRL" +
NUL	00	2
SOH	01	A
STX	02	B
ETX	03	C
EOT	04	D
ENQ	05	E
ACK	06	F
BEL	07	G
BS	08	H
HT	09	I
LF	0A	J
VT	0B	K
FF	0C	L
CR	0D	M
SO	0E	N
SI	0F	O
DLE	10	P
DC1	11	Q
DC2	12	R
DC3	13	S
DC4	14	T
NAK	15	U
SYN	16	V
ETB	17	W
CAN	18	X
EM	19	Y
SUB	1A	Z
ESC	1B	[
FS	1C	\
GS	1D	]
RS	1E	6
US	1F	-

The last five characters in the Full ASCII "CTRL"+ column ([\ ] 6 -), apply to US only. The following chart indicates the equivalents of these five characters for different countries.

Country	Codes				
United States	[	\	]	6	-
Belgium	[	<	]	6	-
Scandinavia	8	<	9	6	-
France	^	8	$	6	=
Germany		Ä	+	6	-
Italy		\	+	6	-
Swiss		<	¨	6	-
United Kingdom	[	'	]	6	-
Denmark	8	\	9	6	-
Norway	8	\	9	6	-
Spain	[	\	]	6	-

Interface Keys

Supported Interface Keys

Supported Interface Keys		IBM AT/XT and PS/2 Compatibles, WYSE PC/AT	IBM XTs and Compatibles	IBM, DDC, Memorex Telex, Harris*
NUL	00	Reserved	Reserved	Reserved
SOH	01	Enter (KP)	CR/Enter	Enter
STX	02	Cap Lock	Caps Lock	F11
ETX	03	ALT make	Reserved	F12
EOT	04	ALT break	Reserved	F13
ENQ	05	CTRL make	Reserved	F14
ACK	06	CTRL break	Reserved	F15
BEL	07	CR/Enter	CR/Enter	New Line
BS	08	Reserved	Reserved	F16
HT	09	Tab	Tab	F17
LF	0A	Reserved	Reserved	F18
VT	0B	Tab	Tab	Tab/Field Forward
FF	0C	Delete	Delete	Delete
CR	0D	CR/Enter	CR/Enter	Field Exit/New Line
SO	0E	Insert	Insert	Insert
SI	0F	Escape	Escape	F19
DLE	10	F11	Reserved	Error Reset
DC1	11	Home	Home	Home
DC2	12	Print	Print	F20
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Backfield/Back Tab
NAK	15	F12	Reserved	F21
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8
RS	1E	F9	F9	F9
US	1F	F10	F10	F10

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

Interface Keys

Supported Interface Keys

Supported Interface Keys		IBM, Memorex Telex (102)*	Memorex Telex (88)**	DEC VT, HDS, WYSE***
NUL	00	Reserved	Reserved	Reserved
SOH	01	Enter	Enter	Enter
STX	02	F11	PF10	PF1
ETX	03	F12	PF11	PF2
EOT	04	F13	PF12	PF3
ENQ	05	F14	Reserved	PF11
ACK	06	F15	Reserved	PF12
BEL	07	New Line	New Line	New Line
BS	08	F16	Field Forward	PF4
HT	09	F17	Field Forward	TAB
LF	0A	F18	Reserved	F13
VT	0B	Tab/Field Forward	Field Forward	F14
FF	0C	Delete	Delete	Remove
CR	0D	Field Exit	New Line	New Line
SO	0E	Insert	Insert	Insert Here
SI	0F	Clear	Erase	Cursor Up
DLE	10	Error Reset	Error Reset	Cursor Left
DC1	11	Home	Reserved	Cursor Down
DC2	12	Print	Print	Cursor Right
DC3	13	Back Space	Back Space	Delete
DC4	14	Back Tab	Back Field	Print
NAK	15	F19	Reserved	F15
SYN	16	F1	PF1	F1
ETB	17	F2	PF2	F2
CAN	18	F3	PF3	F3
EM	19	F4	PF4	F4
SUB	1A	F5	PF5	F5
ESC	1B	F6	PF6	F6
FS	1C	F7	PF7	F7
GS	1D	F8	PF8	F8
RS	1E	F9	PF9	F9
US	1F	F10	Home	F10

