

Chapter 2

Programmer's Guide

Programming Your LS 2080 Scanner

Before programming the scanner, follow the instructions in *Set Up* beginning on page 1-2.

Consult *Parameter Descriptions* beginning on page 2-4 for explanations of parameter types; *Parameter Selections* beginning on page 2-10 shows selectable parameters.

Scanning Sequences

LS 2080 scanners are programmed by scanning sequences of bar codes.

A scanning sequence establishes a value for one parameter type. During a scanning sequence, you scan bar codes for a parameter type, a parameter value, and **ENTER**. The *Scanning Sequence Flowchart* on page 2-3 illustrates the process.

Parameter Menus beginning on page 2-17 contains all the bar codes necessary to program the scanner for each parameter selection.

Scanning Sequence Examples

Example 1

Suppose you want to program the scanner for all default settings except for two parameters, **DECODE UPC ONLY** (NOT EAN) and **INTERCHARACTER DELAY**.

Since you want to keep most of the default settings, scan the **SET DEFAULT** bar code. The default for **DECODE UPC ONLY (NOT EAN)** is **DISABLED** - you need it **ENABLED**. Scan the three bar codes in the order listed below:

SCAN	YOU WILL HEAR . . .
1. DECODE UPC ONLY (NOT EAN)	Short high tone
2. ENABLED	Short high tone
3. ENTER	Hi/Lo/Hi/Lo warble

After the last scan in a successful scanning sequence (**ENTER**), the warble sound (i.e., hi/lo/hi/lo) indicates that the scanner has been successfully programmed for the selected parameter. See *Beeper Definitions* on page 2-12.

Example 2

To set the **INTERCHARACTER DELAY** parameter scan a two digit numeric entry. Note that single digit entries must have a leading zero. The **INTERCHARACTER DELAY** default is 00 ms; in this example you want to set it to 2 ms. To program the scanner for a 2 ms **INTERCHARACTER DELAY** scan the four bar codes listed below.

SCAN	YOU WILL HEAR . . .
1. INTERCHARACTER DELAY	Short high tone
2. 0	Short high tone
3. 2	Short high tone
4. ENTER	Hi/Lo/Hi/Lo warble

