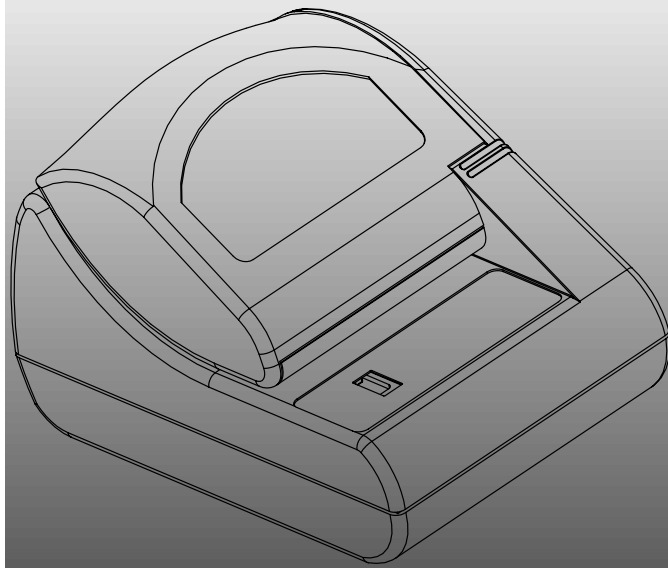


**Welch Allyn ®**  
**SCANTEAM® 8400**

Check Reader



**Programming Menu**

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**USE THIS PAGE**

■ As a general overview of the programming menu. The programming menu consists of two basic components as shown below.

**Welch Allyn **WA**® Programming Menu** **OUTPUT PARAMETERS**

**USE THIS PAGE**

- (1) To select the page to be programmed (\*) values.
- (2) To set beeper volume and tone.
- To program keyboard style and layout.
- To program delay functions.

selections	Scan	variables	Scan
BEEPER VOLUME/TONE	I	0000-FFFF (0180)	
KEYBOARD STYLE	II	Primary A* Secondary B Tertiary C Quaternary D	
KEYBOARD LAYOUT III	III	Layout 1 A* Layout 2 B Layout 3 C	
INTERCHARACTER DELAY	VII	x5ms	*0000-9999
INTERFUNCTION DELAY	VIII	x5ms	*0000-9999
INTERMESSAGE DELAY	IX	x5ms	*0000-9999

**Notes:**  
 (1) Designates DEFAULT selections.  
 (2) The following are suggested Beeper Volume/Tone settings:  
 High 0180  
 Medium 00F0  
 Low 0080  
 Off 0000

**SAMPLE MENU PAGE**

**Welch Allyn **WA**®** **SCANTEAM 8400**

Programming Checks

I

**MENU PAGE**

- Each menu page represents one section of the programming menu. Use individual menu pages in combination with the MICR encoded programming checks to program the check reader.
- **USE THIS PAGE** – is a summary of the programming options (parameters) of each menu page.
- **ENTER** – Each menu page has its own unique ENTER code which reflects the name of the menu page; feed through the equivalent programming check to activate desired menu page.
- **DEFAULT** – Most menu pages have a DEFAULT MICR encoded check which allows the user to independently default menu pages to asterisk (\*) values without affecting the rest of the programming menu. Default values can be easily selected from the desired menu pages by reading the MICR encoded check sequence ENTER, DEFAULT, EXIT. Individual defaults for a specific selection can be made by reading ENTER, ROMAN NUMERAL, DEFAULT, EXIT.
- **EXIT** – To move from one menu page to another, read the EXIT programming check. The EXIT programming check must be read to end programming selection on each menu page before beginning to program on a different menu page.
- **SELECTIONS/VARIABLES** – Lists all of the options available on each menu page. Following each option are symbols in shaded areas. These symbols correspond to the MICR encoded programming checks.
- **NOTES** – are provided to call out any unusual situations and/or refer you to necessary information or examples elsewhere in the menu or manual.

**MENU PAGE FACING (Not Shown)**

- The page facing the menu is often used to supplement or clarify the material presented on the front of each menu page. The information and examples found here are specific to the individual menu page and contain, in some cases, charts and diagrams that must be used in order to determine the correct programming sequence.

**MICR ENCODED PROGRAMMING CHECKS**

- The MICR encoded programming checks are assigned to a ROMAN NUMERAL, DIGIT, LETTER or YES/NO symbol. These checks correspond to the symbols in shaded areas on the menu pages and are read in various combinations to enter programming sequences to the check reader. Programming checks are meaningless unless an ENTER programming check is first read. When an ENTER programming check is read, the programming checks become specific to that menu page and remain so until the EXIT programming check is read or another menu page is selected.

**ESCAPE**

- Feed through the ESCAPE programming check to cancel the current programming sequence. All other parameters will remain as they were.

# PROGRAMMING INSTRUCTIONS

SCANTEAM 8400 Programming Menu

## Getting Started

The SCANTEAM 8400 is programmed using MICR (Magnetic Ink Character Recognition) encoded programming checks, or by downloading programming parameters from a bulletin board system.

**Note:** *Welch Allyn distributes firmware through a dial-up modem connection to Welch Allyn's Bulletin Board System or via diskette. New firmware may be loaded into a SCANTEAM 8400 through Welch Allyn's PC-based software tool called "Quick\*Load". Quick\*Load may also be used to transfer parameters from one SCANTEAM 8400 to another. Please refer to your Quick\*Load User's Guide for complete directions on using Quick\*Load with your 8400.*

These Programming Instructions walk you through the steps for programming the SCANTEAM 8400 using single programming checks.

If you have multiple SCANTEAM 8400s, you can program one 8400, then download the programming to the other 8400s. This method is called "cloning" and is described on page 6.

Regardless of the method you use to program your SCANTEAM 8400, you will need the following items:

- SCANTEAM 8400 Check Reader
- Power Source (PS120/9V wall transformer if the SCANTEAM 8400 is *not* powered by the host)

**Note:** *Please refer to page 7 for a listing of Welch Allyn part numbers for products mentioned in these instructions.*

To program your SCANTEAM 8400 using programming checks, you will need one or both of the following items:

- SCANTEAM 8400 Programming Checks (see part number, page 7).