* IBM 3196/97, 3476/77, 3191/92, 3471/72, Memorex Telex (all models) with 102 key keyboards

** Memorex Telex with 88 key keyboards

*** DEC VT 220/320/340/420 (only available on SCANTEAM 5700–X3), HDS–3200, WYSE WY–85/185

Interface Keys

Supported Interface Keys

Supported Interface Keys		Esprit 200, 400 ANSI	Esprit 200, 400 ASCII	Esprit 200, 400 PC
NUL	00	Reserved	Reserved	Reserved
SOH	01	New Line	New Line	New Line
STX	02	N/A	N/A	N/A
ETX	03	N/A	N/A	N/A
EOT	04	N/A	N/A	N/A
ENQ	05	N/A	N/A	N/A
ACK	06	N/A	N/A	N/A
BEL	07	New Line	New Line	New Line
BS	08	N/A	N/A	N/A
HT	09	Tab	Tab	Tab
LF	0A	N/A	N/A	N/A
VT	0B	Tab	Tab	Tab
FF	0C	N/A	N/A	Delete
CR	0D	New Line	New Line	New Line
SO	0E	N/A	N/A	Insert
SI	0F	Escape	Escape	Escape
DLE	10	F11	F11	F11
DC1	11	Insert	Insert	Home
DC2	12	F13	F13	Print
DC3	13	Back Space	Back Space	Back Space
DC4	14	Back Tab	Back Tab	Back Tab
NAK	15	F12	F12	F12
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	F6	F6
FS	1C	F7	F7	F7
GS	1D	F8	F8	F8
RS	1E	F9	F9	F9
US	1F	F10	F10	F10

Interface Keys

Supported Interface Keys

Supported Interface Keys		Bull BDS–7 (Honeywell HDS–7)	HP 700/92	WYSE WY–60/150 (ASCII/ANSI keyboards)
NUL	00	Reserved	Reserved	Reserved
SOH	01	Transmit	Enter	Enter
STX	02	Reserved	Caps	PF1
ETX	03	Reserved	Reserved	PF2
EOT	04	Reserved	Reserved	PF3
ENQ	05	Backtab	Reserved	PF11
ACK	06	Reserved	Reserved	PF12
BEL	07	Carriage Return	Reserved	New Line
BS	08	Back Space	Back Space	PF4
HT	09	Tab	Tab	TAB
LF	0A	F11	Reserved	F13
VT	0B	F12	Reserved	F14
FF	0C	Delete Character	Reserved	Remove
CR	0D	Carriage Return	Return	New Line
SO	0E	Insert	Reserved	Insert Here
SI	0F	Clear	Reserved	Cursor Up
DLE	10	Error Reset	Home	Cursor Left
DC1	11	Home	Reserved	Cursor Down
DC2	12	Delete Line	Reserved	Cursor Right
DC3	13	Erase EOP	Reserved	Delete
DC4	14	Erase EOF	Reserved	Print
NAK	15	Insert Line	Clear Screen	F15
SYN	16	F1	F1	F1
ETB	17	F2	F2	F2
CAN	18	F3	F3	F3
EM	19	F4	F4	F4
SUB	1A	F5	F5	F5
ESC	1B	F6	Escape	F6
FS	1C	F7	F6	F7
GS	1D	F8	F7	F8
RS	1E	F9	F8	F9
US	1F	F10	Reserved	F10

Interface Keys

Supported Interface Keys

Supported Interface Keys		WYSE WY–30
NUL	00	Reserved
SOH	01	Enter
STX	02	Reserved
ETX	03	Reserved
EOT	04	Reserved
ENQ	05	Reserved
ACK	06	Reserved
BEL	07	Return
BS	08	Reserved
HT	09	Tab
LF	0A	Line Feed
VT	0B	Reserved
FF	0C	Reserved
CR	0D	Return
SO	0E	Reserved
SI	0F	Cursor Up
DLE	10	Cursor Left
DC1	11	Cursor Down
DC2	12	Cursor Right
DC3	13	Back Space
DC4	14	Reserved
NAK	15	Reserved
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5 (CTRL F1)
ESC	1B	F6 (CTRL F2)
FS	1C	F7 (CTRL F3)
GS	1D	F8 (CTRL F4)
RS	1E	F9 (SHIFT F2)
US	1F	F10 (SHIFT F3)

