# NCR VOYIX

# NCR 7895 Scanner/Scale

# Bar Code Programming Guide

BCC5-0000-5516

Issue H

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# Preface

## Audience

This publication is written for store personnel, system integrators, and field engineers.

> 📝 **Note**
>
> This document is NCR proprietary information and is not to be disclosed or reproduced without consent.

## References

- *NCR 7895 Scanner/Scale Site Preparation Guide* (BCC5-0000-5506)

- *NCR 7895 Scanner/Scale Installation Guide* (BCC5-0000-5507)

- *NCR 7895 Scanner/Scale User Guide* (BCC5-0000-5508)

- *NCR 7895 Scanner/Scale Bar Code Programming Guide* (BCC5-0000-5516)

- *NCR 7895 Scanner/Scale Service Guide* (BCC5-0000-5509)

- *NCR 7895 Scanner/Scale Parts Identification Manual* (BCC5-0000-5510)

- *NCR 7895 Scanner/Scale Safety and Regulatory Information* (BCC5-0000-5505)

# Safety Requirements

The NCR 7895 Scanner/Scale conforms to all applicable legal requirements. To view the compliance statements see the *NCR 7895 Scanner/Scale Safety and Regulatory Information* (BCC5-0000-5505).

> ⚠️ **Caution**
>
> This product does not contain user serviceable parts. Servicing should only be performed by a qualified service technician.

# AC Disconnect

To power down the NCR 7895, disconnect the AC power cord.

> ⚠️ **Warning**
>
> A readily accessible and easily identifiable means of disconnecting power from the NCR 7895 Scanner/Scale must be provided, such as a plug on the power cord, isolating switch, or circuit breaker incorporated in the building wiring.

> ⚠️ **Warning**
>
> Il est impératif d'avoir un moyen pour débrancher l'électricité. Ce moyen d'accès doit être visible et facile a identifier, du genre la prise de courant, le switch d'isolation, ou le disjoncteur incorporé dans l'installation électrique du bâtiment ou de l'immeuble.

# Grounding Instructions

The Power Supply used with this product is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided — if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the product's plug. **Repair or replace damaged or worn cords immediately.**

# Warranty

Warranty terms vary by region and country.

All parts of this product that are subject to normal wear and tear are not included in the warranty. In general, damages due to the following are not covered by the warranty.

- Improper or insufficient maintenance

- Improper use or unauthorized modifications of the product.

- Inadequate location or surroundings. Site installation must conform to guidelines listed in the *NCR 7895 Scanner/Scale Site Preparation Guide* (BCC5-0000-5506) and the *NCR Workstation and Peripheral AC Wiring Guide* (BST0-2115-53).

For detailed warranty arrangements please consult your contract documents.

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# Table of Contents

# Revision Record

| Issue | Date | Remarks |
|-------|------|---------|
| A | Jul 2021 | Initial release |
| B | Oct 2021 | Updated software download links |
| C | Jun 2022 | Updated requirements for 123Scan |
| D | Jan 2023 | <ul><li>Corrected bar code in *UPC Composite Mode*</li><li>Updated bar code in *IBM RS-485 Specification Version*</li><li>Update bar code in *CDC COM Port Emulation*</li><li>Updated default setting for the following parameters:<ul><li>Code 128</li><li>IBM RS-485 Specification Version</li><li>Mobile Phone Display Mode</li><li>UPC Composite Mode</li></ul></li><li>Added the following new parameters:<ul><li>NCR Change Host Code Type</li><li>SSI over USB CDC</li><li>CDC Host Variant Type</li><li>NCR QR Filter HTTP</li><li>NCR QR Filter WWW</li><li>NCR Report Alternate Weight Status</li></ul></li></ul> |
| E | Jun 2023 | Added the following parameters:<ul><li>Volume Button Beep Suppression</li><li>Alternate Beeper Volume Table</li><li>Illumination Warning</li></ul> |

| Issue | Date | Remarks |
|---|---|---|
| F | Dec 2023 | Added the following parameters:<br><br>• Trigger on Scan Enable Disable<br><br>• Not on File Number of Beeps<br><br>• Sync Bootup Beep Volume<br><br>• Enable Alternate Beep Volume<br><br>• Alternate Beep Volume<br><br>• Extended Same Symbol Timeout |
| G | Oct 2024 | Updated links |
| H | Nov 2024 | • Converted to Voyix template<br><br>• Removed OBF section |

# Bar Code Programming Overview

This guide includes programming bar codes to configure the NCR 7895 Scanner/Scale.

The scanner is shipped with the settings shown in **"Standard Parameter Defaults"** on page 511. If the default values meet requirements, programming is not necessary.
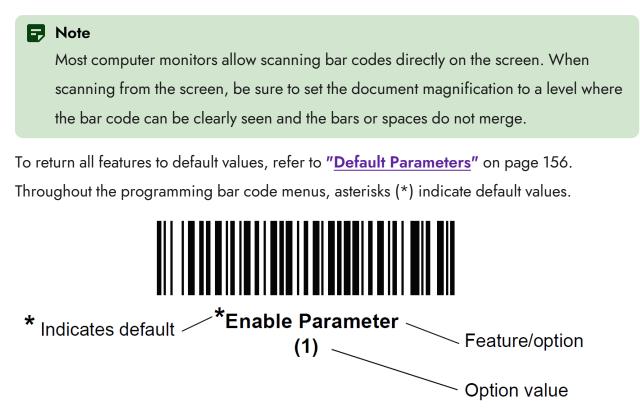
For detailed technical information about the NCR 7895, including installation, setting up interfaces, calibrating the scale, and operation refer to the *NCR 7895 Scanner/Scale Installation Guide* (BCC5-0000-5507) and *NCR 7895 Scanner/Scale User Guide* (BCC5-0000-5508).

| Chapter | Description |
|---|---|
| 123Scan and Software Tools | Describes the 123Scan utility. |
| USB Interface | Provides bar codes to set up the scanner with a USB host. |
| RS-232 Interface | Provides bar codes to set up the scanner with an RS-232 host, such as Point-of-Sale (POS) devices, host computers, or other devices with an available RS-232 port. |
| IBM RS-485 Interface Bar Codes | Provides bar codes to set up the scanner with IBM RS-485 POS systems. |
| Scale Configuration | Provides bar codes to configure and calibrate the scale. |
| User Preferences and Miscellaneous Options | Describes features frequently used to customize how data transmits to the host device and programming bar codes for selecting user preference features for the NCR 7895. |
| Image Capture Preferences | Describes imaging preference features and provides programming bar codes for selecting these features. |
| EAS Parameters | Describes the EAS features and provides programming bar codes for selecting these features. |
| Auxiliary Scanner Bar Codes | Includes the parameter bar codes to configure the NCR 7895 for connection to an auxiliary scanner. |

| Chapter | Description |
|---|---|
| SSI Interface | Customers using RS-232 OPOS require the Simple Serial Interface (SSI), which provides a communications link between the NCR 7895 and a serial host. |
| SNAPI Interface | Includes information about the USB-SNAPI Interface. |
| Symbologies | Describes all symbology features and provides programming bar codes for selecting these features for the NCR 7895. |
| Data Formatting | Describes the features available for customizing scanner operation. |
| Standard Parameter Defaults | Provides a table of all host devices and miscellaneous scanner defaults. |
| Numeric Bar Codes | Includes the numeric bar codes to scan for parameters requiring specific numeric values. |
| Alphanumeric Bar Codes | Includes the alphanumeric bar codes to scan for parameters requiring specific alphanumeric values. |
| ASCII Character Sets | Provides tables for ASCII character values and other character sets. |
| Programming Reference | Provides tables for Symbol code identifiers, AIM code identifiers, and modifier characters. |
| Country Codes | Provides bar codes for programming the country keyboard type for the USB keyboard (HID) device and the keyboard wedge host. |
| Country Code Pages | Provides bar codes for selecting code pages for the country keyboard type. |
| CJK Decode Control | Describes control parameters for Unicode/CJK (Chinese, Japanese, Korean) bar code decode through USB HID Keyboard Emulation mode. |
| Sample Bar Codes | Includes sample bar codes of various code types. |

# Setting Parameters

To set feature values, scan a single bar code or a short bar code sequence. The settings are stored in non-volatile memory and are preserved even when the scanner powers down.