If you are going to clone the firmware (including any programmed parameters) from one SCANTEAM 8400 to another 8400, you will need the following items:

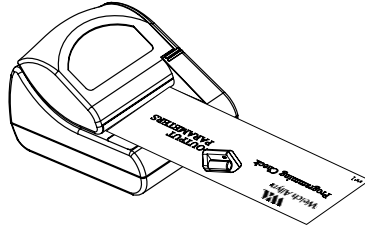
- Cloning cable and Clone Check. (The Clone Check is included in the packet of SCANTEAM 8400 Programming Checks.)

# PROGRAMMING INSTRUCTIONS

## Continued

SCANTEAM 8400 Programming Menu

### Using Single Programming Checks



The single programming checks are used in conjunction with the programming pages which follow these instructions.

The following is an example of programming the 8400 to output a Carriage Return suffix for UPC-A symbology using programming checks.

**Note to CMC-7 users:** *If the SCANTEAM 8400 has been programmed to decode only CMC-7 characters, you must first set it to decode the E-13B characters on the Programming Checks. To do so, feed through the "CMC-7 Conversion" check. The SCANTEAM 8400 temporarily decodes E-13B characters until the End Programming check has been read, then the SCANTEAM 8400 reverts to decoding only CMC-7 characters.*

### Programming Example

1. Turn to page 11 and review the Output Parameters programming table.

Note that every option in the Programming Menu begins with an "Enter" code. Page 11 shows the Output Parameters Enter code. The programming check with the option name (e.g., Output Parameters Enter) is your "Enter" code.

To program a carriage return suffix (for UPC-A symbology), you must use the Output Parameters Enter, XI, 6, 3, 0, D, F, F, and EXIT checks.

2. Have available the programming checks for Output Parameters Enter, XI, 6, 3, 0, D, F, Exit, and End Programming.
3. Feed the Output Parameters Enter check into the check reader.

After you hear 2 beeps and the LED displays a **P**, the SCANTEAM 8400 is ready to accept the variables for your output parameters.

4. Feed through the XI, 6, 3, 0, and D checks.

**Note:** *Each time a variable check is fed through, you should hear a single beep from the reader. If an error occurs during programming, you will not get an error beep sequence (3 beeps) until the End of Programming check has been read.*

5. Feed the F check through two times.
6. Feed through the Exit check.
7. Feed through the End Programming check.

Two beeps and an **O** in the LED display means the programming was successful.

If you hear 3 beeps after feeding through the End Programming check, a programming error has occurred. Begin the programming again, starting with the Output Parameters check.

Using the method just described, program the parameters necessary for your SCANTEAM 8400. Begin at page 9 if you need to program the Terminal ID.

# PROGRAMMING INSTRUCTIONS

## Continued

SCANTEAM 8400 Programming Menu

### Cloning Instructions

The SCANTEAM 8400 check reader includes a cloning capability which provides a way to download the memory contents from a "source" 8400 to any additional ("destination") SCANTEAM 8400s.

1. Program the SCANTEAM 8400 source reader using any programming method.
2. Connect the cloning cable (part number 42204434-01) to the RJ-11 port on the 8400 source reader.
3. Power up the 8400 source reader.
4. Plug the other end of the cloning cable into the RJ-11 port on the 8400 destination reader.

The power will be carried through the cable to power up the destination SCANTEAM 8400 automatically.

5. Feed the **Clone Check** through the 8400 source reader.

The 8400 source reader will emit a single beep. The source 8400 sends (512) 64 byte blocks of information followed by a block check character. This takes approximately 15 seconds. After 15 seconds, you will hear 3 beeps from the 8400 source and a single beep from the 8400 destination reader. This indicates the programming was received by the 8400 destination reader. Disconnect the cable from the 8400 destination reader which is now ready for operation.

**Note:** *ROM and RAM tests are performed in the destination reader. If the destination 8400 fails the ROM and/or RAM tests, you will hear three beeps (five if both tests fail).*

If you have additional SCANTEAM 8400 check readers to clone, you do not have to disconnect the 8400 source. Simply connect an 8400 destination reader to the cloning cable and run the Clone Check through the 8400 source reader. This method may be used to copy memory from the source reader to each destination reader.

# PROGRAMMING INSTRUCTIONS

Continued

SCANTEAM 8400 Programming Menu

## Welch Allyn Part Numbers

Item	Welch Allyn Part #
SCANTEAM 8400 Programming Checks (includes Clone Check)	8400/PC-2
SCANTEAM 8300 Cloning Cable, RJ11 to RJ11	42204434-01
Quick*Load User's Guide	QL/UG






# TERMINAL SELECTION




**USE THIS PAGE**

■ To program the 8400 for operation with one of the terminals listed below.

**8400**

  
Terminal Selection  
Enter  


selections	variables	
NCR	7052 Wedge	48
IBM	4683 (5B, 9B, & 17)	51
	PC, XT	01
	PS/2, 25, 30, 55SX, 70	02
	AT, PS/2 30-286, 50, 55SX, 60, 70, 80	03
RS-232 (PC COMM PORT)		50
AUX PORT 1		00

  
Exit  
End Programming  
  


**Notes:**

- (1) IMPORTANT — The appropriate cable must be used when interfacing the selected terminal.
- (2) No default setting exists for this page.

