# ◆ Metrologic •

## METROLOGIC INSTRUMENTS INC.

MetroSelect® Single-Line Configuration Guide

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#### INTRODUCTION

Your new scanner has been factory configured with a set of default parameters.

Since many host systems have unique formats and protocol requirements, Metrologic provides a wide range of configurable features that may be selected using this bar code based configuration tool. Once the configuration is completed, the scanner stores the settings in nonvolatile memory (NOVRAM). NOVRAM saves the settings when the power is turned off.



Every bar code with an asterisk ( \* ) is a default setting. Bar codes with a tilde ( ~ ) require the *Multi-Code* configuration method.

## **BAR CODE CONFIGURATION METHODS**

The MetroSelect class of scanners can be bar code configured in two ways: the Single-Code Method and the Multi-Code Method.

- Please note that the MS6220 Pulsar® can <u>only</u> be configured using the *Multi-Code Method*.
- (!) To properly configure an MS9540 scanner, all programming codes must be scanned using the CodeGate® option.

#### Single-Code Method

Most features can be enabled or disabled using the Single-Code Method.

- 1. Power up the scanner.
- Scan the bar code for the desired feature.
- 3. Observe a multi-toned, "save setting" beep that indicates the configuration has been saved to NOVRAM.

## **BAR CODE CONFIGURATION METHODS**

- Please note that the MS6220 Pulsar can only be configured using the *Multi-Code* Method.
- ① To properly configure an MS9540 scanner, all programming codes must be scanned using the CodeGate option.

#### Multi-Code Method

All features can be enabled or disabled using the *Multi-Code Method*. A feature marked with a tilde ( ~ ) requires the *Multi-Code Method*.

- 1. Power up the scanner.
- 2. Scan the enter/exit configuration mode bar code (3 beeps).
- 3. Scan the bar code for the desired feature (1 beep).
  - Multiple features can be enabled/disabled before scanning the *enter/exit configuration mode* bar code.
- 4. Scan the *enter/exit configuration mode* bar code (3 beeps) and save the new configuration.



To abort a configuration change, power off the scanner before scanning the enter/exit code.

## **Enter/Exit Configuration Mode**



## **NEED TO START OVER?**

Scan the *Recall Default* bar code. This will erase all previous settings and return the scanner to its default communication protocol.

Keyboard Wedge interface scanners will load keyboard wedge defaults.

All other scanners load RS-232 defaults.



Metrologic manufactures custom OEM scanners, which load the OEM's defaults. Page 84 will explain how this affects "Metrologic Defaults."

**Recall Defaults** 





Bar code descriptions marked with an asterisk (  $^*$  ) define a feature that is a factory default. Bar codes marked with a tilde (  $^\sim$  ) require the *Multi-Code* configuration method.

## **UPC/EAN**

* Enable UPC/EAN
Disable UPC/EAN
* Enable UPC-A
Disable UPC-A
* Enable UPC-E
Disable UPC-E
* Enable EAN-13
Disable EAN-13
* Enable EAN-8
Disable EAN-8

#### **CODE 128**



\* Enable Code 128



Disable Code 128



Enable UCC/EAN-128 ']C1' Code Formatting - For Coupon Code 128, see page 15.



\* Disable UCC/EAN - 128 ']C1' Code Formatting



Ignore <FNC4> Code 128 Characters



\* Use <FNC4> to Determine Extended ASCII Characters

## **CODE 39**



\* Enable Code 39



**Disable Code 39** 



**Enable MOD 43 Check Digit on Code 39** - The scanner only scans Code 39 bar codes that have a valid Modulo 43 check digit.



\* Disable MOD 43 Check Digit on Code 39



**Enable Full ASCII Code 39** 

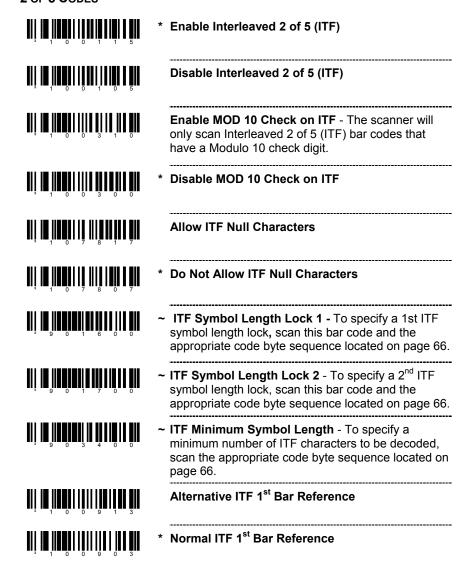


\* Disable Full ASCII Code 39

## **CODE 39**

	Enable PARAF (Italian Pharmaceutical Codes) Support - Code 39 bar codes are converted to PARAF format.
	* Disable PARAF Support
	* Allow PARAF Codes Only
	Allow Non-PARAF Codes
	Enable TRI-OPTIC Code
	* Disable TRI-OPTIC Code
	* Use Standard Code 39 Framing
	Try Code 39 Codes Without 5 Bar Multiples
3 1 0 0 4 1 6	Enable ITF/Code 39 Filters
	* Disable ITF/Code 39 Filters
	Enable Self-Service Library Code 39
	* Disable Self-Service Library Code 39
	Transmit MOD 43 Check Digit - with Self Service Library Code 39
	* Do Not Transmit MOD 43 Check Digit - with Self Service Library Code 39

#### 2 OF 5 CODES



## 2 OF 5 CODES

	Enable Standard 2 of 5
*	Disable Standard 2 of 5
~	Standard 2 of 5 Symbol Length - To specify a minimum number of characters to be decoded, scan this bar code and the appropriate code byte sequence located on page 66.
	Enable Matrix 2 of 5
*	Disable Matrix 2 of 5
	Enable Matrix 2 of 5 Check Digit Requirement
*	Disable Matrix 2 of 5 Check Digit Requirement
	Enable 15 Digit Airline 2 of 5
*	Disable 15 Digit Airline 2 of 5
	Enable 13 Digit Airline 2 of 5
*	Disable 13 Digit Airline 2 of 5
	Enable Hong Kong 2 of 5
*	Disable Hong Kong 2 of 5

## CODABAR **Enable Codabar Disable Codabar Enable Dual Field Codabar Disable Dual Field Codabar CODE 93 Enable Code 93** Disable Code 93 **CODE 11 Enable Code 11** Disable Code 11 Check for 1 Code 11 Check Digit Check for 2 Code 11 Check Digits Do Not Check for 2 Code 11 Check Digits Check for 2 Code 11 Check Digits if Code Length is Greater Than 10 Characters

TELEPEN		
		Enable Telepen
	*	Disable Telepen
		Enable ALPHA Telepen
	*	Disable ALPHA Telepen
PLESSEY CODES		
		Enable MSI Plessey
	*	Disable MSI Plessey
	*	No MSI Plessey Check Digit - Plessy bar codes will not be tested for a check digit.
		Enable MSI Plessey MOD 10/10 Check Digit - Test MSI Plessey bar codes for a 2 digit Modulo 10 check digit.
	*	Enable MSI Plessey Mod 10 Check Digit - Test MSI Plessey bar codes for a 1 digit Modulo 10 check digit.
		Enable UK Plessey
	*	Disable UK Plessey
		Enabled UK Plessey A to X Conversion
	*	Disabled UK Plessey A to X Conversion

#### **PLESSEY CODES**



\* Standard Plessey Stop Characters



**Accept Bad Plessey Stop Characters** 

#### **ADDITIONAL DECODE FEATURES**



Enable Double Border Required / Large Intercharacter Space



\* Disable Double Border Required / Large Intercharacter Space



**Enable Small Border Required** 



\* Disable Small Border



Minimum Symbol Length - Single-line default is 3. Combine this code with the proper code bytes (on page 66), to specify the minimum number of characters in all non-UPC/EAN bar codes.



 Symbol Length Lock - Combine this code with the proper code bytes, to lock the bar code's length into place.



**Enable Modulus 8 Filter on Bar & Space Counts** 



\* Disable Modulus 8 Filter on Bar & Space Counts



Handle Code 39 Bad Border



\* Disable Code 39 Bad Border

#### **CONFIGURABLE CODE LENGTHS**

There are seven bar code lock lengths available. Specific code types can be assigned to a lock length. While in configuration mode:

- 1. Scan the code length lock #1 bar code
- 2. Scan the three code bytes that represent the code length (page 66).
- 3. Scan the matching code *type* lock #1 bar code.
- 4. Scan the three code bytes that represent the code type.

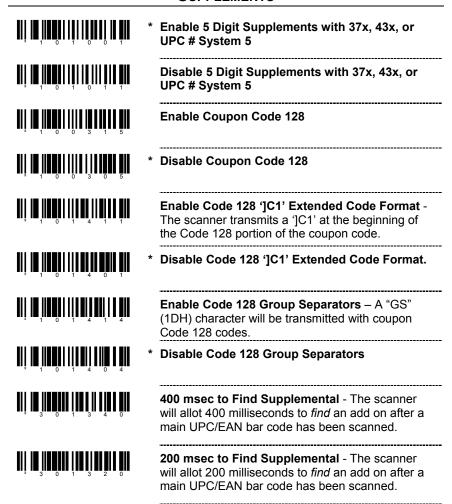
This process can be repeated for lock lengths 2 through 7.