> **📝 Note**
>
> Most computer monitors allow scanning bar codes directly on the screen. When scanning from the screen, be sure to set the document magnification to a level where the bar code can be clearly seen and the bars or spaces do not merge.

To return all features to default values, refer to Throughout the programming bar code menus, asterisks (*) indicate default values.



\* Indicates default — \*Enable Parameter (1) — Feature/option — Option value

# Scanning Sequence Examples

In most cases, scanning one bar code sets the parameter value. The scanner emits a fast warble beep and the LED turns bright green momentarily, then returns to a darker green, signifying a successful parameter entry.

Other parameters require scanning several bar codes. See the parameter descriptions for this procedure.

# Errors While Scanning

Unless otherwise specified, to correct an error during a scanning sequence, rescan the correct parameter.

# 123Scan and Software Tools

This chapter briefly describes the software tools available for customizing scanner operation.

> 📝 **Note**
>
> For more information on the NCR 123Scan utility, refer to the *NCR 7895 Scanner/Scale User Guide* (BCC5-0000-5508).

# 123Scan Software Tool

123Scan is a software tool for customizing scanner operation. Intuitive enough for first time users, the 123Scan wizard guides users through a streamlined setup process. Settings are saved in a configuration file that can be printed as a single programming bar code for scanning, emailed to a smart phone for scanning from its screen, or downloaded to the scanner using a USB cable.

Through 123Scan, users can perform the following:

- Configure a scanner using a wizard
  - Program the following scanner settings:
    - Beeper tone / volume settings
    - Enable / disable symbologies
    - Communication settings
  - Modify data before transmission to a host using Advanced Data Formatting (ADF) by scanning one bar code per trigger pull
- Load parameter settings to a scanner through the following options:
  - Bar code scanning
    - Scan a paper bar code
    - Scan a bar code from a PC screen
    - Scan a bar code from a smart phone screen
  - Download over a USB cable
    - Load settings to one scanner
    - Stage up to 10 scanners simultaneously
- Validate scanner setup
  - View scanned data within the utility's Data View screen
  - Capture an image and save to a PC within the utility's Data View screen
  - Review settings using the Parameter Report
  - Clone settings from an already deployed scanner

- Upgrade scanner firmware
  - Load settings to one scanner
  - Stage up to 10 scanners simultaneously with a power USB hub
- View statistics such as the following:
  - Asset tracking information
  - Time and usage information
  - Bar codes scanned by symbology
  - Communication diagnostics
- Generate the following reports:
  - Bar code Report—programming bar code, included parameter settings, and supported scanner models
  - Parameter Report—list of parameters programmed within a configuration file
  - Activity Report—list of activities performed on a scanner or scanners
  - Inventory Report—list of scanner asset tracking information
  - Validation Report—printout of scanned data
  - Statistics Report—list of all statistics retrieved from the scanner

# Requirements

The following are required to use the 123Scan utility:

- Host computer running Windows OS

- Scanner

- USB cable to connect the scanner to a Windows host computer

- Zebra CoreScanner Driver
    - Included in the 123Scan installation package
    - Supported operating systems:
        - Windows 7 (32-bit and 64-bit)
        - Windows 10 (32-bit and 64-bit)

- Zebra Bioptic Color Camera SDK for Windows
    - Supported operating systems:
        - Windows 7 (32-bit and 64-bit)
        - Windows 10 (32-bit and 64-bit)

    - Download link: http://www.zebra.com/us/en/support-downloads/software/developer-tools/bioptic-color-camera-sdk-for-windows.html

# Downloading Scanner Software

> **! Important**
>
> For deployment and configuration of the NCR 7895 scanner, use the NCR Platform Software and the NCR 123Scan tool available on the NCR web site. Do not download 123Scan from the Zebra web site.

## Drivers

Use NCR Platform Software to get the necessary drivers for the NCR 7895. Applications can interface to the NCR 7895 scanner/scale through either OPOS on Windows or JavaPOS (on supported versions of Linux or Windows). To download these drivers, go to

**https://www5.ncr.com/support/support_drivers_patches.asp?Class=External/RPSWWindows\Released\display** and select the RPSW release that supports the NCR 7895 scanner.

- RPSW 5.3.6.0 (for 64bit)
- RPSW 4.3.6.0 (for 32bit)

> **📝 Note**
>
> For customers who prefer not to use the NCR Platform Software, consult the Zebra support web site for drivers. However, NCR 123Scan from NCR web site must still be used.

## NCR 123Scan Utility

NCR 123Scan is a software tool for customizing scanner operation. To download the NCR 123Scan utility, go to

**https://www5.ncr.com/support/text/Peripherals/7895Utility.htm**.

# Scanner SDK, Other Software Tools, and Videos

The following table lists the tools that can assist in configuring the NCR 7895 scanner.

| Tool | Where to download |
|---|---|
| 123Scan configuration utility | https://www5.ncr.com/support/text/Peripherals/7895Utility.htm |
| SDKs<br><br>• Scanner SDK for Windows<br>• Scanner SDK for Linux<br>• Scanner SDK for Android | https://www5.ncr.com/support/support_drivers_patches.asp?Class=retail_RealScan#7895utils |
| OPOS/JavaPOS Driver | https://www5.ncr.com/support/support_drivers_patches.asp?Class=External/RPSWWindows\Released\display |
| Other Drivers<br><br>• TWAIN driver<br>• USB CDC driver<br>• Virtual COM port driver | https://www5.ncr.com/support/support_drivers_patches.asp?Class=retail_RealScan#7895utils |
| Scanner Management Service (SMS) for Remote Management<br><br>• Windows<br>• Linux<br>• IBM 4690 | https://www5.ncr.com/support/support_drivers_patches.asp?Class=retail_RealScan#7895utils |
| Mobile Apps<br><br>• Scanner Control App<br>    • Android | http://www.zebra.com/scannersoftware |
| How-To-Videos | http://www.zebra.com/ScannerHowToVideos |

# USB Interface

This chapter includes programming bar codes for the USB host interface. The NCR 7895 connects directly to a USB host. Depending on the installation setup, an additional power supply may be required. Only a USB Power Plus host can power the NCR 7895 using a specified Power Plus cable, without an external power supply.

For USB host parameters default settings, refer to **"USB Interface Host Parameters"** on page 512. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.
- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.

# USB Host Parameters

The following are USB host parameters:

- *"USB Device Type"* on the next page
- *"USB Country Keyboard Types - Country Codes"* on page 42
- *"USB Keystroke Delay"* on page 43
- *"USB Caps Lock Override"* on page 44
- *"Scan Disable Mode (Parameter #1214)"* on page 45
- *"Bar Codes with Unknown Characters"* on page 47
- *"USB Convert Unknown to Code 39"* on page 48
- *"USB Fast HID"* on page 49
- *"USB Polling Interval"* on page 50
- *"Keypad Emulation"* on page 53
- *"Quick Keypad Emulation"* on page 54
- *"Keypad Emulation with Leading Zero"* on page 55
- *"USB Keyboard FN1 Substitution"* on page 56
- *"Function Key Mapping"* on page 57
- *"Simulated Caps Lock"* on page 58
- *"Convert Case"* on page 59
- *"USB Static CDC"* on page 60
- *"TGCS (IBM) USB Direct I/O Beep"* on page 61
- *"TGCS (IBM) USB Beep Directive"* on page 62
- *"TGCS (IBM) USB Bar Code Configuration Directive"* on page 63
- *"TGCS (IBM) USB Specification Version"* on page 64
- *"IBM USB Scale Default Response Status (Parameter #1286)"* on page 65
- *"NCR Change Host Code Type (Parameter #2297, SSI #F8h 08h F9h)"* on page 68
- *"CDC Host Variant Type (Parameter #1713, SSI #F8h 06h B1h)"* on page 69

# USB Device Type

Scan one of the following bar codes to select the USB device type. By default, this parameter is set to **IBM Table-top USB**.



