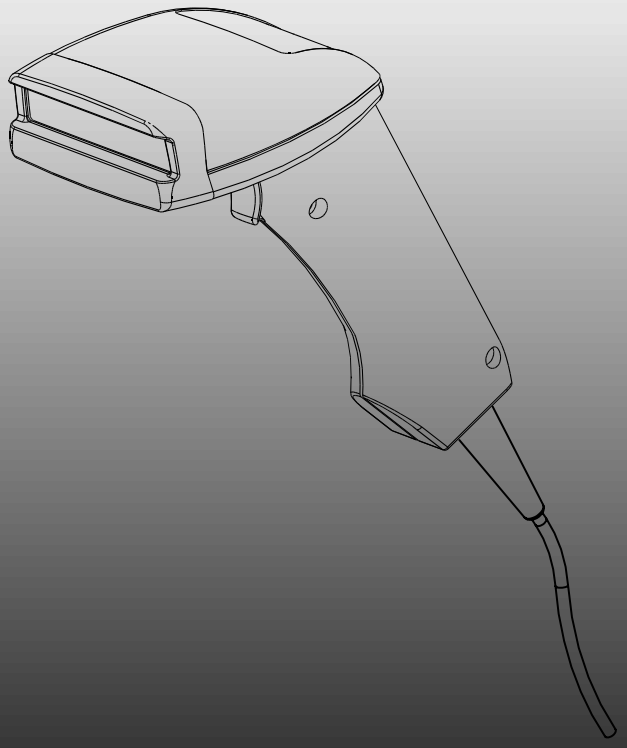
Welch Allyn®

SCANTEAM® 3400 SERIES

Decoded Output



OPERATING GUIDE and PROGRAMMING MENU

Input Power Voltage Requirements	
Model	**Input Power Voltage**
3400XX–X0 3400XX–X2 3400XX–18	5 Volt *ONLY* 
3400X–X1 3400X–X3	5 Volt Standard Cables or 12 Volt Special Cables

Disclaimer

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

This 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.

⚠ Caution:

DO NOT use SCANTEAM 3000 or 5500 12 Volt Interface Cables with the SCANTEAM 3400. **DAMAGE TO YOUR 3400 WILL RESULT!**

Use the appropriate 3400 12 Volt Interface Cable.

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.

European Contact: European Regulatory Manager
Welch Allyn Ltd.
28 Sandyford Office Park
Foxrock, Dublin 18
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Warrington, Cheshire WA2 7LT
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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.

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Chapter 3 Additional Programming Selections, continued...

Chapter 3 Additional Programming Selections, continued...

GETTING STARTED 1

1.1 Introduction to the 3400

The SCANTEAM® 3400 Series CCD is durable and reliable, easy to hold and easy to aim.

Available with Instant Interface decoding, the 3400 supports a wide range of interfaces: keyboard wedge, POS terminals, RS-232, and wand emulation. The 3400 is also capable of Dual Interface, which lets you use *one* scanner for POS terminal and portable data terminal applications, by simply changing cables and scanning one bar code.

The 3400 autodiscriminates 13 standard symbologies and is bar code programmable, allowing you to change its operating and decoding parameters to match your application. FLASH memory is a standard feature, enabling software upgrades to be downloaded from a PC, or cloned from one 3400 to another.

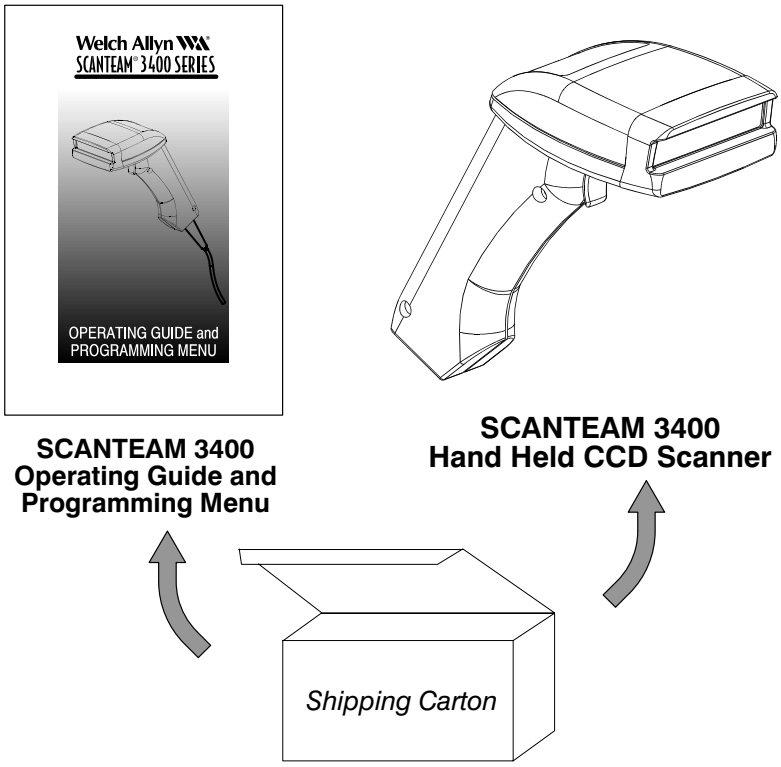
The SCANTEAM 3400 standard product also offers low current consumption to extend the battery life of portable data terminals.

❖ About This Manual

This operating guide and programming menu provides installation and programming instructions for the SCANTEAM 3400. Product specifications, connector pinouts, a troubleshooting guide, warranty and customer support information are also included.

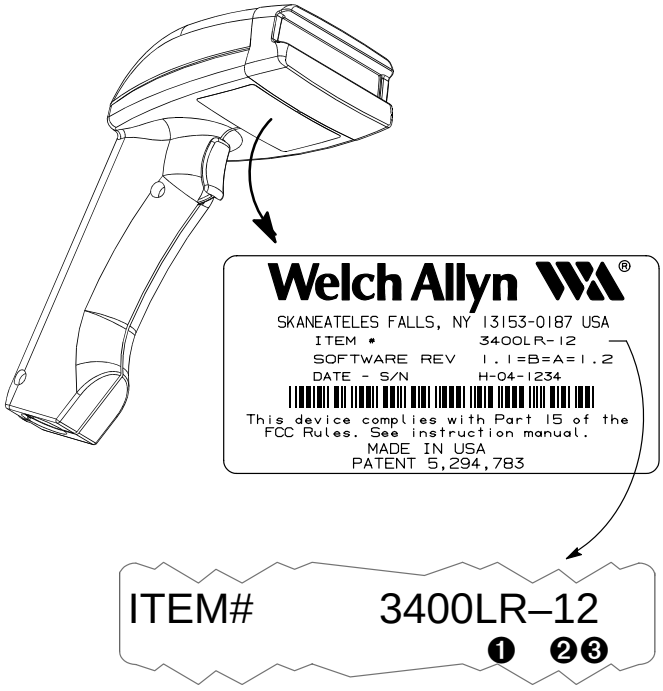
1.2 Unpacking the Scanner

Open the carton. The shipping carton should contain:



- Check to make sure everything you ordered is present.
- *Keep the shipping carton to return the scanner for servicing.*
- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.

1.3 Scanner Identification Label



❶ Focal Distance
LR = reads medium density codes from 1” to 6” (2 to 15 cm)
HD = reads high density codes from contact to 2” (5.08 cm)

❷ Trigger Option
0 = Auto Trigger
1 = Manual Trigger

❸ **Interface Option**

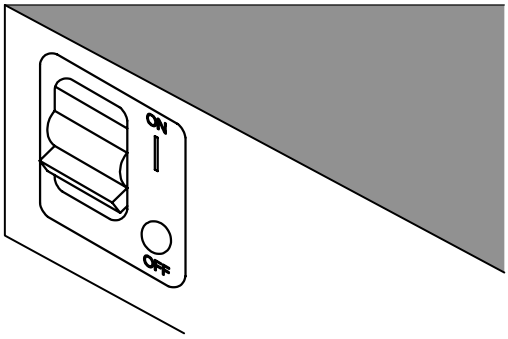
Option	IBM 4683	OCIA OCR	Bar Image Laser Out	Wand Emulation	TTL RS-232	True RS-232	Keyboard Wedge	RS-232 Wedge
0			●					
1	●	●	●	●	●		Various	
2		●	●	●	●		Various	
3						●	DEC *Only*	●
8					●		Various	

1.4 Connecting the Scanner

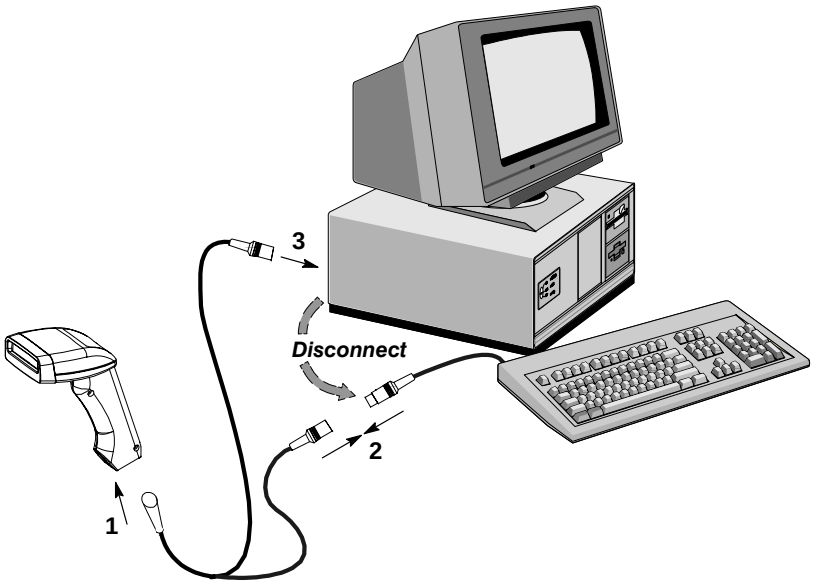
Install the scanner by following the steps shown below:

❶ Disconnect power to the terminal/computer by turning the host system power switch to the “OFF” position.

Power OFF



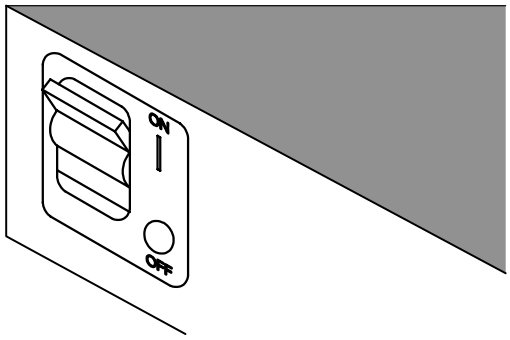
❷ Connect the interface cable to the scanner and to the terminal/computer.



(Keyboard Wedge Example)

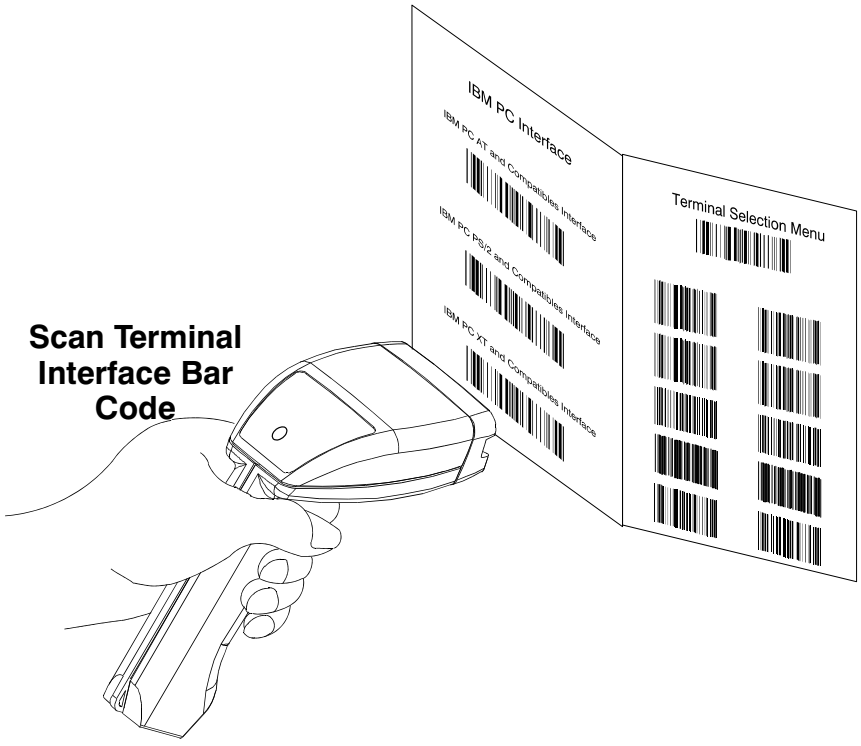
❸ Once the scanner has been fully connected, restore power to the terminal/computer by turning the host system power switch to the “ON” position.

Power ON



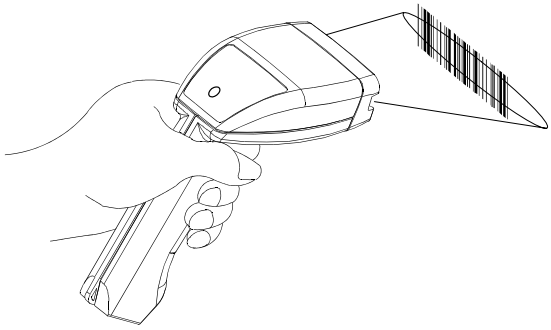
❹ You must program the 3400 to work with your terminal or computer by scanning the appropriate programming bar code(s). *(For further instructions, see Chapter 2, section 2.2 or 2.3.)*

Scan Terminal Interface Bar Code

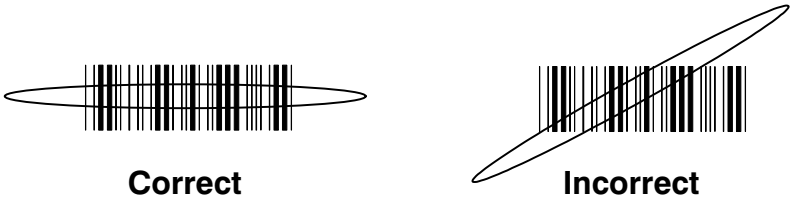


1.5 Scanning Techniques

The scanning technique for a single bar code (on a page or an object) is shown below.



The illustration below shows where to aim the red illuminated beam over the bar code for a good read.

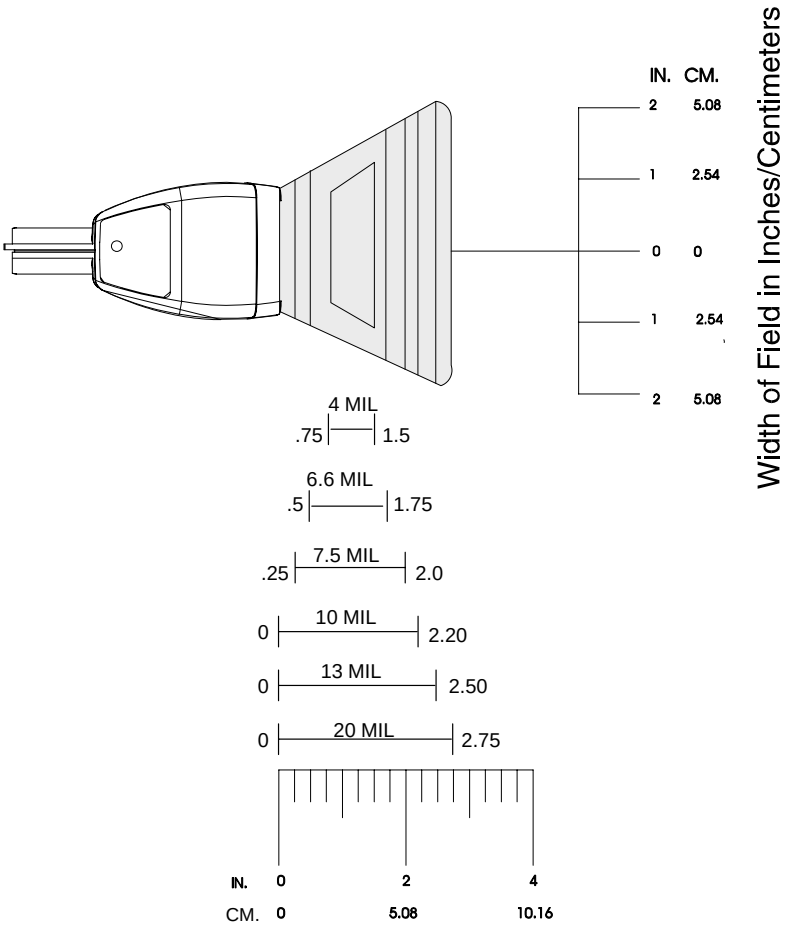


Correct **Incorrect**

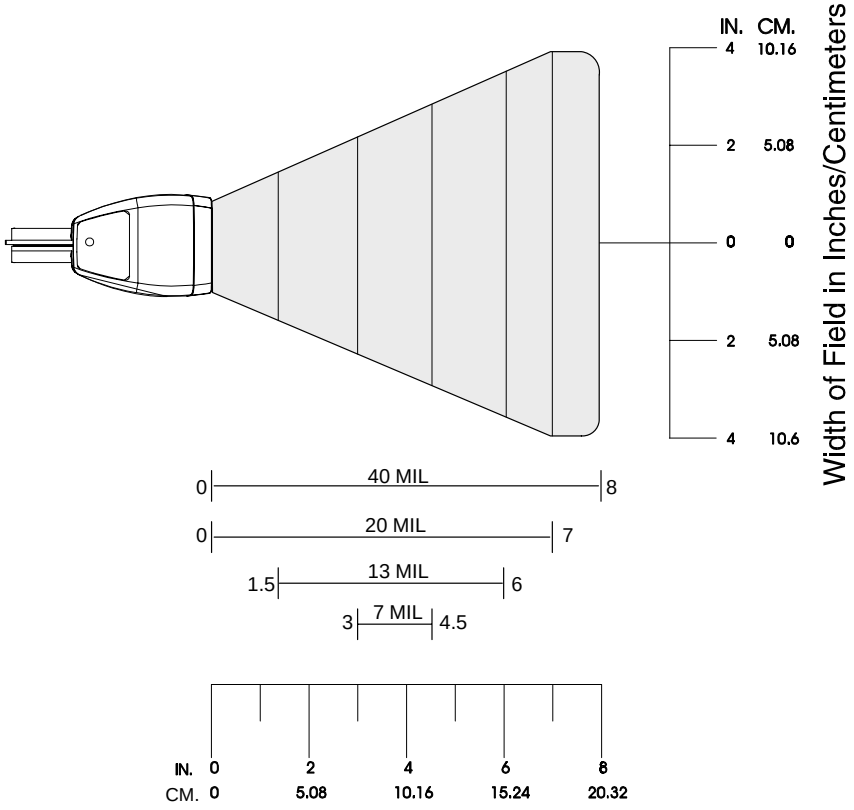
1.6 Scanning Performance

The SCANTEAM 3400 Hand Held CCD Scanner provides a high first pass scanning capability while assuring bar code label integrity and life.