# OUTPUT PARAMETERS

SCANTEAM 8400 Information and Examples

## KEYBOARD STYLE 8400

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



Terminal	Primary	Secondary	Tertiary	Quaternary
IBM PC, PC/XT	XT	CAPS LOCK		
IBM PC/AT	AT	CAPS LOCK		
IBM PS2 (50-80)	NORM	CAPS LOCK		
NCR 7052	34 Key	56 Key	122 Key Caps On	122 Key Caps Off



## SYMBOLGY CHART



SYMBOLGY	Primary	ALT-A	ALT-B	ALT-C	CODE ID
UPC-A	63	83	A3	C3	c
EAN	64	84	A4	C4	d
CODE-39	62	82	A2	C2	b
Interleaved 2 of 5	65				e
CODE 128	6A	8A	AC	CA	j
MSR TRACK 1	78	98	B8	D8	x
MSR TRACK 2	79	99	B9	D9	y
MSR TRACK 3	7A	9A	BA	DA	z
HOST PORT	71				q
AUX PORT 1	72				r
AUX PORT 2	73				s
E13-B	74				t
CMC-7	75				u
AAMVA TRACK 1	58				X
AAMVA TRACK 2	59				Y
AAMVA TRACK 3	5A				Z
California TRACK 1	55				U
California TRACK 2	56				V
California TRACK 3	57				W
Universal	99				

**USE THIS PAGE**

- To default this page to asterisk (\*) values.
- To set beeper volume and tone.
- To program keyboard style and layout.
- To program 4683 I/O Port; OCIA, OCR, and wand emulation format selections.
- To program delay functions.

  
Output  
Parameters  
Enter  


  
Default  


selections		variables	
BEEPER VOLUME/TONE	<b>I</b>		0000–FFFF *(1919)
KEYBOARD STYLE	<b>II</b>	Primary	A*
		Secondary	B
		Tertiary	C
		Quaternary	D
KEYBOARD LAYOUT III (Keypad)	<b>III</b>	Layout 1 (Telephone)	A*
		Layout 2 (Calculator)	B
		Layout 3	C
4683 I/O PORT SELECTION	<b>IV</b>	Port 5B	A*
		Port 9B	B
		Port 17	C
		Port 5B/9B/17 Disable	D
INTERCHARACTER DELAY	<b>VII</b>	x5ms	*0000–9999
INTERFUNCTION DELAY	<b>VIII</b>	x5ms	*0000–9999
INTERMESSAGE DELAY	<b>IX</b>	x5ms	*0000–9999

**Notes:**

- (1) \* Designates DEFAULT selections.
- (2) The following are suggested Beeper Volume/Tone settings:
 

High	1919
Medium	4949
Low	0C0C
Off	0000

# OUTPUT PARAMETERS continued

## INTERCHARACTER DELAY INTERFUNCTION DELAY INTERMESSAGE DELAY

Intercharacter delay is the time delay (x5ms) between data characters output by the 8400.  
 Interfunction delay is the time delay (x5ms) between "function key" characters output by the 8400.  
 Intermessage delay is the time delay (x5ms) between records output by the 8400.

EXAMPLE: 8400 programmed as follows:  
 Intercharacter delay = 10ms Interfunction delay = 50ms Suffix = Tab and Field Exit.

When a bar code symbol containing the characters 123 is scanned, the 8400 will output to the terminal as follows:

1	10ms	2	10ms	3	10ms	Tab	50ms	Field Exit
	delay		delay		delay		delay	

## PREFIX/SUFFIX

Prefixes and suffixes are characters added by the 8400 to barcode data. Prefixes and suffixes are assigned according to the barcode symbology using the Symbology Chart on page 10. Use the HEX-ASCII table below to find the ASCII value to be used for programming a particular prefix or suffix.

**NOTE:** The 8400 will translate characters 00-1F (keyboard function codes) into keyboard "function keys." The assigned translation is dependent upon the terminal being used. Refer to the SCANTEAM 8400 Technical Manual to determine the assigned translation.

EXAMPLE: 1) To program a carriage return suffix for UPC-A symbology only, scan:

OUTPUT PARAMETERS ENTER, XI, 6, 3, O, D, F, F, EXIT, END PROGRAMMING

Where: OUTPUT PARAMETERS ENTER enters programming mode.

XI enters suffix programming.

63 selects UPC symbology (see page 10, Symbology Chart).

0D designates Carriage Return (see SCANTEAM 8400 Technical Manual/Hex-ASCII chart below).

FF terminates suffix programming.

EXIT leaves programming mode for this option.

END PROGRAMMING ends programming.

EXAMPLE: 2) To program a carriage return suffix for ALL symbologies, scan:

OUTPUT PARAMETERS ENTER, XI, 9, 9, O, D, F, F, EXIT, END PROGRAMMING

Where: OUTPUT PARAMETERS ENTER enters programming mode.

XI enters suffix programming.

99 selects ALL symbologies (see page 10, Symbology Chart).

0D designates Carriage Return (see SCANTEAM 8400 Technical Manual/Hex-ASCII chart below).

FF terminates suffix programming.

EXIT leaves programming mode for this option.

END PROGRAMMING ends programming.

## Required Pre/Suffixes for Particular Retail Terminals:

### IBM 4680 PORT 5B SUFFIX




UPC-A 0D	EAN 8 0C	Code 3 of 9 00 0A 0B
UPC-D	EAN 13 16	1 2 of 5 00 0D 0B
UPC-E 0A		Code 128 00 18 0B



## 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

**USE THIS PAGE**

- To default this page to asterisked (\*) values.
- To set prefix and suffix.
- To program output modes and wand/laser port modes.
- To program a country code.

selections		variables		
PREFIX	<b>X</b>	Symbology or 99 Universal (ALL)	(See Chart Pg. 4)	
		Prefix(es) (2,3,4,5)	*00-7F	FF
SUFFIX	<b>XI</b>	Symbology or 99 Universal (ALL)	(See Chart Pg. 4)	
		Suffix(es) (2,3,4,5)	*00-7F	FF
OUTPUT MODES	<b>XII</b>	Buffer Scans	A	Yes/No*
		DL/ID MSR	B	Yes/No*
		Code ID Transmit	C	Yes/No*
		Error Code Transmit	D	Yes/No*
		Track 1 Preferred	E	Yes/No*
		IBM 4680 Dual Track MSR Track 1 & 2 (6)	F	Yes/No*
		IBM 4680 Dual Track MSR Track 2 & 3 (6)	G	Yes/No*
		Ignore Amount Field if ?'s	I	Yes/No*
WAND/LASER PORT MODES	<b>XIII</b>	Hand Held Laser Timeout	A	*Yes/No
		Laser Redundancy	B	Yes/No*