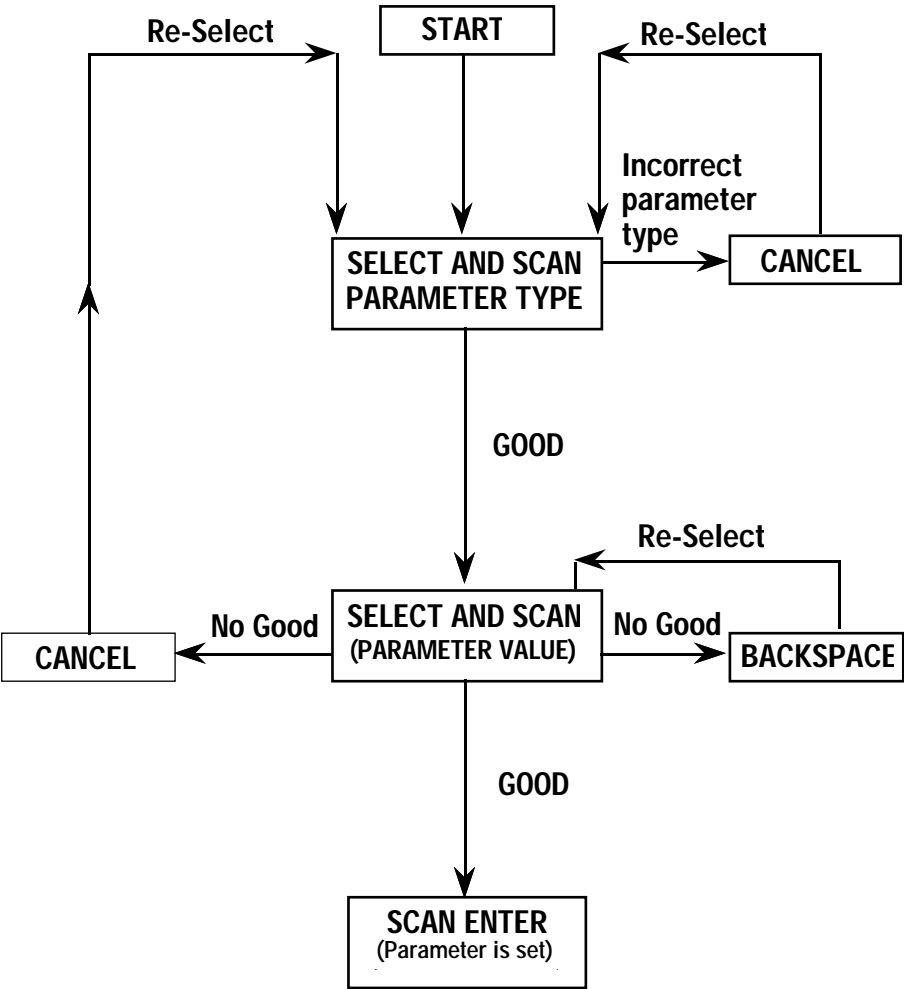
Errors While Scanning

Don't worry if you make an error during a scanning sequence. There are two special-purpose bar codes, **BACKSPACE** and **CANCEL**, to help you.

Scanning the **BACKSPACE** bar code erases the value of the previous bar code scanned but keeps you within the scanning sequence for a parameter type.

Scanning **CANCEL** removes you from the *current* sequence so that you can start again.

Scanning Sequence Flowchart



Parameter Descriptions

See *Parameter Selections* beginning on page 2-10 for the range of values and default settings for each parameter type. See also *Parameter Menus* beginning on page 2-17.

Set Parameter Defaults

Scanning the **SET DEFAULT** bar code returns all parameters to the default values listed in *Parameter Selections*. See *Set Default Parameter* on page 2-18 for menu.

Keyboard Type

Select the type of keyboard to be used with the LS 2080. *Even if default setting for all parameters is selected, a keyboard type must be selected, or the unit will not operate. Selecting a keyboard type will automatically return prefix and suffix settings to their default values.* See *Keyboard Type* beginning on page 2-19 for menu.

National Type (Europe)

Select the national type (UK English, French, or German) to be used with the LS 2080. See *National Type (Europe)* beginning on page 2-21 for menus.

Numeric Key Pad Emulation (Europe)

If this option is enabled, keystrokes are emulated by sending the ASCII code equivalent of the specific character using the ALTERNATE (Alt) key and the numeric key pad of the host PC. The ASCII character is represented by a 3-digit decimal equivalent. For example, the ASCII character "A" is entered as **065**. See *ASCII Character Set* on page A-4. See *Numeric Key Pad Emulation (Europe)* on page 2-23 for menus.

Break Key Code Transmission (Europe)

When this parameter is enabled, both "operate" ("make") and "release" ("break") key codes are transmitted. When it is disabled, only "operate" ("make") key codes are sent. This parameter only affects scanned data, not the key codes passed through from the keyboard. See *Break Key Code Transmission (Europe)* on page 2-24 for menus.

Code Types

The bar code menu selections enable the scanner to decode any or all of the following symbologies (see *Code Types* beginning on page 2-25 for menus):

- UPC Versions A and E (EAN 8 and 13)
- Code 39 Full ASCII
- Discrete 2 of 5
- Code 128
- Code 39
- Interleaved 2 of 5
- Code 93
- Codabar

The scanner will autodiscriminate between all of the above code types, except for between Code 39 and Code 39 Full ASCII.

Select whether UPC/EAN is to be decoded with or without supplementals. See *Supplemental Selection* on page 2-6 for details.

If you want to add Discrete 2 of 5 or Interleaved 2 of 5, check the previously enabled lengths. To set lengths for these codes, see *Fixed Lengths For A Code 2 of 5* beginning on page 2-27.

Fixed Lengths for Code 2 of 5

Select one or two lengths for the Interleaved or Discrete 2 of 5 codes. Determine the number of characters represented in each code type by counting the number of printed (i.e., human readable) digits that represent a bar code label. One or two lengths (Length1, Length 2) for either code type may be set, as needed.

If the default setting is satisfactory it need not be reset. Set one or both lengths, one per scanning sequence. **LENGTH 1** may range from 01-31 and **LENGTH 2** from 00-31. See *Fixed Lengths For A Code 2 of 5* beginning on page 2-27 for menus.

Decode Options

See *Decode Options* beginning on page 2-29 for menus.