The following figures illustrate the 3400's Scanner Performance or depth of field. Depth of field is the range of distances over which a scanner can accurately decode a bar code. This distance is measured from the front of the scanner at the exit window and is dependent on code size, contrast, and quality.



SCANTEAM 3400HD
Reading Distance and Bar Code Size
(Working zone shown at nominal focus)



SCANTEAM 3400LR
Reading Distance and Bar Code Size
(Working zone shown at nominal focus)

QUICK START PROGRAMMING MENU 2

2.1 Introduction

Use this chapter to program the SCANTEAM 3400 Hand Held CCD Scanner to work with your terminal/computer.

❖ About "Plug and Play" Programming

With "Plug and Play" programming (Section 2.2), you connect the 3400 and scan *only one* bar code to program the scanner (including required prefixes/suffixes).

❖ About Terminal Selection Programming

With Terminal Selection programming (Section 2.3), you program the 3400 for *any* supported terminal/computer.

❖ Program Carriage Return (CR) Suffix

Use the single bar code in Section 2.4 to program a carriage return suffix in the 3400.

❖ To Clear Bar Code Suffix

Use the single bar code in Section 2.5 to clear bar code suffix in the programmed 3400.

❖ To Reset Factory Default Settings

Use the single bar code in Section 2.6 to reset the 3400 to factory default settings.

❖ Additional Programming Options

If you need additional programming options, refer to Chapter 3 to configure the 3400 to:

- selective factory default settings
- *any* variation of the programmable features available.

2.2 “Plug and Play” (Single Scan) Programming

“Plug and Play” bar codes are available for the following:

IBM PC Interfaces
IBM 4683 Ports 5B, 9B, and 17
OCIA Interfaces
OCR, RS–232, and Wand Emulation Interfaces.

Note: *If your terminal or computer isn’t included in the list above, see Terminal Selection Programming – Section 2.3.*

❖ Programming Instructions

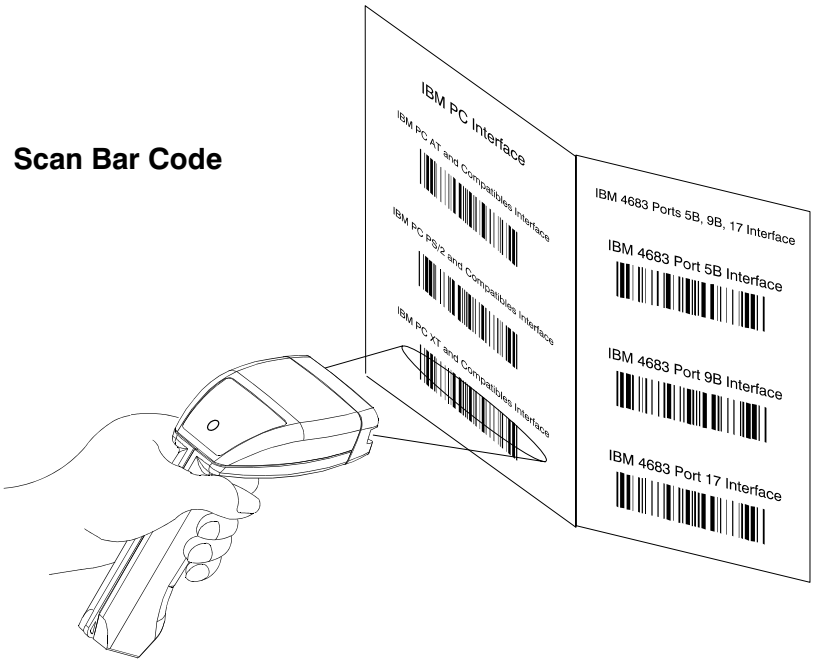
To program the SCANTEAM 3400 using the “Plug and Play” bar codes (starting on page 2–5):

❶ Locate the “Plug and Play” single bar code you need for your terminal or computer.

Locate Bar Code

❷ Scan the appropriate “Plug and Play” single bar code.

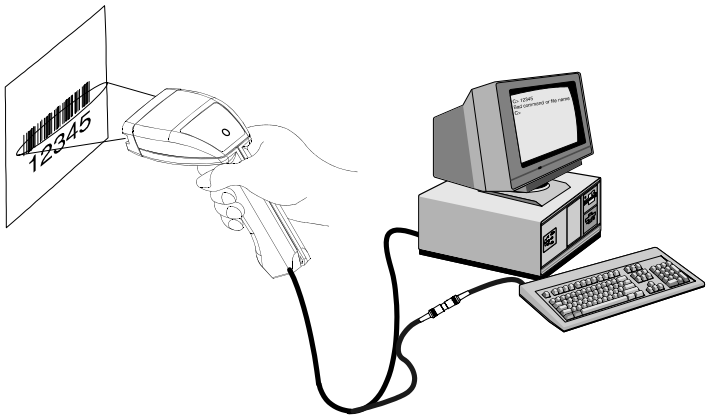
Scan Bar Code



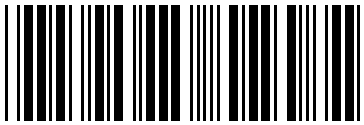
Note: *Programming bar codes will <u>not</u> output data to your terminal.*

❸ After programming the 3400 for terminal interface, scan the sample bar code (below) to check that the 3400 is set up correctly for your terminal.

Scan Sample Bar Code



Sample Code 39 Bar Code



12345

Note: *Other Sample Bar Codes are inside the back cover of this Operating Guide and Programming Menu.*

❖ IBM PC Interface

Scan **one** of the following “Plug and Play” bar codes to program the 3400 for IBM AT, PS/2, or XT compatibles.

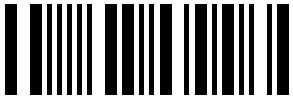
IBM PC AT and Compatibles Interface

(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



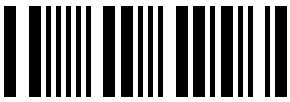
*Each bar code above **also** programs a carriage return (CR) suffix.*

These Plug and Play codes do not apply to 3400–X3 units.

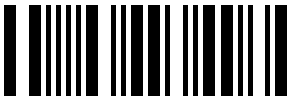
❖ IBM 4683 Ports 5B, 9B, and 17 Interface

Scan **one** of the following "Plug and Play" bar codes to program the 3400 for IBM 4683 Port 5B, 9B, or 17.

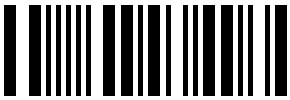
IBM 4683 Port 5B Interface



IBM 4683 Port 9B HHBCR–1



IBM 4683 Port 9B HHBCR–2



IBM 4683 Port 17 Interface

*Each bar code above **also** programs the following suffixes for each symbology:*

symbology	suffix	symbology	suffix
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		

These Plug and Play codes do not apply to 3400–X2, 3400–X3, or 3400–18 units.

❖ OCIA Interface

Scan **one** of the following “Plug and Play” bar codes (this page and the next page) to program the 3400 for Spectra–Physics, NCR Short Format (Eight Bit), NCR Long Format (Nine Bit), or Nixdorf OCIA.

Spectra–Physics OCIA Interface

*This bar code **also** programs the following prefixes for each symbology:*

symbology	prefix	symbology	prefix
EAN 8	06 06	UPC A	01
EAN 13	06	UPC E	05

NCR OCIA Short Format (Eight Bit) Interface

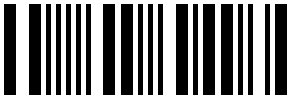
*This bar code **also** programs the following prefixes for each symbology:*

symbology	prefix	symbology	prefix
EAN 8	0F 0F	UPC A	0A
EAN 13	0F	UPC E	0E

These Plug and Play codes do not apply to 3400–X3 or 3400–18 units.

OCIA Interface, *continued*

NCR OCIA Long Format (Nine Bit) Interface



*This bar code **also** programs the following prefixes for each symbology:*

symbology	prefix	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 **also** programs the following prefixes for each symbology:*

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

These Plug and Play codes do not apply to 3400–X3 or 3400–18 units.

❖ OCR, RS–232, and Wand Emulation Interface

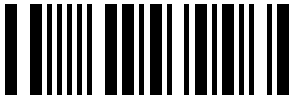
Scan **one** of the following “Plug and Play” bar codes (this page and the next page) to program the 3400 for Fujitsu, IBM Port 21 OCR, RS–232, or Wand Emulation (Code 39 Format).

Fujitsu OCR Interface

*This bar code **also** programs the following suffixes for each symbology:*

symbology	suffix	symbology	suffix
EAN 8	17	UPC A	17
EAN 13	17	UPC E	17
I 2 of 5	03 *(Application Dependent)*		

IBM OCR (Port 21) Interface



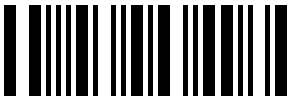
*This bar code **also** programs the following suffixes for each symbology:*

symbology	suffix	symbology	suffix
EAN 8	0C	UPC A	0D
EAN 13	16	UPC E	0A
Code 128	1D		

These Plug and Play codes do not apply to 3400–X3 or 3400–18 units.

OCR, RS–232, and Wand Emulation Interface, *continued*

RS–232 Interface



*This bar code **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)

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

Wand Emulation Plug and Play codes apply to 3400–X1 and 3400–X2 units only.

If you've already programmed the 3400 using "Plug and Play" (Section 2.2), you don't need to continue programming the 3400.

2.3 Terminal Selection Programming

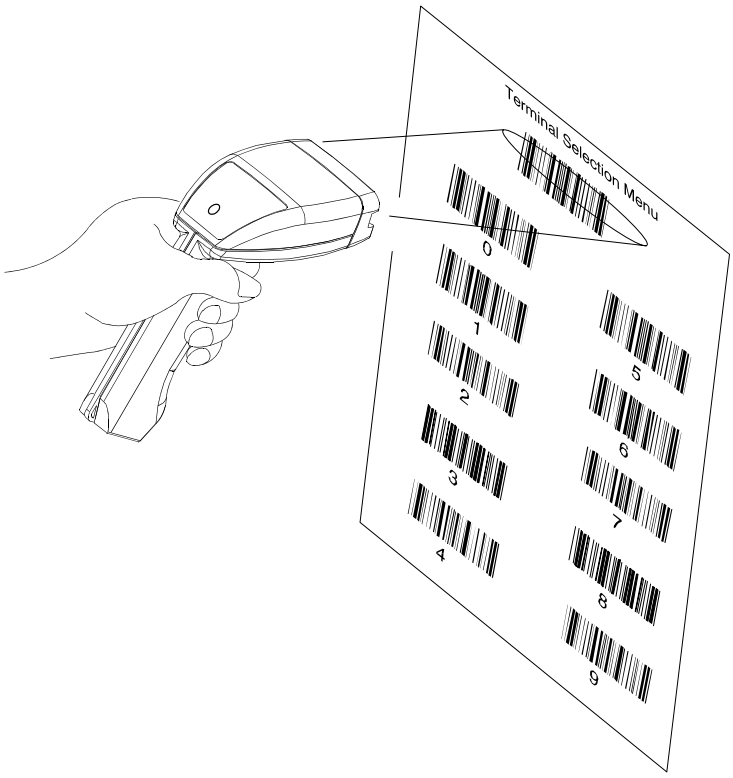
Use this section to program the 3400 to work with *any* supported terminal or computer.

❖ Programming Instructions

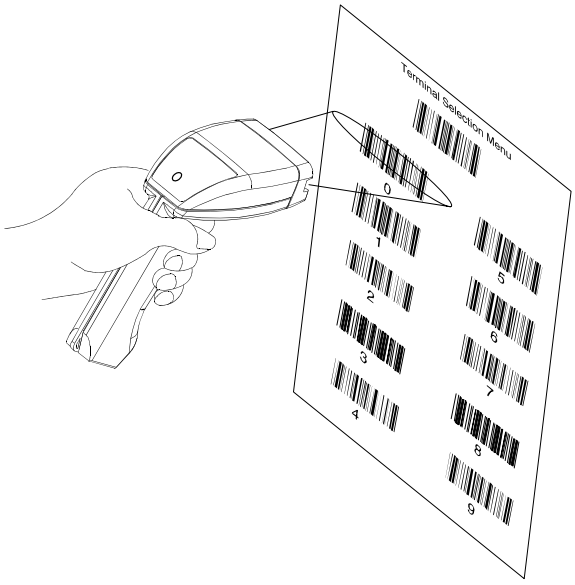
To program the SCANTEAM 3400 using the Terminal Selection menu:

❶ Locate the two–digit terminal I.D. number for your terminal or computer on the Supported Terminals chart (page 2–14).

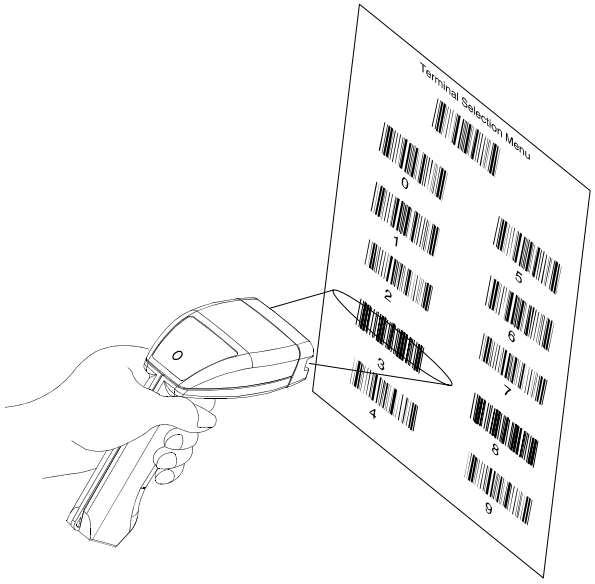
❷ Scan the "Program Terminal Interface" bar code found on the Terminal Selection menu (page 2–14).



❸ Scan the bar code representing the first digit of the terminal I.D. number (also on page 2–14).



❹ Scan the bar code representing the second digit of the terminal I.D. number.



❺ The 3400 terminal interface is now set up. To program a carriage return (CR) suffix see page 2–18. You may also turn off the carriage return (or any other suffix) using Clear Bar Code Suffix, also on page 2–18.

Terminal Selection Programming Example

You want to connect the SCANTEAM 3400 to an Esprit terminal, model 400. The Supported Terminals Chart (next page) lists a terminal I.D. number of “03” for the Esprit 400 terminal.

***First*, scan “Program Terminal Interface” bar code *(on page 2–14)*.**

***Then*, scan the Terminal I.D. number bar codes “0” and “3”.**

The 3400 has been set up, and will transmit data to the Esprit 400.