  
Exit  
End Programming  


**Notes:**

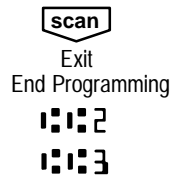
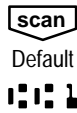
- (1) \* Designates DEFAULT selections.
- (2) Feed FF to terminate a pre/suffix.
- (3) To clear a pre/suffix of a particular symbology, feed the Symbology and FF.
- (4) Default clears all pre/suffixes of all symbologies.
- (5) To program Code ID feed the ASCII representation of Code ID on the Symbology and HEX ASCII Charts on pages 10 and 12 of this menu.
- (6) Start/Stop and LRC characters will be disabled.



# CODE SELECTION I (INDUSTRIAL)

**USE THIS PAGE**

- To select the pre-programmed asterisk (\*) values by scanning DEFAULT symbol.
- To enable or disable listed code selections.



selections	scan	variables	scan	scan
CODE 39 ID = b (HEX 62)	II	Enable		*Yes/No
		Minimum Length	A	*00–Max
		Maximum Length	B	Min–48*
		S/S Xmit	C	Yes/No*
		Check Char. Req'd	D	Yes/No*
		Xmit Check Char.	E	Yes/No*
		Full ASCII	F	*Yes/No
		Append Option	G	Yes/No*
INTERLEAVED 2 of 5 ID = e (HEX 65)	III	Enable		*Yes/No
		Minimum Length	A	*02–Max
		Maximum Length	B	Min–80*
		6, 14 & 16 only	C	Yes/No*
		Check Digit Req'd	D	Yes/No*
		Xmit Digit Req'd	E	Yes/No*
CODE 128 ID = j (HEX 6A)	VIII	Enable	G	*Yes/No
		Minimum Length	A	*00–Max
		Maximum Length	B	Min–80*
DISABLE ALL CODES (Including Retail)	XIX			Yes/No*
DECODING ALGORITHM	XX	Code 39	B	Adap/Trad *Y/N

**Notes:**

- (1) \* Designates DEFAULT selections.
- (2) The DEFAULT Minimum Length for these codes is 4 characters.
- (3) Available with special software, ordered under six digit part number.

# CODES RETAIL

## RETAIL CODE OUTPUT FORMATS

### Non-Zero Suppressed UPC-A and UPC-E Output Format

UPC-A	cXXXXXXXXXXC
UPC-A with 2 digit addenda	cXXXXXXXXXXC-AA
UPC-A with 5 digit addenda	cXXXXXXXXXXC-AAAAA
UPC-E	cXXXXXXXXXXC
UPC-E with 2 digit addenda	cXXXXXXXXXXC-AA
UPC-E with 5 digit addenda	cXXXXXXXXXXC-AAAAA

### Zero Suppressed UPC-A and UPC-E Output Format

UPC-A	cXXXXXXXXXXC
UPC-A with 2 digit addenda	cXXXXXXXXXXC-AA
UPC-A with 5 digit addenda	cXXXXXXXXXXC-AAAAA
UPC-E	cXXXXXXXXC
UPC-E with 2 digit addenda	cXXXXXXXXC-AA
UPC-E with 5 digit addenda	cXXXXXXXXC-AAAAA

### EAN/JAN Output Format

EAN/JAN-13	dffXXXXXXXXXXC
EAN/JAN-13 with 2 digit addenda	dffXXXXXXXXXXC-AA
EAN/JAN-13 with 5 digit addenda	dffXXXXXXXXXXC-AAAAA
EAN/JAN-8	dffXXXXXC
EAN/JAN-8 with 2 digit addenda	dffXXXXXC-AA
EAN/JAN-8 with 5 digit addenda	dffXXXXXC-AAAAA

**Where:** c = UPC Code ID  
d = EAN/JAN Code ID  
N = Number System Character  
f = Identification Flag  
X = Data Character  
C = Checksum Character  
- = Space  
A = Addenda Character

**NOTE:** Appropriate code identification must be programmed in a prefix. Proper parameters must be enabled for number system, checksum, and addenda characters to be transmitted. **For maximum data security, disable the Codes not used.**

### UPC/EAN LENGTH CHART


selections	Basic Length	W/out Ck. Digit	W/out Sys. Digit	W/2 Digit Addendum	W/5 Digit Addendum	TOTAL
UPCA	12	-01	-01	+02	+05	
UPCE [w/0's suppressed]	8	-01	-01	+02	+05	
UPCE [expanded]	12	-01	-01	+02	+05	
UPCD1	14	-01	-01	+02	+05	
UPCD2	20	-02	-01	+02	+05	
UPCD3	24	-02	-01	+02	+05	
UPCD4	28	-03	-01	+02	+05	
UPCD5	32	-03	-01	+02	+05	
EAN8	8	-01	N/A	+02	+05	
EAN13	13	-01	N/A	+02	+05	



**CODE  
SELECTION II  
(RETAIL)**




**USE THIS PAGE**

- To select the pre-programmed asterisk (\*) values by scanning DEFAULT symbol.
- To enable or disable listed code selections.