SCANTEAM 5700 Product Specifications

Parameter	*Specification*
Dimensions Weight Length Height Width	 7 ounces (198 g) 5.8 inches (14.8 cm) 5.8 inches (14.8 cm) 3.0 inches (7.6 cm)
Light Source	670 nm visible laser diode (VLD); 5700ALR = 650nm VLD
Scan Rate	36 ±3 scans per second
Print Contrast	Minimum Reflective Difference = 25% (5700/A); MRD = 40% (5700ALR, 5700/HD)
Skew Angle	±65 degrees (from perpendicular) – 5700/A ±60 degrees (from perpendicular) – 5700/HD, 5700ALR
Pitch Angle	±55 degrees (left/right from perpendicular) – 5700/A ±65 degrees (left/right from perpendicular) – 5700/HD, 5700ALR
Operating Voltage Non-Decoded Decoded	 +4.5 to 5.5 VDC (57–04 model only supports +12VDC input with unique cable) Either +5 VDC or +12 VDC, depending on interface
Power Consumption Non-Decoded +5VDC Non-Decoded +12VDC Decoded +5VDC Decoded +12VDC	 0.060 mA Idle, 110 mA Scanning; (135mA – 5700ALR) 10 mA Idle, 110 mA Scanning; (145mA – 5700ALR) 60 to 90 mA Idle‡,, 165 to 200 mA Scanning 105 mA Idle‡, 210 mA Scanning
Temperature Ranges	Operating 32° F to +104° F (–0° C to +40° C) Storage –40° F to +140° F (–40° C to +60° C)
Humidity	5 to 95% non-condensing
Mechanical Shock	5 drops from 5 feet (1.5m) to concrete (5700/A/HD/ALR)
ESD Sensitivity	15 kV to any external surface
Agency Compliance	FCC Class B, CE, LVD, CDRH Class II (Class IIIa for 5700ALR)

‡ When operated in switched power mode, idle current is less than 0.06 mA.

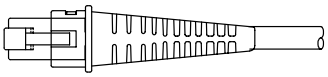
Standard Cable Pinouts

Laser Output *only*
5700–X0
(Laser Compatible Bar Image)

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

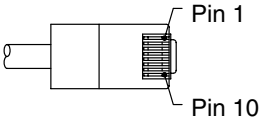
Interface cables normally supplied with scanner model 5700–X0 are terminated with an 10 pin modular plug (P1) and a 9 pin Type D (Squeeze–to–release) connector (P2) that is compatible with all Welch Allyn terminals. See chart below.

P1

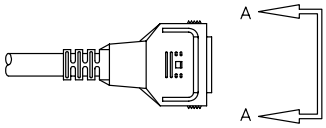


10 Pin Modular Plug

P1 connects to the scanner handle.

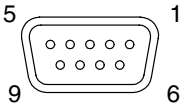


P2



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
5	Good Read	Turn on Good Read LED or Beeper	3
7	+5VDC	5 Volt Power Connection ♦	9
8	Trigger	Trigger Signal to Decoder	5
3	Enable	Laser Enable	6
4	Ground	Supply Ground	7
2	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!***

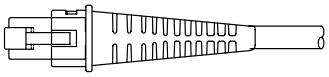
Standard Cable Pinouts

Laser Output *only*
5700–X4
(Laser Compatible Bar Image +12VDC Input*)

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

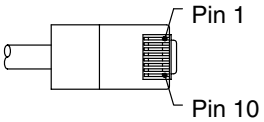
Interface cables normally supplied with scanner model 5700–X0 are terminated with an 10 pin modular plug (P1) and a 9 pin Type D (Squeeze–to–release) connector (P2) that is compatible with all Welch Allyn terminals. See chart below.