**\*IBM Table-top USB**



**IBM Hand-held USB**



**IBM OPOS**
**(IBM Hand-held with Full Disable)**

## HID Keyboard Emulation



## CDC COM Port Emulation



## SSI over USB CDC



## Symbol Native API (SNAPI) with Imaging Interface



## Symbol Native API (SNAPI) without Imaging Interface

> **📝 Note**
>
> Take note of the following:
>
> - When changing USB device types, the scanner resets and emits the standard startup beep sequences.
>
> - When connecting two scanners to a host, IBM does not allow selecting two of the same device type. If two connections are required, select **IBM Table-top USB** for the NCR 7895 and **IBM Hand-held USB** for the second scanner.
>
> - Select **IBM Hand-held USB** to disable data transmission when an IBM register issues a Scan Disable command. Aim, illumination, and decoding is still permitted. Select **IBM OPOS (IBM Hand-held with Full Disable)** to completely shut off the scanner when an IBM register issues a Scan Disable command, including aim, illumination, decoding, and data transmission.
>
> - Before scanning USB CDC Host, install the appropriate USB CDC Driver on the host to ensure the scanner does not stall during power up (due to a failure to enumerate USB). Go to [www.zebra.com/support](www.zebra.com/support), **Support & Downloads→ Barcode Scanners→ USB CDC Driver**, select the appropriate Windows platform, and download either of the following:
>     - `Zebra_CDC_ACM_Driver_(x64)v2.15.0004.exe` (64bit)
>     - `Zebra_CDC_ACM_Driver(x86)_v2.15.0004.exe` (32bit)

To recover a stalled scanner, do any of the following:
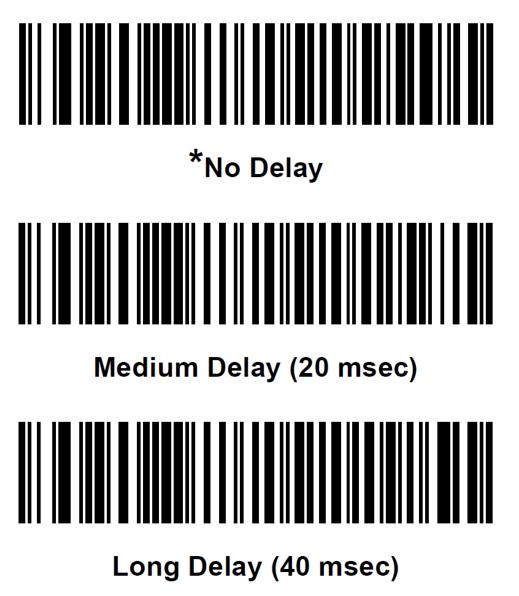
- Install the USB CDC Driver

- Unplug the USB cable and add power. Scan another USB host of one of the following bar codes:
    - Set Factory Defaults or Restore Defaults in **"Default Parameters"** on page 156
    - IBM Table-top USB in this section

# USB Country Keyboard Types - Country Codes

For bar codes and other detailed information for country keyboard types, refer to **"Country Codes"** on page 607.

# USB Keystroke Delay

Scan one of the following bar codes to set the delay, in milliseconds, between emulated keystrokes. Select a longer delay for hosts that require slower data transmission. By default, this parameter is set to **No Delay**.

*No Delay

Medium Delay (20 msec)

Long Delay (40 msec)

# USB Caps Lock Override

This option applies only to the USB Keyboard HID device.

Scan **Override Caps Lock Key** to preserve the case of the data regardless of the state of the **Caps Lock** key. By default, this parameter is set to **Disable**.
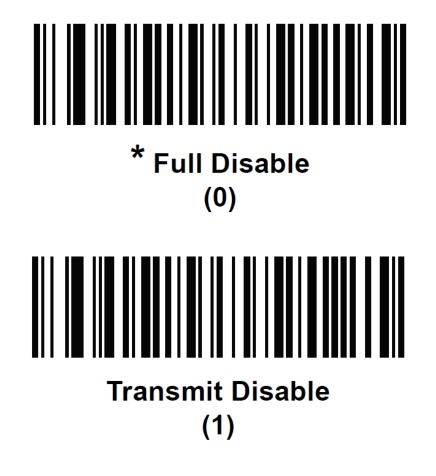
> 🗒 **Note**
>
> This setting is always enabled for the Japanese Windows (ASCII) keyboard type and cannot be disabled.



**Override Caps Lock Key
(Enable)**



**\*Do Not Override Caps Lock Key
(Disable)**

# Scan Disable Mode (Parameter #1214)

This parameter determines the behavior of the NCR 7895 when it receives a *Scan Disable* directive from the connected host.

- **Full Disable**—scanning bar codes is disabled.

- **Transmit Disable**—may scan bar codes, but transmission of bar code data is disabled.

- **Auto Disable**—disables scanning after transmission of a bar code, and remains disabled until the host sends a *Scan Enable*.

> 📝 **Note**
>
> This feature is currently supported by IBM Table Top USB, IBM Hand-held USB, and all IBM 46XX interfaces.

Scan one of the following bar codes to select the scan disable mode. By default, this parameter is set to **Full Disable**.



\* Full Disable
(0)



Transmit Disable
(1)

**Auto Disable**
**(2)**

# Bar Codes with Unknown Characters

This option applies only to the USB Keyboard HID and IBM devices. Unknown characters are characters the host does not recognize.

- **Send Bar Codes with Unknown Characters**—sends all bar code data except for unknown characters. The scanner issues no error beeps.

- **Do Not Send Bar Codes with Unknown Characters**—prevents sending bar codes containing at least one unknown character to the host, or for USB Keyboard HID devices to send the bar code characters up to the unknown character. The scanner issues an error beep.

Scan one of the following bar codes to select the scanner response to unknown characters. By default, this parameter is set to **Send Bar Codes with Unknown Characters**.



*Send Bar Codes with Unknown Characters



Do Not Send Bar Codes with Unknown Characters

# USB Convert Unknown to Code 39

This option applies only to the IBM hand-held, IBM table-top, and OPOS devices.

Scan one of the following bar codes to enable or disable converting unknown bar code type data to Code 39. By default, this parameter is set to **Disable Convert Unknown to Code 39**.



**Enable Convert Unknown to Code 39**
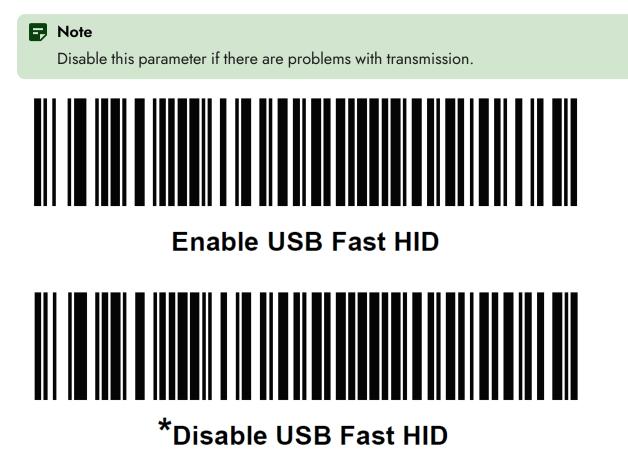


**\*Disable Convert Unknown to Code 39**

# USB Fast HID

Scan **Enable USB Fast HID** to transmit USB HID data at a faster rate. By default, this parameter is set to **Disable**.