Transmit UPC-E/UPC-A Check Digit

If enabled, decoded UPC-E or UPC-A symbols are transmitted with check digit.

Supplemental Selection

Select whether UPC/EAN is decoded with or without supplemental characters, or whether the unit will autodiscriminate between the two. Supplementals are additionally appended characters, according to specific code format conventions (e.g., UPC-A+2, UPC-E+2, EAN-8+2). If **UPC/EAN with supplemental characters** is selected, UPC/EAN symbols with or without supplemental characters are decoded; supplemental portions are ignored. If **UPC/EAN without supplemental characters** is selected and the scanner is presented with a UPC/EAN plus supplemental symbol, that symbol will not be decoded. If **autodiscrimination** is chosen, the LS 2080 will autodiscriminate between UPC/EAN symbols with or without supplementals, with a chance of error. *Problems with supplemental symbols can occur when the supplemental field is of poor quality or is not fully in the scanning field. When scanning a UPC/EAN with supplementals, make sure that a significant margin of the scanning field extends beyond the supplemental.*

Decode UPC Only (Not EAN)

If enabled, this option limits LS 2080 UPC/EAN decode capability to UPC versions only. It disables EAN decode capability.

Convert UPC-E to UPC-A

If enabled, this parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data is subject to UPC programming selections (e.g., Preamble, Check Digit).

EAN Zero Extend

If selected, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.

CLSI Editing

If selected, this parameter inserts a space after the 1st, 5th, and 10th characters of a 14-character Codabar symbol. The symbol length does not include start and stop characters.

NOTIS Editing

If selected, this option strips the start and stop characters from decoded Codabar symbols.

Beeper Enable/Disable

If enabled, the unit beeper will sound during normal scanning. Usually it is desirable to operate the unit with the beeper enabled. In all cases, the beeper operates during parameter menu scanning and indicates error conditions. See *Beeper Definitions* on page 2-12.

Transmit Code ID Character

A code ID character identifies the code type of a scanned bar code. This may be useful when the scanner is decoding more than one code type. In addition to any single-character prefix already selected, the code ID character is appended as a prefix to the decode. Code ID characters are: A = UPC-A, UPC-E, EAN-13, or EAN-8; B = Code 39; C = Codabar; D = Code 128; E = Code 93; F = Interleaved 2 of 5; G = Discrete 2 of 5 or Discrete 2 of 5 IATA.

Prefix

If desired, select an appropriate start-of-text character as a prefix to transmitted data. Choose no prefix or one prefix. Refer to *Prefix and Suffix Keystroke Identifiers* on page A-3. See *Prefix/Suffix* beginning on page 2-31 for menus.

Suffix

If desired, select an appropriate suffix to be appended to transmitted data. Refer to *Prefix and Suffix Keystroke Identifiers* on page A-3. See *Prefix/Suffix* beginning on page 2-31 for menus.

Communications Delays and Timeouts (Intercharacter Delay)

Select the intercharacter delay option matching host device requirements. Select from no delay to a 99 ms delay between the transmission of each character. See *Communications Delays and Timeouts* beginning on page 2-33 for menus.

Prefix/Suffix Transmit Delay

This parameter specifies a delay period to occur after any prefix or suffix is transmitted. The proper delay period varies according to host terminal requirements. In some cases, no delay is necessary. The delay period can range from 00 to 9.9 seconds. See *Prefix/Suffix Transmit Delay* beginning on page 2-35 for menus.

UPC A and E Preamble(s)

Three options are given for the lead-in characters of decoded UPC-A or UPC-E symbols transmitted to the host device. Select one preamble for UPC-A decodes and one for UPC-E decodes. These lead-in characters are considered part of the symbol itself. The three options are:

- a system character only
- the country code and system character
- no preamble

The system character is the digit printed to the extreme left of a UPC symbol. The country code for UPC is always zero, and it cannot be transmitted without the system character. See *UPC-E/UPC-A Preamble* beginning on page 2-37 for menus.

Scan and Store (Code 39 Buffering)

When you select the scan and store option, all Code 39 symbols having a leading space as a first character are temporarily buffered in the unit to be transmitted later. The leading space is not buffered.

Decode of a valid Code 39 symbol with no leading space causes transmission in sequence of all buffered data in a first-in first-out format, plus transmission of the “triggering” symbol. See *Code 39 Buffering (Scan and Store)* beginning on page 2-15 for further details. When the scan and transmit option is selected, decoded Code 39 symbols without leading spaces are transmitted without being stored in the buffer.