P1

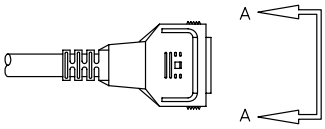


10 Pin Modular Plug

P1 connects to the scanner handle.

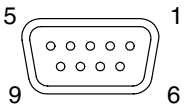


P2



9 Pin Type D Female

P2 connects to your terminal.



View A–A

P1	*Signal*	*Function*		P2
9	SOS	Start of Scan		1
5	Good Read	Turn on Good Read LED or Beeper		3
4	Ground	Supply Ground		7
6	Data	Digital Bar Code Data Output		2
8	Trigger	Trigger Signal to Decoder		5
3	Enable	Laser Enable		6
1	+12VDC	Power Connection		9
10	VCC (Connected for AutoTrigger**)		N/C	8

**** Note:** Cable supports decoders which supply +12V on pin 9 ONLY.*

***** Note:** Reference the Cable Matrix for correct AutoTrigger cable.*

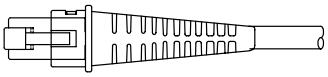
Standard Cable Pinouts

Wand Emulation
5700–X1, 5700–X2

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

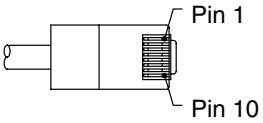
Interface cables normally supplied with scanner model 5700–X1 and 5700–X2 are terminated with an 10 pin modular plug (P1) and a 9 pin Type D (Squeeze–to–release) connector (P2) that is compatible with all Welch Allyn terminals. See chart below.

P1

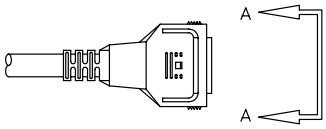


10 Pin Modular Plug

P1 connects to the scanner handle.

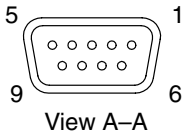


P2



9 Pin Type D Female

P2 connects to your terminal.



View A–A

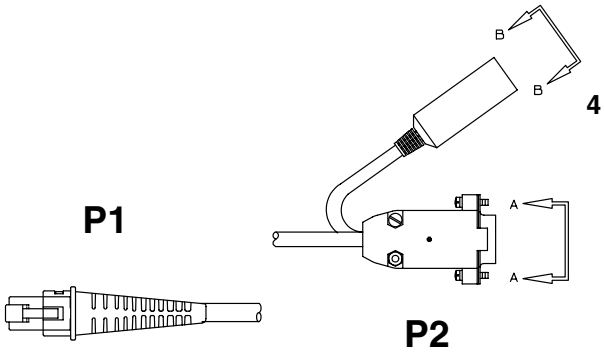
P1	*Signal*	*Function*	P2
2	Braid	Cord Shield	8
3	Prog 1	Tied to 5 Volt Power	
4	Ground	Supply Ground	7
6	Barcode	Bar Code Data Output	2
7	+5VDC	5 Volt Power Connection	4

Standard Cable Pinouts

RS–232
5700–X1, 5700–X2 (TTL) and 5700–X3 (True)

Decoded output data format is provided at the modular connector in the scanner handle.

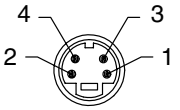
Interface cables normally supplied with scanner model 5700–X1, 5700–X2 (TTL), and 5700–X3 (True) are terminated with an 10 pin modular plug (P1) and a 9 pin Type D connector (P2) that is compatible with all Welch Allyn terminals. See chart below.



P3

4 Pin Type Mini–DIN

P3 connects to the external power supply.