❖ 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
DEC	VT 510/520/525 LK411 Keyboard (DEC Style)	A4
DEC	VT 510/520 PC Style Keyboard	05
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
IBM Thinkpad	750	97
ICL	300	77
IDEAS		08
ITT	9271	07
Lee Data	IIS	07
Link	MC–5	18
Mac		49

*** Only supported by 3400–X3 units.**
**** The 3400–18 only supports IBM PC XT, PS2/2 25, 30, AT, PS/2 30–286, 50, and 55SX.**

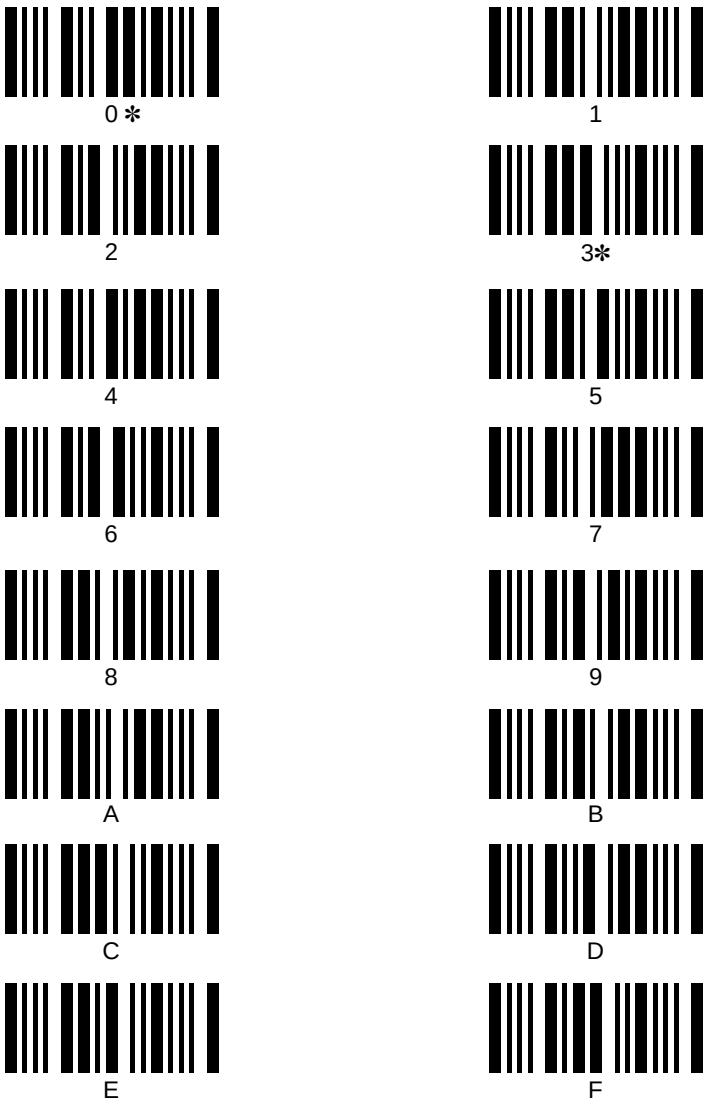
❖ Terminal Selection Menu

Scan the bar code below to program a terminal interface.

Program Terminal Interface

Scan the two–digit terminal I.D. number for the terminal interface you want set up (*see chart on page 2–14*).

Terminal I.D. Number



Default = 03 Terminal I.D. for 3400–X1, 3400–X2
Default = 00 Terminal I.D. for 3400–X3

Supported Terminals, *continued*

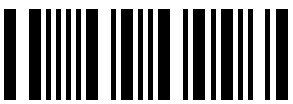
Terminal	Model(s)	Terminal I.D.
OCIA		52
OCR		53
Olivetti	M19, M24, M28, M200	01**
Olivetti	240, 250, 290, 380, P500	03**
Qume ANSI	QVT 61, 62, 70, 191, 321, 322	82
Qume ASCII	QVT 31, 51, 61, 62, 70, 191	74
Qume Enhanced PC	QVT 61, 62, 70, 82, 191, Qx15	38
RS232 True		00
RS232 TTL		00**
Serial Wedge*		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

*** Only supported by 3400–X3 units.**
**** The 3400–18 only supports Olivetti M19, M24, M28, M200, Olivetti 240, 250, 290, 380, P500, and RS232 TTL.**

† **Wyse 60 requires a 40 millisecond intercharacter delay. Refer to Intercharacter Delay on page 3–26 : Scan Enter, Intercharacter Delay Selection, 0, 8 (x5ms), and Exit.**

❖ Terminal Selection Menu

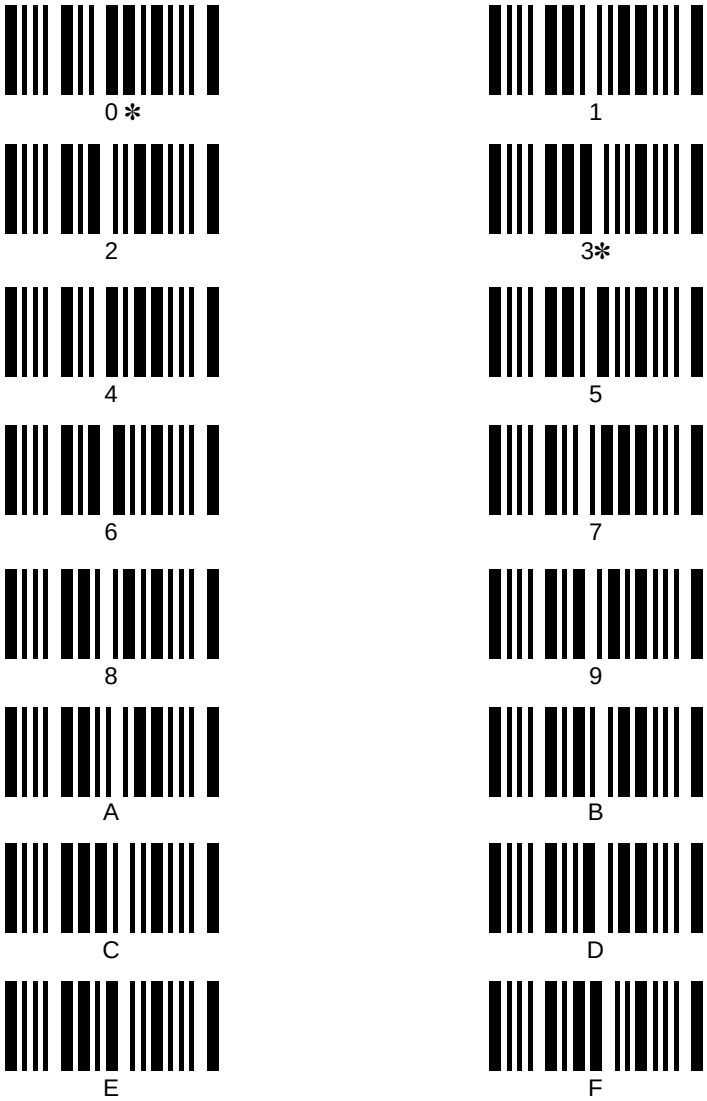
Scan the bar code below to program a terminal interface.



Program Terminal Interface

Scan the two–digit terminal I.D. number for the terminal interface you want set up (*see chart on page 2–16*).

Terminal I.D. Number



Default = 03 Terminal I.D. for 3400–X1, 3400–X2
Default = 00 Terminal I.D. for 3400–X3

2.4 Program Carriage Return (CR) Suffix

If your application requires a carriage return (CR) suffix, scan the bar code below to Program a Carriage Return for all enabled bar code symbologies.

Program Carriage Return Suffix

Caution: Scanning this code clears all previously programmed prefixes and suffixes.

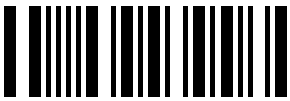
2.5 Clear Bar Code Suffix

If your application doesn't need a bar code suffix (such as carriage return – CR), you may scan the bar code below to clear Bar Code Suffix.

Clear Bar Code Suffix

2.6 Reset Factory Settings

Scan the bar code below to reset the SCANTEAM 3400 scanner to the factory settings. The factory settings are indicated by "✻" (asterisks) on the programming menu pages (Chapter 3).



Factory Default Settings

ADDITIONAL PROGRAMMING SELECTIONS 3

If you've already programmed the 3400 using "Plug and Play" or Terminal Selection (Chapter 2), you don't need to continue programming the 3400 (unless you need to set other features).

3.1 Introduction

Use this chapter to program the SCANTEAM 3400 Hand Held CCD Scanner for *any* programmable feature.

Additional programming selections include:

- Prefixes and Suffixes
- Dual Interface (set up for two different applications)
- Output (beeper, delays, output mode, country codes)
- Industrial Symbologies
- Retail Symbologies
- RS–232 (baud rate, parity, data format, protocols)
- Data Formatter (Bar Code Editor)
- CCD Operation
- Wand Emulation and Laser Output
- Status Check.

After you've programmed the SCANTEAM 3400, the information represented by the programming bar codes is stored in the scanner's nonvolatile (EEPROM) memory. If you turn the scanner off, nonvolatile memory retains the programmed features.

❖ Programming Instructions

Resetting Default Settings

The first page of each programming section allows you to program the SCANTEAM 3400 to factory settings for *that* particular section. This is useful if you've changed the features (or don't know what's been programmed) and want to reset the 3400 defaults, but not ***all*** its defaults.

To reset the 3400 to factory settings for a particular programming section, turn to that section and:

❶ Scan the "ENTER" bar code to enter programming mode.

❷ Scan the "DEFAULT" bar code to set factory settings. ***Factory settings are indicated by "✻" (asterisks).***

❸ Scan the "EXIT" bar code to exit programming mode.

Changing Settings

To change the default values, turn to the programming selection you want to change:

❶ Scan the "ENTER" bar code to enter programming mode (unless noted otherwise).

❷ Scan the Selection bar code (*the bar codes toward outside edge of page*).

❸ Scan the option bar code (*centered on page*) to make your programming choice, then scan "EXIT."

Programming sequence is numbered (❶, ❷, ❸, etc.) next to bar code, bar code title, or text describing bar code.

❖ Global Programming Bar Codes

After you've scanned ENTER in any programming section, you may use the bar codes below to:

DEFAULT

DEFAULT resets the scanner to factory settings.

ESCAPE

ESCAPE stops the programming sequence *(programming selections are unchanged)*.

EXIT

EXIT stops the programming sequence *(any changed programming selections are saved)*.

3.2 Bar Code Prefix and Suffix Programming

Use this section to program the 3400 for Bar Code Prefix and Suffix selections. Scan the bar codes below to default the 3400 to factory settings (✻) for bar code prefix and suffix selections.

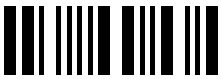
❶ **ENTER Prefix/Suffix Program Mode**

❷ **DEFAULT All Prefix/Suffix Selections**

❸ **EXIT Prefix/Suffix Program Mode**

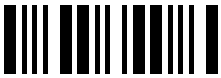
❖ Bar Code Prefix Selection: Code I.D. Transmit

❶ **ENTER Program Mode**



Scan the bar code below to program Code I.D. Transmit, then choose enable or disable.

❷ **Code I.D. Transmit**



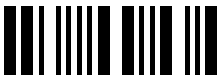
❸ **Enable (Yes)**

❸ **Disable (No ✻)**

❹ **EXIT Program Mode**

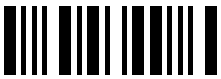
Code I.D. Chart			
Symbology	**Code I.D.**	**Symbology**	**Code I.D.**
Codabar	a	MSI	g
Code 39	b	Code 11	h
UPC	c	Code 93	i
EAN	d	Code 128	j
Interleaved 2 of 5	e	Matrix 2 of 5	m
Code 2 of 5	f	Plessey	n

❖ Bar Code Prefix Selection:
AIM I.D. Transmit



❶ ENTER Program Mode

Scan the bar code below to program AIM I.D. Transmit, then choose enable or disable.



❷ AIM I.D. Transmit

❸ Enable (Yes)

❸ Disable (No ✻)

❹ EXIT Program Mode

AIM I.D. Chart			
Symbology	**AIM I.D.**	**Symbology**	**AIM I.D.**
Codabar	]F	MSI	]M
Code 39	]A	Code 11	]H
UPC	]E	Code 93	]G
EAN	]E	Code 128	]C
Interleaved 2 of 5	]I	Matrix 2 of 5	]X
Code 2 of 5	]S	Plessey	]P

Bar Code Prefix Example

To program a line feed prefix for UPC–A symbology ***only*, scan the following bar codes**:

❶ ENTER (*Prefix Selection*)
❷ Assign ASCII Character Prefix
❸ 6, 3 (*on Symbology Bar Code chart*)
❹ 0, A (*on ASCII Bar Code chart*)
❺ F, F (*on ASCII Bar Code chart*)
❻ EXIT (*Prefix Selection*)

Where the:

"ENTER (Prefix Selection)" bar code enters programming mode.
"Assign ASCII Character Prefix" bar code starts assigning an ASCII character prefix.
"6" and "3" bar codes specify UPC symbology (see Symbology Chart).
"0" and "A" bar codes specify Line Feed (see Hex– ASCII Chart).
"F" and "F" bar codes save the prefix assignment.
"EXIT (Prefix Selection)" bar code exits programming mode.

Bar Code Suffix Example

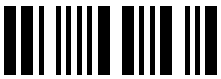
To program a carriage return suffix for ***ALL*** symbologies, **scan the following bar codes**:

❶ ENTER (*Suffix Selection*)
❷ Assign ASCII Character Suffix
❸ 9, 9 (*on Symbology Bar Code chart*)
❹ 0, D (*on ASCII Bar Code chart*)
❺ F, F (*on ASCII Bar Code chart*)
❻ EXIT (*Suffix Selection*)

Where the:

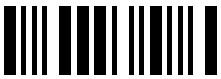
"ENTER (Suffix Selection)" bar code enters programming mode.
"Assign ASCII Character Suffix" bar code starts assigning an ASCII character suffix.
"9" and "9" bar codes specify All symbologies (see Symbology Chart).
"0" and "D" bar codes specify Carriage Return (see Hex– ASCII Chart).
"F" and "F" bar codes save the suffix assignment.
"EXIT (Suffix Selection)" bar code exits programming mode.

❖ Bar Code Prefix Selection: Assign ASCII Character Prefix



❶ ENTER Program Mode

Scan the bar code below to start assigning an ASCII character prefix.

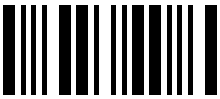


❷ Assign ASCII Character Prefix

❸ Refer to the chart below, then scan the two bar codes on the next page that represent the bar code symbology requiring a prefix.

Symbology Chart			
Symbology	**Hex Value**	**Symbology**	**Hex Value**
Codabar	61	Code 11	68
Code 39	62	Code 93	69
UPC	63	Code 128	6A
EAN	64	Matrix 2 of 5	6D
Interleaved 2 of 5	65	Plessey	6E
Code 2 of 5	66	All Symbologies	99
MSI	67	(Prefix/Suffix Programming **only**.)	

Symbology Bar Codes


1


2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9


A


B


C


D


E

❖ Bar Code Prefix Selection:

Assign ASCII Character Prefix, *continued*

❹ Refer to the chart below to find the hex value of the prefix you wish to assign.

Hex – ASCII Chart

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

❺ Scan two of the ASCII Bar Codes (next page) that represent the hex digits of the prefix you require.

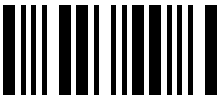
Up to 20 characters, including Code I.D., may be assigned as a bar code prefix.

❻ Scan “F” ***twice*** on the ASCII Bar Code chart to save the prefix assignment.

❼ **EXIT Program Mode**

ASCII Bar Codes


0 **


1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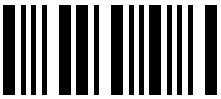
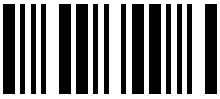

5

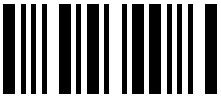

6


7


8


9


A


B

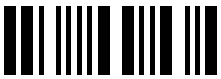

C


D


E

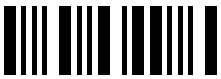

F

❖ Bar Code Suffix Selection: Assign ASCII Character Suffix



❶ ENTER Program Mode

Scan the bar code below to start assigning an ASCII character suffix.



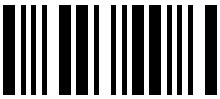
❷ Assign ASCII Character Suffix

❸ Refer to the chart below, then scan the two bar codes on the next page that represent the bar code symbology requiring a suffix.

Symbology Chart

Symbology	Hex Value	Symbology	Hex Value
Codabar	61	Code 11	68
Code 39	62	Code 93	69
UPC	63	Code 128	6A
EAN	64	Matrix 2 of 5	6D
Interleaved 2 of 5	65	Plessey	6E
Code 2 of 5	66	Universal –	99
MSI	67	(*All Symbologies*)	

Symbology Bar Codes


1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9


A


B


C


D


E

❖ Bar Code Suffix Selection:

Assign ASCII Character Suffix, *continued*

❹ Refer to the chart below to find the hex value of the suffix you wish to assign.

Hex – ASCII Chart

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

❺ Scan two of the ASCII Bar Codes (next page) that represent the hex digits of the suffix you require.

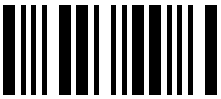
Up to 20 characters may be assigned as a bar code suffix.

❻ Scan “F” ***twice*** on the ASCII Bar Code chart to save the suffix assignment.