> 📝 **Note**
>
> Disable this parameter if there are problems with transmission.

**Enable USB Fast HID**

**\*Disable USB Fast HID**

# USB Polling Interval

Scan one of the following bar codes to set the polling interval, which is the rate at which data transmits between the scanner and host computer. A lower number indicates a faster data rate. By default, this parameter is set to **8 msec**.
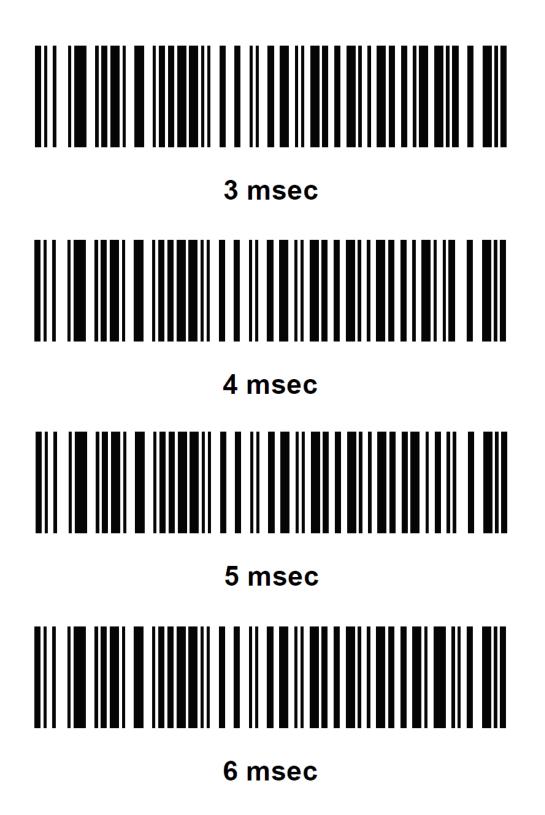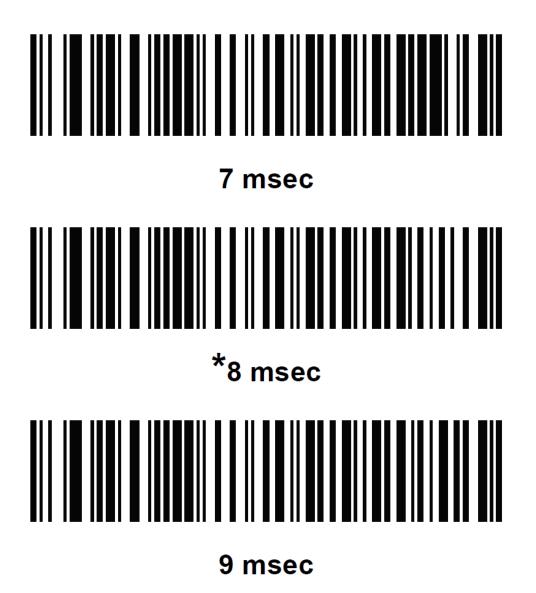
> 📝 **Note**
>
> When changing the USB polling interval, the scanner restarts and issues a power-up beep sequence.

> ❗ **Important**
>
> Ensure the host supports the selected data rate.



**1 msec**



**2 msec**

**3 msec**



**4 msec**



**5 msec**



**6 msec**

**7 msec**

**\*8 msec**

**9 msec**

# Keypad Emulation

Scan **Enable Keypad Emulation** to send all characters as ASCII sequences over the numeric keypad. For example, ASCII A transmits as `"ALT make"` `0 6 5` `"ALT Break"`. By default, this parameter is set to **Disable**.

> 📝 **Note**
>
> If the keyboard type is not listed in the country code list, disable **"Quick Keypad Emulation"** on the next page and enable **Keypad Emulation**. For more information on country code list, refer to **"Country Codes"** on page 607.



**Enable Keypad Emulation**
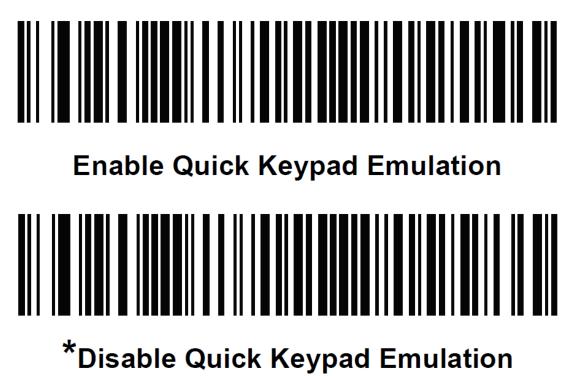


**\*Disable Keypad Emulation**

# Quick Keypad Emulation

This option applies only to the USB Keyboard HID device when **"Keypad Emulation"** on the previous page is enabled.

Scan **Enable Quick Keypad Emulation** for a quicker method of emulation using the numeric keypad where ASCII sequences are only sent for ASCII characters not found on the keyboard. By default, this parameter is set to **Disable**.



**Enable Quick Keypad Emulation**



**\*Disable Quick Keypad Emulation**

# Keypad Emulation with Leading Zero

Scan **Enable Keypad Emulation with Leading Zero** to send character sequences sent over the numeric keypad as ISO characters which have a leading zero. For example, ASCII A transmits as "`ALT MAKE`" `0 0 6 5` "`ALT BREAK`". By default, this parameter is set to **Disable**.
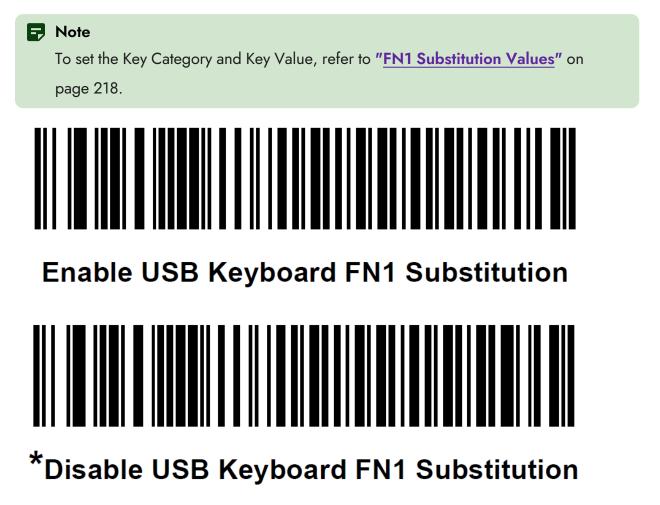
**Enable Keypad Emulation with Leading Zero**

**\*Disable Keypad Emulation with Leading Zero**
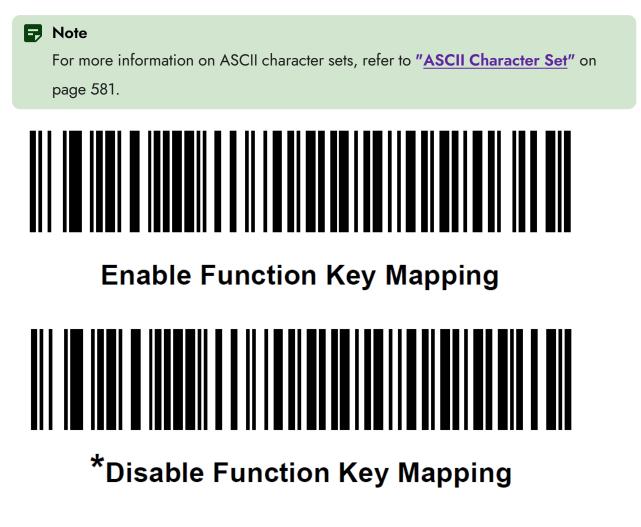
# USB Keyboard FN1 Substitution

This option applies only to the USB Keyboard HID device. Scan **Enable USB Keyboard FN1 Substitution** to replace any FN1 character in a GS1 128 bar code with a user-selected Key Category and value. By default, this parameter is set to **Disable**.