Scan and Store affects Code 39 decodes only. If you select scan and store, it is recommended that you configure the scanner to decode Code 39 symbology only. See *Code 39 Scan and Store* on page 2-39 for menu.

Transmit “No Decode” Message

This feature gives you the option to transmit “NR” when a symbol does not decode. Prefixes and suffixes enabled will be appended around this character. See *Transmit “No Decode” Message* on page 2-40 for menu.

Scan Data Transmission Format

Options for scan data transmission formats can be selected by the user. A programmed prefix and/or suffix is enabled for transmit by scanning the appropriate Scan Data Format option. The following are standard selections:

- Standard: <scan data>
- Option 1: <scan data> <SUFFIX>
- Option 2: <PREFIX> <scan data> <SUFFIX>
- Option 3: <PREFIX> <scan data>

See *Scan Data Transmission Format* on page 2-41 for menu.

Laser On Time

This parameter allows you to select a specific laser on time. Values range from 0.5 to 6 seconds in 0.5 second increments. See *Laser On Time* beginning on page 2-42 for menu.

Parameter Selections

PARAMETER	SELECTIONS AVAILABLE	DEFAULT
Keyboard Type	See list on page 2-19 .	None
National Type	UK English, French, German	UK English
Numeric Key Pad Emulation	Enable, Disable	Disable
Break Key Code Transmission	Enable, Disable	Enable
Add/Delete Code Types	Code 39, Code 39 Full ASCII, Discrete 2 of 5, Interleaved 2 of 5, Codabar, UPC/EAN, Code 128, Code 93, all code types.	All Code Types
First Length - Discrete 2 of 5	2 digit entry, ranging from 01-31.	12
Second Length - Discrete 2 of 5	2 digit entry, ranging from 00-31.	0
First Length - Interleaved 2 of 5	2 digit entry, ranging from 01-31.	14
Second Length - Interleaved 2 of 5	2 digit entry, ranging from 00-31.	0
Xmit UPC-A Check Digit	Enable, Disable	Enable
Xmit UPC-E Check Digit	Enable, Disable	Disable
Supplemental Selection	No Supplemental, Supplemental Only, Autodiscriminate	No Supplemental
Decode UPC Only	Enable, Disable	Disable
Convert UPC-E to A	Enable, Disable	Disable
EAN Zero Extend	Enable, Disable	Disable
CLSI Editing	Enable, Disable	Disable
NOTIS Editing	Enable, Disable	Disable

PARAMETER	SELECTIONS AVAILABLE	DEFAULT
Beep On Good Decode	Enable, Disable	Enable
Xmit Code Identifier	Enable, Disable	Disable
Prefix to Decoded Data	None, User's Choice (1 character)	None
Suffix to Decoded Data	None, User's Choice (1 character)	None
Intercharacter Delay (Communication Delays & Timeouts)	00 to 99 ms	0 ms
UPC-E/UPC-A Preamble	System Character, System Character & Country Code, None	System Character
Buffer Code 39 Symbols (Scan and Store)	Enable, Disable	Disable
Xmit "No Decode" Message	"NR", No Message	No Message
Serial Data Transmission Format	Standard, Options 1 through 3.	Standard
Laser On Time	0.5 to 6 seconds	3 seconds

Note: Suffix and prefix selections are based on a chart of selectable characters. See *Prefix and Suffix Keystroke Identifiers* on page A-3.

Beeper Definitions

Standard Use

BEEPER SEQUENCE	INDICATION
1 Beep - short high tone	A symbol has been successfully decoded.
2 Beeps - long high tone	Data transmission not successful.
3 Beeps - short high tone	Power-up, or watchdog reset.

Parameter Menu Scanning

BEEPER SEQUENCE	INDICATION
1 Beep - short high tone	Successful entry of a bar code in a programming sequence.
4 Beeps - hi/lo/hi/lo (warble sound)	Parameter value has been entered successfully. Set defaults.
2 Beeps - long low tone	Incorrect programming sequence performed. Scan CANCEL and try program sequence again.