❼ EXIT Program Mode

ASCII Bar Codes

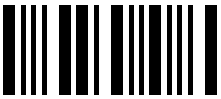

0 **


1


2


3


4

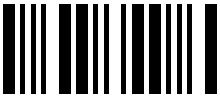

5

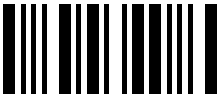

6


7


8


9


A


B


C


D

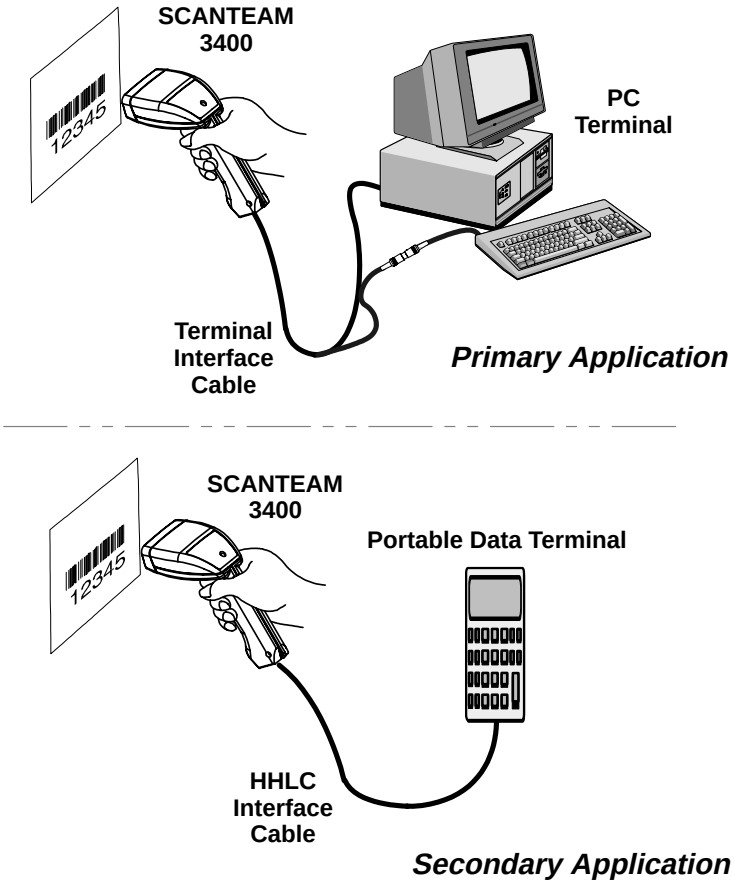

E


F

3.3 Dual Interface Programming

SCANTEAM models 3400–X1 and 3400–X2 support Dual Interface, which allows you to connect to two different terminals by switching interface cables. The figure below illustrates Dual Interface.

Dual Interface: ***1 scanner + 2 interface cables = 2 applications***



Dual Interface Programming, *continued*

The 3400 is compatible with a wide range of terminals in the primary (or single) interface mode. (Primary terminal selection programming is found on page 2–11.)

Secondary interface is designed to support a limited set of interfaces common to portable data terminals. These interfaces include:

- Hand Held Laser Emulation (HHLC)
- Wand Emulation, Code 39
- Wand Emulation, Same Code
- RS–232 TTL.

The scanner must be programmed for secondary interface, just as it must be for primary interface. To program the 3400 for secondary interface, follow the steps below. ***(Dual Interface single scan programming codes on the following page.)***

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

Note: *ENTER and EXIT bar codes are not needed for Dual Interface.*

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

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. These selections include:

Prefix/Suffix — Reread Delay
Buffer Scans — Wand Emulation Polarity
Trigger Mode — Wand Emulation Transmission Rate
Symbology selections (including EAN ISBN).

3400–X3 and 3400–18 units do not support Dual Interface.

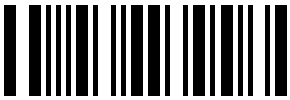
Dual Interface Single Scan Programming Codes

❖ Code 39 Wand Emulation Selection ✻

❖ Same Code Wand Emulation Selection †

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

❖ RS–232 Selection



❖ Laser Emulation Selection

Dual Interface Programming Notes:

- To change the secondary interface from one selection to another (from HHLC to RS–232, for example), 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 on page 3–17.

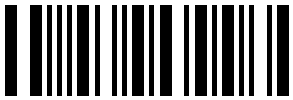
3400–X3 and 3400–18 units do not support Dual Interface.

- Scanning “Plug and Play” bar codes (single scan terminal selection bar codes – Section 2.2), 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 (such as baud rate or parity), while in primary *or* secondary mode will affect both interfaces.

Dual Interface selection is not available if the 3400 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.

Primary Interface *only* Selection allows you to 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 Selection bar code.

❖ Primary Interface *only* Selection ✻



❖ Enable Dual Interface Selection

3400–X3 and 3400–18 units do not support Dual Interface.

3.4 Output Programming

Use this section to program the 3400 for Output selections. Scan the bar codes below to default the 3400 to factory settings (✻) for output selections.

❶ **ENTER Output Program Mode**

❷ **DEFAULT All Output Selections**

❸ **EXIT Output Program Mode**

❖ Beeper Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Beeper selection, then choose the volume you want.

❷ **Beeper Selection**

❸ **Beeper Off**

❸ **Beeper Low Volume**

❸ **Beeper Medium Volume**

❸ **Beeper High Volume** ✻

❹ **EXIT Program Mode**

❖ Keyboard Style Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Keyboard Style selection, then choose the keyboard style you want.

❷ **Keyboard Style Selection**

❸ **Style A** ✻

❸ **Style B**

❸ **Style C**

❸ **Style D**

❸ **Style F**

Yes

No

❸ **Style G**

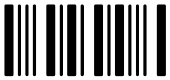
Keyboard Style Selection, *continued*

❸ **Style H**

Yes

No

❸ **Style I**



Yes

No

❸ **Style J**

Yes

No

❹ **EXIT Program Mode**

The charts on the following pages show the keyboard style for supported terminals.

Note: Styles A, B, and C cannot be used with one another; however they may be combined with other styles. All styles with Yes / No bar codes can be scanned in combination with all other styles. For example, you can combine style F with G. First scan F, then scan G. If Style D is combined with another style, D must be scanned first. For example, scan D before scanning B to enable both the CTRL ASCII and the CAPS LOCK functions. Scanning Style A disables Style D.

Terminal		Keyboard Style								
ID	Name	A	B	C	D	F	G	H	I	J
		Primary	Secondary	Tertiary	Quaternary	DirCon	AutoCaps	NumPad	Turbo	Auto DC
1	IBM XT	std	CAPS LOCK	SHFT LOCK	CTRL ASCII	No	No	Yes	No	No
2	IBM PS/2	std	CAPS LOCK	SHFT LOCK	CTRL ASCII	Yes	Yes	Yes	12/9	Yes
3	IBM AT	std	CAPS LOCK	SHFT LOCK	CTRL ASCII	Yes	Yes	Yes	14/3	Yes
5	IBM AT3 DEC VT510	std	CAPS LOCK	SHFT LOCK	CTRL ASCII	Yes	Yes	Yes	14/11	Yes
6	IBMTerminals w/102 keys	std	CAPS LOCK	SHFT LOCK	No	No	Yes	Yes	No	No
7	IBMTerminals w/122 keys	std	CAPS LOCK	SHFT LOCK	No	No	Yes	Yes	No	No
8	IBMTerminals w/122 keys	std	CAPS LOCK	SHFT LOCK	No	No	Yes	Yes	No	No
9	Not Used*	std			No	No			No	No
10	Not Used*	std	D/E		No	No			No	No
11	Not Used*	std	D/E		No	No			No	No
19	Not Used*	std	D/E		No	No			No	No
23		std			No	No			No	No
24		std	D/E		No	No			No	No
25		std	D/E		No	No			No	No
35		std	CAPS LOCK	SHFT LOCK	No	No			No	No
45		std	CAPS LOCK	SHFT LOCK	No	No			No	No
46		std	CAPS LOCK	SHFT LOCK	No	No			No	No
71		std	CAPS LOCK	SHFT LOCK	No	No			No	No
84		std	CAPS LOCK	SHFT LOCK	No	No			No	No
97	IBM Thinkpad	std	ob-solete	ob-solete	CTRL ASCII	ob-solete	ob-solete	Yes	No	N/A
A4	DEC VT510 LK411	std	CAPS LOCK	SHFT LOCK	CTRL ASCII	Yes	Yes	Yes	14/11	Yes

* Unused in SCANTEAM 3400 (IDs 9, 10, 11, 19)

OUTPUT

Note: *The Keyboard Style Table below applies to SCANTEAM 3400 software prior to software revision level 4.0.*

Keyboard Style

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

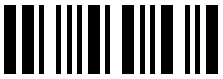
Terminal	Primary	Secondary	Tertiary	Quaternary	Quinquenary
IBM PC/XT	XT	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
IBM PC/AT	AT	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
IBM PS2 (50–80)	NORM	CAPS LOCK	SHIFT LOCK	"CTRL" + ASCII †	Gr DOS SHIFT LOCK
HDS 2000, 3200	T/W	"CTRL +"			
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	

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

❖ Keyboard Emulation Mode

(For IBM PC/AT – terminal ID = 03 – only)

❶ ENTER Program Mode



Scan the bar codes below to program Keyboard Emulation Mode, then enable or disable the selection.

❷ Keyboard Emulation Selection

❸ Keyboard Emulation Mode

❹ Enable

❹ Disable

❺ EXIT Program Mode

❖ Programmable Output Delay Selections

❶ **ENTER Program Mode**

Scan the bar code below to start Intercharacter Delay selection.

❷ **Intercharacter Delay Selection**

❸ Scan two of the Numeric Bar Codes (next page) to set the delay to any value between 00 ✻ and 99†.

Scan the bar code below to start Interfunction Delay selection.

❷ **Interfunction Delay Selection**

❸ Scan two of the Numeric Bar Codes (next page) to set the delay to any value between 00 ✻ and 99†.

Scan the bar code below to start Intermessage Delay selection.

❷ **Intermessage Delay Selection**

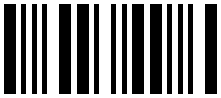
❸ Scan two of the Numeric Bar Codes (next page) to set the delay to any value between 00 ✻ and 99†.

❹ **EXIT Program Mode**

† ***x5ms***

Numeric Bar Codes


0 **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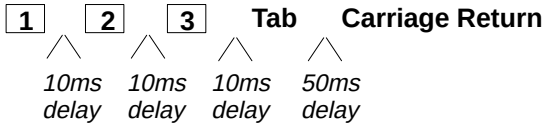
Programmable Output Delay Example

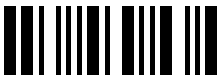
The SCANTEAM 3400 is programmed as follows:

❶ **Intercharacter Delay = 10ms**
❷ **Interfunction Delay = 50ms**
❸ **Bar Code Suffix = Tab and Carriage Return**

When a bar code symbol containing the characters “123” is scanned, the 3400 will output the following to the terminal/computer:

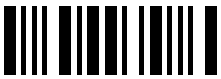


❖ Output Mode Selection: Buffer Scans



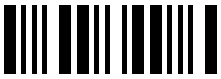
❶ ENTER Program Mode

Scan the bar code below to start Output Mode selection.



❷ Output Mode Selection

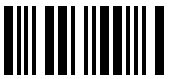
Scan the bar code below to program Buffer Scans, then choose enable or disable. *If enabled*, the 3400 accepts a second scan while transmitting the current scan to the terminal. *If disabled*, the 3400 won't accept additional scans until the current scan is output to the terminal.



❸ Buffer Scans

❹ Enable (Yes ✻)

❹ Disable (No)



Programming the 3400 for Wand Emulation mode disables the Buffer Scans Output option.

❺ EXIT Program Mode

❖ Output Mode Selection: Function Code Transmit

❶ **ENTER Program Mode**

Scan the bar code below to start Output Mode selection.

❷ **Output Mode Selection**

Scan the bar code below to program Function Code Transmit, then choose enable or disable. *Refer to Chapter 4 for Function Code tables (Supported Interface Keys).*

❸ **Function Code Transmit**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

---

❺ **EXIT Program Mode**

Function Code Transmit Enabled Example

The SCANTEAM 3400 is connected to an IBM PC XT and is programmed as follows:

❶ **Bar Code Prefix: GS (1D) – F10 key**
❷ **Bar Code Suffix: CR (0D) – ENTER key**
❸ **Function Code Transmit: Enabled**

When a bar code containing the characters "1234<HT>5678" is scanned, the 3400 will output the following to the terminal/computer:

F10	1	2	3	4	**Tab**	5	6	7	8	**ENTER**
bar code prefix										*bar code suffix*

The Supported Interface Key "HT" (IBM XT table page 4–4) has been translated and sent as the Tab key.

Function Code Transmit Disabled Example

The SCANTEAM 3400 is connected to an IBM PC XT and is programmed as follows:

❶ **Bar Code Prefix: GS (1D) – F10 key**
❷ **Bar Code Suffix: CR (0D) – ENTER key**
❸ **Function Code Transmit: Disabled**

When a bar code containing the characters "1234<HT>5678" is scanned, the 3400 will output the following to the terminal/computer:

F10	1	2	3	4	5	6	7	8	**ENTER**
bar code prefix									*bar code suffix*

The "HT" has been stripped from the data string. (The prefix and suffix are not affected by Function Code Transmit.)

❖ Output Mode Selection: Laser Redundancy

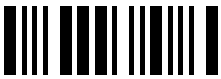
❶ **ENTER Program Mode**

Scan the bar code below to start Output Mode selection.

❷ **Output Mode Selection**

Scan the bar code below to program Laser Redundancy, then choose enable or disable. *If enabled*, the 3400 requires **three identical scans** before data will be accepted. *If disabled*, the 3400 accepts data after a single valid scan.

❸ **Laser Redundancy**



❹ **Enable (Yes)**

❹ **Disable (No ✻)**

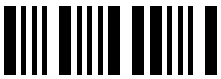
---

❺ **EXIT Program Mode**

❖ Country Code Selection

❶ ENTER Program Mode

Scan the bar code below to start Country Code selection.



❷ Country Code Selection

❸ Refer to the chart below to find the numeric value of the country keyboard you require.

Country Code	
United States	00 ✻
Belgium	01
Denmark † Finland Norway † Sweden	02
France	03
Germany/Austria	04
Italy	05
Switzerland	06
United Kingdom	07
Denmark (WYSE)	08
Norway (WYSE)	09
† *Use special Wyse selection when using Wyse terminals.*	

❹ Scan two of the Numeric Bar Codes (next page) that represent the Country Code you want programmed.

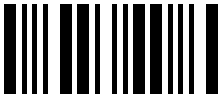
Country Code Selection applies to Keyboard Wedge interfaces *only.*

❺ EXIT Program Mode

OUTPUT

Numeric Bar Codes

0 **



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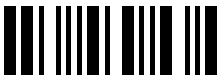
Note: *The NCR 7052 Keypad Selection applies to SCANTEAM 3400 software prior to software revision level 4.0.*

❖ NCR 7052 Keypad Selection*



❶ ENTER Program Mode

Scan the bar code below to program NCR 7052 Keyboard Layout selection, then choose the keyboard layout you want.

❷ NCR 7052 Keypad Selection

❸ Layout 1 (telephone style keypad) ✻

❸ Layout 2 (calculator style keypad)

❸ Layout 3 (PC/AT style keypad)

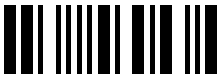
❹ EXIT Program Mode

**** 3400–X3 units do not support NCR 7052 Keypad Selection.***

3.5 Industrial Symbology Programming

Use this section to program the 3400 for Industrial Symbology selections. Scan the bar codes below to default the 3400 to factory settings (✻) for industrial symbology selections.

❶ **ENTER Industrial Symbology Program Mode**



❷ **DEFAULT All Industrial Symbology Selections**

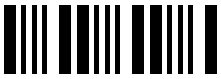
❸ **EXIT Industrial Symbology Program Mode**

Examples of Industrial bar codes may be found on page 3–39 in this programming section.

❖ Codabar Selection

❶ ENTER Program Mode

Scan the bar code below to start Codabar symbology selection, then enable or disable Codabar decoding.



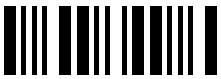
❷ Codabar Selection

❸ Enable (Yes ✻)

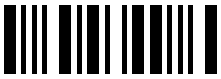
❸ Disable (No)

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***



❹ Set Minimum Length



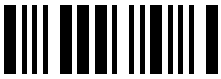
❹ Set Maximum Length

Other Codabar selections include: Start/Stop Transmit, Check Character Required, Check Character Transmit, Concatenation, and Concatenation Required.

Codabar Selection, *continued*

Scan the bar code below to program Codabar Start/Stop Transmit, then choose enable or disable.

❹ **Start/Stop Transmit**

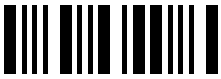


❺ **Enable (Yes)**

❺ **Disable (No ✻)**

Scan the bar code below to program Codabar Check Character Required, then choose enable or disable.

❹ **Check Character Required**



❺ **Enable (Yes)**

❺ **Disable (No ✻)**

Scan the bar code below to program Codabar Check Character Transmit, then choose enable or disable.