> 📝 **Note**
>
> To set the Key Category and Key Value, refer to **"FN1 Substitution Values"** on page 218.



**Enable USB Keyboard FN1 Substitution**



**\*Disable USB Keyboard FN1 Substitution**
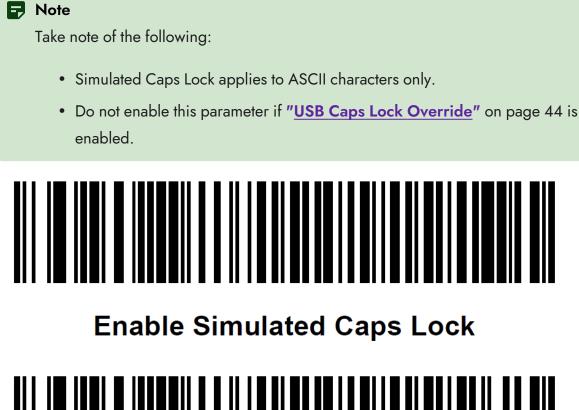
# Function Key Mapping

ASCII values under 32 are normally sent as a control-key sequence. Scan **Enable Function Key Mapping** to send the keys in bold in place of the standard key mapping. Table entries that do not have a bold equivalent remain the same regardless of whether this parameter is enabled. By default, this parameter is set to **Disable**.

> 📝 **Note**
>
> For more information on ASCII character sets, refer to **"ASCII Character Set"** on page 581.



**Enable Function Key Mapping**



**\*Disable Function Key Mapping**

# Simulated Caps Lock
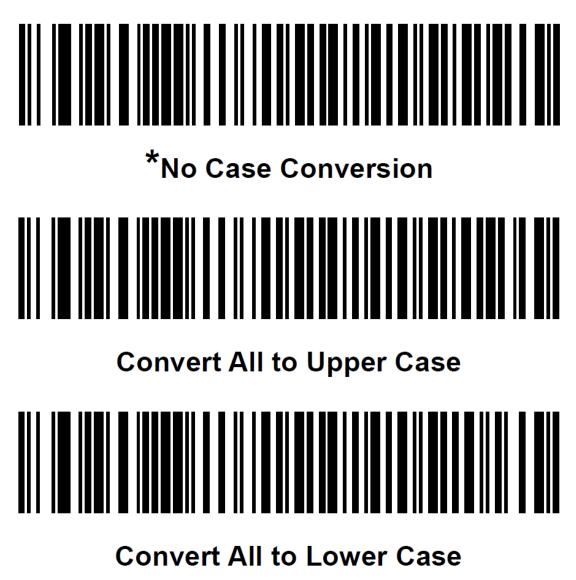
Scan **Enable Simulated Caps Lock** to invert upper and lower case characters on the bar code as if the Caps Lock state is enabled on the keyboard. This inversion occurs regardless of the Caps Lock state of the keyboard. By default, this parameter is set to **Disable**.

> 📋 **Note**
>
> Take note of the following:
>
> - Simulated Caps Lock applies to ASCII characters only.
> - Do not enable this parameter if **"USB Caps Lock Override"** on page 44 is enabled.



**Enable Simulated Caps Lock**



**\*Disable Simulated Caps Lock**

# Convert Case

Scan one of the following bar codes to convert all bar code data to the selected case. By default, this parameter is set to **No Case Conversion**.



**\*No Case Conversion**



**Convert All to Upper Case**



**Convert All to Lower Case**

# USB Static CDC

When disabled, each device connected consumes another COM port (first device = COM1, second device = COM2, third device = COM3, and so on).

When enabled, each device connects to the same COM port.

Scan one of the following bar codes to enable or disable USB Static CDC. By default, this parameter is set to **Enable**.



**\*Enable USB Static CDC**



**Disable USB Static CDC**

# TGCS (IBM) USB Direct I/O Beep

The host can send a direct I/O beep request to the scanner. If **Ignore Direct I/O Beep** is selected, the scanner does not sound beeps on this command. All directives are still acknowledged to the USB host as if they were processed.

Scan one of the following bar codes to honor or ignore direct I/O beep. By default, this parameter is set to **Ignore**.



**Honor Direct IO Beep**



**\*Ignore Direct IO Beep**

# TGCS (IBM) USB Beep Directive

The host can send a beeper configuration request to the scanner. Scan **Ignore Beep Directive** to prevent the scanner from processing the host request. All directives are still acknowledged to the USB host as if they were processed. By default, this parameter is set to **Honor**.

*Honor Beep Directive

Ignore Beep Directive

# TGCS (IBM) USB Bar Code Configuration Directive

The host can enable and disable code types. Scan **Ignore Bar Code Configuration Directive** to prevent the scanner from processing the host request. All directives are still acknowledged to the USB host as if they were processed. By default, this parameter is set to **Ignore**.



**Honor Bar Code Configuration Directive**



**\*Ignore Bar Code Configuration Directive**

# TGCS (IBM) USB Specification Version

The following are options fro the TGCS (IBM) USB specification version:

- **IBM Specification Level Version 0 (Original)**—sends the following code types as unknown:
    - Data Matrix
    - GS1 Data Matrix
    - QR Code
    - GS1 QR
    - MicroQR Code
    - Aztec
- **IBM Specification Level Version 2.2**—sends the code types with the appropriate IBM identifiers.

Scan one of the following bar codes to select the USB specification version. By default, this parameter is set to **Version 0 (Original)**.



**\*IBM Specification Level Version 0 (Original)**



**IBM Specification Level Version 2.2**

# IBM USB Scale Default Response Status (Parameter #1286)

An NCR 7895 scanner/scale unit sends a 2-byte scale status to the IBM USB POS system as the default setting. This parameter allows a user to program the NCR 7895 scanner/scale to send either a 2-byte scale status or a 3-byte scale extended status.

- **2-byte Scale Status - Extended Scale Status Disabled**—the 2-byte scale status sent to the IBM POS consists of the information shown in the following tables.

| Bit Position | Description |
|---|---|
| Scale Status Byte 0 | |
| 0 | Flash update in progress (if flash update is implemented) |
| 1 | Configuration data response frame |
| 2 | Extended status response frame |
| 3 | Not defined (always 0) |
| 4 | Not defined (always 0) |
| 5 | Not defined (always 0) |
| 6 | Unacceptable command |
| 7 | Device not ready to receive weigh commands |
| Scale Status Byte 1 | |
| 0 | 0—US weigh mode<br>1—Metric weigh mode |
| 1 | 0—Four digit weight<br>1—Five digit weight |
| 2 | Weight data not include/scale in motion |
| 3 | Data value error (weight digits not in range 0-9) |

| Bit Position | Description |
|---|---|
| 4 | Read error (timeout occurred trying to obtain valid weight/status) |
| 5 | Remote display required but not detected |
| 6 | Scale hardware error |
| 7 | Undefined command received (command reject) |

- **3-byte Scale Status - Extended Scale Status Enabled**—when enabled, the NCR 7895 scanner/scale sends an additional scale status byte to the IBM POS with the information shown in the following table.

| Bit Position | Description |
|---|---|
| **Scale Status Byte 2** | |
| 0 | Configuration successful |
| 1 | Scale under zero |
| 2 | Scale over capacity |
| 3 | Scale center-of-zero |
| 4 | Scale requires zeroing |
| 5 | Scale warm up in progress |
| 6 | Duplicate weight (United Kingdom mode only) |
| 7 | Not defined (always 0) |

> **Note**
>
> Some IBM POS applications require a 3-byte extended scale status for better price or weight transaction performance.