View B–B

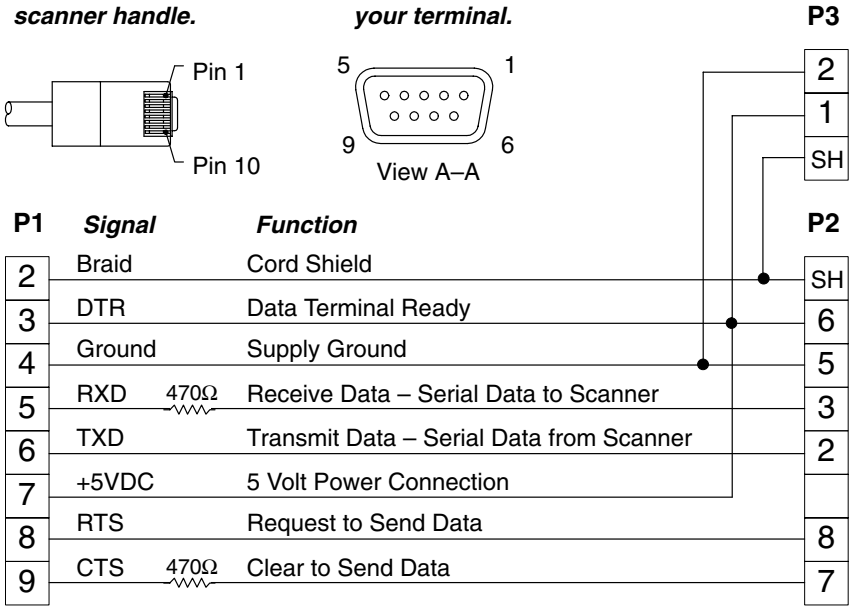
10 Pin Modular Plug

P1 connects to the scanner handle.

9 Pin Type D Female

P2 connects to your terminal.

View A–A



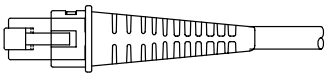
Standard Cable Pinouts

Laser Output
5700–X1, 5700–X2
(Laser Compatible Bar Image, Low Power/Dual Interface)

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

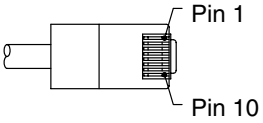
Interface cables normally supplied with scanner model 5700–X1 and 5700–X2 are terminated with an 10 pin modular plug (P1) and a 9 pin Type D (Squeeze–to–release) connector (P2) that is compatible with all Welch Allyn terminals. See chart below.

P1

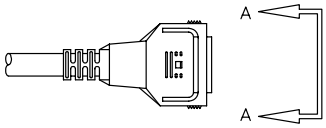


10 Pin Modular Plug

P1 connects to the scanner handle.

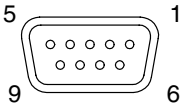


P2



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
5	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
8	N/C	Cord Shield	Braid	8
10	N/C			
1	N/C			

Maintenance

The Hand-Held Decoded Output Laser Scanner provides reliable and efficient operation with a minimum of care. Although specific maintenance is not required, the following periodic checks insure dependable scanner operation:

Cleaning the Scan Window

Scanning performance may degrade if the scan window is not clean. If the window is visibly dirty, or if the scanner isn't scanning well, clean the scan window with a soft cloth or facial tissue dampened with water (or a mild detergent– water solution). If a detergent solution is used, rinse with a clean tissue dampened with water only.

The scanner housing may also be cleaned the same way.

⚠ Warning:

Do not submerge the scanner in water. The scanner's housing is not water–tight.

Do not use abrasive wipers or tissues on the scan window: abrasive wipers may scratch the window.

Never use solvents (alcohol or acetone) on the housing or window: solvents may damage the finish or the window.

Do not open the scanner. There are no serviceable parts inside.

Inspecting Cords and Connectors

Inspect the scanner's interface cable and connector for wear or other signs of damage. A badly worn cable or damaged connector may interfere with scanner operation. Contact your Welch Allyn distributor for information about cable replacement. Cable replacement instructions on page 8–2.

Examining the Scanner Housing

Routinely examine the scanner housing for signs of damage. A damaged housing may cause the internal components to move and may result in a malfunctioning scanner.

Maintenance & Troubleshooting

Replacing the Interface Cable

The standard interface cable is attached to the scanner with an 8–pin modular connector. When properly seated, the connector is held in the scanner handle by a flexible retention tab. The cable's designed to be field replaceable.

Notes:

- Order replacement cables from Welch Allyn or from an authorized distributor.
- When ordering a replacement cable, specify the cable part number of the original interface cable.