~ Code Length Lock #1
~ Code Type Lock #1
~ Code Length Lock #2
~ Code Type Lock #2
~ Code Length Lock #3
~ Code Type Lock #3
~ Code Length Lock #4
~ Code Type Lock #4
~ Code Length Lock #5
~ Code Type Lock #5

# 

		Enable Two Digit Supplements
	*	Disable Two Digit Supplements
	*	Enable Two Digit Redundancy - The scanner will scan the bar code plus the 2 digit add on twice before accepting data.
		Disable Two Digit Redundancy
3 1 0 1 2 1 6		Enable Five Digit Supplements
	*	Disable Five Digit Supplements
		Enable Five Digit Redundancy - The scanner will scan the bar code plus the 5 digit add on twice before accepting data.
	*	Disable Five Digit Redundancy
		Supplements are Required - All UPC/EAN labels that are scanned must have a supplement.
	*	Supplements are Not Required
		Enable Remote Supplement Required - MS9500 & MS6200 not supported.
1 0 1 4 0 6	*	Disable Remote Supplement Required - MS9500 & MS6200 not supported.
		Enable Bookland (978) Supplement Required
	*	Disable Bookland (978) Supplement Required

Enable 977 (2 Digit) Supplement Required - The scanner will require a 2 digit supplement to be scanned when an EAN-13 code begins with 977.
Disable 977 (2 Digit) Supplement Required
Enable 378/379 French Supplement Required
Disable 378/379 French Supplement Required
Enable 414/419 German Bookland Supplement Required
Disable 414/419 German Bookland Supplement Required
Enable 434/439 German Supplement Required
Disable 434/439 German Supplement Required
Enable # System 2 Requires Supplements
Disable # System 2 Requires Supplements
Enable UPC # System 5 Requires Supplements
Disable UPC # System 5 Requires Supplements
Enable 2 Digit Supplements with 37x, 43x, or UPC # System 5
Disable 2 Digit Supplements with 37x, 43x, or UPC # System 5



**100 msec to Find Supplemental** - The scanner will allot 100 milliseconds to *find* an add on after a main UPC/FAN bar code has been scanned

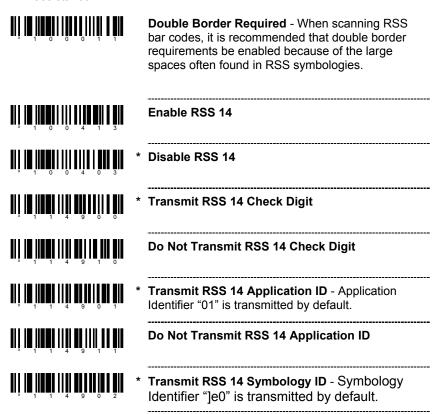
Enable Code ID's with Supplements
* Disable Code ID's with Supplements
* Beep Once on Supplements
Beep Twice on Supplements
Enable ISBN Check Digit Transmission - Not available with all models.
Disable ISBN Check Digit Transmission
Enable Bookland to ISBN Conversion - Not available with all models
* Disable Bookland to ISBN Conversion
Enable ISBN Re-Formatting
* Disable ISBN Re-Formatting
Disable Supplementals when CodeGate Button is Pressed - Available for MS9540 scanners only. Requires standard Code Gate be inactive in and out of stand.
* CodeGate Does Not Affect Supplemental Scanning - Available for MS9540 scanners only.
No Supplement Checking if EAN-13 Code is just scanned
* Normal Supplement Checking

## **RSS BAR CODE IMPLEMENTATION**

Metrologic's MS9520 Voyager<sup>®</sup> and MS9540 VoyagerCG<sup>®</sup> laser scanners with software #14810 and higher can be configured to scan RSS type codes.



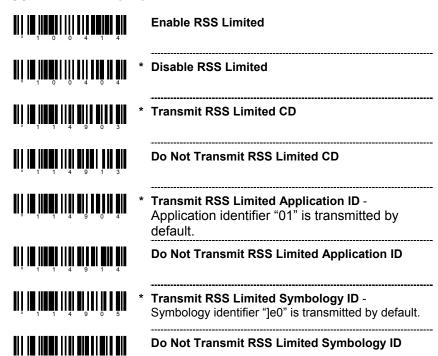
XT keyboard will no longer be supported in standard software releases with software #14810 or higher. If XT keyboard is needed for your application, software #14806 or lower is required, contact a Metrologic customer service representative at 1-800-ID-METRO for further assistance.



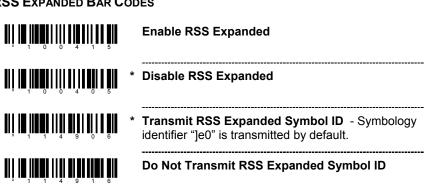
Do Not Transmit RSS 14 Symbology

## **RSS BAR CODE IMPLEMENTATION**

#### **RSS LIMITED BAR CODES**



#### **RSS EXPANDED BAR CODES**



#### **CONFIGURATION MODE BAR CODES**

Enable ISBT Code 128
Disable ISBT Code 128

These bar codes are used to enable/disable a special transmit mode as outlined in section 3.5.2 of the ISBT-128 Specification. This output method allows the user to confirm independently the accuracy of the Code-128 check digit.



These bar codes can be used to disable the transmission of the ISBT Code 128 data identifiers. When this option is selected, the first two data characters are removed from the data stream (ID characters) unless the ISBT bar code scanned contains the Donation Identification Number identifiers. In this instance only the first ID character is removed from the Donation ID Number. The second is regarded as normal data.



These bar codes are used to convert and transmit the Mode 37, 2 check digit from the flag digits of the Donation Identification Number provided the check digit is contained in the flag digits. Transmission of the Donation Identification number will be the same except for the last two digits, which are converted into a single check sum character.



## **CONCATENATION PROGRAM MODE BAR CODES**

Supported by the MS9500 series only.

The following bar codes are used to program variable time requirements used to find the 2<sup>nd</sup> bar code of the ISBT concatenation sequence.

3 0 1 3 1 0	100 msec to Find Concatenation Sequence
	200 msec to Find Concatenation Sequence
	300 msec to Find Concatenation Sequence
	400 msec to Find Concatenation Sequence
	500 msec to Find Concatenation Sequence
	600 msec to Find Concatenation, Sequence
	700 msec to Find Concatenation Sequence

# PRE-DEFINED CONCATENATION PROGRAM MODE BAR CODES Supported by the MS9500 series only.

The first two barcodes can be used to enable/disable pre-defined concatenation sequences. The remaining bar codes enable the specific enable concatenation sequences and are not needed to enable concatenation. They can be used to disable any selected pre-defined concatenation sequence as well as re-enable it.

3 1 3 8 4 1 3	Enable Pre-Defined Concatenation Sequence
	Disable Pre-Defined Concatenation Sequence
	Donation Identification Number + AB0/Rh (D) Blood Groups =á + =% Concatenation
	Donation Identification Number + Donor Identification Number = á + &; Concatenation

#### PRE-DEFINED CONCATENATION PROGRAM MODE BAR CODES

Donation Identification Number + Confidential Unit Exclusion Status =á + &! Concatenation
Product Code + Expiration Date (Form 1) =< + =>Concatenation
Product Code + Expiration Date (Form 2) =< + &> Concatenation
Product Code + Expiration Date (Form 3) &< + => Concatenation
Product Code + Expiration Date (Form 4) &< + &> Concatenation

# **USER-DEFINED CONCATENATION PROGRAM MODE BAR CODES**Supported by the MS9500 series only.

The first two bar codes can be used to enable/disable user-defined concatenation sequences. The remaining bar codes are used to enter the user-defined identifiers used in the concatenation sequence. These bar codes require that the user enter program mode first. Then, after scanning the appropriate code, follow the rules for using code bytes to enter the desired identifiers.

3 1 3 8 4 1 4	Enable User-Defined Sequences
	Disable User-Defined Sequences
	1 <sup>st</sup> Left Identifier
	2 <sup>nd</sup> Left Identifier
	1 <sup>st</sup> Right Identifier
	2 <sup>nd</sup> Right Identifier

Supported by the MS9500 series only.

The following example demonstrates how to program the User-Defined ISBT identifiers:

Assume the left-hand identifiers are the ISBT defined donation identification number: "=G"; and the right hand identifiers are country specific identifiers "&a".

- 1. Scan the ENTER/EXIT programming mode bar code.
- 2. Scan the 1<sup>st</sup> Left Identifier programming mode bar code.
- 3. Scan (Code Byte 0) + (Code Byte 6) + (Code Byte 1).
- 4. Scan the 2<sup>nd</sup> Left Identifier programming mode bar code.
- 5. Scan (Code Byte 0) + (Code Byte 7) + (Code Byte 1).
- 6. Scan the 1<sup>st</sup> Right Identifier programming mode bar code.
- 7. Scan (Code Byte 0) + (Code Byte 3) + (Code Byte 8).
- 8. Scan the 2<sup>nd</sup> Right Identifier programming mode bar code.
- 9. Scan (Code Byte 0) + (Code Byte 9) + (Code Byte 7).
- 10. Scan the Enable User-Defined Sequence bar Code.
- 11. Scan the Enable ISBT bar code.
- 12. Scan the ENTER/EXIT programming mode bar code.