Scan one of the following bar codes to select the scale default response status. By default, this parameter is set to **2-byte IBM USB Scale Status**.

**\*2-byte IBM USB Scale Status - Extended Scale Status Disabled (0)**



**3-byte IBM USB Scale Status - Extended Scale Status Enabled (1)**

# NCR Change Host Code Type (Parameter #2297, SSI #F8h 08h F9h)
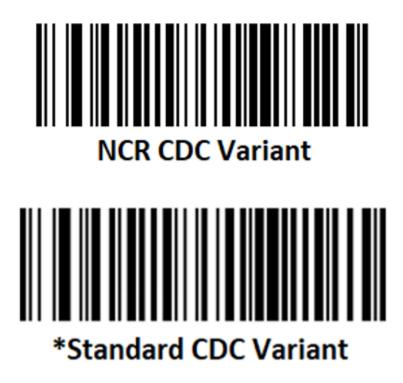
Scan one of the following bar codes to enable or disable NCR bar code types. By default, this parameter is set to **Disable**.



Enable NCR Barcode Types



*Disable NCR Barcode Types

# CDC Host Variant Type (Parameter #1713, SSI #F8h 06h B1h)

Scan one of the following bar codes to select the CDC host variant type. By default, this parameter is set to **Standard CDC Variant**.

**NCR CDC Variant**

**\*Standard CDC Variant**

# RS-232 Interface

This chapter includes programming bar codes and procedures to set up the scanner for an RS-232 host interface. The NCR 7895 uses the RS-232 interface to connect to POS devices, host computers, or other devices with an available RS-232 port (COM port).

> 📝 **Note**
>
> The scanner uses TTL RS-232 signal levels, which interface with most system architectures. For system architectures requiring RS-232C signal levels, Zebra offers different cables providing TTL-to-RS-232C conversion. Contact the Zebra Customer Support Center online at: **www.zebra.com/support** for more information.

For RS-232 host parameters default settings, refer to **"RS-232 Interface Host Parameters"** on page 514. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.
- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.

# RS-232 Host Parameters

For RS-232 host parameter default settings and code ID characters, refer to the following sections:

- **"Terminal Specific RS-232"** on the next page
- **"Terminal Specific Code ID Characters"** on page 75

The following are RS-232 host parameters:

- **"RS-232 Host Type"** on page 78
- **"Baud Rate"** on page 82
- **"Parity"** on page 84
- **"Stop Bits"** on page 85
- **"Data Bits"** on page 86
- **"Check Receive Errors"** on page 87
- **"Hardware Handshaking"** on page 88
- **"Software Handshaking"** on page 91
- **"Host Serial Response Timeout"** on page 93
- **"RTS Line State"** on page 95
- **"Beep on <BEL>"** on page 96
- **"Intercharacter Delay"** on page 97
- **"RS-232 Power On Mode (Parameter #1939)"** on page 99
- **"Nixdorf Beep/LED Options"** on page 101
- **"Bar Codes with Unknown Characters"** on page 102
- **"NCR Variant Preferences"** on page 103
- **"Reject Same Weight (Parameter #1968)"** on page 111
- **"RS-232 Code ID Suppression (Parameter #2108)"** on page 112
- **"RS-232 Code ID Suppression Code Type (Parameter #2110)"** on page 113
- **"RS-232 Code ID Suppression Host (Parameter #2111)"** on page 116

# Terminal Specific RS-232

RS-232 hosts use their own parameter default settings. These default settings are shown in the following tables.

> 📝 **Note**
>
> If the host used is not included in the tables, refer to the documentation for the host device to set communications parameters to match the host.

| Parameter | ICL | Fujitsu | Wincor-Nixdorf Mode A | Wincor-Nixdorf Mode B/OPOS/JPOS |
|---|---|---|---|---|
| Baud Rate | 9600 | 9600 | 9600 | 9600 |
| Parity | Even | None | Odd | Odd |
| Stop Bit Select | One | One | One | One |
| ASCII Format | 8-bit | 8-bit | 8-bit | 8-bit |
| Hardware Handshaking | RTS/CTS Option 3 | None | RTS/CTS Option 3 | RTS/CTS Option 3 |
| Software Handshaking | None | None | None | None |
| Serial Response Timeout | 9.9 seconds | 2 seconds | None | None |
| RTS Line State | High | Low | Low | Low = No data to send |
| Beep On <BEL> | Disable | Disable | Disable | Disable |
| Transmit Code ID | Yes | Yes | Yes | Yes |
| Data Transmission Format | Data/Suffix | Data/Suffix | Data/Suffix | Data/Suffix |
| Prefix | None | None | None | None |
| Suffix | CR (1013) | CR (1013) | CR (1013) | CR (1013) |

> 📝 **Note**
>
> Take note of the following:
>
> - In the Wincor-Nixdorf Mode B, if CTS is low, scanning is disabled. When CTS is high, scanning is enabled.
> - If Wincor-Nixdorf Mode B is scanned without connecting the digital scanner to the proper host, it may appear unable to scan. If this happens, scan a different RS-232 host type within 5 seconds of cycling power to the digital scanner.

| Parameter | Olivetti | Omron | Common Use Terminal Equipment (CUTE) | NCR | Datalogic |
|---|---|---|---|---|---|
| Baud Rate | 9600 | 9600 | 9600 | 9600 | 9600 |
| Parity | Even | None | Even | Odd | Odd |
| Stop Bit Select | One | One | One | One | One |
| ASCII Format | 7-bit | 8-bit | 7-bit | 7-bit | 7-bit |
| Hardware Handshaking | None | None | None | None | None |
| Software Handshaking | ACK/NAK | None | None | None | None |
| Serial Response Timeout | 9.9 seconds | 9.9 seconds | 9.9 seconds | 9.9 seconds | 9.9 seconds |
| RTS Line State | Low | High | High | High | High |
| Beep On <BEL> | Disable | Disable | Disable | Disable | Disable |
| Transmit Code ID | Yes | Yes | Yes | Yes | Yes |
| Data Transmission Format | Prefix/Data/Suffix | Data/Suffix | Prefix/Data/Suffix | Prefix/Suffix* | Data/Suffix |
| Prefix | STX (1002) | None | STX (1002) | STX* | None |
| Suffix | ETX (1003) | CR (1013) | CR (1013) ETX (1003) | ETX* | CR (1013) |

> **📝 Note**
>
> The CUTE host disables all parameter scanning, including Set Defaults. If you inadvertently select CUTE, scan **Enable Parameter Bar Code Scanning** (refer to **"Parameter Bar Code Scanning (Parameter #236, SSI #ECh)"** on page 157), and then change the host selection.

# Terminal Specific Code ID Characters

Selecting an RS-232 host enables the transmission of code ID characters. These default settings are shown in the following tables.