To Replace the Interface Cable:

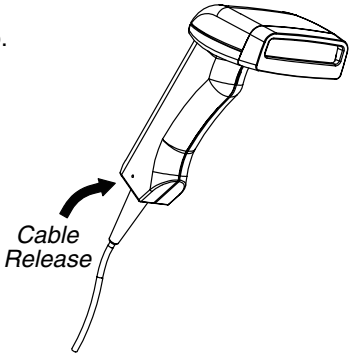
❶ Turn the power to the host system OFF.

❷ Disconnect the scanner cable from the terminal or computer.

❸ Locate the small hole on the side of the scanner handle near the base (*see Figure below*).

❹ Straighten one end of a paper clip.

❺ Insert the end of the paper clip into the small hole and press in. This depresses the retention tab, releasing the connector. Pull the connector out of the scanner handle while maintaining pressure on the paper clip.



❻ Replace with the new cable. Insert the connector into the opening at the base of the scanner handle. Press firmly. The connector is "keyed" to go in only one way, and will click into place.

To Reset Factory Settings

If you aren't sure *what* programming options have been set up in your scanner, or you've changed some options and now want the factory settings restored, refer to Main Menu Selections in Section 1 and scan the ***Factory Default Settings*** bar code.

Maintenance & Troubleshooting

Troubleshooting

The Hand-Held Decoded Output Laser scanner automatically performs self-tests whenever you turn it on. If your scanner is not functioning properly, review the following Troubleshooting Guide to try to isolate the problem.

Troubleshooting Guide

Is the power on? Is the red illuminated beam on?
If the red scan beam on the scanner isn't illuminated, check that: ❶ the cable is connected properly. ❷ the host system power is on (if external power isn't used).

Is the scanner having trouble reading your bar codes?
If the scanner isn't reading bar codes well, check that the bar codes: ❶ aren't smeared, rough, scratched, or exhibiting voids. ❷ aren't coated with frost or water droplets on the surface. ❸ are enabled in the scanner or the decoder the scanner is connected to.

Is the bar code displayed but not "entered"?
The bar code is displayed on the host device correctly, but you still have to press a key to enter it (*the Enter/Return key or the Tab key, for example*). ***You need to program a suffix.*** Programming a suffix enables the scanner to output the scanned bar code *plus* the key you need (such as a "CR," carriage return) to enter the bar code into your application. (*See Suffix Selection in Section 3, Output Parameters Menu.*)

Maintenance & Troubleshooting

Does the scanner read your bar code incorrectly?

If the scanner reads a bar code (*one beep for a good read*), but the bar code is not displayed correctly on the host screen:

❶ The scanner may not be programmed for the appropriate terminal interface.

Example: *You scan "12345" and the host displays "@es%."*

Reprogram the scanner with the correct "Plug and Play" or Terminal Selection bar code (*see Section* 1).

❷ The scanner may not be programmed to output your bar code properly.

Example: *You scan "12345" and the host displays "A12345B."*

Reprogram the scanner with the proper Symbology selections (*see Section 4, Symbology Menu*).

The scanner won't read your bar code at all?

If the scanner will not read your bar code:

❶ Try scanning the Sample Bar Codes (*found on the back cover of the User's Guide*).

If the scanner reads the Sample Bar Codes, check that your bar code is readable. (*See "Is the scanner having trouble reading your bar codes" on the previous page.*)

Verify that your bar code symbology is enabled. (*See Sections 4, Symbology Menu.*)

If the scanner does not read the Sample Bar Codes either, continue to #2, below...

❷ If the scanner won't read the Sample Bar Codes either:

Verify that the bar code symbologies are enabled. (*See Sections 4, Symbology Menu.*)

Scan the "Default All... " bar code on each symbology menu page in Section 4 to enable most symbologies. (*MSI and Plessey will have to be enabled individually, as they are defaulted* ***Off****.*)

Obtaining Factory Service

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.