Code 39 Scan and Store

BEEPER SEQUENCE	INDICATION
1 Beep - hi/low tone	Indicates new data being entered into the buffer.
3 Beeps - short lo/hi/lo tone	The buffer has been erased, or there was an attempt to transmit an empty buffer.
3 Beeps - long high tone	Code 39 buffer is full.
4 Beeps - long low tone	Error in transmitting stored buffer data.
2 Beeps - lo/hi tone	Transmission of stored buffer data is good.

Full ASCII Code 39

The LS 2080 can be programmed to interpret Code 39 in one of two ways: Code 39 Full ASCII and standard Code 39. The unit can not autodiscriminate between Code 39 and Code 39 Full ASCII.

The default is standard Code 39. To enable Code 39 Full ASCII, follow the instructions in *Code Types* on page 2-25 for selecting code types.

Code 39 Full ASCII

The ASCII character set assigns a code to letters, punctuation marks, numerals, and most control keystrokes on the keyboard.

The first 32 codes are non-printable and are assigned to keyboard control characters such as BACKSPACE and RETURN. The other 96 are called printable codes because all but SPACE and DELETE produce visible characters.

Code 39 Full ASCII interprets the bar code control character (\$ + % /) preceding a Code 39 symbol and assigns an ASCII character value. For example, when Code 39 Full ASCII is enabled and a +B is scanned, it will be interpreted as b, %J as ?, and \$H emulates the keystroke BACKSPACE. Scanning ABC\$M will output the keystroke equivalent of ABC ENTER.

Note that the keystroke will depend on the keyboard in use. For example, \$D will be interpreted as END (IBM PC /XT, /AT, PS/2). See the table on [page A-2](#) for keyboard output produced by embedded codes.

Standard Code 39

Code 39 transmits characters exactly as they are printed. For example +A is transmitted as +A, and ABC\$M as ABC\$M.

Prefixes and Suffixes

Selecting a Prefix and Suffix

The *Keyboard Identifier Maps* on page A-5 will help you locate non-printable keyboard characters and identify the prefix/suffix value assigned. Bar code menus are on *Prefix/Suffix* beginning on page 2-31.

Scanning the bar codes representing a three-digit value in column 1 of the table will assign a keyboard character as a prefix or suffix.

Note that entering a prefix or suffix value with no corresponding keyboard value assigned results in no suffix or prefix being sent.

Prefix and/or suffix character transmit is enabled using the Serial Data Transmission Format parameter (see *Scan Data Transmission Format* on page 2-9).

Code 39 Buffering (Scan and Store)

You cannot delete Code 39 buffering capability while there is data in the transmission buffer.

To allow disabling of Code 39 buffering, first force the buffer transmission (see *Transmit Buffer* on page 2-16) or clear the buffer.

Buffer Data

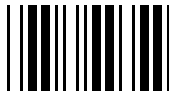
To buffer data, Code 39 buffering must be enabled, and a symbol must be read with a space immediately following the start pattern.

- Unless the symbol overflows the transmission buffer, the unit gives a hi/lo beep to indicate a successful decode and buffering. See *Overfilling Transmission Buffer* on page 2-16.
- The unit adds the message, excluding the leading space to the transmission buffer.
- No transmission of data occurs.

Clear Transmission Buffer

To clear the transmission buffer, read a symbol which contains only a start character, a dash (minus), and a stop character (see symbol below).

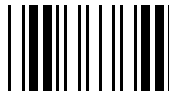
- The unit issues a short hi/lo/hi beep to signal that the transmission buffer has been erased, and no transmission has occurred.
- The unit erases the transmission buffer.
- No transmission of data occurs.



Transmit Buffer

To transmit the buffer, read a symbol containing either the first or second condition:

1. Only a start character, a plus (+), and a stop character (see symbol below).
 - The unit signals that the transmission buffer has been sent (a hi/lo beep).
 - The unit sends the buffer.
 - The unit clears the buffer.



2. A Code 39 bar code with leading character other than a space.
 - The unit signals that a good decode and buffering of that decode has occurred by giving a lo/hi beep.
 - The unit transmits the buffer.
 - The unit signals that the buffer has been transmitted.

Overfilling Transmission Buffer

If the symbol just read will result in an overflow of the transmission buffer:

- The unit indicates that the symbol has been rejected by issuing three long, high beeps.
- No transmission of data occurs.