The scanner is now programmed with the appropriate identifiers. Since both ISBT and User-defined Concatenation are enabled, ISBT 128 bar codes scanned successively that contain these identifiers will be concatenated.

An alternate method of the type found in section 4.8.1 of the ISBT specifications can be used for programming user-defined concatenation sequences. Using the previous example, the identifiers can be programmed into a single programming mode bar code. The following bar codes can be used to enable and disable the user-defined concatenation.

Enable (Left, =G) + (Right, &a)



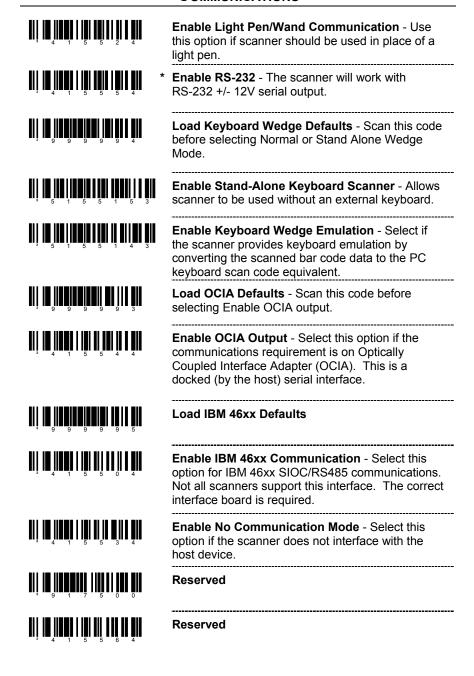
Disable (Left, =G) + (Right, &a)



These programming-mode bar codes differ from Metrologic's normal set of programming mode bar codes and can only be used in single-code programming mode. In *Multi-Code* program mode, these bar codes are not recognized.

Two forms of concatenation can be enabled at any given time – one pre-defined sequence and the User-defined sequence. Code selects and ISBT Code-128 concatenation cannot be used simultaneously. Both functions use the same internal resources so they must remain mutually exclusive.

#### **COMMUNICATIONS**



#### **CONFIGURATION MODE OPTIONS**



Allow Configuration Mode on Power-Up – the scanner can only enter MetroSet mode before any bar codes are scanned.



 \* Allow Configuration Mode Anytime - Allow MetroSet configuration at any time.



Allow configuration Codes on Power-Up - Once a product bar code is scanned after power-up, the scanner will not accept configuration bar codes.



 \* Allow Configuration Codes Anytime - Allows scanning of configuration bar codes at any time.

#### SCAN BUFFERS



\* 1 Scan Buffer - The scanner will scan one bar code in the scan field and not scan again until the bar code is removed from the scan field for the duration of the same symbol time out.



**2 Scan Buffers** - The scanner will scan 2 bar codes in the scan field one time each. These 2 bar codes will not be scanned again and until they are removed from the scan field for the duration of the same symbol time out.



**3 Scan Buffers** - Same function as 2 Scan Buffers, but 3 bar codes are in the scan field.



**4 Scan Buffers** - Same function as 2 Scan Buffers, but 4 bar codes are in the scan field.

#### REDUNDANT SCANS



 Nedundant Scans - Requires 1 good decode for a good scan.



**1 Redundant Scan** - Requires 2 consecutive decodes of the same bar code data for a *good scan*.



**2 Redundant Scans** - Requires 3 consecutive decodes of the same bar code data for a *good scan*.



**3 Redundant Scans** - Requires 4 consecutive decodes of the same bar code data for a *good scan*.



**4 Redundant Scans** - Requires 5 consecutive decodes of the same bar code for a *good scan*.



**5 Redundant Scans** - Requires 6 consecutive decodes of the same bar code for a *good scan*.



**6 Redundant Scans** - Requires 7 consecutive decodes of the same bar code for a *good scan*.



**7 Redundant Scans** - Requires 8 consecutive decodes of the same bar code for a *good scan*.

#### MISCELLANEOUS DECODE FEATURES



\* Optional Same Symbol Check - Requires 1 different character between successive bar codes to consider the bar code "new".



**Normal Same Symbol Check** - Requires 3 different characters between successive bar codes to consider the bar code "new".

#### SAME SYMBOL TIME OUTS

The length of time before a bar code can be rescanned after it is removed from the scan field is user-configurable in increments of 50 msecs to 6350 msecs (6.35 sec).

If using an MS9500 or IS4120FL, please go to page 75.



Variable Same Symbol Time Out - In configuration mode, scan this bar code followed by the appropriate code byte sequence (on page 66) to set the same symbol time out duration. This feature is not supported for the MS9500 or IS4120FL, refer to page 75 for additional information.



No Same Symbol Time Out



Infinite Same Symbol Time Out - The scanner will not repetitively scan the same bar code. This option overrides the symbol rescan time-outs.



**Enable 2 Second Time Out** - after 2 seconds of inactivity the laser will turn off and stay off until the CodeGate button is pressed. *This feature is for the MS5145 only.* 



Disable 2 Second Time Out

#### **LED OPTIONS**



Flash Green LED if Rescan Allowed - This indicates same symbol timeout has elapsed.



Do Not Flash Green LED if Rescan Allowed



Reverse LED Functions - Red = Laser On Green = Good Read



\* Normal LED Functions - Green = Laser On Red = Good Read

## BEEPER OPTIONS **Normal Tone Optional Tone 1 Optional Tone 2 Optional Tone 3 Optional Tone 4 Optional Tone 5** Optional tone 6 No Beep **Beep Once on Supplements** Beep Twice on Supplements **Enable Fast Beep** Disable Fast Beep Beep on BEL Command - The scanner beeps when it receives a BEL character from the host. If a number is sent within 200 msecs before the BEL character, the scanner will beep that number of

times.

## BEEPER OPTIONS \* Ignore BEL Command Enable Light Pen Toggle During Beep - The scanner beeps and toggles the light pen data line on a successful decode. This drives a good read indicator. **Disable Light Pen Toggle During Beep Enable Pass-Through** Disable Pass-Through Beep with Pass-Through Data No Beep with Pass-Through Data **Enable Record Count Capture** No Record Count Capture

**Transmit Record Counts** 

## **DATA TRANSMISSION DELAYS**

Use these codes to select the amount of delay between sending data characters from the scanner to the host. This helps prevent the scanner from overflowing host-input buffers.

*	1 msec Intercharacter Delay
	10 msec Intercharacter Delay
	25 msec Intercharacter Delay
~	Variable msec Intercharacter Delay - Scan this bar code and a sequence of code bytes (on page 66) to set the delay between characters sent to the host system (range from 1 to 255 msecs.).
	No Intercharacter Delay
	Variable Inter-Record Delay
	Turn Off Laser During Inter-Record Delay
	Leave Laser On During Inter-Record Delay

## **COMMUNICATION TIME OUT OPTIONS**

	<b>Enable Communications Time Out</b>
*	Disable Communications Time Out
*	Beep Before Transmit
	Beep After Transmit
~	Variable Communications Time Out
### ** ** ** ** ** ** ** ** ** ** ** **	Default Communications Time Out (2 secs)
	Short Communications Time Out (1 secs)
	Long Communications Time Out (4 secs)
	Three Beeps on Time Out
*	No Beeps on Time Out
	Razzberry Tone on Time Out
*	No Razzberry Tone on Time Out

#### **SCANNER OPERATION**

#### HOST SCANNER COMMANDS



**Enable D/E Disable Command.** - The scanner will disable scanning after it receives an ASCII "D" from the host device. It will enable scanning when it receives an ASCII "E".



Disable D/E Disable.



**Enable Z/R Type D/E Simulation** - The scanner will disable scanning after it receives an ASCII "Z" from the host device. It will enable scanning when it receives an ASCII "R".



\* No Z/R Type D/E Simulation



**Enable F/L Laser Command** - The scanner will turn *off* the laser after the scanner receives an ASCII "F" character. The laser will turn *on* after it receives an ASCII "L" character.



Disable F/L Laser Command



**Use DTR Scan Disable** - The scanner will monitor the DTR input to determine if scanning should be allowed. A +12V "active" level enables decoding. A -12V "inactive" level disables decoding.



\* Do Not Use DTR Scan Disable - Do not monitor the DTR input.



**Activate DC2 Character** - Scanning will be initiated with the receipt of a DC2 character (^R, 124).



Do Not Activate on DC2 Character



Transmit "METROLOGIC" with receipt of an "I" (49H) via RS232



\* Don't Transmit "METROLOGIC" with receipt of an "I" (49H) via RS232

# **SCANNER OPERATION**

## **HOST SCANNER COMMANDS**

	Transmit Scanner ID byte with receipt of an "i" (69H) via RS232 - The ID byte is transmitted as 3 bytes (i.e. 0, 0, 1).
***************************************	Don't Transmit Scanner ID byte with receipt of an "i" (69H) via RS232
	Transmit "NO READ" if DC2 Activated
***************************************	Do Not Transmit "NO READ" if DC2 Activated
	No Green LED During "NO READ" Transmit
***************************************	Green LED During "NO READ" Transmit
	Transmit Serial Number
	Enable Motor On/Off Commands
* 1 1 8 2 0 3	Disable Motor On/Off Commands
	Disable RS232 Receive
	Normal RS232 Receive
	Enable Banco Control Mode
	Disable Banco Control Mode

# **SCANNER OPERATION**

### **TEST MODES**



**Scanability ON** - This option enters scanability test mode. *Do not enable unless instructed by a Metrologic representative.* 



\* Scanability OFF



**Scan Count Mode ON** - The scanner will enter scan count test mode and the scanner's firmware number will transmit to the host. *Do not enable unless instructed by a Metrologic representative.* 



\* Scan Count Mode OFF.