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

Main Office
Welch Allyn, Inc.
Data Collection Division
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

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

European Office
Welch Allyn, Ltd.
Hondsruglaan 87 D
5628 DB Eindhoven
The Netherlands

Telephone: Int+ 31 40 242 4486
Fax: Int+ 31 40 2425672

United Kingdom Office
Welch Allyn U.K., Ltd.
Dallam Court
Dallam Lane
Warrington
Cheshire WA2 7LT
United Kingdom

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

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

Customer Support

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

Asia / Pacific Office
Welch Allyn
10/F Tung Sun Commercial Centre
194–200 Lockhart Road
Wanchai, Hong Kong

Telephone: Int+852–2511–3050 *or* 2511–3132
Fax: Int+852–251–1355

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

Japan Office
Welch Allyn, Ltd.
Bon Marusan 8F
3-5-1 Kanda-Jinbocho
Chiyoda-ku
Tokyo 101, Japan

Telephone: Int+81–3–5212–7392
Fax: Int+81–3–3261–7372

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

Latin America Office
Welch Allyn, Ltd.
5150 North Tamiami Trail
Suite 302
Naples, FL 34103-2821

Telephone: (941) 263–7600
Fax: (941) 263–9689

Help Desk

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

North America:
Telephone: (315) 685–2476 (8 a.m. to 6 p.m. EST)
Fax number: (315) 685–4960
Email: *dcd_techsupt@welchallyn.com*

Europe:
European Office Telephone: Int+31 40 242 4486
United Kingdom Telephone: Int+44 1925 240055
Email: *dcd_techsupt@welchallyn.com*

Asia:
Telephone: Int+852–2511–3050 *or* 2511–3132
Email: *dcd_techsupt@welchallyn.com*

Customer Support

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 two (2) 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.

Default Chart

Serial Interface Menu Defaults

The following chart lists the factory default Serial Interface Menu settings (indicated by a "✱" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Prefix / Suffix Selections		
Primary Prefix	None	Page 2–3
Primary Suffix	None	Page 2–3
Secondary Prefix	None	Page 2–5
Secondary Suffix	None	Page 2–5
Output Selections		
Beeper Volume	High	Page 2–8
Output Delays Intercharacter Delay	00 (x5mS)	Page 2–8
Interfunction Delay	00 (x5mS)	Page 2–8
Intermessage Delay	00 (x5mS)	Page 2–8
Reread Delay	Low (175mS)	Page 2–9
Good Read Delay	None	Page 2–9
Laser Voting	Disable	Page 2–9
Buffered Scans	Enable	Page 2–10
Code I.D. Transmit	Disable	Page 2–10
AIM I.D. Transmit	Disable	Page 2–10
Function Code Transmit	Enable	Page 2–10
Serial Communication Selections		
CTS Check	Disable	Page 2–11
Baud Rate	9600	Page 2–11
RS-232 Word Length	7 Data Bits, 1 Stop Bit	Page 2–12
Parity	Even	Page 2–12
Protocol	Record	Page 2–13
Serial Wedge	To P1	Page 2–13
Data Formatter Selections		
Require Data Format	Disable	Page 2–15

Default Chart

General Operating Menu Defaults

The following chart lists the factory default General Operating Menu settings (indicated by a "✱" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Laser Options		
Marker Beam (5700ALR only)	Off	Page 3–2
AutoTrigger	Enable	Page 3–2
Wand Emulation Selections		
Transmission Rate	25 ips	Page 3–3
Wake Up Pulse	Disable	Page 3–3
Output Polarity	Black High	Page 3–3
Country Code Selections		
Foreign Keyboards	United States	Page 3–4
Keyboard Selections		
AT Direct Connect	Disable	Page 3–5
NCR 7052 Keypad	Layout 1 (Telephone)	Page 3–5
Keyboard Style	Prior to Software Rev 2.0–Style A	Page 3–6
	Software Rev 2.0–Regular	Page 3–7
Keyboard Style Modifiers	Numeric Keypad Mode Off	Page 3–8