❹ **Check Character Transmit**

❺ **Enable (Yes)**

❺ **Disable (No ✻)**

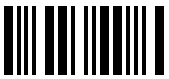
Codabar Selection, *continued*

Scan the bar code below to program Codabar Concatenation, then choose enable or disable.

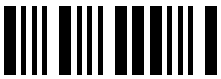
❹ Concatenation

❺ Enable (Yes ✻)

❺ Disable (No)



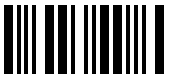
Scan the bar code below to program Codabar Concatenation Required, then choose enable or disable.



❹ Concatenation Required

❺ Enable (Yes)

❺ Disable (No ✻)



❻ EXIT Program Mode

Codabar without Concatenation

❖ Scan would look like: **A1234A**

Codabar with Concatenation

Codabar Bar Code

Code 39 Bar Code

❖ Code 39 Selection

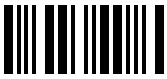
❶ **ENTER Program Mode**

Scan the bar code below to start Code 39 symbology selection, then enable or disable Code 39 decoding.

❷ **Code 39 Selection**

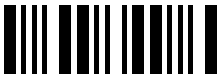
❸ **Enable (Yes ✻)**

❸ **Disable (No)**

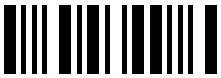


Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***



❹ **Set Minimum Length**

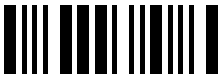


❹ **Set Maximum Length**

Other Code 39 selections include: Start/Stop Transmit, Check Character Required, Check Character Transmit, Full ASCII, and Append Option.

Scan the bar code below to program Code 39 Start/Stop Transmit, then choose enable or disable.

❹ **Start/Stop Transmit**

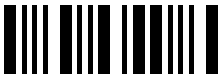


❺ **Enable (Yes)**

❺ **Disable (No ✻)**

Scan the bar code below to program Code 39 Check Character Required, then choose enable or disable.

❹ **Check Character Required**



❺ **Enable (Yes)**

❺ **Disable (No ✻)**

Scan the bar code below to program Code 39 Check Character Transmit, then choose enable or disable.

❹ **Check Character Transmit**

❺ **Enable (Yes)**

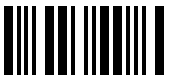
❺ **Disable (No ✻)**

Scan the bar code below to program Code 39 Full ASCII, then choose enable or disable.

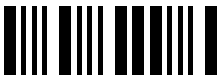
❹ Full ASCII

❺ Enable (Yes ✻)

❺ Disable (No)



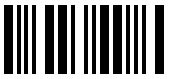
Scan the bar code below to program Code 39 Append Option, then choose enable or disable.



❹ Append Option

❺ Enable (Yes)

❺ Disable (No ✻)



❻ EXIT Program Mode

❖ Interleaved 2 of 5 Selection

❶ **ENTER Program Mode**

Scan the bar code below to start Interleaved 2 of 5 symbology selection, then enable or disable Interleaved 2 of 5 decoding.

❷ **Interleaved 2 of 5 Selection**

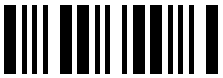
❸ **Enable (Yes ✻)**

❸ **Disable (No)**

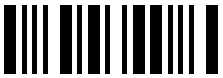
Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❹ **Set Minimum Length**



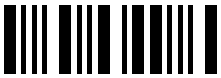
❹ **Set Maximum Length**



Other Interleaved 2 of 5 selections include: Check Digit Required and Check Digit Transmit.

Interleaved 2 of 5 Selection, *continued*

Scan the bar code below to program Interleaved 2 of 5 Check Digit Required, then choose enable or disable.

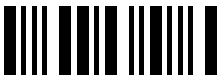


❹ Check Digit Required

❺ Enable (Yes)

❺ Disable (No ✻)

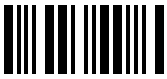
Scan the bar code below to program Interleaved 2 of 5 Check Digit Transmit, then choose enable or disable.



❹ Check Digit Transmit

❺ Enable (Yes)

❺ Disable (No ✻)



❻ EXIT Program Mode

❖ Code 2 of 5 Selection

❶ ENTER Program Mode

Scan the bar code below to start Code 2 of 5 symbology selection, then enable or disable Code 2 of 5 decoding.

❷ Code 2 of 5 Selection

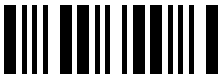
❸ Enable (Yes ✻)

❸ Disable (No)

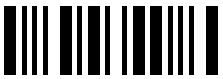
Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❹ Set Minimum Length



❹ Set Maximum Length



❺ EXIT Program Mode

❖ Matrix 2 of 5 Selection

❶ ENTER Program Mode

Scan the bar code below to start Matrix 2 of 5 symbology selection, then enable or disable Matrix 2 of 5 decoding.

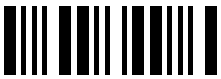
❷ Matrix 2 of 5 Selection

❸ Enable (Yes ✻)

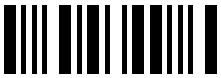
❸ Disable (No)

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***



❹ Set Minimum Length



❹ Set Maximum Length

❺ EXIT Program Mode

❖ Code 11 Selection

❶ **ENTER Program Mode**

Scan the bar code below to start Code 11 symbology selection, then enable or disable Code 11 decoding.

❷ **Code 11 Selection**

❸ **Enable (Yes ✻)**

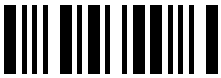
❸ **Disable (No)**

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❹ **Set Minimum Length**

❹ **Set Maximum Length**



Code 11 Selection, *continued*

Scan the bar code below to program 2 Check Digits Required for Code 11, then choose enable or disable.

❹ 2 Check Digits Required

❺ Enable (Yes ✻)

❺ Disable (No †)

† No (Disabled) = 1 Check Digit

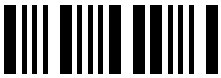
❻ EXIT Program Mode

❖ Code 93 Selection

❶ **ENTER Program Mode**

Scan the bar code below to start Code 93 symbology selection, then enable or disable Code 93 decoding.

❷ **Code 93 Selection**



❸ **Enable (Yes ✻)**

❸ **Disable (No)**

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❹ **Set Minimum Length**

❹ **Set Maximum Length**

❺ **EXIT Program Mode**

❖ Code 128 Selection

❶ **ENTER Program Mode**

Scan the bar code below to start Code 128 symbology selection, then enable or disable Code 128 decoding.

❷ **Code 128 Selection**

❸ **Enable (Yes ✻)**

❸ **Disable (No)**

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Industrial Symbologies Min/Max Length chart (page 3–52). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❸ **Set Minimum Length**

❸ **Set Maximum Length**

EAN–128 Programming

When enabled, the 3400 substitutes a <GS> for Function Character 1.

❹ <GS> Substitution

❺ Enable (Yes ✻)

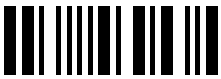
❺ Disable (No)

Note: *For complete EAN-128 support, the AIM code ID feature also should be enabled. Refer to Page 3–6.*

❻ EXIT Program Mode

❖ Disable All Symbologies

❶ ENTER Program Mode



Scan the bar code below to Disable **ALL** Symbologies.

Caution: You will *not* be prompted to verify this option.

❷ Disable All Symbologies

❸ EXIT Program Mode

Note: All Retail Symbologies will be disabled also.

Industrial Symbologies Min/Max Length Chart		
Symbology	**Minimum Length**	**Maximum Length**
Codabar	04 ✻	60 ✻
Code 39	00 ✻	48 ✻
Interleaved 2 of 5	02 †	80 ✻
Code 2 of 5	01 †	48 ✻
Matrix 2 of 5	01 †	80 ✻
Code 11	01 †	80 ✻
Code 93	00 ✻	64 ✻
Code 128	00 ✻	80 ✻

† The Default minimum length for these symbologies is 4 characters.

Numeric Bar Codes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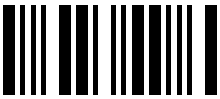
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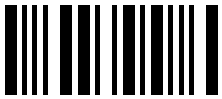
8


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3.6 Retail Symbology Programming

Use this section to program the 3400 for Retail Symbology selections. Scan the bar codes below to default the 3400 to factory settings (✻) for retail symbology selections.

❶ **ENTER Retail Symbology Program Mode**

❷ **DEFAULT All Retail Symbology Selections**

❸ **EXIT Retail Symbology Program Mode**

Examples of Retail bar codes may be found on pages 3–57, 3–61, and 3–62 in this programming section.

❖ UPC Selection

❶ **ENTER Program Mode**

Scan the bar code below to start UPC symbology selection.

❷ **UPC Selection**

UPC selections include: Version A, Version E0, Version E1, Check Digit Transmit, Number System Transmit, Version E Expand, 2–Digit Addendum, and 5–Digit Addendum.

Scan the bar code below to program UPC Version A, then choose enable or disable.

❸ **Version A**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program UPC Version E0, then choose enable or disable.

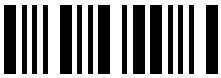
❸ **Version E0**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program UPC Version E1, then choose enable or disable.

❸ **Version E1**



❹ **Enable (Yes)**

❹ **Disable (No ✻)**

Note: *Version E1 only works if EAN 13 is disabled. Refer to EAN 13 Page 3–58.*

Scan the bar code below to program UPC Check Digit Transmit, then choose enable or disable.

❸ **Check Digit Transmit**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

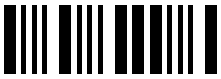
Scan the bar code below to program UPC Number System Transmit, then choose enable or disable.

❸ **Number System Transmit**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program UPC Version E Expand, then choose enable or disable.



❸ Version E Expand

❹ Enable (Yes)

❹ Disable (No ✻)

Scan the bar code below to program UPC 2–Digit Addenda, then choose enable or disable.

❸ 2–Digit Addenda

❹ Enable (Yes)

❹ Disable (No ✻)

Scan the bar code below to program UPC 5–Digit Addenda, then choose enable or disable.

❸ 5–Digit Addenda

❹ Enable (Yes)

❹ Disable (No ✻)

❺ EXIT Program Mode

UPC–A Bar Code

UPC–A Bar Code

❖ EAN Selection

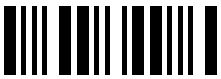
❶ **ENTER Program Mode**

Scan the bar code below to start EAN symbology selection.

❷ **EAN Selection**

EAN selections include: EAN/JAN 13, EAN/JAN 8, Check Digit Transmit, 2–Digit Addendum, 5–Digit Addendum, and ISBN Enable.

Scan the bar code below to program EAN/JAN 13, then choose enable or disable.



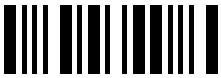
❸ **EAN/JAN 13**

❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program EAN/JAN 8, then choose enable or disable.

❸ **EAN/JAN 8**

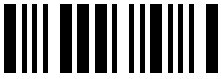


❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program EAN Check Digit Transmit, then choose enable or disable.

❸ **Check Digit Transmit**

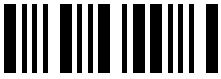


❹ **Enable (Yes ✻)**

❹ **Disable (No)**

Scan the bar code below to program EAN 2–Digit Addenda, then choose enable or disable.

❸ **2–Digit Addenda**



❹ **Enable (Yes)**

❹ **Disable (No ✻)**

EAN Selection, *continued*

Scan the bar code below to program EAN 5–Digit Addenda, then choose enable or disable.

❸ 5–Digit Addenda

❹ Enable (Yes)

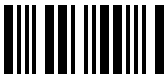
❹ Disable (No ✻)

Scan the bar code below to program EAN ISBN Enable, then choose enable or disable.

❸ ISBN Enable

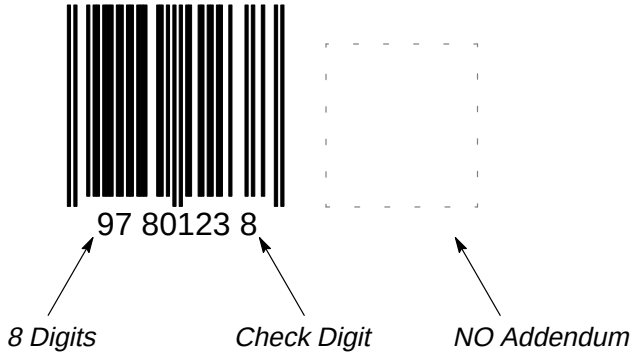
❹ Enable (Yes)

❹ Disable (No ✻)



❺ EXIT Program Mode

EAN 8 Bar Code



EAN 8 Bar Code

EAN 13 Bar Code

EAN 13 Bar Code

❖ UPC & EAN Addenda Selection

❶ **ENTER Program Mode**

Scan the bar code below to program UPC & EAN Addenda Required, then choose enable or disable.

❷ **UPC & EAN Addenda Required**

❸ **Enable (Yes)**

❸ **Disable (No ✻)**

Scan the bar code below to program UPC/EAN Format, then choose to add a space or not to add a space between the UPC/EAN code and addenda.

❷ **Addenda Format**

❸ **Space (✻)**

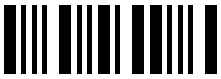
❸ **No Space**

❹ **EXIT Program Mode**

❖ MSI Selection

❶ **ENTER Program Mode**

Scan the bar code below to start MSI symbology selection, then enable or disable MSI decoding.



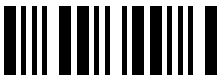
❷ **MSI Selection**

❸ **Enable (Yes)**

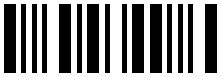
❸ **Disable (No ✻)**

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Retail Symbologies Min/Max Length chart (page 3–67). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***



❹ **Set Minimum Length**



❹ **Set Maximum Length**

❺ **EXIT Program Mode**

❖ Plessey Selection

❶ **ENTER Program Mode**

Scan the bar code below to start Plessey symbology selection, then enable or disable Plessey decoding.

❷ **Plessey Selection**

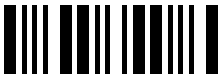
❸ **Enable (Yes)**

❸ **Disable (No ✻)**

Note: *If you don't need to program additional selections, you may scan EXIT now to exit program mode and save your changes.*

To set minimum allowable length, scan the "Set Minimum Length" bar code, then refer to the Retail Symbologies Min/Max Length chart (page 3–67). Scan two of the Numeric Bar Codes (below the Length chart) to set the length. ***Repeat the process to set maximum length.***

❹ **Set Minimum Length**



❹ **Set Maximum Length**

❺ **EXIT Program Mode**

❖ Disable All Symbologies

❶ ENTER Program Mode

Scan the bar code below to Disable **ALL** Symbologies.

Caution: You will *not* be prompted to verify this option.

❷ Disable All Symbologies

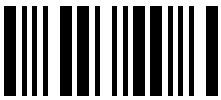
❸ EXIT Program Mode

Note: All Industrial Symbologies will be disabled also.

Retail Symbologies Min/Max Length Chart		
Symbology	**Minimum Length**	**Maximum Length**
MSI	04 ✻	48 ✻
Plessey	04 ✻	48 ✻

Numeric Bar Codes


0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3.7 RS–232 Programming

Use this section to program the 3400 for RS–232 selections. Scan the bar codes below to default the 3400 to factory settings (✻) for RS–232 selections.

❶ **ENTER RS–232 Program Mode**

❷ **DEFAULT All RS–232 Selections**

❸ **EXIT RS–232 Program Mode**

❖ Baud Rate Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Baud Rate selection, then choose the baud rate you want.

❷ **Baud Rate Selection**

❸ **300 bps (bits per second)**

❸ **600 bps (bits per second)**

❸ **1200 bps (bits per second)**

❸ **2400 bps (bits per second)**

❸ **4800 bps (bits per second)**

❸ **9600 bps (bits per second) ✻**

❸ **19200 bps (bits per second)**

❸ **38400 bps (bits per second)**

❹ **EXIT Program Mode**

❖ Parity Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Parity selection, then choose the parity you want.

❷ **Parity Selection**

❸ **None**

❸ **Mark**

❸ **Space**

❸ **Odd**

❸ **Even** ✻

❹ **EXIT Program Mode**

❖ Data Format Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Data Format selection, then choose the data format you want.

❷ **Data Format Selection**

❸ **7 Data, Parity, 1 Stop** ✻

❸ **7 Data, Parity, 2 Stop**

❸ **8 Data, Parity, 1 Stop**

❹ **EXIT Program Mode**

❖ CTS Handshake Selection

❶ **ENTER Program Mode**

This selection allows you to disable the CTS Handshake if your terminal/computer doesn't have a CTS I/O line.
Scan the bar code below to program CTS Handshake selection, then choose enable or disable.

❷ **CTS Handshake Selection**

❸ **Enable (Yes)**

❸ **Disable (No ✻)**

CTS Handshake only applies when the 3400 is in Serial Mode (RS–232, TTL or True).

❹ **EXIT Program Mode**

❖ Serial Wedge Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Serial Wedge selection, then choose the Operating Mode Output Direction you want.

❷ **Serial Wedge Selection**
(Model 3400–X3 only)

❸ **To P1** ✻ †

❸ **To P2** †

❸ **To P1 and P2** †

† **P1 and P2 are serial wedge designations printed on the serial wedge cable.**

❹ **EXIT Program Mode**

❖ Protocol Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Protocol selection, then choose the protocol you want.