  
Code  
Selection II  
Enter  


  
Default  


  
Exit  
End Programming  


selections			variables		
UPC	ID = c (HEX 63)	<b>I</b>	Version A	A	*Yes/No
			Version D(4)	B	No*
			Version E0	C	*Yes/No
			Version E1	D	*Yes/No
			Check Digit Xmit	E	Yes/No
			Number System Xmit	F	Yes/No
			Version E Expand	G	Yes/No*
			2-Digit Addenda	H	*Yes/No
			5-Digit Addenda	I	*Yes/No
			EAN	ID = d (HEX 64)	<b>II</b>
EAN/JAN 8	B	*Yes/No			
Check Digit Xmit	C	Yes/No			
2-Digit Addenda	D	*Yes/No			
5-Digit Addenda	E	*Yes/No			
UPC & EAN ADDENDA REQ'D.		<b>III</b>	Enable		Yes/No*
SPACE BETWEEN UPC / EAN ADDENDA REQ'D.		<b>VII</b>	Enable		*Yes/No

**Notes:**

- (1) \* Designates DEFAULT selections.
- (2) Available with special software, ordered under six digit part number.
- (3) UPC Version D is not supported at this time.

# MAIN PORT CONFIGURATION Output

SCANTEAM 8400 Information and Examples

## 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

## BAUD RATE

The baud rate is programmable from 300 bits per second to 38,400 bits per second. Programming the 8400 to the desired baud rate causes the data to be sent at the specified rate.

## PARITY

Parity provides a means of checking data bit patterns for validity. The four choices are Space, Mark, Odd, and Even. The parity should be programmed to match the parity of the terminal being used. If the parity is not set correctly, the resulting data may be incorrect.

## DATA BITS

The two choices for data bits are seven and eight. The data bits selection must match the requirements of the terminal being used.

## PROTOCOL

A set of rules governing the exchange of data between communications devices. See **SCANTEAM 8400 Technical Manual** for a description of supported protocols.

## END OF RECORD

Marks the end of an incoming data record from the Auxiliary Port. Use the HEX ASCII chart above to find the alpha-numeric codes used for programming a particular End of Record. The 8400 does not send End of Record characters to the terminal.



## MAIN PORT CTS CHECK



If programmed on (Yes), the 8400 will not transmit data until the CTS input is positive.




# MAIN PORT CONFIGURATION



**USE THIS PAGE**

■ To default this page to asterisked (\*) values.

  
Main Port  
Configuration  
Enter  


  
Default  


  
Exit  
End Programming  
  


selections		variables	
MAIN PORT CONFIGURATION	<b>I</b>	PC COM PORT	D*
MAIN PORT BAUD RATE	<b>II</b>	300	A
		600	B
		1200	C
		2400	D
		4800	E
		9600	F*
		19200	G
		38400	H
MAIN PORT PARITY	<b>III</b>	None	A
		Mark	B
		Space	C
		Odd	D
		Even	E*
MAIN PORT DATA BITS	<b>IV</b>	Seven	A*
		Eight	B
MAIN PORT PROTOCOL	<b>V</b>	End of Record	A
		60 mS Timeout	B*
		TRANZ 330 Protocol	C
		ZON JR Protocol	D
		Host Command Protocol	E
MAIN PORT END OF RECORD	<b>VI</b>	00-7F	0D*
MAIN PORT CTS CHECK	<b>VII</b>		Yes/No*

**Notes:**  
(1) \* Designates DEFAULT selections.

# AUXILIARY PORT 1 and 2

SCANTEAM 8400 Information and Examples

## INTRODUCTION

The 8400 Auxiliary port menu is used to (1) Program the 8400's Auxiliary Port communication parameters and protocols and (2) Enable/disable output of keyboard function codes contained in incoming data.

Refer to the **SCANTEAM 8400 Technical Manual** for detailed information about all items on the 8400 Auxiliary Port programming menu.

## 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

## BAUD RATE

The baud rate is programmable from 300 bits per second to 38,400 bits per second. Programming the 8400 to the desired baud rate causes the data to be sent at the specified rate.

## PARITY

Parity provides a means of checking data bit patterns for validity. The four choices are Space, Mark, Odd, and Even. The parity should be programmed to match the parity of the terminal being used. If the parity is not set correctly, the resulting data may be incorrect.

## DATA BITS

The two choices for data bits are seven and eight. The data bits selection must match the requirements of the terminal being used.

## PROTOCOL



A set of rules governing the exchange of data between communications devices. See **SCANTEAM 8400 Technical Manual** for a description of supported protocols.



## END OF RECORD


Marks the end of an incoming data record from the Auxiliary Port. Use the HEX ASCII chart above to find the alpha-numeric codes used for programming a particular End of Record. The 8400 does not send End of Record characters to the terminal.




# AUX PORT(S) CONFIGURATION

**USE THIS PAGE**  
 ■ To default this page to asterisked (\*) values.

  
 Aux Port(s)  
 Configuration  
 Enter  


  
 Default  


selections		variables		
AUX PORT #1 BAUD RATE	<b>I</b>	300		A
		600		B
		1200		C
		2400		D
		4800		E
		9600		F*
		19200		G
		38400		H
		AUX PORT #1 PARITY	<b>II</b>	None
Mark				B
Space				C
Odd				D
Even				E*
AUX PORT #1 DATA BITS	<b>III</b>	Seven		A*
		Eight		B
AUX PORT #1 PROTOCOL	<b>IV</b>	End of Record		A
		60 mS Timeout		B*
AUX PORT #1 END OF RECORD	<b>V</b>	00-7F		0D*
AUX PORT #2 BAUD RATE	<b>VI</b>	300		A
		600		B
		1200		C
		2400		D
		4800		E
		9600		F*
		19200		G
		38400		H
		AUX PORT #2 PARITY	<b>VII</b>	None
Mark				B
Space				C
Odd				D
Even				E*
AUX PORT #2 DATA BITS	<b>VIII</b>	Seven		A*
		Eight		B
AUX PORT #2 PROTOCOL	<b>IX</b>	End of Record		A
		60 mS Timeout		B*
AUX PORT #2 END OF RECORD	<b>X</b>	00-7F		0D*