Attempt to Transmit an Empty Buffer

If the symbol just read was the transmit buffer symbol and the Code 39 buffer is empty:

- A short lo/hi/lo beep signals that the buffer is empty.
- No transmission of data occurs.
- The buffer remains empty.

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Set Default Parameter

To select the **SET DEFAULT** parameter, scan the **SET DEFAULT** bar code. Scanning this automatically reconfigures the value of each parameter to its default value shown in *Parameter Selections* beginning on page 2-10.



SET DEFAULT

Keyboard Type

1. Scan the **KEYBOARD TYPE** bar code.
2. To select a keyboard, scan two bar codes from the following page corresponding to the keyboard identifier (see below). The first label scanned should signify the most significant digit.
3. Scan **ENTER**.

Note: A keyboard type must be selected even if using all the default parameter settings. Selecting a keyboard type will return prefix and suffix settings to the default values.

Keyboard Type	Identifier
IBM XT Compatible	01
IBM AT Compatible	02
IBM PS/2 Models 25, 30	06
IBM PS/2 Models 30-286, 50, 55X, 60, 65X, 70, 80	02
COMPAQ 386	02

Caution

Installing an LS 2080 to any PC or terminal other than those combinations defined above may damage your LS 2080 and/or terminal.



KEYBOARD TYPE



0



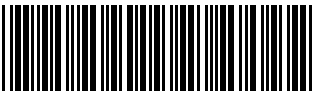
5



1



6



2



7



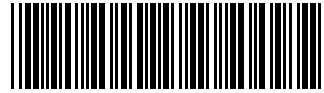
3



8



4



9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

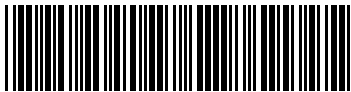


CANCEL

National Type (Europe)

- 1. Scan the **NATIONAL TYPE** bar code.
- 2. Scan a bar code from the following page corresponding to the national type identifier (see below).
- 3. Scan **ENTER**.

National Type	Identifier
UK English	0
French	1
German	2



NATIONAL TYPE



0



5



1



6



2



7



3



8



4

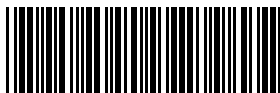


9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

Numeric Key Pad Emulation (Europe)

1. Scan the **NUMERIC KEY PAD EMULATION** bar code.
2. Scan **ENABLE** or **DISABLE**.
3. Scan **ENTER**.



BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



Break Key Code Transmission (Europe)

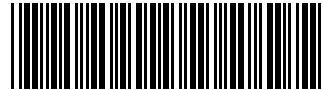
1. Scan the **BREAK KEY CODES** bar code.
2. Scan **ENABLE** or **DISABLE**.
3. Scan **ENTER**.



BREAK KEY CODES



ENABLE



DISABLE

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

Code Types

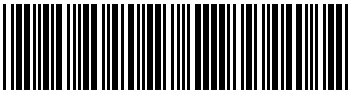
These two options either add or delete a code type.

To add a code:

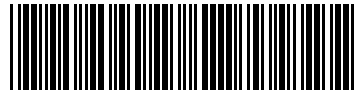
1. Scan the **ENABLE** bar code.
2. Scan the bar code corresponding to the code type to be added.
3. Scan **ENTER**.

To delete a code:

1. Scan the **DISABLE** bar code.
2. Scan the bar code corresponding to the code type to be deleted.
3. Scan **ENTER**.



ENABLE



DISABLE



CODE 39



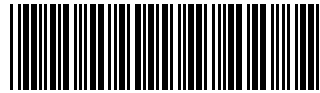
CODE 39 FULL ASCII



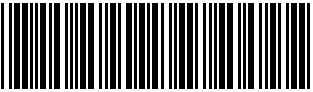
CODE 93



UPC/EAN



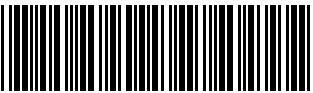
INTERLEAVED 2 OF 5



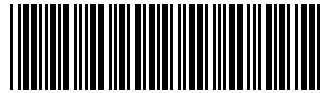
DISCRETE 2 OF 5



CODE 128



ALL CODES

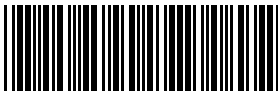


CODABAR

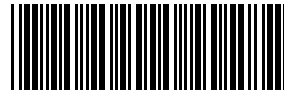
BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

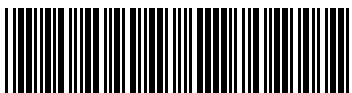


CANCEL

Fixed Lengths For A Code 2 of 5

To set the fixed lengths for a Code 2 of 5:

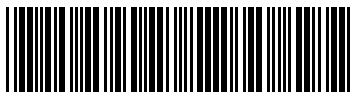
1. Scan the **LENGTH** bar code for the code type and length to be changed.
2. To enter the length, scan two bar codes from the next page; the first bar code scanned should signify the most significant digit.
3. Scan **ENTER**.