> 📝 **Note**
>
> These code ID characters are not programmable and are separate from the Transmit Code ID feature. Do not enable the Transmit Code ID feature for these terminals.

| Parameter | ICL | Fujitsu | Wincor-Nixdorf Mode A | Wincor-Nixdorf Mode B/OPOS/JPOS |
|---|---|---|---|---|
| UPC-A | A | A | A | A |
| UPC-E | E | E | C | C |
| EAN-8/JAN-8 | FF | FF | B | B |
| EAN-13/JAN-13 | F | F | A | A |
| Bookland EAN | F | F | A | A |
| Code 39 | C <len> | None | M | M |
| Code 39 Full ASCII | None | None | M | M |
| Trioptic | None | None | None | None |
| Code 32 | None | None | None | None |
| Codabar | N <len> | None | N | N |
| Code 128 | L <len> | None | K | K |
| GS1-128 | L <len> | None | P | P |
| Code 93 | None | None | L | L |
| Interleaved 2 of 5 | I <len> | None | I | I |
| Discrete 2 of 5 | H <len> | None | H | H |

| Parameter | ICL | Fujitsu | Wincor-Nixdorf Mode A | Wincor-Nixdorf Mode B/OPOS/JPOS |
|---|---|---|---|---|
| MSI | None | None | O | O |
| IATA | H<len> | None | H | H |
| GS1 DataBar Variants | None | None | E | E |
| PDF417 | None | None | Q | Q |
| MicroPDF417 | None | None | S | S |
| Data Matrix | None | None | R | R |
| QR Codes | None | None | U | U |
| Aztec/Aztec Rune | None | None | V | V |

| Parameter | Olivetti | Omron | Common Use Terminal Equipment (CUTE) | NCR | Datalogic |
|---|---|---|---|---|---|
| UPC-A | A | A | A | A | A |
| UPC-E | C | E | None | E | E |
| EAN-8/JAN-8 | B | FF | None | FF | FF |
| EAN-13/JAN-13 | A | F | A | F | F |
| Bookland EAN | A | F | None | None | None |
| Code 39 | M <len> | C <len> | 3 | B1 | * |
| Code 39 Full ASCII | None | None | 3 | None | None |
| Trioptic | None | None | None | None | $T |
| Code 32 | None | None | None | None | AE |

| Parameter | Olivetti | Omron | Common Use Terminal Equipment (CUTE) | NCR | Datalogic |
|---|---|---|---|---|---|
| Codabar | N <len> | N <len> | None | None | % |
| Code 128 | K <len> | L <len> | 5 | B3 | # |
| GS1-128 | P <len> | L <len> | 5 | None | None |
| Code 93 | L <len> | None | None | None | & |
| Interleaved 2 of 5 | I <len> | I <len> | 1 | B2 | i |
| Discrete 2 of 5 | H <len> | H <len> | 2 | None | None |
| MSI | O <len> | None | None | None | @ |
| IATA | H<len> | H<len> | 2 | None | IA |
| GS1 DataBar Variants | None | None | None | ]e0 | GS1 DataBar - R4 GS1 DataBar Limited - RL GS1 DataBar Expanded - RX |
| PDF417 | None | None | 6 | ]L2* | P |
| MicroPDF417 | None | None | 6 | ]L2* | mP |
| Data Matrix | None | None | 4 | ]d0* | Dm |
| QR Codes | None | None | 7 | ]Q0 | QR |
| Aztec/Aztec Rune | None | None | 8 | ]z0 | Az |
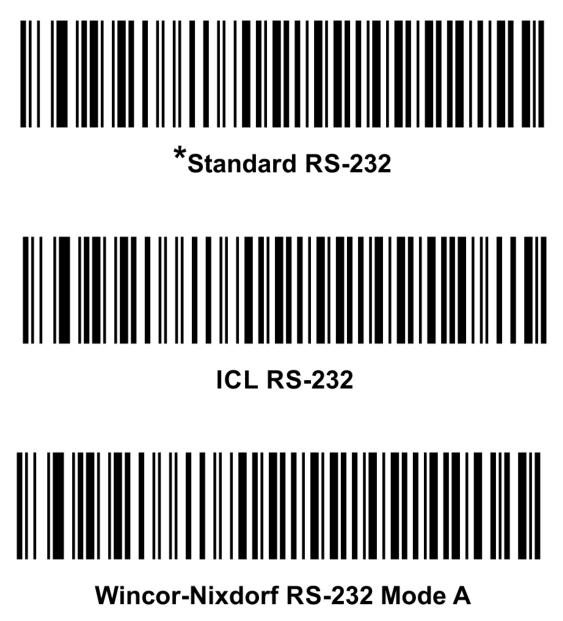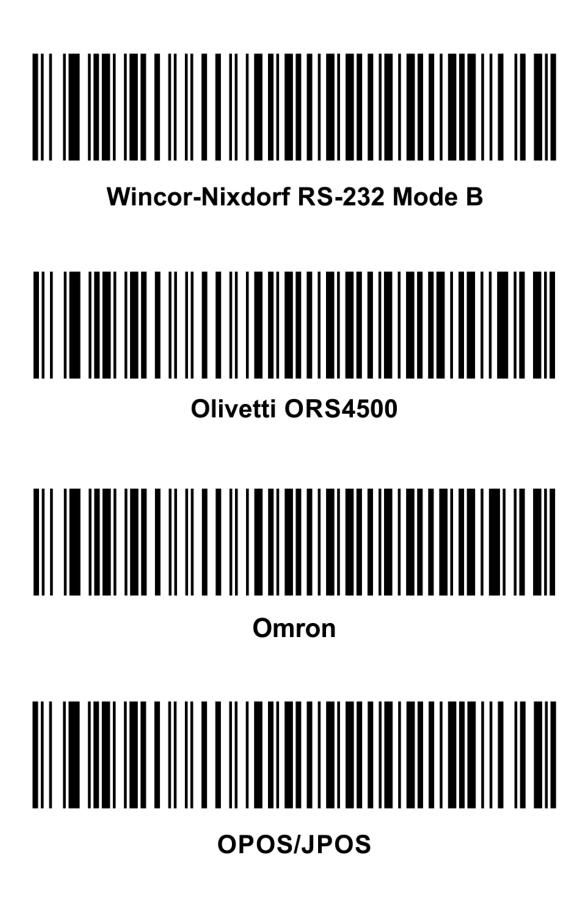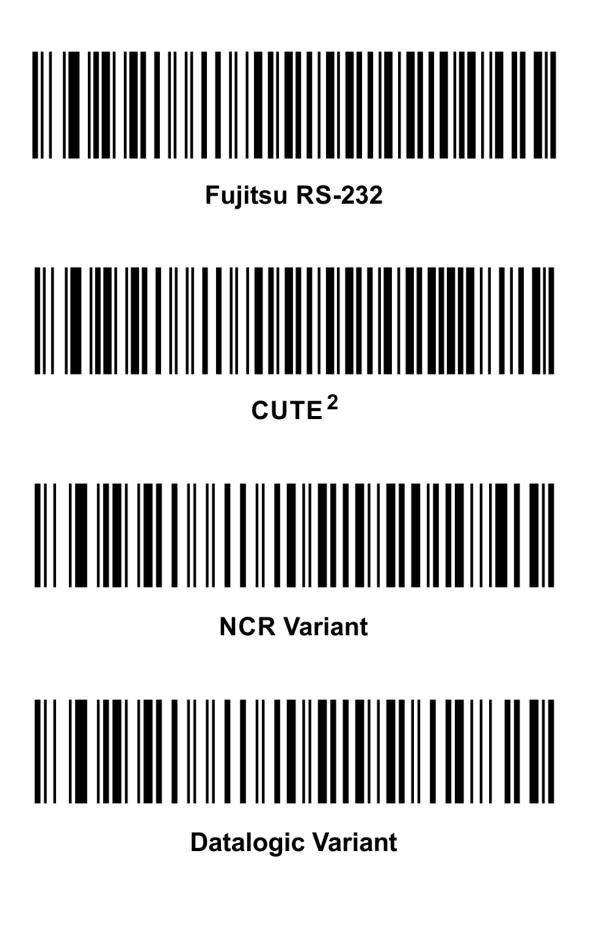
> 📝 **Note**
>
> Characters marked with an asterisk (*) indicates that the Code-ID transmits a **P** in NCR-LEGACY mode.

# RS-232 Host Type

Scan one of the following bar codes to select the RS-232 host interface. By default, this parameter is set to **Standard RS-232**.