  
 Exit  
 End Programming  
  




**Notes:**  
 (1) \* Designates DEFAULT selections.



# DATA FORMATTER COMMANDS











SCANTEAM 8400 Information and Examples

COMMAND	ACTION
F1	Send all characters followed by "XX" key or function code, starting from current cursor position. ** Syntax = F1XX where 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, leaving cursor pointing to character "NN" + 1. ** Syntax = F2NNXX NN = No. of Characters 00–99 DEC. where XX = HEX ASCII character or function code 00–FE HEX
F3	Send up to but not including "SS" character, (** Search and Send**) Starting from current cursor position, leaving cursor pointing to "SS" Char. followed by "XX" key or function code. ** Syntax = F3SSXX SS = HEX ASCII Character 00–7F HEX. where XX = HEX ASCII character 00–7F HEX.
F4	Send "XX" character "NN" times, (**INSERT**) Leaving cursor in current cursor position. ** Syntax = F4XXNN where XX = HEX ASCII character 00–7F HEX NN = No. of characters 00–99 DEC.
F5	Move cursor ahead "NN" characters from current cursor position. ** Syntax = F5NN NN = No. of characters 00–99 DEC.
F6	Move cursor back "NN" characters from current cursor position. ** Syntax = F6NN NN = No. of characters 00–99 DEC.
F7	Move cursor to the beginning of the data string. ** Syntax = F7
F8	Search ahead for "XX" character from current cursor position, leaving cursor pointing to "XX" char. ** Syntax = F8XX where XX = HEX ASCII character 00–7F.
F9	Search back for "XX" character from current cursor position, leaving cursor pointing to "XX" char. ** Syntax = F9XX where XX = HEX ASCII character 00–7F.
FA	Leading zero suppress on Suppress leading zeroes from current cursor position until 1st non-zero character, leaving cursor pointing to first non-zero character. ** Syntax = FA
FB	Suppress "XX" character(s) up to 4 starting from current cursor position until suppress disable command "FC" or end of format. ** Syntax = FBXXFB, FBXXXXFB, FBXXXXXXFB where XX = HEX ASCII character 00–7F.
FC	Disable suppress filter and clear all suppressed characters. ** Syntax = FC
FD	DCA mode ON/OFF (Toggle) Convert characters to DCA starting from current cursor position until next "FD" command or end of format. ** Syntax = FD
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 where XX = HEX ASCII Character 00–7F
E8	Find last (rightmost) occurrence of character and replace with RR, leaving the cursor pointing to RR. **Syntax = E8XRR
E9	Replace up to 4 characters with RR. **Syntax = E9XXXXXXXXXE9RR where XX = HEX ASCII Character 00–7F
EA	Clear – Replace Table.
EE	Leading space suppress on. Suppress leading spaces from current cursor position until first non-space character, leaving cursor pointing to first non-space character. ** Syntax = EE
EF	Delay function. **Syntax = EFXXXX where XXXX = 0000–FFFF x 5ms delay.

  
Data  
Formatter  
Enter  


  
Default  


  
Exit  
End Programming  


selections		variables			
FORMAT REQUIRED?	I		Yes/No*		
selections					
	Terminal Type (2)	Code ID	Length	Editor Command Sequences	End Format
II	( * ) ( ) ( * ) ( )				(FF)
* You may use Universal Number of 99.					
selections		variables			
MSR DATA	III	Start/Stop Char. Transmit	A	Yes/No	
		LRC Char. Transmit	B	Yes/No	
MSR TRACK SELECTION	IV	Track 1 Enable	A	*Yes/No	
		Track 2 Enable	B	*Yes/No	
		Track 3 Enable	C	*Yes/No	
MSR TRACK 2 PRE-EDITED DATA FORMATS	V	Clear Pre-edited Data Format	A		
		Acct # + Key-Code 1	B		
		Acct # + Key-Code 1 + YYMM + Key-Code 2	C		
		Acct # + Key-Code 1 + MMY + Key-Code 2	D		
		Acct # + Key-Code 1 + YYMM+ Key-Code 2 + All Remaining Data + Key-Code 3	E		
		Acct # + Key-Code 1 + MMY + Key-Code 2 + All Remaining Data + Key-Code 3	F		
MSR TRACK 1 PRE-EDITED DATA FORMATS	VI	Clear Pre-edited Data Format	A		
		Acct # + Key-Code 1 + YYMM + Key-Code 2 + Name + Key-Code 3	B		
		Acct # + Key-Code 1 + MMY + Key-Code 2 + Name + Key-Code 3	C		
		Acct # + Key-Code 1 + YYMM+ Key-Code 2 + Name + Key-Code 3 + All Remaining Data + Key-Code 4	D		
		Acct # + Key-Code 1 + MMY + Key-Code 2 + Name + Key-Code 3 + All Remaining Data + Key-Code 4	E		
KEY-CODE 1-4 ASSIGNMENT (Assignable Delimiter or Function Codes all default to "0D.")	VII	Key-Code 1 (E0H)	A	00-FE *0D	
		Key-Code 2 (E1H)	B	00-FE *0D	
		Key-Code 3 (E2H)	C	00-FE *0D	
		Key-Code 4 (E3H)	D	00-FE *0D	
DELETE TERMINAL/CODE SPECIFIC	XIX		Terminal Type (*)	Code ID (*)	
DELETE ALL FORMATS	XX	Are You Sure?		Yes/No	

**Notes:**  
(1) \* Designates DEFAULT selections.  
(2) For terminal type selection, see page 9.

# DATA FORMATTER

SCANTEAM 8400 Examples

## Bar Code Example

**Scenario:** You need to read a 6–digit bar code printed in Interleaved 2 of 5. Only the first five digits of the code will be transmitted. You want the transmitted code terminated with a vertical tab and a horizontal tab.

**Solution:** On the Data Formatter page of this menu:

Step 1: Feed DATA FORMATTER ENTER check.

Step 2: Feed I and Yes checks (enables data formatting)

Step 3: Feed XX and Yes checks (clears previous formats)

Step 4: Feed II check (**Enter Data Formatting Parameters**)

Feed 03 check for terminal type (PC/AT)

Feed 65 check for Code I 2 of 5 Symbology (Primary from Symbology chart on page 10 of this menu.