Scan the *Enter Configuration Mode* bar code before trying to set these features (see the *Multi-Code Method* on page 2).

## **USER CONFIGURABLE PREFIXES, ALL DATA**



Configurable Prefix Character #1 - A prefix ID can be added and assigned for data transmission. Use this code with a code byte sequence (on page 66) that represents the desired character.



 Configurable Prefix Character #2 - Assigns a second configurable prefix character.



 Configurable Prefix Character #3 - Assigns a third configurable prefix character.



 Configurable Prefix Character #4 - Assigns a fourth configurable prefix character.



 Configurable Prefix Character #5 - Assigns a fifth configurable prefix character.

.....



 Configurable Prefix Character #6 - Assigns a sixth configurable prefix character.



 Configurable Prefix Character #7 - Assigns a seventh configurable prefix character.



 Configurable Prefix #8 - Assigns an eighth configurable prefix character.



~ Configurable Prefix Character #9 - Assigns a ninth configurable prefix character.



 Configurable Prefix Character #10 - Assigns a tenth configurable prefix character.



\* Clear All User Configurable Prefixes

## USER CONFIGURABLE ID CHARACTERS, CODE SPECIFIC

Ш				Ш		
Щ	ı∎,ııı	ı	١Ħ١	III	ПЩ	

\* Use Configurable Code ID Bytes as Prefixes -User configured, code specific ID bytes are transmitted before the data. If using prefixes, user configured suffixes can not be used.



Use Configurable Code ID Bytes as Suffixes - User configured, code specific ID bytes are transmitted after the data. If using suffixes, user configured prefixes can not be used.

‡ Enter configuration mode then scan this bar code followed by the three code byte bar codes (on page 66) that represent a unique ID character to be associated with this bar code type.

9 0 5 6 0 0	~ Configurable UPC-A ID ‡
	~ Configurable UPC-E ID ‡
	~ Configurable EAN-8 ID ‡
	~ Configurable EAN-13 ID ‡
	~ Configurable Code 39 ID ‡
	~ Configurable Code 128 ID ‡
	~ Configurable Code 93 ID ‡
	~ Configurable Code 11 ID ‡
	~ Configurable Telepen ID ‡

# USER CONFIGURABLE ID CHARACTERS, CODE SPECIFIC

‡ Enter configuration mode then scan this bar code followed by the three code byte bar codes (on page 66) that represent a unique ID character to be associated with this bar code type.

3 9 0 7 2 0 0	~ Configurable TRI-OPTIC ID ‡
	~ Configurable Standard 2 of 5 ID ‡
	~ Configurable Interleaved 2 of 5 ID ‡
	~ Configurable Matrix 2 of 5 ID ‡
	~ Configurable Airline 2 of 5 ID ‡
	~ Configurable MSI Plessey ID ‡
	~ Configurable UK Plessey ID ‡
	~ Configurable Codabar ID ‡
	* Clear All Configurable Code Specific ID's - Clears all unique ID characters previously identified.
	Enable Teraoka ID
	* Disable Teraoka ID
	Enable Taiwan 7-11 ID
	* Disable Taiwan 7-11 ID

#### STANDARD PREFIX CHARACTERS



**Enable STX Prefix** - The scanner will transmit a Start of TeXt (ASCII 02H) before each bar code.



Disable STX Prefix



**Enable Rochford-Thomson Mode** 



\* Disable Rochford-Thomson Mode



Enable AIM ID Characters



\* Disable AIM ID Characters



**Enable UPC Prefix ID** - The scanner will transmit a prefix before any UPC/EAN bar code. The prefixes are A (UPC-A), E0 (UPC-E), F (EAN-13), and FF (EAN-8).



\* Disable UPC Prefix ID.



**Enable NCR Prefix ID** - The scanner will transmit a prefix before the following code types. The prefixes are as follows: A (UPC-A), E0 (UPC-E), FF (EAN-8), F (EAN 13), B1 (Code 39) B2 (ITF), B3 (Code 128 and other codes).



\* Disable NCR Prefix ID



**Enable Nixdorf ID Characters** - This option transmits code identities before each bar code for many Siemen/Nixdorf registers.

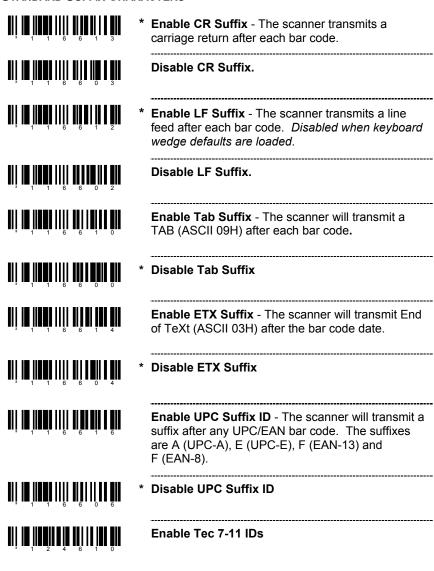


Disable Nixdorf ID Characters

# STANDARD PREFIX CHARACTERS

Enable SANYO ID Characters
* Disable SANYO ID Characters
Enable Manufacturer ID Prefix - Transmits "METROLOGIC" before all bar code data.
* Disable Manufacturer ID Prefix
Enable "C" Prefix
* Disable "C" Prefix
Enable "\$" Prefix ID for UPC/EAN
* Disable "\$" Prefix ID for UPC/EAN
Enable Tab Prefix - The scanner will transmit a TAB (ASCII 09H) before each bar code.
* Disable Tab Prefix
Enable SNI Beetle Mode
* Disable SNI Beetle Mode
Enable Cipher 1021 IDs
* Disable Cipher 1021 IDs

#### STANDARD SUFFIX CHARACTERS



Disable Tec 7-11 IDs

#### LONGITUDINAL REDUNDANCY CHECK

A Longitudinal Redundancy Check (LRC) is an error checking character that is calculated across a sequence of data characters. It is determined by eXclusive ORing (XOR) the characters to be checked, starting with an initial value of 00H.

The result, an "LRC byte" is then transmitted following the data stream and used by the receiving computer to determine if the information was received correctly. In the scanner's case, XOR is performed prior to adding parity bits.

When the LRC is enabled, the scanner defaults to starting the LRC on the second byte of information transmitted. Optionally, the calculation can start on the first byte transmitted.



**Enable Transmit of LRC Calculation** - The scanner outputs on LRC check character after the bar code.



Disable Transmit of LRC Calculation.



\* Start LRC on First Byte - The scanner will calculate the LRC check digit starting with the first character.



**Start LRC on Second Byte** - The scanner will calculate the LRC check digit starting with the second character.

#### CHARACTER REPLACEMENTS

To replace a character:

- 1. Scan the enter/exit configuration mode bar code (on page 2).
- 2. Scan the character to replace code (shown below).
- Scan the ASCII code byte value of the character you wish to replace (refer to the ASCII Reference Table in the Code Byte Usage section of this manual).
- 4. Scan the replacement character bar code (shown below).
- 5. Scan the ASCII code byte value of the replacement character.
- 6. Scan the enter/exit configuration mode bar code (on page 2).



~ Character to Replace



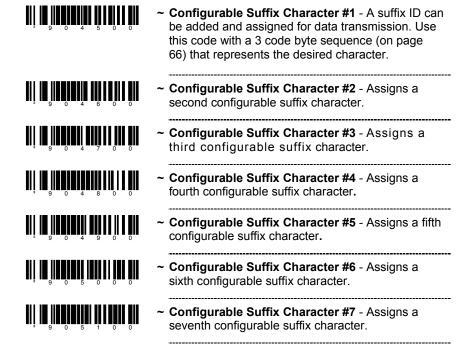
~ Replacement Character



No Replacement

### USER CONFIGURABLE SUFFIXES, ALL DATA

Note: Scan the Enter/Exit Configuration mode code before trying to set this feature. Refer to Multi-Code Method on page 2.