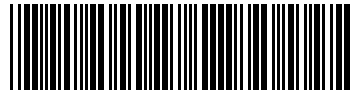
DISCRETE 2 OF 5 LENGTH 1
(Range 01-31)



DISCRETE 2 OF 5 LENGTH 2
(Range 00-31)



INTERLEAVED 2 OF 5 LENGTH 1
(Range 01-31)



INTERLEAVED 2 OF 5 LENGTH 2
(Range 00-31)



0



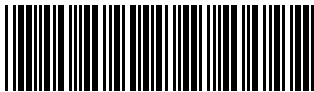
5



1



6



2



7



3



8



4



9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

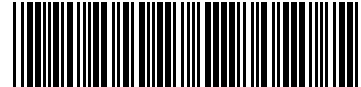
Decode Options

To select one of the decode options:

1. Scan the desired **DECODE OPTION** bar code.
2. Scan the **ENABLE** or **DISABLE** bar code.
3. Scan **ENTER** on the next page.



TRANSMIT UPC-E CHECK DIGIT



TRANSMIT UPC-A CHECK DIGIT



CONVERT UPC-E TO UPC-A



DECODE UPC ONLY



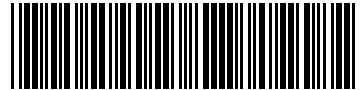
TRANSMIT CODE IDENTIFIER



BEEP AFTER GOOD DECODE



CLSI EDITING



EAN ZERO EXTEND



NOTIS EDITING



ENABLE



DISABLE

Supplemental Selection

To select the desired UPC supplemental option:

1. Scan the **SUPPLEMENTAL SELECTION** bar code.
2. Scan the bar code for the desired option.
3. Scan **ENTER**.



BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

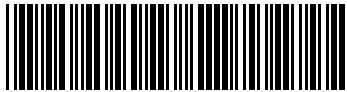
ENTER - stores and enters the new change.



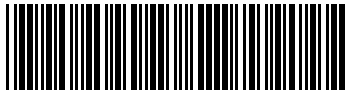
Prefix/Suffix

To enter a prefix/suffix:

1. Scan the **PREFIX** or **SUFFIX** bar code.
2. Scan three bar codes from the next page in the range of 000-127. See *Keyboard Identifier Maps* on page A-5.
3. Scan **ENTER**.



PREFIX



SUFFIX



0



5



1



6



2



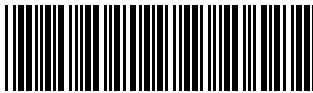
7



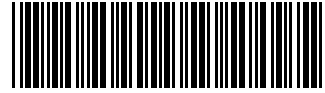
3



8



4



9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

Communications Delays and Timeouts

To enter a new delay or timeout value:

1. Scan the **INTERCHARACTER DELAY** bar code.
2. Enter the new value by scanning two bar codes. The first bar code scanned corresponds to the most significant digit; the second bar code corresponds to the least significant digit. The value entered must be within the 00-99 ms range.
3. Scan **ENTER**.



INTERCHARACTER DELAY
(Range = 00-99 ms)



0



5



1



6



2



7



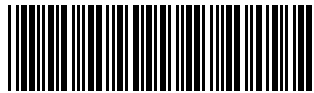
3



8



4



9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

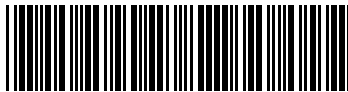


CANCEL

Prefix/Suffix Transmit Delay

To select a prefix/suffix transmit delay:

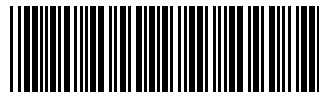
1. Scan the **PREFIX/SUFFIX TRANSMIT DELAY** bar code.
2. Enter the new value by scanning two bar codes in sequence. The first one corresponds to the most significant digit.
3. Scan **ENTER**.