❷ **Protocol Selection**
(Model 3400–X3 only)

❸ **Record Protocol ✻**

❸ **XON–XOFF Protocol**

❸ **ACK/NAK Protocol**

❹ **EXIT Program Mode**

3.8 Data Formatter (Bar Code Editor) Programming

Use this section to program the 3400 for Data Formatter (Bar Code Editor) selections. Scan the bar codes below to default the 3400 to factory settings (✻) for Data Formatter selections.

❶ **ENTER Data Formatter Program Mode**

❷ **DEFAULT All Data Formatter Selections**

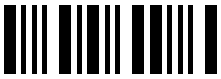
❸ **EXIT Data Formatter Program Mode**

❖ Format Editor Selection

❶ ENTER Program Mode

To make Data Format Editor selections, you'll need to know the terminal type, code I.D., code length, and editor commands your application requires. Use the Alpha–numeric bar codes (next page) to scan these options.

Scan the bar code below to start Format Editor selection.



❷ Format Editor Selection

❸ Terminal Type

Scan two bar codes that represent the terminal type (00–99†). (*See Section 2.3 for a list of terminal I.D. numbers.*)

❹ Code I.D.

Refer to the Symbology chart (page 3–8), 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.)

❺ Length

Scan two bar codes representing the bar code length you require (00–99†).

❻ Editor Command Sequences

Refer to the Format Editor Commands chart (page 3–78). Scan two bar codes that represent the command you need.

❼ End Format (FF)

Scan "F" ***twice*** to end Format Editor selection.

❽ EXIT Program Mode

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

Alpha−numeric Bar Codes (for Format Editor Selection)


0


1


2


3


4


5


6


7


8


9


A


B


C


D


E


F

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).*

❖ Require Data Format

❶ **ENTER Program Mode**

Scan the bar code below to program Require Data Format, then choose enable or disable.

❷ **Require Data Format**

❸ **Enable (Yes)**

❸ **Disable (No ✻)**

❹ **EXIT Program Mode**

❖ Delete All Formats

❶ **ENTER Program Mode**

Scan the bar code below to Delete **ALL** Formats, then scan "Yes" if you are sure you want to delete all formats or "No" if you **do not** want to delete all formats.

❷ **Delete All Formats**

❸ **Yes**

❸ **No**

❹ **EXIT Program Mode**

3.9 Trigger and Reread Delay Programming

Use this section to program the 3400 for Trigger/Reread Delay selections. Scan the bar codes below to default the 3400 to factory settings (✻) for Trigger/Reread Delay selections.

❶ **ENTER Trigger/Reread Delay Program Mode**

❷ **DEFAULT All Trigger/Reread Delay Selections**

❸ **EXIT Trigger/Reread Delay Program Mode**

❖ Programmable HHLC Interface Power Up Delay

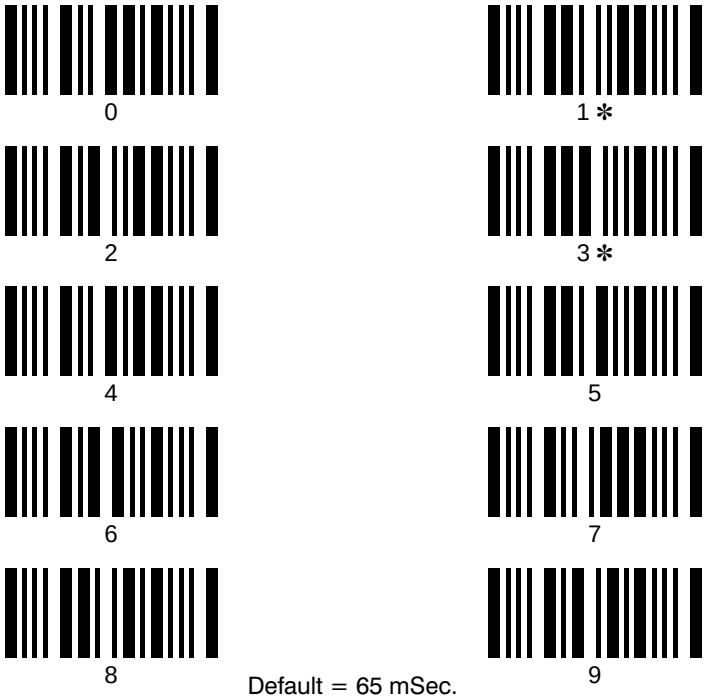
❶ **ENTER Program Mode**

Scan the bar code below to start HHLC Interface Power Up Delay selection. This selection delays full power up, allowing the PDT terminal to power up on scanner trigger. The PDT powers down between scans, greatly extending battery life.

❷ **HHLC Power Up Delay Selection**

❸ Scan two of the Numeric Bar Codes (below) to set the delay to any value between 00 and 99.† Default = 65mSec.

Numeric Bar Codes



Default = 65 mSec.

❹ **EXIT Program Mode**

† *Total delay time = scan value x 5ms.*

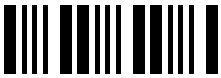
TRIGGER/REREAD DELAY

❖ Trigger Mode Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Trigger Mode selection, then choose the trigger option you want.

❷ **Trigger Mode Selection**



❸ **Auto–Trigger**

❸ **Manual Trigger ✻**

❸ **Manual Trigger – Switched Power**

Note: *The ST3400–18 is available with manual trigger only.*

❹ **EXIT Program Mode**

❖ Reread Delay Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Reread Delay selection, then choose the delay you want.

❷ **Reread Delay Selection**

❸ **Low** ✻

❸ **Medium**

❸ **High**

❸ **Extra High**

❹ **EXIT Program Mode**

❖ Good Read Delay Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Good Read Delay selection, then choose the delay you want.

❷ **Good Read Delay Selection**

❸ **None ✻**

❸ **Low (500 milliseconds)**

❸ **Medium (1.0 second)**

❸ **High (1.5 seconds)**

❹ **EXIT Program Mode**

3.10 Wand Emulation and Laser Output Programming

Use this section to program the 3400 for Wand Emulation and Laser Output selections. Scan the bar codes below to default the 3400 to factory settings (✻) for wand emulation and laser output selections.

❶ **ENTER Wand Emulation and Laser Output Program Mode**

❷ **DEFAULT All Wand Emulation and Laser Output Selections**

❸ **EXIT Wand Emulation and Laser Output Program Mode**

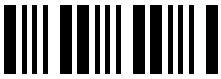
3400–X3 and 3400–18 units do not support Wand Emulation and Laser Output.

❖ Output Polarity Selection

❶ ENTER Program Mode

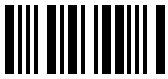
Scan the bar code below to program Output Polarity selection, then choose the polarity you want.

❷ Output Polarity Selection
(Wand and Laser Emulation)



❸ White High (“Laser”) ✻ †

❸ Black High †



† **In Laser Emulation mode, the default output polarity is white high. In Wand Emulation mode, the default output polarity is black high.**

❹ EXIT Program Mode

3400–X3 and 3400–18 units do not support Output Polarity.

❖ Transmission Rate Selection

❶ **ENTER Program Mode**

Scan the bar code below to program Transmission Rate selection, then choose the transmission rate you want.

❷ **Transmission Rate Selection**

❸ **10 ips (inches per second)**

❸ **120 ips (inches per second)**

❸ **25 ips (inches per second) ✻**

❸ **150 ips (inches per second)**

❸ **40 ips (inches per second)**

❸ **200 ips (inches per second)**

❸ **80 ips (inches per second)**

❹ **EXIT Program Mode**

3400–X3 and 3400–18 units do not support Transmission Rate.

❖ Data Sync / Wake Up Selection †

❶ ENTER Program Mode

Scan the bar code below to program Data Sync / Wake Up Signal, then choose enable or disable.

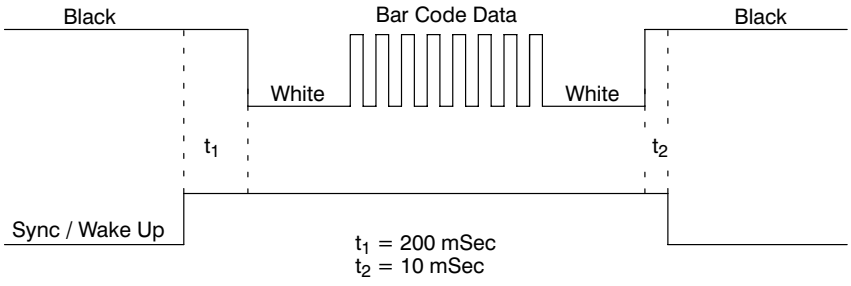
❷ Data Sync / Wake Up Signal

❸ Enable (Yes)

❸ Disable (No ✻)

❹ EXIT Program Mode

Default = Off (Disable / No). If enabled, the scanner generates a sync / wake up pulse when the trigger switch is activated to alert the decoder or portable terminal that digital bar code data will follow. The bar code data is transmitted after a 200 millisecond delay from the start of pulse.



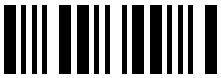
† **A unique wand emulation cable is required to support this feature. Refer to the IPWC Interface/Cable Matrix for the cable part number.**

3.11 Status Check

Use this section to request a 3400 Status Check. Scan the ENTER bar code to start Status Check.

❶ ENTER Status Check Mode

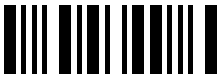
Scan the bar code below to show formats status. One format per line will be printed out.



❷ Show Formats

❶ ENTER Status Check Mode

Scan the bar code to show the software revision level. The software revision for retail terminals will be printed out as "3960XXXX." The software revision for non–retail terminals will be printed out as "3960–XX Rev. X.X." (The "X's" stand for the revision level.)



❷ Show Software Revision

There are no default settings for status check selections. After Formats and/or Software Revision have printed out, the 3400 will automatically EXIT programming mode.

3.12 SCANTEAM 3400 Cloning Instructions

Procedure:

1) Connect the 4 pin female mini–DIN on the cloning cable (p/n 42204559–01) to the power supply (PS5/C).
2) Connect the SOURCE* unit to one of the 10 pin modular connectors on the cloning cable.
3) Connect the DESTINATION* unit to the remaining 10 pin modular connector on the cloning cable. Scan the "Destination" cloning bar code.

"Destination" Cloning Bar Code

4) Scan the "SOURCE" cloning bar code. The unit's green LED will flash on and off. This process takes about 15 seconds.

"Source" Cloning Bar Code

5) When cloning is complete, the SOURCE* unit will flash its green LED on and off.
6) Unplug the DESTINATION* unit from the cloning cable.
7) To clone another unit, repeat steps 3 through 5.

***Note:** *The SOURCE unit is the unit containing the desired firmware. The SOURCE unit may be an original "Master" unit, or a unit that has been cloned from the "Master" unit. The DESTINATION unit is the unit which needs to be updated from the SOURCE or "Master" unit.*

Caution: DO NOT scan the "source" bar code unless you are going to clone a unit. If you do, you may lock up your unit and will have to turn the power off and back on.

SUPPORTED INTERFACE KEYS 4

4.1 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 SCANTEAM 3400 Hand Held CCD 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		Ã	+	6	-
Italy		\	+	6	-
Swiss		<	··	6	-
United Kingdom	[	´	]	6	-
Denmark	8	\	9	6	-
Norway	8	\	9	6	-
Spain	[	\	]	6	-

4.2 Supported Interface Keys

This section provides tables of Supported Interface Keys for the following terminal interfaces:

BULL BDS–7
DDC 3596 (122 Keyboard)
DEC VT 220/320/340
DEC VT 510/520/525
HARRIS H180/191 (122 Keyboard)
HDS–3200
HONEYWELL HDS–7
HP 700/92
IBM AT/PS/2 Compatibles
IBM XT and Compatibles
IBM 30, 50–80
IBM 3191/92, 3471/72, 3196/97, 3476/77 (122 Keyboard)
IBM 3196/97, 3476/77, 3491/92, 3471/72 (102 Keyboard)
MEMOREX TELEX (All) (88 Keyboard)
MEMOREX TELEX (All) (102 Keyboard)
TELEX (All) (122 Keyboard)
WYSE PC/AT
WYSE WY–30
WYSE WY–60/150 (ASCII/ANSI Keyboards)
WYSE WY–85/185

❖ Supported Interface Keys

IBM AT and PS/2 Compatibles, WYSE PC/AT

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER (KP)
STX	02	CAP LOCK
ETX	03	ALT make
EOT	04	ALT break
ENQ	05	CTRL make
ACK	06	CTRL break
BEL	07	CR/ENTER
BS	08	RESERVED
HT	09	TAB
LF	0A	RESERVED
VT	0B	TAB
FF	0C	DELETE
CR	0D	CR/ENTER
SO	0E	INSERT
SI	0F	ESCAPE
DLE	10	F11
DC1	11	HOME
DC2	12	PRINT
DC3	13	BACKSPACE
DC4	14	BACK TAB
NAK	15	F12
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys

DEC VT-510/520/525 PC Style Keyboard

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER (KP)
STX	02	CAP LOCK
ETX	03	RESERVED
EOT	04	RESERVED
ENQ	05	RESERVED
ACK	06	RESERVED
BEL	07	CR/ENTER
BS	08	RESERVED
HT	09	TAB
LF	0A	RESERVED
VT	0B	TAB
FF	0C	DELETE
CR	0D	CR/ENTER
SO	0E	INSERT
SI	0F	ESCAPE
DLE	10	F11
DC1	11	HOME
DC2	12	PRINT
DC3	13	BACKSPACE
DC4	14	BACK TAB
NAK	15	F12
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys

DEC VT-510/520/525 LK 411 Style Keyboard

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER (KP)
STX	02	PF1
ETX	03	PF2
EOT	04	PF3
ENQ	05	F11
ACK	06	F12
BEL	07	CR/ENTER
BS	08	PF4
HT	09	TAB
LF	0A	F13
VT	0B	F14
FF	0C	REMOVE
CR	0D	CR/ENTER
SO	0E	INSERT HERE
SI	0F	CURSOR UP
DLE	10	CURSOR LEFT
DC1	11	CURSOR DOWN
DC2	12	CURSOR RIGHT
DC3	13	RESERVED
DC4	14	RESERVED
NAK	15	HELP
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys
IBM XTs and Compatibles

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	CR/ENTER
STX	02	CAPS LOCK
ETX	03	RESERVED
EOT	04	RESERVED
ENQ	05	RESERVED
ACK	06	RESERVED
BEL	07	CR/ENTER
BS	08	RESERVED
HT	09	TAB
LF	0A	RESERVED
VT	0B	TAB
FF	0C	DELETE
CR	0D	CR/ENTER
SO	0E	INSERT
SI	0F	ESCAPE
DLE	10	RESERVED
DC1	11	HOME
DC2	12	PRINT
DC3	13	BACKSPACE
DC4	14	BACK TAB
NAK	15	RESERVED
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys

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

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER
STX	02	F11
ETX	03	F12
EOT	04	F13
ENQ	05	F14
ACK	06	F15
BEL	07	NEW LINE
BS	08	F16
HT	09	F17
LF	0A	F18
VT	0B	TAB/FIELD FORWARD
FF	0C	DELETE
CR	0D	FIELD EXIT/NEW LINE
SO	0E	INSERT
SI	0F	F19
DLE	10	ERROR RESET
DC1	11	HOME
DC2	12	F20
DC3	13	BACKSPACE
DC4	14	BACKFIELD/BACK TAB
NAK	15	F21
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys

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

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER
STX	02	F11
ETX	03	F12
EOT	04	F13
ENQ	05	F14
ACK	06	F15
BEL	07	NEW LINE
BS	08	F16
HT	09	F17
LF	0A	F18
VT	0B	TAB/FIELD FORWARD
FF	0C	DELETE
CR	0D	FIELD EXIT
SO	0E	INSERT
SI	0F	CLEAR
DLE	10	ERROR RESET
DC1	11	HOME
DC2	12	PRINT
DC3	13	BACKSPACE
DC4	14	BACK TAB
NAK	15	F19
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys

Memorex Telex with 88 key keyboards

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER
STX	02	PF10
ETX	03	PF11
EOT	04	PF12
ENQ	05	RESERVED
ACK	06	RESERVED
BEL	07	NEW LINE
BS	08	FIELD FORWARD
HT	09	FIELD FORWARD
LF	0A	RESERVED
VT	0B	FIELD FORWARD
FF	0C	DELETE
CR	0D	NEW LINE
SO	0E	INSERT
SI	0F	ERASE
DLE	10	ERROR RESET
DC1	11	RESERVED
DC2	12	PRINT
DC3	13	BACK SPACE
DC4	14	BACK FIELD
NAK	15	RESERVED
SYN	16	PF1
ETB	17	PF2
CAN	18	PF3
EM	19	PF4
SUB	1A	PF5
ESC	1B	PF6
FS	1C	PF7
GS	1D	PF8
RS	1E	PF9
US	1F	HOME

❖ Supported Interface Keys

DEC VT 220/320/340/420†, HDS–3200,
WYSE WY–85/185,

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER
STX	02	PF1
ETX	03	PF2
EOT	04	PF3
ENQ	05	PF11
ACK	06	PF12
BEL	07	NEW LINE
BS	08	PF4
HT	09	TAB
LF	0A	F13
VT	0B	F14
FF	0C	REMOVE
CR	0D	NEW LINE
SO	0E	INSERT HERE
SI	0F	CURSOR UP
DLE	10	CURSOR LEFT
DC1	11	CURSOR DOWN
DC2	12	CURSOR RIGHT
DC3	13	DELETE
DC4	14	PRINT
NAK	15	F15
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

† This option only available on SCANTEAM 3400–X32.