- Configured Suffix Character #8 Assigns an eighth configurable suffix character.
- ~ Configurable Suffix Character #9 Assigns a ninth configurable suffix character.
  - Configurable Suffix Character #10 Assigns a tenth configurable suffix character.
- \* Clear All User Configurable Suffixes

# SPECIAL FORMATS **Enable SINEKO Mode Disable SINEKO Mode Enable Newcode Formatting Mode A Disable Newcode Formatting Mode A Enable Newcode Formatting Mode B** Disable Newcode Formatting Mode B Remove All Leading Zero's Don't Remove Leading Zero's **Enable MS951 CAPS Lock** Disable MS951 CAPS Lock **Enable HCA Parsing Disable HCA Parsing**

# **UPC/EAN FORMATTING Transmit UPC-A Check Digit** Do Not Transmit UPC-A Check Digit Transmit UPC-E Check Digit Do Not Transmit UPC-E Check Digit Expand UPC-E to 12 Digits - Expand UPC-E bar codes to the 12 digit equivalent, UPC-A bar codes. Do Not Expand UPC-E to 12 Digits Send Number System on Expanded UPC E Do Not Send Number System on Expanded UPC E Enable GTIN Formatting Disable GTIN Formatting Convert UPC-A to EAN-13 - The scanner converts UPC-A to EAN-13 by transmitting a leading zero before the bar code. Do Not Convert UPC-A to EAN-13

# UPC/EAN FORMATTING Transmit Lead Zero on UPC-E - This option will transmit a zero before each UPC-E bar code. Do Not Transmit Lead Zero on UPC-E Convert EAN-8 to EAN-13 - The scanner will transmit five zeros before the bar code to convert FAN-8 to FAN-13. Do Not Convert EAN-8 to EAN-13 **Transmit UPC-A Number System** Do Not Transmit UPC-A Number System Transmit UPC-A MFR # Do Not Transmit UPC-A MFR # Transmit UPC-A ITEM # Do Not Transmit UPC-A ITEM # **Transmit EAN-8 Check Digit** Do Not Transmit EAN-8 Check Digit Transmit EAN-13 Check Digits - The scanner will transmit EAN-13 Check Digit. Do Not Transmit EAN-13 Check Digit.

CODABAR FORMATTING	
	Transmit Codabar Start/Stop Characters - Transmits Codabar's Start/stop characters before and after each bar code.
*	Do Not Transmit Codabar Start/Stop
	Enable CLSI Editing - Works only with 14 digit Codabar type lengths. This option will perform CLSI type editing before the information is transmitted to the host.
*	Do Not Enable CLSI Editing
	Enable Codabar Mod-16 Check Digit
*	Disable Codabar Mod-16 Check Digit
	Enable Codabar "7-Check" Check Digit
*	Disable Codabar "7-Check" Check Digit
*	Transmit Codabar Check Digit
	Don't Transmit Codabar Check Digit

#### **CODE 39 FORMATTING**



**Transmit Mod 43 Check Digit on Code 39** - This feature works in conjunction with Mod 43 *Check Digit on Code 39* option, on page 4. Both must be enabled for this feature to work.



\* Do Not Transmit Mod 43 Check Digit on Code 39



**Transmit Code 39 Stop/Start Characters** - The scanner transmits Code 39's start and stop characters before and after each bar code.



\* Do Not Transmit Code 39 Stop/Start Characters.



Transmit an "A" (41H) Prefix if Italian Pharmaceutical.



\* Do not Transmit an "A" (41H) Prefix if Italian Pharmaceutical

#### **CODE 11 FORMATTING**



**Transmit Code 11 Check Digit** - This bar code will transmit Code 11 check characters when used with *Enabled Code 11* on page 8.



Do Not Transmit Code 11 Check Digit

#### **TELEPEN**



Enable Convert Telepen ^L to E



Disable Convert Telepen ^L to E

#### **PLESSEY**



**Transmit UK Plessey Check Digit** - The scanner will transmit UK Plessey Check Digit characters and must be used with the UK Plessey option.



\* Do Not Transmit UK Plessey Check Digit



**Enable UK Plessey Special Format** 



**Disable UK Plessey Special Format** 



**Transmit MSI Plessey Check Digit** - This option works in conjunction with one or both of the Enabled MSI Plessey Mod options on page 9.



Do Not Transmit MSI Plessey Check Digit

#### 2 OF 5 CODE FORMATTING



**Transmit Mod 10 Check Digit on ITF** - The scanner transmits interleaved 2 of 5 (ITF) Mod 10 check character.



\* Do Not Transmit Mod 10 Check Digit on ITF -Works in conjunction with Mod 10 check on ITF. Both must be enabled for this feature to work.



Transmit Matrix 2 of 5 Check Digit



Do Not Transmit Matrix 2 of 5 Check Digit

## **RS232**



\* Enable RS232 Mode - the scanner will work with RS-232 +/-12V serial output.

## **PARITY FEATURES**

A parity bit is an extra data bit used to help catch data transmission errors. The scanner's parity must match the host's parity.

	No Parity
	Odd Parity - Select to set the parity bit to either a 1 or a 0 to ensure an odd number of bits are 1's.
***************************************	Space Parity - Select to set the parity bit always 0.
	Even Parity - Select to set the parity bit to either a 1 or 0 to ensure an even number of bits are 1's.
	<b>Mark Parity</b> - Select Mark Parity to set the parity bit always 1.
BAUD RATE	
	115200 BAUD Rate (Not available with Voyager)
	57600 BAUD Rate (Not available with Voyager)
	38400 BAUD Rate
	19200 BAUD Rate
	14400 BAUD Rate

\* 9600 BAUD Rate

4800 BAUD Rate

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# BAUD RATE 2400 BAUD Rate 1200 BAUD Rate 600 BAUD Rate 300 BAUD Rate DATA/STOP BITS 8 Data Bits - The number of data bits transmitted for each character. 7 Data Bits 1 Stop Bit 2 Stop Bits HARDWARE HANDSHAKING Enable RTS/CTS Handshaking - Output a Request to Send (RTS) signal and wait for a Clear to Send (CTS) signal before transmitting data. Disable RTS/CTS Handshaking.

signal for each character.

last character has been transmitted.

Character RTS/CTS - Activates/Deactivates RTS

Message RTS/CTS - Activates RTS before sending

the first character and leaves it active until after the

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#### HARDWARE HANDSHAKING



Invert RTS Polarity (RSV1)

-12V = Active +12V = Inactive



Standard RTS Polarity - Use standard RTS polarity -12V = Inactive

+12V = Active



**Invert CTS Polarity (RSV2)** 

OK to send

-12V = Active, +12V = Inactive, Do not send



Standard CTS Polarity

-12V = Inactive, +12V = Active,
Do not send OK to send



Activate RTS, Do Not Wait for CTS (RSV3) -Activate RTS for transmission but do not wait for

CTS to send.



Activate RTS, Wait for CTS - Wait for CTS after activating RTS.



Test CTS Not Present Before RTS (RSV4) - Do not activate RTS if CTS is already present.



Do Not Test for CTS Present Before RTS



Enable DTR Support - The scanner will stop scanning when the Data Terminal Ready (DTR) signal goes inactive.



**Disable DTR Support** 



Enable RTS Counter Toggle - The scanner will toggle the RTS line on a good decode.



**Disable RTS Counter Toggle** 



Enable XON/XOFF Handshaking - The scanner will stop transmission whenever on XOFF (ASCII 13H) is received. Transmission will resume after an XON (ASCII 11H) is received.



Disable XON/XOFF Handshaking.

#### SOFTWARE HANDSHAKING



**Enable ACK/NAK** - After transmitting data, wait for an ACK (06H) or a NAK (15H) response from the host. If ACK is received, complete the communications cycle and look for more bar codes. If NAK is received, retransmit the last set of bar code data and wait for ACK/NAK again.



Disable ACK/NAK



**Support BEL/CAN in ACK/NAK** - When BEL (07H) is received, the scanner beeps 3 times and exits the communications loop. If a CAN (18H) is received, then the scanner will exit the communications loop, silently.



\* Ignore BEL/CAN in ACK/NAK - Ignore BEL/CAN characters in communication loop.



**Enable 5 Retries on ACK/NAK Time Out** - Allow up to 5 NAK retransmissions of the data before dropping out of the communications loop.



\* Disable 5 Retries on ACK/NAK Time Out



#### **Enable 5 NAK Retries**

Allow up to 5 retransmissions of the data if a NAK is received.



Disable 5 NAK Retries

#### **MISCELLANEOUS**



**Enable French PC Term** - The scanner transmits PC type make/break scan codes instead of ASCII data characters. The scan codes match a WYSE French PC Term.



\* Disable French PC Term

#### **ENABLE KEYBOARD EMULATION**



**Load Keyboard Wedge Defaults** - Loads the default settings for keyboard wedge mode.



Enable Stand-Alone Keyboard Emulation - Use this with special stand-alone models that are not cabled for an external keyboard. Scan this bar code to enable the Stand-Alone Mode. The scanner will send keyboard "power on" information and configure hardware to simulate a constant keyboard connection.



Enable Keyboard Wedge Emulation - Use this with an external keyboard. Transmit in wedge made to allow standard PC keyboards to communicate when no bar code data is available.

#### **COUNTRY/SCAN CODE TABLE SELECTS**

^ USA Reyboard
Switzerland Keyboard
Spain Keyboard
Italy Keyboard
Germany Keyboard
France Keyboard
UK Keyboard

\* IISA Keyhoard

# COUNTRY/SCAN CODE TABLE SELECTS **Belgium Keyboard** Japan Keyboard IBM 4700 Financial Keyboard Sweden/Finland Keyboard Slovenian Keyboard KEYBOARD/SYSTEM TYPE AT Keyboard - Includes IBM PS/2 and compatible models 50, 55, 60, 80. XT Keyboard - Special firmware in Voyager. PS/2 Keyboard - Includes IBM PC and compatible models 30, 70, 8556. **Enable Terminal Keyboard Emulation.** Enable XT Keyboard for Mode 1 - Special firmware in Voyager.

Enable XT Keyboard for Mode 2 - Special

firmware in Voyager.

**IBM Terminal Keyboards** 

## 'DUMB' TERMINAL SELECTIONS

Note: The following terminals may require custom cables.