Feed 06 check for length (fixed length code)

**Format Parameters:** (Sequence to be fed for label format from the Bar Code Chart in the back of this menu.) **F2 05 0B F4 09 01 FF**

F2 05 0B: F2 is the send xx number of characters followed by a function code. Send the first five characters of the label followed by a vertical tab. (Hex 0B)

F4 09 01: Append one hex 09 (a horizontal tab) at the end of the label.

FF: Termination character for the end of the format.

Feed EXIT check.

Feed END PROGRAMMING check.

**Note:** To set minimum required default parameters for IBM 4683, OCIA and OCR interfaces: set OUTPUT PARAMETERS IV, V or VI, then feed through OUTPUT PARAMETERS ENTER, DEFAULT and EXIT. For more information, refer to the SCANTEAM 8400 Technical Manual.

# DATA FORMATTER

SCANTEAM 8400 Examples

## Magnetic Stripe Reader Format Example NCR 7052, MSR Track 2

Field 1 = Acct # + B2 Func. Code  
Field 2 = Exp. Date MM/YY + B2 Func. Code  
Field 3 = All Remaining + B2 Func. Code  
No Field Separator, Start/Stop, LRC.  
Raw Data String: ;1234567890123456=9202891100106600345?R  
Format Syntax: 48,79,99 F5 01, F3 3D B2, F5 03, F2 02 00, F6 04,  
F2 02 B2, F5 02, F3 3F B2, FF  
48 = Terminal Type NCR 7052  
79 = 'y' MSR Track 2  
99 = Label Length

Command	Cursor Position	Output Data String
Start	;1234567890123456=9202891100106600345?R ↑	
F5 01	;1234567890123456=9202891100106600345?R ↑	
F3 3D B2	;1234567890123456=9202891100106600345?R ↑	1234567890123456 +B2
F5 03	;1234567890123456=9202891100106600345?R ↑	
F2 02 00	;1234567890123456=9202891100106600345?R ↑	1234567890123456 +B2+02
F6 04	;1234567890123456=9202891100106600345?R ↑	
F2 02 B2	;1234567890123456=9202891100106600345?R ↑	1234567890123456 +B2+0292+B2
F5 02	;1234567890123456=9202891100106600345?R ↑	
F3 3F B2	;1234567890123456=9202891100106600345?R ↑	1234567890123456 +B2+0292+B2
FF = Stop		+891100106600345 +B2

# MICR DATA FORMATTER

SCANTEAM 8400 Information and Examples

MICR FIELD NAME	MICR ID #
Entire MICR Line	00
Auxiliary On US	01
External Processing Code (EPC)	02
Routing	03
ONUS	04
Amount	05
Check #	06
Account #	07
Process Control Code	08

MICR FIELD LENGTH SELECTIONS	SELECTION #
Zero (Field Disabled)	00
Fixed Length	XX (where XX is the HEX ASCII Representation 00–7F)
Variable Length	99

MICR FIELD FILL SELECTIONS	SELECTION
Any character	XX (where XX is the HEX ASCII Representation 00–7F)





Note: MICR field length must be programmed for fixed length.

MICR FIELD JUSTIFICATION	SELECTION #	SELECTION
Left Justify	00	
Right Justify	01	

Note: MICR field length must be programmed for fixed length.

## MICR PROGRAMMING CHECKS - EQUIVALENTS TO BAR CODES

Roman Numerals	Roman Numerals	Letters	Digits	Others
I t1	XI o1	A a1	0 (YES) d0	ESCAPE tt0
II t2	XII o2	B a2	1 (NO) d1	DEFAULT tt1
III t3	XIII o3	C a3	2 d2	EXIT tt2
IV t4	XIV o4	D a4	3 d3	END PROG tt3
V t5	XV o5	E a5	4 d4	
VI t6	XVI o6	F a6	5 d5	
VII t7	XVII o7	G a7	6 d6	
VIII t8	XVIII o8	H a8	7 d7	
IX t9	XIX o9	I a9	8 d8	
X t0	XX o0	J a0	9 d9	

where: t =  (transit symbol)  
 o =  (On Us symbol)  
 a =  (amount symbol)  
 d =  (dash symbol)

# MICR DATA FORMATTER

**USE THIS PAGE**

■ To default this page to asterisked (\*) values.



selections	scan	variables	scan
MICR DECODING	I	Auto Discrimination	A
		E13-B Only	B*
		CMC-7 Only	C
MINIMUM MICR SIGNAL LEVEL (2)	II	Default = \$00 (test disabled)	\$00-\$FE
MAXIMUM MICR SIGNAL LEVEL (2)	III	Default = \$00 (test disabled)	\$00-\$FE
SELECT MICR OUTPUT FORMAT 02-09 Pre-canned	IV	<ENTIRE MICR LINE UN-EDITED (RAW MICR)> NO EXCEPTIONS – includes spaces and symbols – field format rules not verified	00*
		Custom Format (See V, VI, VII)	01
		<TRANSIT #>T<ACCOUNT #>A <CHECK SERIAL #> – account #: no symbols	02
		<TRANSIT #>T<14 DIGIT ACCOUNT #>A<6 DIGIT CHECK SERIAL #> – account #: No spaces or symbols, zero filled, right justified – check #: zero filled, right justified	03
		<TRANSIT #>T<ACCOUNT #>A <CHECK SERIAL #> – account #: includes spaces and symbols	04
		<ENTIRE MICR LINE UN-EDITED (RAW MICR)> – includes spaces and symbols – field format rules verified	98
		<ENTIRE MICR LINE UN-EDITED (RAW MICR)> – includes spaces and symbols – field format rules not verified – a question mark (?) will be sent for unreadable characters	99 Test Mode

**Note:**  
ASCII characters transmitted in place of E13-B symbols:  
t = Transit symbol  
o = On Us symbol  
a = amount symbol  
d = dash symbol