Default Chart

Symbology Menu Defaults – Industrial

The following chart lists the factory default Industrial Symbology Menu settings (indicated by a "✱" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Codabar Selections		
Codabar	On	Page 4–2
Start / Stop Characters	Don't Transmit	Page 4–2
Decoding	Adaptive	Page 4–2
Message Length	Min = 4, Max = 60	Page 4–2
Check Character	No Check Character	Page 4–3
Concatenation	Allow	Page 4–3
Code 39 Selections		
Code 39	On	Page 4–4
Start / Stop Characters	Don't Transmit	Page 4–4
Full ASCII	Enable	Page 4–4
Append	Disable	Page 4–4
Decoding	Adaptive	Page 4–5
Message Length	Min = 0, Max = 48	Page 4–5
Check Character	No Check Character	Page 4–5
Code 93 Selections		
Code 93	On	Page 4–6
Message Length	Min = 0, Max = 64	Page 4–6
Interleaved 2 of 5 Selections		
Interleaved 2 of 5	On	Page 4–7
Decoding	Adaptive	Page 4–7
Message Length	Min = 4, Max = 80	Page 4–7
Check Digit	No Check Digit	Page 4–7
Code 2 of 5 Selections		
Code 2 of 5	On	Page 4–8
Message Length	Min = 4, Max = 48	Page 4–8
Matrix 2 of 5 Selections		
Matrix 2 of 5	On	Page 4–8
Message Length	Min = 4, Max = 80	Page 4–8

Default Chart

Symbology Menu Defaults – Industrial

The following chart lists the factory default Industrial Symbology Menu settings (indicated by a "✱" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
Code 11 Selections		
Code 11	On	Page 4–9
Check Digits Required	2 Check Digits	Page 4–9
Message Length	Min = 4, Max = 80	Page 4–9
Code 128 Selections		
Code 128	On	Page 4–9
Message Length	Min = 0, Max = 80	Page 4–9
Code 128 Function Character Selection		
Code 128 Function Character	Off	Page 4–10
<GS> Substitution	Off	Page 4–10
Code 16K Selections †		
Code 16K	Off	Page 4–11
Message Length	Min = 0, Max = 154	Page 4–11
Code 49 Selections †		
Code 49	Off	Page 4–11
Message Length	Min = 1, Max = 80	Page 4–11

† Not in standard product. Contact your Welch Allyn Sales Coordinator.

Default Chart

Symbology Menu Defaults – Retail

The following chart lists the factory default Retail Symbology Menu settings (indicated by a "✱" on the programming menu pages).

Parameter Name	*Default Setting*	*Page Reference*
EAN Selections		
EAN / JAN 13	On	Page 4–12
EAN / JAN 8	On	Page 4–12
Check Digit	Transmit	Page 4–12
ISBN	Disable	Page 4–12
UPC Selections		
UPC A	On	Page 4–13
UPC E0	On	Page 4–13
UPC E1	Off	Page 4–13
Check Digit	Transmit	Page 4–13
Number System	Transmit	Page 4–13
Version E Expand	Don't Expand	Page 4–13
EAN / UPC Addenda Selections		
EAN / UPC Addenda	Don't Require	Page 4–14
EAN / UPC Addenda Format	Space	Page 4–14
EAN Addenda Two Digit Addenda	Disable	Page 4–14
Five Digit Addenda	Disable	Page 4–14
UPC Addenda Two Digit Addenda	Disable	Page 4–14
Five Digit Addenda	Disable	Page 4–14
MSI Selections		
MSI	Off	Page 4–15
Message Length	Min = 4, Max = 48	Page 4–15
Plessey Selections		
Plessey	Off	Page 4–15
Message Length	Min = 4, Max = 48	Page 4–15

Default Chart

Programming Chart


0


1


2


3


4


5


6


7


8


9


A


B


C


D


E


F

Sample Bar Codes

Code 39

TEST–SHEET

Matrix 2 of 5

6543210

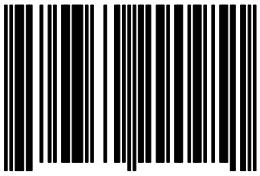
Code 128

CODE 128

Code 93

123456–9$

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

HAND HELD® PRODUCTS
a WelchAllyn® affiliate

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