	IBM Terminal Keyboards
	Reserved Terminal Keyboard #2
	Reserved Terminal Keyboard #3
	Reserved Terminal Keyboard #4
	Reserved Terminal Keyboard #5
	Reserved Terminal Keyboard #6
	Reserved Terminal Keyboard #7
	Reserved Terminal Keyboard #8
	Lower Case Lock On - transmit all data as lower case.
*	Lower Case Lock Off
	Spanish Keyboard Ñ Substitution – the following two characters will translate as follows: # to Ñ and

^ to ñ.

No Spanish Keyboard Ñ Substitution

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# SPECIAL KEYBOARD FEATURES

	Transmit Make Code Only - Not available on all models.
	* Transmit Make/Break Code - Not available on all models.
	* Transmit FOH Break Code - The scanner will transmit the FOH in the break-code sequence.
	Do Not Transmit FOH Break Code
	Transmit Cleanup Bit - Use for certain NEC computers.
	* Do Not Transmit Cleanup Bit
	<b>Enable Alt Mode</b> - The scanner will duplicate the following keyboard sequence; <i>Hold down Alt key, Type decimal number that corresponds to the appropriate character.</i>
	* <b>Disable Alt Mode</b> - Caution: If host software application uses the right Alt key as a "Hot" key, Alt mode must be disabled.
	Enable Auto Detect Mode (AT/PS2) - Automatically detects caps lock status.
	* Disable Auto Detect Mode (AT/PS2)
3 1 1 6 2 1 4	Enable Caps Lock (XT)
	* Disable Caps Lock (XT)

# SPECIAL KEYBOARD FEATURES

	<b>Send Numbers as Keypad Data</b> - All data is sent as if it has been entered on a keypad.
*	Send Numbers as Normal Data
	Enable Reserved Feature
*	Disable Reserved Feature
*	Use Extended ASCII To Send Extended Key Codes - Use extended ASCII characters to send PC keyboard keys such as F1, F2, etc
	Use Extended ASCII Characters as Extended ASCII> - Transmit extended ASCII codes via Alt Mode.
*	Character KB Inhibit
	Message KB Inhibit
	Enable Right Alt Key Sequencing
	Disable Right Alt Key Sequencing
	Enable LaCaixa Special Keyboard Prefix & Suffix Scan Codes
*	Disable LaCaixa Special Keyboard Prefix & Suffix Scan Codes

#### INTERSCAN CODE DELAYS



\* InterScan Code Delay 800 msec - The time specified represents the amount of time between individual 11 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.



InterScan Code Delay 7.5 msec - This time specified represents the amount of time between individual 9 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.



InterScan Code Delay 15 msec - The time specified represents the amount of time between individual 11 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.



 Variable InterScan Code Delay msec - Refer to Multi-Code Method on page 2. Sets value in 100 microsecond increments.

## **CONTROL SETS**

In general, standard bar code symbologies will only encode the ASCII character set. Function keys, arrow keys and many other extended keys on an IBM compatible keyboard do not translate to ASCII characters. One method of 'bar coding' the extended keys is to substitute the extended key codes when a specific ASCII control character is found in the bar code stream. The Control Sets are specific translations of the ASCII (HEX) set.

#### Control Set #1



**Enable Control Set #1** 



\* Disable Control Set #1

# Control Set #1

ASCII (HEX)	<b>ASCII Control</b>	Extended Key
00H	Null	Numeric Keypad + (Plus)
01H	SOH	Num Lock
02H	STX	Down Arrow
03H	ETX	Numeric Keypad- (Minus)
04H	EOT	Insert
05h	ENQ	Delete
06H	ACK	System Request
07H	BEL	→ (Right Arrow)
08H	BS	← (Left Arrow)
09H	TAB	Tab
0AH	LF	Caps Lock
0BH	VT	Shift Tab
0CH	FF	Left Alt
0DH	CR	Enter
0EH	SO	Left Control
OFH	SI	Up Arrow
10H	DLE	F1
11H	DC1	F2
12H	DC2	F3
13H	DC3	F4
14H	DC4	F5
15H	NAK	F6
16H	SYN	F7
17H	ETB	F8
18H	CAN	F9
19H	EM	F10
1AH	SUB	Home
1BH	ESC	Esc
1CH	FS	Page Up
1DH	GS	Page Down
1EH	RS	Print Screen
1FH	US	End

# **OCIA**

	<b>Enable OCIA Mode</b> - Select this option if communications requires OCIA (Optically Coupled Interface Adapter). The host clocks this serial interface.
	Load OCIA Defaults
	Enable DTS/Siemens
	* Enable DTS/Nixdorf
	Enable NCR-S
	Enable NCR-F
7 7 0 5	* Transmit character count with non-UPC codes while transmitting in OCIA NCR-S mode
	Do not Transmit character count with non-UPC codes while transmitting in OCIA NCR-S mode

# **LIGHT PEN PARAMETERS**

	<b>Enable Light Pen Mode</b> - Select this option if the scanner will be used in place of a light pen. It provides light pen emulation of each bar code scanned.
	* Bars High
	Spaces High
	Transmit as Code 39 - All bar codes will be decoded then transmitted as Code 39 bar codes.
	* Transmit as Scanned - All bar codes will be decoded and transmitted in that symbology.
	Poll Light Pen Source - The scanner waits for an active source voltage before transmitting data.
	* Do Not Poll Light Pen Source.
	Enable Inverted IDLE/Extra Toggle - The scanner beeps and toggles the light pen data line with an extra data pulse to condition the decoder.
1 1 6 9 0 1	* Disable Inverted IDLE/Extra Toggle.
	Enable Pre-Transmit Toggle of RTS Line
	* Disable Pre-Transmit Toggle of RTS Line

## **LIGHT PEN PARAMETERS**

#### SET NARROW ELEMENT WIDTH



**10x Narrow Element Border** - Allows the transmission of Light Pen/Wand emulation using a 10x border.



 \* 50x Narrow Element Border - Allows the transmission of Light Pen/Wand emulation using a 50x border.



1 ms Narrow Element Width - Allows the transmission of Light Pen/ Wand emulation at 1ms Narrow Element width.



60 µs Narrow Element Width



100 µs Narrow Element Width



500 µs Narrow Element Width



~ Variable Narrow Element Width - Sets the minimum x-dimension in 6 μs increments. Scan this code followed by a 3-digit code byte sequence (on page 66).

## MS9520/9540-00 LASER EMULATION MODE

#### **ENABLE HANDHELD LASER EMULATION MODE**

The MS9520-00 and MS9540-00 leave the factory with Laser Emulation interface enabled.

If you recall defaults while re-configuring your scanner, scan the following barcode to re-enable the Laser Emulation interface. The scanner you are using must be labeled as an MS9520-00 or MS9540-00 to support this feature.

**Enable HH Laser Emulation** 



If host controlled laser emulation is required scan the following bar code <u>after</u> scanning the Enable HH Laser Emulation bar code.

**Enable Host Controlled Laser Emulation** 



3 1 1 7 0 0 1

**Normal Laser Emulation Motor Idle State** 



**Reverse Laser Emulation Motor Idle State** 

# **IBM 46xx Configuration**

IBM Port	
	<b>Enable IBM 46xx Communication</b> - For IBM 46xx SIOC/RS485 communications. Not all scanners support this interface. The correct interface board is required.
	Load 46xx IBM Defaults - Load default format settings for the IBM 46xx systems.
	IBM Port 17B 3687-2 In Counter
	IBM Port 5B 1520 HH Laser
*	IBM Port 9B 4500 CCD HH BCR1
	IBM Port 9B 4501 CCD HH BCR2
*	Disable CTS select of IBM 46xx vs RS232
	Enable IBM 46xx transmit when CTS = -12 Volt & RS232 transmit when CTS = +12 Volt
IBM RESERVED CODES	
	IBM Reserved #1
	IBM Reserved #2
	IBM Reserved #3
	IBM Reserved #5

**‡ When used with the MS9500 series**, the following codes will enable communication with an MX009 converter cable.

OR

‡ **If used with an MS5145**, these codes will enable direct USB communication without the use of an MX009 converter cable.

3 4 1 5 5 1 1 4	Enable USB Interface ‡
	Enable Low Speed USB Defaults ‡
	Enable MX009-Full Speed RS232 Communication with Full Speed IBM OEM USB
	Load Integrated Full Speed USB Defaults
	Enable RS232 Transmit to MX009-Full Speed for Scanners with Integrated Low Speed USB
	Disable RS232 Transmit to MX009-Full Speed for Scanners with Integrated Low Speed USB
	Enable Barcode ID
	Disable Barcode ID
	Enable USB Reserve Code #1
	Disable USB Reserve Code #1
	Enable USB Reserve Code #2
	Disable USB Reserve Code #2

## **USB**

Sears USB Defaults
Sears Aux Defaults
Scanner 4B00h Handheld
Scanner 4A00h Flatbed
4A00h/6E00h Scanner/Scale

The following codes only apply to scanners with internal Low-Speed USB interfaces and specific software versions. Please contact a Metrologic representative for additional information on the use and restrictions of these bar codes.



Enable USB Point-of-Sale (POS) Mode



If the *Recall Defaults* bar code is scanned while reconfiguring the scanner the USB POS mode will no longer be enabled. It will be necessary to re-scan the *Enable USB POS Mode* for USB POS mode.