❖ Supported Interface Keys
Bull BDS–7 (Honeywell HDS–7)

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	TRANSMIT
STX	02	RESERVED
ETX	03	RESERVED
EOT	04	RESERVED
ENQ	05	BACKTAB
ACK	06	RESERVED
BEL	07	CARRIAGE RETURN
BS	08	BACKSPACE
HT	09	TAB
LF	0A	F11
VT	0B	F12
FF	0C	DELETE CHARACTER
CR	0D	CARRIAGE RETURN
SO	0E	INSERT
SI	0F	CLEAR
DLE	10	ERROR RESET
DC1	11	HOME
DC2	12	DELETE LINE
DC3	13	ERASE EOP
DC4	14	ERASE EOF
NAK	15	INSERT LINE
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys
HP 700/92

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	ENTER
STX	02	CAPS
ETX	03	RESERVED
EOT	04	RESERVED
ENQ	05	RESERVED
ACK	06	RESERVED
BEL	07	RESERVED
BS	08	BACKSPACE
HT	09	TAB
LF	0A	RESERVED
VT	0B	RESERVED
FF	0C	RESERVED
CR	0D	RETURN
SO	0E	RESERVED
SI	0F	RESERVED
DLE	10	HOME
DC1	11	RESERVED
DC2	12	RESERVED
DC3	13	RESERVED
DC4	14	RESERVED
NAK	15	CLEAR SCREEN
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	ESCAPE
FS	1C	F6
GS	1D	F7
RS	1E	F8
US	1F	RESERVED

❖ Supported Interface Keys

ASCII/ANSI keyboards for WYSE WY–60/150

Supported Interface Keys		*Key Function*
NUL	00	RESERVED
SOH	01	NEW LINE
STX	02	INSERT/PF1
ETX	03	DELETE/PF2
EOT	04	CLEAR/PF3
ENQ	05	F11
ACK	06	F12
BEL	07	NEW LINE
BS	08	REPLACE/PF4
HT	09	TAB FORWARD
LF	0A	F13
VT	0B	F14
FF	0C	F15
CR	0D	NEW LINE
SO	0E	INSERT
SI	0F	CURSOR UP
DLE	10	CURSOR LEFT
DC1	11	CURSOR DOWN
DC2	12	CURSOR RIGHT
DC3	13	BACKSPACE
DC4	14	PRINT
NAK	15	F16
SYN	16	F1
ETB	17	F2
CAN	18	F3
EM	19	F4
SUB	1A	F5
ESC	1B	F6
FS	1C	F7
GS	1D	F8
RS	1E	F9
US	1F	F10

❖ Supported Interface Keys
WYSE WY–30

Supported Interface Keys		*Key Function*
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	BACKSPACE
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)

FULL ASCII CODE 39 BAR CODE CHART

%U (NUL)

$H (BS)

$A (SOH)

$I (HT)

$B (STX)

$J (LF)

$C (ETX)

$K (VT)

$D (EOT)

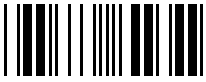
$L (FF)

$E (ENQ)

$M (CR)

$F (ACK)

$N (SO)

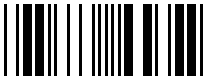


$G (BEL)

$O (SI)

$P (DLE)

$X (CAN)

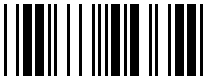


$Q (DC1)

$Y (EM)

$R (DC2)

$Z (SUB)

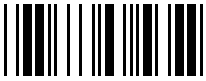


$S (DC3)

%A (ESC)

$T (DC4)

%B (FS)



$U (NAK)

%C (GS)

$V (SYN)

%D (RS)

$W (ETB)

%E (US)

PRODUCT SPECIFICATIONS AND PINOUTS 5

5.1 Environmental Specifications

parameter	*specification*
Operating Temperature Storage Temperature	32° F to 122° F [0°C to 50°C] –40° F to 158° F [–40°C to 70°C]
Humidity	0% to 95% RH noncondensing
Barometric Pressure	101,000 to 69,000 Pascals [Sea level to 3,000 meters]
Mechanical Shock	Functional after ten 5ft. [1.5m] drops
ESD Sensitivity	Functional after 15KV discharge
Ambient Illumination	Standard 3400LR and 3400HD = 10,000 lux 3400-18 = 3,000 lux
Modular Connector Life	750 insertions/disconnections

5.2 Electrical Specifications

parameter	*specification*	
Operating Voltage	5 VDC ±10%	
5VDC Input *only*	**50 Scans/Sec**	**110 Scans/Sec**
Current Draw (3400–X0)	80mA	N/A
Current Draw (3400–X1)	N/A	180mA
Current Draw (3400–X2)	N/A	170mA
Current Draw (3400–X3)	N/A	170mA
Current Draw (3400–18)	N/A	180mA
Standby Current (3400–1X)	100µA	
In–Rush Current	400mA maximum	
Power Supply Noise Rejection	100mV peak to peak, from 10 to 100KHz	
Acquisition Time (Trigger to Output)	100msec maximum	
Mean Time Between Failure (MTBF)	50,000 hours (for ground benign)	

5.3 Scanner Performance

parameter	*specification*
Pitch Angle	±7 degrees
Skew Angle	±30 degrees
Minimum Reflective Difference (MRD)	37.5%
Scan Rate	112 or 50 scans per second (set at factory)
Horizontal Scan Velocity	0 to 5 inches [127mm] per second
Illumination	660 nm Visible Red Light Emitting Diodes
Resolution (3400HD)	4.0 mil [0.102mm] code density minimum
(3400LR)	7.0 mil [0.178mm] code density minimum

5.4 Pinouts

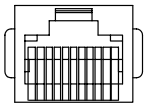
❖ Laser Output *only*

3400–X0

(Laser Compatible Bar Image)

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

10 Pin RJ41 Modular Connector



Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	Braid	N/C	Cord Shield
3	Blue	Lasen	Laser Enable
4	Black	Ground	Supply Ground
5	Orange	Acknowledge	Turn on Good Read LED or Beeper
6	Green	Digout	Digital Bar Code Data Output
7	Red	+5VDC	5 Volt Power Connection
8	White	Trigger	Trigger Signal to Decoder
9	Gray	SOS	Start of Scan
10	N/C		

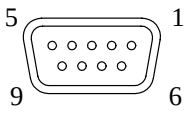
❖ Standard Laser Cable

for 3400–X0

(Laser Compatible Bar Image)

Interface cables normally supplied with SCANTEAM 3400–X0 scanners are terminated with a 9 pin Type D (squeeze–to–release) connector that is compatible with all Welch Allyn terminals. See chart below.

Terminating Connector:
Standard 9 Pin
Squeeze–to–Release Connector



Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	Grey	SOS	Start of Scan
2	Green	Data	Digital Bar Code Signal Output
3	Orange	ACK	Acknowledge – Good Read to Scanner
4	Red	♦ +5VDC or no connection	Power to Scanner
5	White	Trigger	Trigger to Ground
6	Blue	Laser ON	Scan Enable
7	Black	GRND	Ground
8	Drain	Shield	Cord Shield Only
9	Red	♦ +12VDC or no connection	Power to Scanner

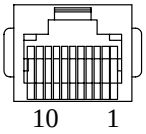
(♦) *Pins 4 and 9 are populated depending on power supply voltage option.*

❖ Keyboard Wedge

3400–X1, 3400–X2, 3400–18

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

10 Pin RJ41 Modular Connector



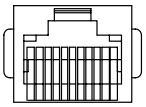
Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	Braid	N/C	Cord Shield
3	Blue	Prog 1	
4	Black	Ground	Supply Ground
5	Orange	Tclock	Terminal Clock
6	Green	Tdata	Terminal Data
7	Red	+5VDC	5 Volt Power Connection
8	White	Kdata	Keyboard Data
9	Gray	Kclock	Keyboard Clock
10	N/C		

❖ Wand Emulation

3400–X1, 3400–X2

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

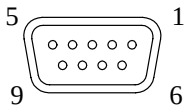
10 Pin RJ41 Modular Connector



Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	Braid	N/C	Cord Shield
3	Blue	+5VDC	5 Volt Power Connection
4	Black	Ground	Supply Ground
5	Not Used	N/C	
6	Green	Barcode	Bar Code Data Output
7	Red	+5VDC	5 Volt Power Connection
8	N/C		
9	N/C		
10	N/C		

The chart below shows the terminating connector pinouts for the Wand Emulation interface cable.

Terminating Connector:
Standard 9 Pin
Squeeze–to–Release Connector



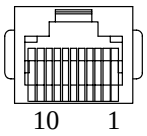
Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
2	Green	Barcode	Bar Code Data Output
4	Red	+5VDC	5 Volt Power Connection
7	Black	Ground	Supply Ground
8	Drain	Shield	Cord Shield Only

❖ IBM 4683 Port 5B and Port 17

3400–X1 only

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

10 Pin RJ41 Modular Connector



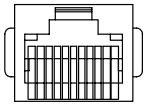
Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	Braid	N/C	Cord Shield
3	Blue	Prog 1	
4	Black	Ground	Supply Ground
5	Orange	NC	No connection
6	Green	NC	No connection
7	Red	+5VDC	5 Volt Power Connection
8	White	$\overline{\text{RX/TX}}$	Inverted Data to and from Scanner
9	Gray	RX/TX	Data to and from Scanner
10	N/C		

❖ RS–232

3400–X1, 3400–X2 (TTL), 3400–18 (TTL) and 3400–X3 (True)

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

10 Pin RJ41 Modular Connector



Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	Braid	N/C	Cord Shield
3	Blue	Prog 1	
4	Black	Ground	Supply Ground
5	Orange	RXD	Receive Data – Serial Data to Scanner
6	Green	TXD	Transmit Data – Serial Data from Scanner
7	Red	+5VDC	5 Volt Power Connection
8	White	RTS	Request to Send Data
9	Gray	CTS	Clear to Send Data
10	N/C		

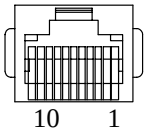
❖ Laser Output

3400–X1, 3400–X2

(Laser Compatible Bar Image, Low Power)

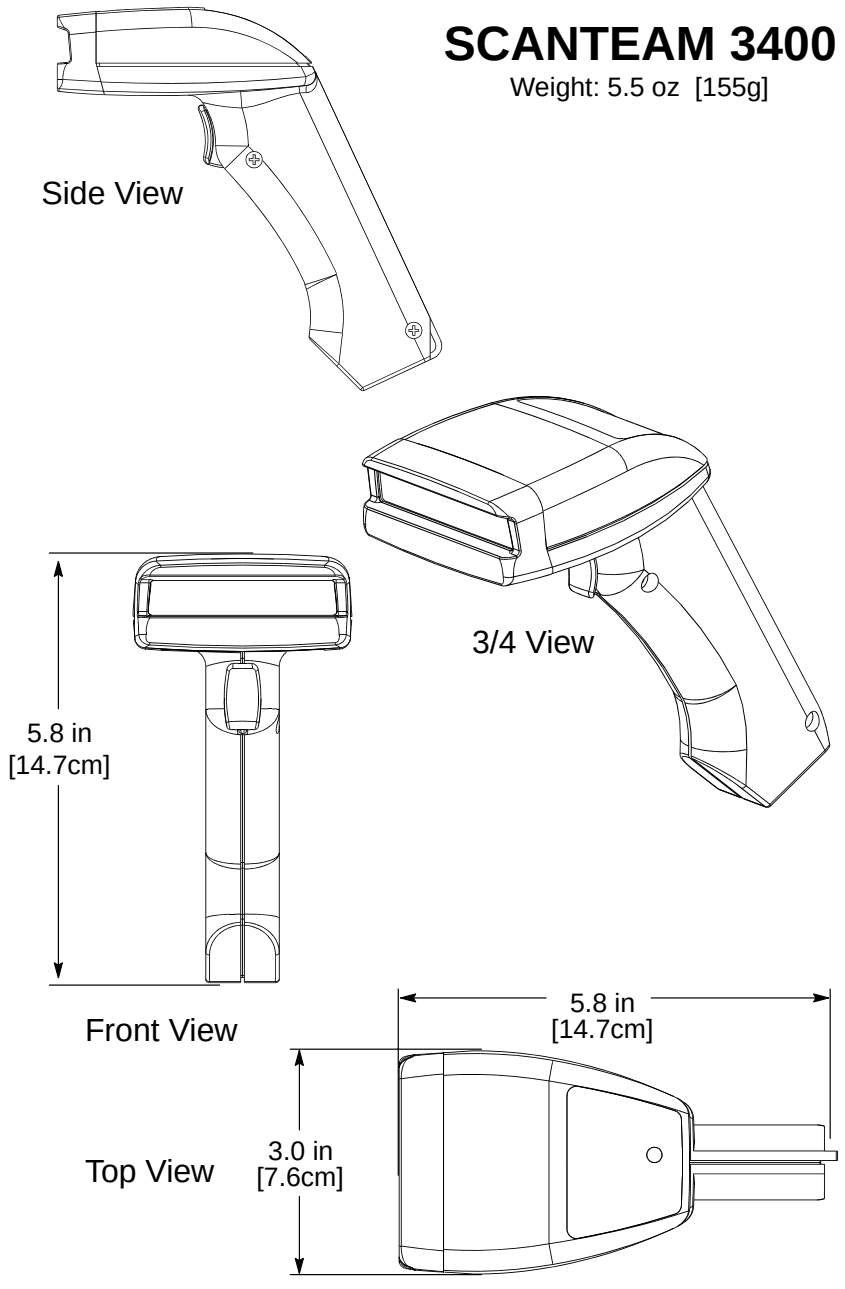
Conventional laser data format provided at 10 pin RJ41 modular connector (in scanner handle) with low power feature. See chart below.

10 Pin RJ41 Modular Connector



Pin	*Standard Welch Allyn Color Code*	*Signal*	*Function*
1	N/C		
2	White	Trigger	Trigger Signal to Decoder
3	Blue	Lasen	Laser Enable
4	Black	Ground	Supply Ground
5	Orange	Acknowledge	Turn on Good Read LED or Beeper
6	Green	Digout	Digital Bar Code Data Output
7	Red	+5VDC	5 Volt Power Connection
8	Not Used	N/C	
9	Gray	SOS	Start of Scan
10	N/C		

5.5 General Dimensions



MAINTENANCE AND TROUBLESHOOTING GUIDE 6

6.1 Maintenance

The SCANTEAM 3400 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 3400 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.

⚠ Caution:

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.

❖ Inspecting Cords and Connectors

Inspect the 3400'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 below....

❖ Replacing the Interface Cable

The standard interface cable is attached to the 3400 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:

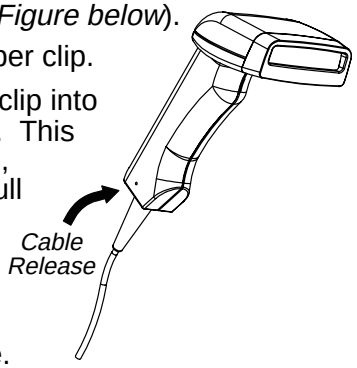
❶ Turn the power to the host system OFF.

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.

❖ Examining the Scanner Housing

Routinely examine the 3400 housing for signs of damage. A damaged housing may cause the internal components to move and may result in a malfunctioning scanner.

6.2 Troubleshooting

The SCANTEAM 3400 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 3400 isn't illuminated, check that: ❶ the cable is connected properly. ❷ the host system power is on (if external power isn't used). ❸ the trigger works (if the 3400 is equipped with one). *If the 3400 turns on when trigger is pulled, the 3400 is in Manual trigger mode. To change to Auto trigger mode go to Section 3.9, Trigger Mode Selection.*

Is the 3400 having trouble reading your bar codes?
If the 3400 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 3400 or the decoder the 3400 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 3400 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 Section 3.2, Suffix Selection.*)

Does the 3400 read your bar code incorrectly?

If the 3400 reads a bar code (*one beep for a good read*), but the bar code is not displayed correctly on the host screen:

❶ The 3400 may not be programmed for the appropriate terminal interface.

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

Reprogram the 3400 with the correct "Plug and Play" or Terminal Selection bar code (*see Section 2.2, 2.3*).

❷ The 3400 may not be programmed to output your bar code properly.

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

Reprogram the 3400 with the proper Symbology selections (*see Sections 3.5 and 3.6*).

The 3400 won't read your bar code at all?

If the 3400 will not read your bar code:

❶ Try scanning the Sample Bar Codes (*found inside the back cover*).