**Notes:**  
(1) \* Designates DEFAULT selections.  
(2) Feed 00 to disable test.

# MICR DATA FORMATTER

continued

SCANTEAM 8400 Examples

## MICR Data Example #1 Custom Format

**Scenario:** Output a known check format where 0001 is the check number.

Check Data: t123456789t987-654321o-0001  
Desired custom output: <transit #>T<check #>S<account #>A

**Solution:** Scan the following series:

MICR DATA FORMATTER ENTER

IV	01	(custom format)
V	03 FB 74 FB F1 54 FF	(format routing buffer)
V	07 F1 41 FF	(format account # buffer)
V	06 F1 53 FF	(format check # buffer)
VI	03 99 00 00 FF	(routing buffer variable length)
VI	07 99 00 00 FF	(account # buffer variable length)
VI	06 99 00 00 FF	(check # buffer variable length)
VII	03 06 07 FF	(order of buffer output)

EXIT  
END PROGRAMMING

---

## MICR Data Example #2 Exception Table Parsing

**Scenario:** Output a check with exception table entry where 0001 is the check number.

Check Data: t123456789t987-654321o2220001  
Desired output: <transit #>T<account #>A<check #>

**Solution:** Scan the following series:

MICR DATA FORMATTER ENTER

IX 1 2 3 4 5 6 7 8 F2 14 5A F2 04 5A F1 00 FF  
EXIT  
END PROGRAMMING

---

## MICR Data Example #3 Custom Format plus Data Formatter

**Scenario:** Output only the account number from a check, followed by a carriage return.

**Solution:** Scan the following series:

MICR DATA FORMATTER ENTER

IV 02 (Transit t, Account a)  
EXIT  
END PROGRAMMING

DATA FORMATTER ENTER



















II 99 (terminal)  
74 (code ID - MICR)  
99 (variable length)  
F8 54 F5 01 F3 41 0D FF  
EXIT  
END PROGRAMMING



# MICR DATA FORMATTER

continued

**USE THIS PAGE**

■ To default this page to asterisked (\*) values.

selections		variables	
CUSTOM MICR FORMAT FIELD EDIT	V	 Field ID  Editor Command Sequence  \$FF	None*
CUSTOM MICR FORMAT FIELD ATTRIBUTE(S)	VI	 Field ID  Field Length (HEX Value)  Field Fill  Field Justify  \$FF	None*
CUSTOM MICR FORMAT FIELD OUTPUT ORDER	VII	 Order of Output 00-08	 \$FF None*
ACTIVATE EXCEPTION TABLE PARSING	VIII		*Yes/No
EXCEPTION TABLE PARSING	IX	 Transit Number  Editor Command Sequence  \$FF	None*
DELETE SPECIFIC EXCEPTION TABLE	IX	 Transit Number  D0  \$FF	None*
DELETE ALL EXCEPTION TABLE PARSING ENTRIES	X	Are you sure?	Yes/No

  
Exit  
End Programming  


(1) \* Designates DEFAULT selections.

(2) Exception table parsing is activated in the event that the canned format or custom MICR format does not correctly parse a particular Bank's On Us field.

(3) Refer to MICR example #2 on page 28. Exception Table Parsing will be invoked only on those checks where the routing (transit) numbers match the transit number in the format.

## STATUS CHECK

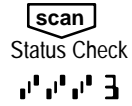
SCANTEAM 8400 Programming Menu

The Status Check, choice D, of the 8400 programmed parameters displays the software version number, XXX, where "XXX" stands for the version level. For example, software version number 33992001 is displayed as 001.

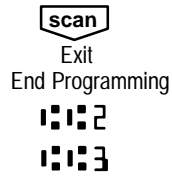
The Formats selection, choice C, lists the existing formats entered using the Data Formatter Programming page. Each format will be followed by a CR (carriage return) as listed.

**USE THIS PAGE**

■ To output the current programming status of menu pages to either the terminal or the auxiliary port.



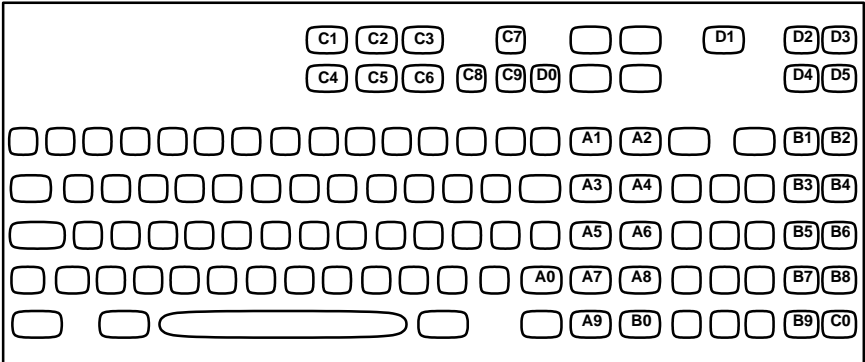
selections	scan	variables	scan
TO TERMINAL	I	Formats	C
		Software version	D
TO AUXILIARY	II	Formats (including Custom Formats)	C
		Software version	D
TO DISPLAY	iii	Software version	A



# KEYBOARD LAYOUTS

## NCR 7052/32-Key and 56-Key

C2	C5	C8	D1	D4	D7	E0
C3	C6	C9	D2	D5	C8	E1
C4	C7	D0	D3	D6	D9	E2
A0	A5	B0	B1	B2	B7	E3
A1	A6			B3	B8	E4
A2	A7			B4	B9	E5
A3	A8			B5	C0	E6
A4	A9			B6	C1	E7



NCR 7052 122 Keyboard

The FO delimiter translates to the following:  
 NCR 7052, 32/56 key layout      ENTER KEY = B6  
 NCR 7052, 122 Big Ticket        ENTER KEY = B9  
 IBM 3683, 48/52 key layout        ENTER KEY = C3

**Welch Allyn** ®

SCANTEAM 8400 Programming Menu

**USER'S  
NOTES**



8400/PM Rev A