\* Enable USB Keyboard (HID) Mode

## CODE BYTES USAGE



The features that use these code bytes for configuration require that the scanner be in Configuration Mode. The Enter/Exit Configuration Mode bar code (on page 2) must be scanned before starting the configuration cycle.

Example: User configurable prefix/suffix characters can be saved into the scanner by scanning the 3 digit decimal equivalent of the ASCII character into the appropriate character location with the code byte bar codes.

To add an Asterisk (\*) as a Prefix scan the following bar codes in order.

- 1. Enter/Exit Configuration Mode (3 beeps) 2. Configurable Prefix #1 (1 beep) 3. Code Byte 0 (1 beep) 4. Code Byte 4 (2 beeps)
- 5. Code Byte 2 (3 beeps) 6. Enter/Exit Configuration Mode (3 beeps)

# CODE BYTES 0-9

Code Byte 0
Code Byte 1
Code Byte 2
Code Byte 3
Code Byte 4
Code Byte 5
Code Byte 6
Code Byte 7
Code Byte 8
Code Byte 9

### RESERVED CODES



~ Enable Reserved Code - Contact Metrologic for information about this feature.



~ Disable Reserved Code

### **CODE TYPE TABLE**

Code Byte	Code Types
004	UPC-A
002	UPC-E
003	EAN-8
005	EAN-13
080	Code 39
081	Codabar
082	Interleaved 2 of 5
083	Code 128
084	Code 93
091	MSI Plessey
092	Code 11
093	Airline 2 of 5 (15 digits)
094	Matrix 2 of 5
095	Telepen
096	UK Plessey
099	TRI-OPTIC
098	Standard 2 of 5
097	Airline (13 digits)

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
00	000	NUL	@
01	001	SOH	Α
02	002	STX	В
03	003	ETX	С
04	004	EOT	D
05	005	ENQ	Е
06	006	ACK	F
07	007	BEL	G
08	800	BS	Н
09	009	HT	1
0A	010	LF	J
0B	011	VT	K
0C	012	FF	L
0D	013	CR	M
0E	014	so	N
0F	015	SI	0
10	016	DLE	Р
11	017	DC1	Q
12	018	DC2	R
13	019	DC3	S
14	020	DC4	Т
15	021	NAK	U
16	022	SYN	V
17	023	ETB	W
18	024	CAN	X
19	025	EM	Υ
1A	026	SUB	Z
1B	027	ESC	[
1C	028	FS	1

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
1D	029	GS	۸
1E	030	RS	_
1F	031	US	space,blank
20	032	SP	
21	033	!	
22	034	u	
23	035	#	
24	036	\$	
25	037	%	
26	038	&	
27	039	,	apostrophe
28	040	(	
29	041	)	
2A	042	*	
2B	043	+	
2C	044	,	comma
2D	045	-	minus
2E	046		period
2F	047	1	
30	048	0	number zero
31	049	1	number one
32	050	2	
33	051	3	
34	052	4	
35	053	5	
36	054	6	
37	055	7	
38	056	8	
39	057	9	
3A	058	:	
3B	059	,	

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
3C	060	<	less than
3D	061	+	
3E	062	>	greater than
3F	063	?	
40	064	@	shift P
41	065	Α	
42	066	В	
43	067	С	
44	068	D	
45	069	E	
46	070	F	
47	071	G	
48	072	Н	
49	073	I	letter I
4A	074	J	
4B	075	K	
4C	076	L	
4D	077	M	
4E	078	N	
4F	079	0	letter O
50	080	Р	
51	081	Q	
52	082	R	
53	083	S	
54	084	Т	
55	085	U	
56	086	V	
57	087	W	
58	088	X	
59	089	Y	

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
5A	090	Z	
5B	091	[	shift K
5C	092	١	shift L
5D	093	]	shift M
5E	094	۸	à,shift N
5F	095	_	, shift 0, underscore
60	096	•	accent grave
61	097	а	
62	098	b	
63	099	С	
64	100	d	
65	101	е	
66	102	f	
67	103	g	
68	104	h	
69	105	I	
6A	106	j	
6B	107	k	
6C	108	1	
6D	109	m	
6E	110	n	
6F	111	0	
70	112	р	
71	113	q	
72	114	r	
73	115	S	
74	116	t	
75	117	u	
76	118	V	
77	119	W	
78	120	Х	

## ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
79	121	У	
7A	122	z	
7B	123	{	
7C	124	I	vertical slash
7D	125	}	alt mode
7E	126	~	(alt mode)
7F	127	DEL	delete, rubout

# EXTENDED KEY CODE REFERENCE TABLE

Key	At Scan Code	PS2 Scan Code	3151	Prefix/Suffix Value Hex = Decimal
<b>↑</b>	75H	48H	63H	80H = 128
<b>V</b>	72H	50H	60H	81H = 129
<b>→</b>	74H	4DH	6AH	82H = 130
<b>←</b>	6BH	4BH	61H	83H = 131
Insert	70H	52H	67H	84H = 132
Delete	71H	53H	64H	85H = 133
Home	6CH	47H	6EH	86H = 134
End	69H	4FH	00H	87H = 135
Page Up	7DH	49H	00H	88H = 136
Page Down	7AH	51H	00H	89H = 137
Right Alt	11H	38H	00H	8AH = 138
Right Ctrl	14H	1DH	39H	8BH = 139
Reserved	00H	00H	00H	8CH = 140
Reserved	00H	00H	00H	8DH – 141
Numeric Keypad Enter	5AH	1CH	79H	8EH = 142
Numeric Keypad/	4AH	35H	00H	8FH = 143
F1	05H	3BH	07H	90H = 144
F2	06H	3CH	0FH	91H = 145
F3	04H	3DH	17H	92H = 146
F4	0CH	3EH	1FH	93H = 147
F5	03H	3FH	27H	94H = 148
F6	0BH	40H	2FH	95H = 149
F7	83H	41H	37H	96H = 150

### **EXTENDED KEY CODE REFERENCE TABLE**

Key	At Scan Code	PS2 Scan Code	3151	Prefix/Suffix Value Hex = Decimal
F8	0AH	42H	3FH	97H = 151
F9	01H	43H	47H	98H = 152
F10	09H	44H	4FH	99H = 153
F11	78H	57H	56H	9AH = 154
F12	07H	58H	5EH	9BH = 155
Numeric +	79H	4EH	00H	9CH = 156
Numeric -	7BH	4AH	7CH	9DH = 157
Numeric *	7CH	37H	00H	9EH = 158
Caps Lock	58H	3AH	14H	9FH = 159
Num Lock	77H	45H	00H	A0H = 160
Left alt	11H	38H	00H	A1H = 161
Left Ctrl	14H	1DH	11H	A2H = 162
Left Shift	12H	2AH	12H	A3H = 163
Right Shift	59H	36H	59H	A4H = 164
Print Screen	Multiple	00H	00H	A5H = 165
Tab	ODH	OFH	0DH	A6H = 166
Shift Tab	8DH	8FH	65H	A7H = 167
Enter	5AH	1CH	5AH	A8H = 168
ESC	76H	01H	H80	A9H = 169
Left ALT Make	11H	36H	00H	AAH = 170
Left ALT Break	11H	B6H	00H	ABH = 171
Left CTRL Make	14H	1DH	00H	ACH = 172
Left CTRL Break	14H	9DH	00H	ADH = 173
*Left ALT + 1 character	11H	36H	00H	AEH = 174
*Left Crtl + 1 character	14H	1DH	00H	AFH = 175
*Send			58H	C0H = 192
Clear			6FH	C1H = 193
Jump			76H	C2H = 194
Send Line			7EH	C3H = 195
Erase EOF			6DH	C4H = 196
Send - Make Only			58H	C5H = 197

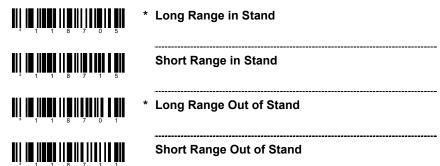
\*Example:

1st Configurable Prefix = 174 2nd Configurable Prefix = 065 Scanner will transmit < left ALT Make> "A" < Left ALT Break>

# MS9520 VOYAGER® & MS9540 VOYAGER CG® SERIES

### **ACTIVATION RANGE**

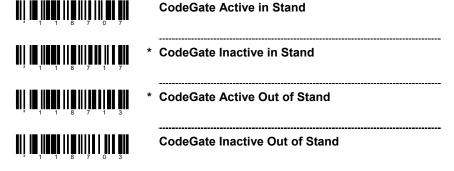
Use these bar codes to select infrared (IR) sensor activation range for sensing when objects are placed in the scan field.



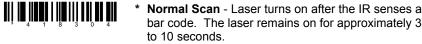
### **CODEGATE STATUS**

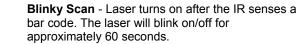
Use the following bar codes to control button functions.

Note: The following functions are not supported by all versions of the MS5145.



#### LASER/SCAN MODES





**Continuous Blinky Scan** - The laser blinks continuously and the IR is inactive. *This feature is not available for the VoyagerPDF series*.