If the 3400 reads the Sample Bar Codes, check that your bar code is readable. (*See "Is the 3400 having trouble reading your bar codes" on the previous page.*)

Verify that your bar code symbology is enabled. (*See Sections 3.5 and 3.6.*)

If the 3400 does not read the Sample Bar Codes either, continue to #2, below...

❷ If the 3400 won't read the Sample Bar Codes either:

Verify that the bar code symbologies are enabled. (*See Sections 3.5 and 3.6.*)

Scan ENTER, DEFAULT, and EXIT on the first pages of Sections 3.5 and 3.6 to enable most symbologies. (*MSI and Plessey will have to be enabled individually in Section 3.6.*)

To Reset Factory Settings

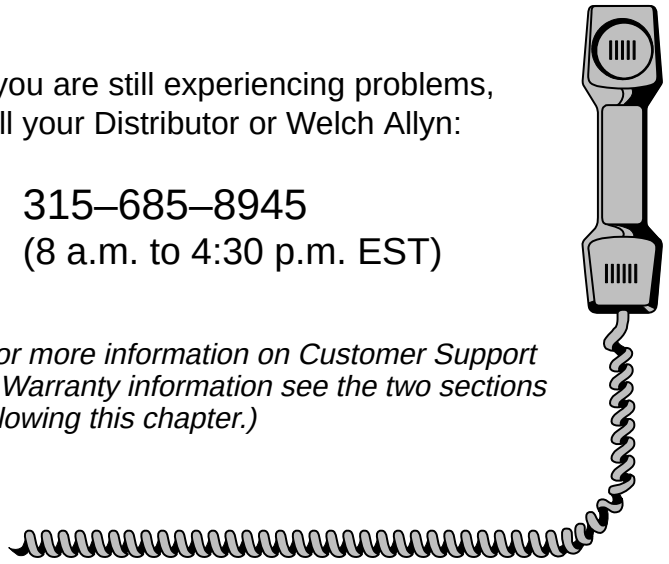
If you aren't sure *what* programming options have been set up in the 3400, or you've changed some options and now want the factory settings restored, see Section 2.6 and scan the "Factory Default Settings" bar code.

If All Else Fails...

If you are still experiencing problems, call your Distributor or Welch Allyn:

315–685–8945
(8 a.m. to 4:30 p.m. EST)

(For more information on Customer Support or Warranty information see the two sections following this chapter.)



CUSTOMER SUPPORT 7

7.1 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 #).

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

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

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

European Office
Welch Allyn, Ltd.
28 Sandyford Office Park
Foxrock
Dublin 18
Ireland

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

U.K. Office
1st Floor
Dallam Court Dallam Lane
Warrington, Chesire WA2 7LT
England

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.

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

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

7.2 Technical Support

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

North America:

Telephone: (315) 685–8945 (8am to 4:30pm EST)

Europe:

United Kingdom

Telephone: Int+44 1925 240055

Ireland

Telephone: Int+353–1295–0750

Asia:

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

LIMITED WARRANTY A

Welch Allyn warrants its products to be functional and free from manufacturing defects at the time of delivery. Welch Allyn warrants that it will replace or repair, at its option, any SCANTEAM 3400 that fails to perform according to its published specifications during a period of three (3) years from the time of shipment by Welch Allyn (or from a Welch Allyn authorized distributor) to the user.

Any attempt on the part of the user to disassemble or service the scanner will void the warranty.

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

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 PRODUCT HEREIN SOLD.

IN NO EVENT SHALL WELCH ALLYN 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.

HEX ASCII (CONVERSION) CHART B

BIT NUMBERS								0_0	0_0	0_1	0_1	1_0	1_0	1_1	1_1
b_7	b_6	b_5	b_4	b_3	b_2	b_1	COLUMN → / ROW ↓	0	1	2	3	4	5	6	7
			0	0	0	0	0	NUL	DLE	SP	0	@	P	‘	p
			0	0	0	1	1	SOH	DC1	!	1	A	Q	a	q
			0	0	1	0	2	STX	DC2	”	2	B	R	b	r
			0	0	1	1	3	ETX	DC3	#	3	C	S	c	s
			0	1	0	0	4	EOT	DC4	$	4	D	T	d	t
			0	1	0	1	5	ENQ	NAK	%	5	E	U	e	u
			0	1	1	0	6	ACK	SYN	&	6	F	V	f	v
			0	1	1	1	7	BEL	ETB	’	7	G	W	g	w
			1	0	0	0	8	BS	CAN	(	8	H	X	h	x
			1	0	0	1	9	HT	EM	)	9	I	Y	i	y
			1	0	1	0	A	LF	SUB	*	:	J	Z	j	z
			1	0	1	1	B	VT	ESC	+	;	K	[	k	{
			1	1	0	0	C	FF	FS	,	<	L	\	l	|
			1	1	0	1	D	CR	GS	–	=	M	]	m	}
			1	1	1	0	E	SO	RS	.	>	N	^	n	~
			1	1	1	1	F	SI	US	/	?	O	_	o	DEL

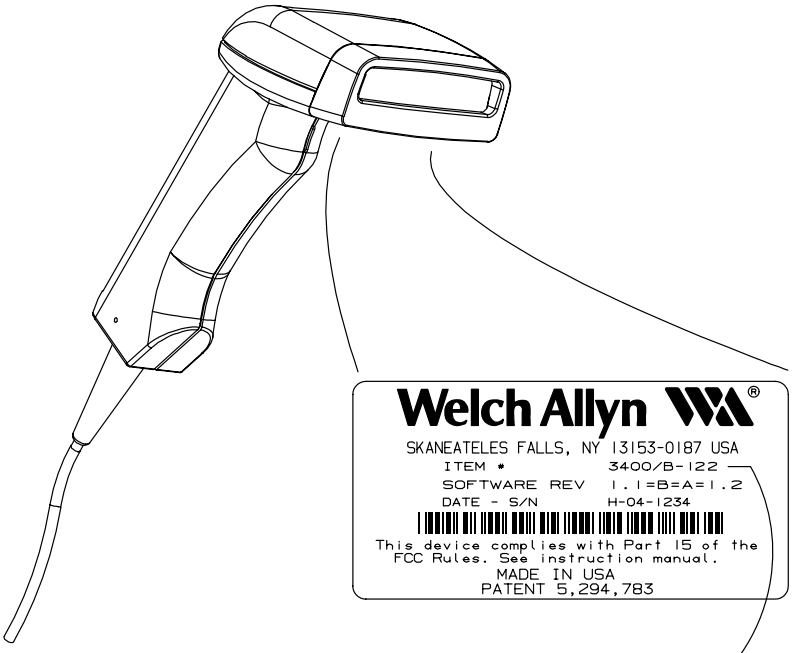
CONTROL FUNCTION DEFINITIONS

NUL	Null, or all zeros	VT	Vertical tabulation	SYN	Synchronous idle
SOH	Start of heading	FF	Form feed	ETB	End of transmission block
STX	Start of text	CR	Carriage Return	CAN	Cancel
ETX	End of text	SO	Shift out	EM	End of medium
EOT	End of transmission	SI	Shift in	SUB	Substitute
ENQ	Enquiry	DLE	Data link escape	ESC	Escape
ACK	Acknowledge	DC1	Device control 1	FS	File separator
BEL	Bell, or alarm	DC2	Device control 2	GS	Group separator
BS	Backspace	DC3	Device control 3	RS	Record separator
HT	Horizontal tabulation	DC4	Device control 4	US	Unit separator
LF	Line Feed	NAK	Negative acknowledge	SP	Space
				DEL	Delete

3400/B AND 3400LR/C INFORMATION C

The following pages describe the 3400/B and 3400LR/C scanners. These scanners use the same programming methods detailed in this User's Guide, but their identification labels, performance, and specifications differ from the 3400LR and 3400HD.

C.1 Scanner Identification (3400/B)



SCANTEAM 3400/B Identification Label

ITEM# 3400/B–122
❶ ❷❸❹

Scan Rate ❶
B = 100 Scans/Second
E = 50 Scans/Second

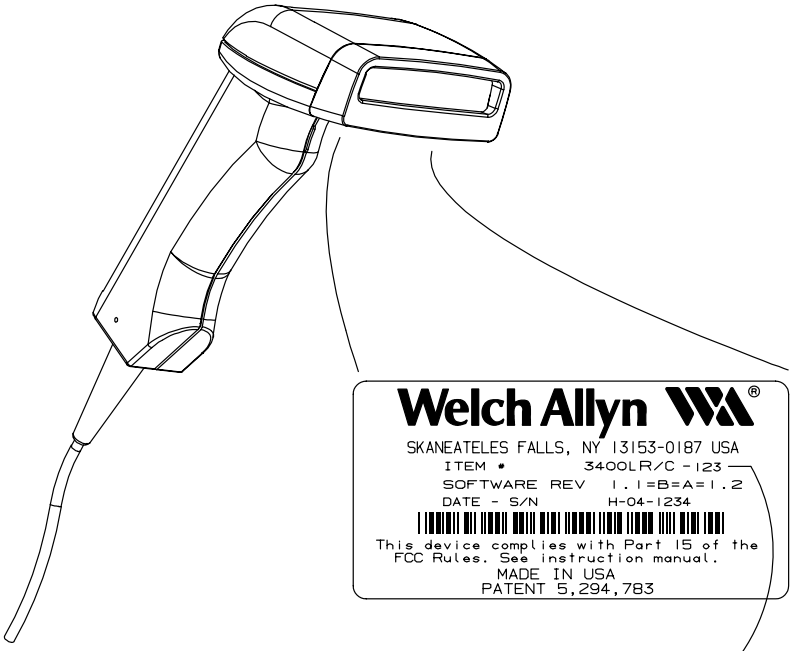
Trigger Option ❷
0 = Auto Trigger
1 = Manual Trigger

Focal Distance ❹
1 = reads high density code in contact
2 = reads low density code from 0 to 4” [10cm]

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*	•

C.2 Scanner Identification (3400LR/C)



SCANTEAM 3400LR/C Identification Label

ITEM# 3400LR/C–123
❶ ❷❸❹

Scan Rate ❶
C = 120 Scans/Second

Trigger Option ❷
0 = Auto Trigger
1 = Manual Trigger

Focal Distance ❹
3 = reads medium density codes from 0–6”

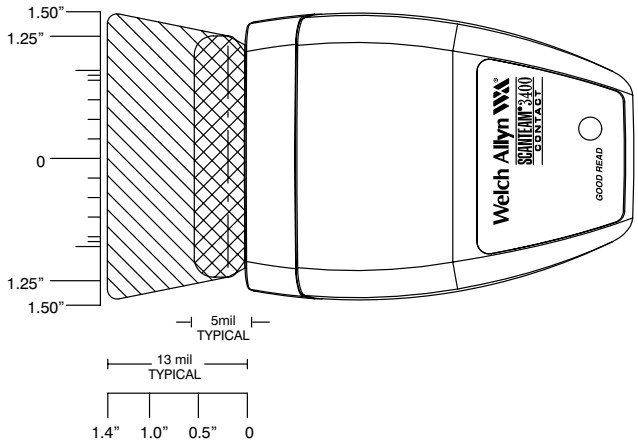
Interface Option ❸

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

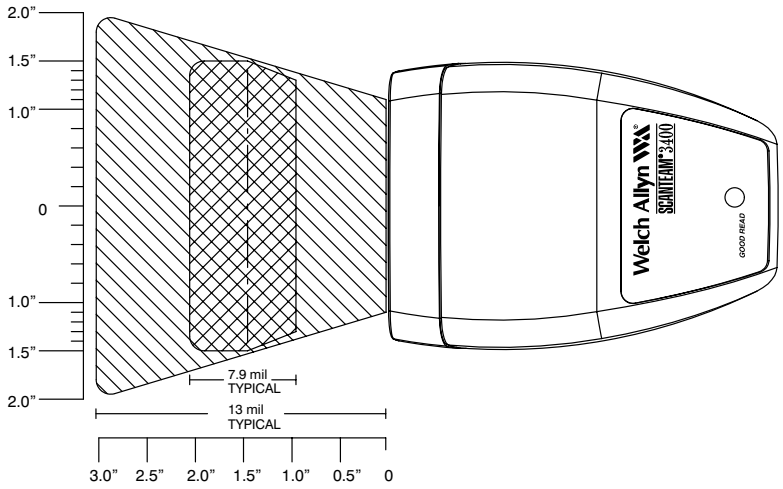
C.3 Scanning Performance

The following figures illustrate the 3400/B and 3400LR/C's Scanner Performance or depth of field. Depth of field is the range of distances over which a scanner can accurately digitize a bar code. This distance is measured from the front of the scanner at the exit window and is dependent on code size, contrast, and quality. Depth of field is equal to the far distance minus the near distance (Δ distance).

The first figure shows the depth of field for a contact scanner and the second figure shows the depth of field for a non–contact scanner.



SCANTEAM 3400 Depth of Field
Contact Scanner



SCANTEAM 3400 Depth of Field
Non–Contact Scanner

C.4 Environmental Specifications

parameter	*specification*
Operating Temperature Storage Temperature	32° F to 122° F [0°C to 50°C] –40° F to 158° F [–40°C to 70°C]
Humidity	0% to 95% RH noncondensing
Barometric Pressure	101,000 to 69,000 Pascals [Sea level to 3,000 meters]
Mechanical Shock	Functional after ten 5ft. [1.5m] drops
ESD Sensitivity	Functional after 15KV discharge
Ambient Illumination	3,000 lux (in contact with bar code)
Modular Connector Life	750 insertions/disconnections

C.5 Electrical Specifications (3400–XX1, XX2)

parameter	*specification*	
Operating Voltage	5 VDC ±10%	
5VDC Input *only*	**50 Scans/Sec**	**100 Scans/Sec**
Current Draw (3400–X0X)	55mA	80mA
Current Draw (3400–X1X)	175mA	200mA
Current Draw (3400–X2X)	125mA	150mA
Current Draw (3400–X3X)	165mA	190mA
Standby Current (3400/X–1XX)	100µA	
In–Rush Current	400mA maximum	
Power Supply Noise Rejection	100mV peak to peak, from 10 to 100KHz	
Acquisition Time (Trigger to Output)	100msec maximum	
Mean Time Between Failure (MTBF)	50,000 hours (for ground benign)	

C.6 Electrical Specifications (3400LR/C)

parameter	*specification*
Operating Voltage	5 VDC ±10%
5VDC Input *only* Current Draw (3400LR/C–X03) Current Draw (3400LR/C–X13) Current Draw (3400LR/C–X23) Current Draw (3400LR/C–X33)	**120 Scans/Sec** 180mA 240mA 230mA 230mA
Standby Current (3400LR/C–1X3)	100µA
In–Rush Current	400mA maximum
Power Supply Noise Rejection	100mV peak to peak, from 10 to 100KHz
Acquisition Time (Trigger to Output)	100msec maximum
Mean Time Between Failure (MTBF)	50,000 hours (for ground benign)

C.7 Scanner Performance (3400–XX1, XX2)

parameter	*specification*
Pitch Angle	±7 degrees
Skew Angle	±30 degrees
Minimum Reflective Difference (MRD)	37.5%
Scan Rate	100 or 50 scans per second (factory selectable)
Field Width	2.2 in [55mm] at near contact to 3.0 in [76mm] at 1 in [25mm] from scanner's nose
Horizontal Scan Velocity	0 to 5 inches [127mm] per second
Illumination	660 nm Visible Red Light Emitting Diodes (LED) with focusing reflector
Working Distance (3400–XX1)	Near contact for high density code
Working Distance (3400–XX2)	From contact to 4 in [10cm] for low to medium density code
Resolution (3400–XX1) (3400–XX2)	5.0 mil [0.127mm] code density minimum 7.0 mil [0.178mm] code density minimum

C.8 Scanner Performance (3400LR/C)

parameter	*specification*
Pitch Angle	±7 degrees
Skew Angle	±30 degrees
Minimum Reflective Difference (MRD)	37.5%
Scan Rate	120 scans per second
Field Width	2.2 in [55mm] at near contact to 5.0 in [127mm] at 4 in [101.6mm] from scanner's nose
Horizontal Scan Velocity	0 to 5 inches [127mm] per second
Illumination	660 nm Visible Red Light Emitting Diodes (LED) with focusing reflector
Working Distance (3400LR–XX3)	From contact to 6 in [15.2cm] for medium density code
Resolution (3400LR–XX3)	7 mil [0.178mm] code density minimum

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P

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S

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❖ SAMPLE BAR CODES ❖

Codabar

0013557900

Code 39

TEST–SHEET

Interleaved 2 of 5

1234567890

Code 2 of 5

123456

Matrix 2 of 5

6543210

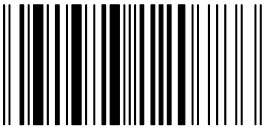
Code 11

11223344

Code 128

CODE 128

UPC–A



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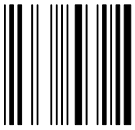

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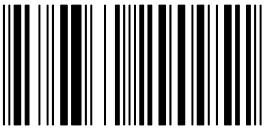

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MSI †

44332211

Plessey †

9876

† *Programming the "DEFAULT All Retail Selections" doesn't enable these symbologies.*

3400/DO/UG Rev J

Welch Allyn

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