PREFIX/SUFFIX TRANSMIT DELAY
(Range 00-9.9 sec)



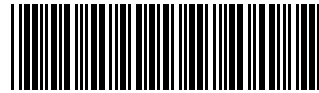
0



5



1



6



2



7



3



8



4



9

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

UPC-E/UPC-A Preamble

To select one of the preamble options:

1. Scan the bar code corresponding to the **PREAMBLE** option desired.
2. Scan the bar code on the next page to enable or disable the option.
3. Scan **ENTER**.



UPC-E PREAMBLE



UPC-A PREAMBLE



SYSTEM CHARACTER



**SYSTEM CHARACTER
AND COUNTRY CODE**



NONE

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

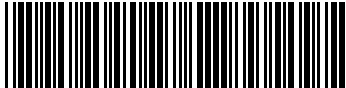


CANCEL

Code 39 Scan and Store

To select a scan and store option:

1. Scan the **SCAN** and **STORE** bar code.
2. Scan the **ENABLE** or **DISABLE** bar code to enable or disable the option.
3. Scan **ENTER**.



SCAN AND STORE



ENABLE



DISABLE

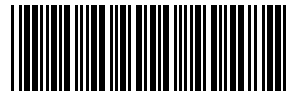
BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

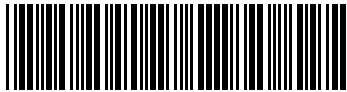


CANCEL

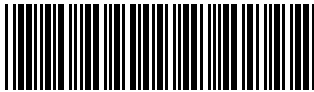
Transmit “No Decode” Message

To enable/disable transmission of the “NR” message:

1. Scan the **TRANSMIT “NR”** bar code.
2. Scan the **ENABLE** or **DISABLE** bar code to enable or disable the option.
3. Scan **ENTER**.



**TRANSMIT “NR”
(NO DECODE MESSAGE)**



ENABLE



DISABLE

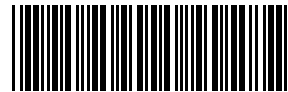
BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER

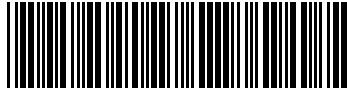


CANCEL

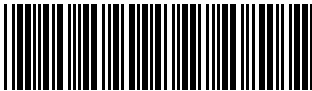
Scan Data Transmission Format

To select a scan data transmission format:

1. Scan the **SCAN DATA OPTIONS** bar code.
2. Scan the bar code corresponding to the desired converted data format.
3. Scan **ENTER**.



SCAN DATA OPTIONS



STANDARD: <SCAN DATA>



**OPTION 2: <PREFIX>
<SCAN DATA> <SUFFIX>**



**OPTION 1: <SCAN DATA>
<SUFFIX>**



**OPTION 3: <PREFIX>
<SCAN DATA>**

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



ENTER



CANCEL

Laser On Time

To select a laser on time:

1. Scan the **LASER ON TIME** bar code.
2. Scan the bar code corresponding to the desired value.
3. Scan **ENTER**.



LASER ON TIME



0.5 SEC.



2.0 SEC.



1.0 SEC.



2.5 SEC.



1.5 SEC.



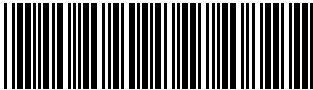
3.0 SEC.



3.5 SEC.



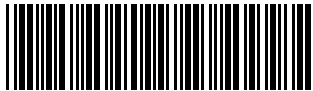
5.0 SEC.



4.0 SEC.



5.5 SEC.



4.5 SEC.



6.0 SEC.

BACKSPACE - deletes the last bar code scanned.

CANCEL - deletes the entire change and returns the user to the decode mode.

ENTER - stores and enters the new change.



BACKSPACE



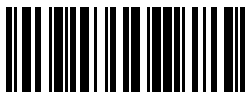
ENTER



CANCEL

Test Symbols

After you set the initial parameters, you may want to test your scanner using the bar codes below:



5012345248

CODE 128 TEST



01234567890128

I 2 OF 5 TEST



20300128

EAN-8 TEST



5 012345678900

EAN-13 TEST



0 1234567890

UPC A TEST



01234567

CODE 39 TEST