# MS9520 VOYAGER® & MS9540 VOYAGERCG® SERIES

### LASER/SCAN MODES



**Custom (One Shot) Scan** - the laser turns on after a good decode.



**Enable Manual Activation Mode** - the laser activates when the CodeGate button is pressed.

### SAME SYMBOL TIME OUTS

If using an MS5145 Eclipse, the MS9524 or MS9544 Voyager*PDF*, please go to page 26.

	No Same Symbol Time Out
	1000 msec Same Symbol Time Out
***************************************	875 msec Same Symbol Time Out
	750 msec Same Symbol Time Out
	625 msec Same Symbol Time Out
	500 msec Same Symbol Time Out
	375 msec Same Symbol Time Out
	250 msec Same Symbol Time Out
	Infinite Same Symbol Time Out

# MS9524 & MS9544 VOYAGERPDF® SERIES

	* Enable PDF
	Disable PDF
	* Enable Audible Indicator
	Disable Audible Indicator
	Enable PDF CodeGate in Stand
	* Disable PDF CodeGate in Stand
	Enable PDF CodeGate Out of Stand
	* Disable PDF CodeGate Out of Stand
	Enable Fun Tones - scan this bar code then scan an Optional Tone bar code (on page 27).
	* Disable Fun Tones
MICROPDF AND COMPOS	SITE CODE HANDLING
	Enable MicroPDF - allows composite symbologies to be scanned (PDF 417 is enabled by default).
	* Disable MicroPDF
	* Enabe RSS 2D Linkage - transmits the 1D RSS with out scanning the 2D portion
	Disable RSS 2D Linkage

# MS9524 & MS9544 VOYAGERPDF® SERIES

<b>Enable UPC/EAN Linkage</b> - link UPC/EAN symbols with a 2D composite constituent then transmit.
Disable UPC/EAN Linkage
* Enable Code 128 Linkage - transmit the 1D Code 128 without scanning the 2D portion
Disable Code 128 Linkage
* Enable PDF 1D Linkage - transmit the 2D portion of the PDF-417 w/o scanning the 1D portion.
Disable PDF 1D Linkage
* Enable UPDF 1D Linkage - transmit the 2D portion of microPDF w/o scanning the 1D portion
Disable UPDF 1D Linkage
Normal Composite Xmit - always transmit the 1D and 2D constituent composite components separately.
Xmit Composite Separately - transmit the 1D and 2D constituent comosite components separately.
Enable EAN-128 Emulation - utilize the UCC/EAN128 protocol for transmission purposes.
Disable EAN-128 Emulation

For Same Symbol Time Out information please refer to page 26.

# MS9535 VOYAGERBT<sup>™</sup>

# Get Bluetooth Address

Configures the VoyagerBT to get a Bluetooth address.

- If the next scanned bar code consists of 12 characters, the scanner will remember the code and establish a Bluetooth connection.
- If the bar code scanned is not 12 characters, the scanner will ignore the scan and get a Bluetooth address. The bar code will then need to be re-scanned.



Configures the VoyagerBT to act as a server so that other devices using the Bluetooth technology will be able to initiate a connection to the VoyagerBT.



Sleep in 1 Minute - the scanner will go into sleep (power save) mode after the laser has been off for 1 minute.



**Sleep in 2 Minutes** - the scanner will go into sleep mode after the laser has been off for 2 minutes.

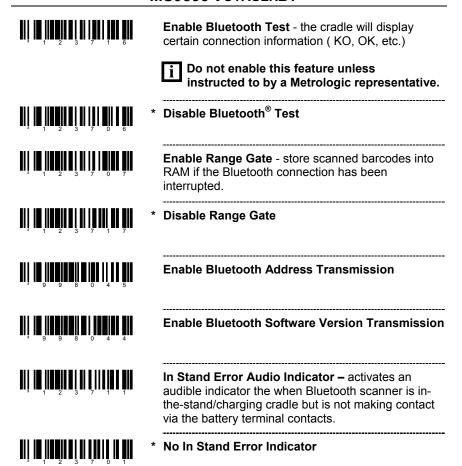


**Sleep in 5 Minutes** - the scanner will go into sleep mode after the laser has been off for 5 minutes.

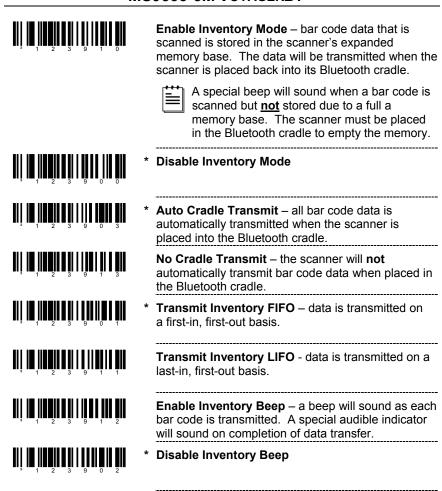


**Sleep in 10 Minutes** - the scanner will go into sleep mode after the laser has been off for 10 minutes.

# MS9535 VOYAGERBT™



### MS9535-5M VOYAGERBT<sup>™</sup>



No Transmit/Entry Counter

**Transmit/Entry Counter** – optional field transmitted with the bar code data that is a count of the number of transmissions used to transmit the entire buffer.

# MS9535-5M VOYAGERBT<sup>™</sup>



**Clear Inventory Records** – will clear all stored bar code data in memory.



**Delete Last Record** – deletes the last bar code stored.

When the *Transmit Quantity Field* has been enabled, each scanned quantity code is a unique field. If the *delete last record* bar code is scanned it will remove the last quantity code scanned.

Example:

If a quantity of 103 (Quantity 1, Quantity 0, and Quantity 3) was scanned but a quantity of 10 was desired.

- Scan the delete last record bar code.
- The Quantity 3 code will be deleted and a quantity of 10 will be stored.



**Transmit All Records** – transmits all stored data records



**Transmit Record Counters** – will transmit the number of records and the number of bar codes currently stored as a 5-digit number separated by a space.



Transmit Quantity Field – adds an additional quantity field for the last item (bar code) scanned. Once enabled the user is able to enter a numerical quantity from 1 to 9999 for the last item (bar code) scanned (see Inventory Quantity Bar Codes on page 82).



Don't Transmit Quantity Field

# MS9535-5M VOYAGERBT<sup>™</sup>

### **INVENTORY QUANTITY BAR CODES\*\***

The following inventory quantity bar codes will enable the user to enter a quantity from 1 to 9999 for the last item (bar code) scanned. The item's bar code data will be retransmitted as many times as the *quantity* indicates.

### Example:

- 1. Scan the item's bar code (ie. ABCD)
- 2. Scan the Quantity 1 bar code
- 3. Scan the Quantity 0 bar code
- 4. The ABCD bar code will be transmitted 10 times

Quantity 0
Quantity 1
Quantity 2
Quantity 3
Quantity 4
Quantity 5
Quantity 6
Quantity 7
Quantity 8
Quantity 9

<sup>\*\*</sup> Transmit Quantity Field must be enabled (on page 81) for this feature.

# IS4120FL/IS4220FL SCAN ENGINES

Disable Old Serial Program
Enable Old Serial Program
Enable TTL UART
Enable Non Buffered TTL UART
Enable Detect and Notify Mode
Cunningham Defaults - Scan this code followed by Recall Defaults code to enable and load Cunningham defaults.
Recall Defaults

For Same Symbol Time Out information please refer to page 75.

### MISCELLANEOUS FEATURES

### **CUSTOM DEFAULTS**

Metrologic manufactures several scanners for OEM applications. These scanners may use a different set of defaults than Metrologic factory defaults. Scanning the bar code will reset the default table to Metrologic defaults.



**Enable Factory Defaults** - Scan this code followed by *Recall Defaults* code to enable and load Metrologic factory defaults.



#### Recall Defaults



**Ruby Verifone Defaults** - Scan this code followed by *Recall Defaults* code to enable and load Ruby Verifone defaults.



**RCH** - Scan this code followed by *Recall Defaults* code to enable and load RCH defaults.



**Sanyo** - Scan this code followed by *Recall Defaults* code to enable and load Sanyo defaults.



**Gilbarco** - Scan this code followed by *Recall Defaults* code to enable and load Gilbarco defaults.



**ALT Defaults** - Scan this code followed by *Recall Defaults* code to enable and load Alt defaults.



**LaCaixa Custom Keyboard Defaults** - Scan this code followed by *Recall Defaults* code to enable and load LaCaixa defaults.



**ABACAB Defaults** - Scan this code followed by *Recall Defaults* code to enable and load ABACAB defaults.

### MISCELLANEOUS FEATURES

### SERIAL PROGRAM MODE

For Serial Program Mode, all commands must be framed by an STX (02 Hex) and ETX (03 Hex).

#### To recall defaults:

- Transmit <STX>999999<ETX> through the Serial Port. This will put the scanner in serial program mode. Scanning will be suspended and the scanner will respond with an ACK (06 Hex).
- Transmit <STX>999998<ETX> through the Serial Port. This is the Recall Defaults bar code in the MetroSelect guide. The scanner will respond with an ACK (06 Hex).
- 3. Transmit <STX>999999<ETX> through the Serial Port. This will cause the scanner to exit program mode and save the new settings. The scanner will beep 3 times and send an ACK (06 Hex).

If at anytime, the scanner cannot recognize a command, it will respond with a NAK (15 Hex). Please refer to the Installation and User's Guide of the scanner for a complete description of Serial Program Mode.

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