*Standard RS-232



ICL RS-232



Wincor-Nixdorf RS-232 Mode A

**Wincor-Nixdorf RS-232 Mode B**

**Olivetti ORS4500**

**Omron**

**OPOS/JPOS**

**Fujitsu RS-232**

**CUTE** $^2$

**NCR Variant**

**Datalogic Variant**

> **Note**
>
> Take note of the following:
>
> - Scanning **Standard RS-232** activates the RS-232 driver, but does not change the port settings (for example, parity, data bits, handshaking). Selecting another RS-232 host type bar code changes these settings.
>
> - The CUTE host disables all parameter scanning, including Set Defaults. If you inadvertently select CUTE, scan **Enable Parameter Bar Code Scanning** (refer to **"Parameter Bar Code Scanning (Parameter #236, SSI #ECh)"** on page 157), and then change the host selection.

# Baud Rate

Baud rate is the number of bits of data transmitted per second. Scan one of the following bar codes to set the baud rate of the scanner to match the baud rate setting of the host device. Otherwise, data may not reach the host device or may reach it in distorted form. By default, this parameter is set to **9600**.

> 📝 **Note**
>
> The scanner does not support baud rates below 9600.



**\*Baud Rate 9600**



**Baud Rate 19,200**



**Baud Rate 38,400**

**Baud Rate 57,600**

**Baud Rate 115,200**

# Parity
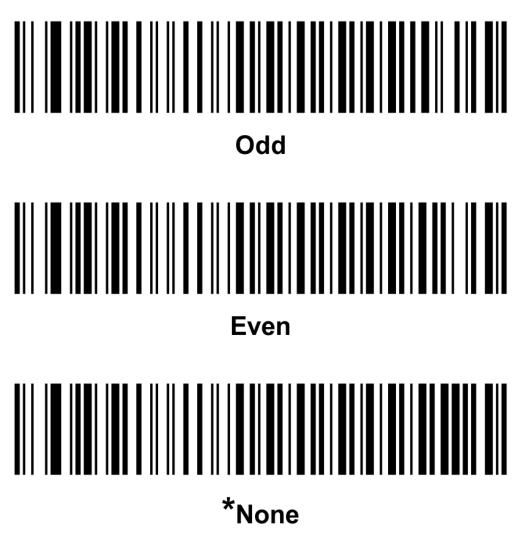
A parity check bit is the most significant bit of each ASCII coded character. Scan one of the following bar codes to select the parity type according to host device requirements:

- **Odd**—sets the parity bit value to **0** or **1**, based on data, to ensure that the coded character contains an odd number of 1 bits.

- **Even**—sets the parity bit value to **0** or **1**, based on data, to ensure that the coded character contains an even number of 1 bits.

- **None**—No parity bit is required.
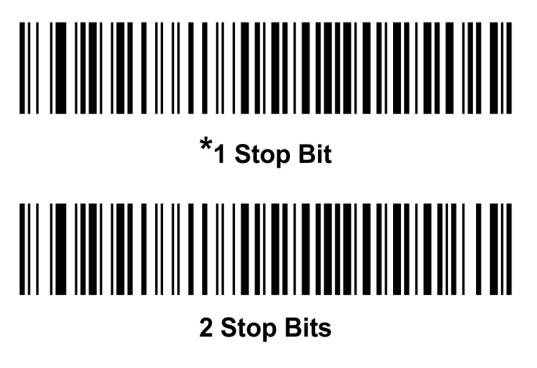
Scan one of the following bar codes to select the parity type according to host device requirements. By default, this parameter is set to **None**.



**Odd**



**Even**



**\*None**

# Stop Bits

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. Scan one of the following bar codes to

Scan one of the following bar codes to set the number of stop bits (one or two) based on the number the receiving host can accommodate. By default, this parameter is set to **1 Stop Bit**.



**\*1 Stop Bit**



**2 Stop Bits**

# Data Bits

This parameter allows the scanner to interface with devices requiring a 7-bit or 8-bit ASCII protocol. Scan one of the following bar codes to select the data bits. By default, this parameter is set to **8-bit**.



7-bit



*8-bit

# Check Receive Errors

Scan one of the following bar codes to set whether to check the parity, framing, and overrun of received characters. By default, this parameter is set to **Check for Received Errors**.



*Check For Received Errors



Do Not Check For Received Errors
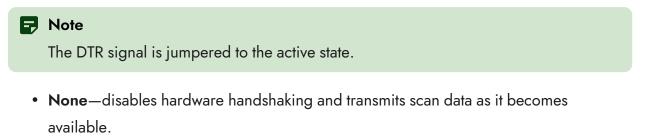
The parity value of received characters is verified against the value set for Parity. For more information, refer to "Parity" on page 84.

# Hardware Handshaking

The data interface consists of an RS-232 port designed to operate either with or without the hardware handshaking lines Request to Send (RTS) and Clear to Send (CTS).

If hardware handshaking and software handshaking are both enabled, hardware handshaking takes precedence.

> 📝 **Note**
>
> The DTR signal is jumpered to the active state.

- **None**—disables hardware handshaking and transmits scan data as it becomes available.

- **Standard RTS/CTS**—sets standard RTS/CTS hardware handshaking and transmits scanned data according to the following sequence:
  1. The scanner reads the CTS line for activity.
     - If the CTS line is deasserted, the scanner asserts the RTS line and waits up to **"Host Serial Response Timeout"** on page 93 for the host to assert CTS, and then transmits data when asserted. After the timeout, if the CTS line is not asserted, the scanner sounds a transmit error and discards the data.
     - If CTS is asserted, the scanner waits up to Host Serial Response Timeout for the host to deassert CTS. After this timeout, if the CTS line is still asserted, the scanner sounds a transmit error and discards the scanned data.
  2. The scanner deasserts RTS after sending the last character of data.
  3. The host negates CTS. The scanner checks for a deasserted CTS upon the next data transmission.

> 📝 **Note**
>
> During data transmission, if CTS is deasserted for more than 50 ms between characters, the scanner sounds a transmit error and discards the data. The data must be rescanned.
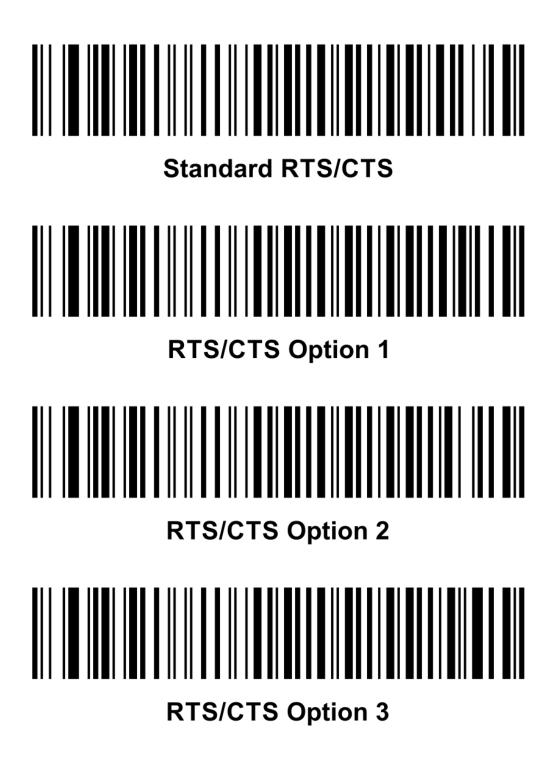
- **RTS/CTS Option 1**—the scanner asserts RTS before transmitting and ignores the state of CTS. The scanner deasserts RTS when transmission completes.

- **RTS/CTS Option 2**—RTS is always high or low (user-programmed logic level). However, the scanner waits for the host to assert CTS before transmitting data. If CTS is not asserted within the Host Serial Response Timeout, the scanner sounds a transmit error and discards the data. During data transmission, if CTS is deasserted for more than 50 ms between characters, the scanner sounds a transmit error and discards the data.

- **RTS/CTS Option 3**—transmits scanned data according to the following sequence:

   1. The scanner asserts RTS before data transmission, regardless of the state of CTS.

   2. The scanner waits up to the Host Serial Response Timeout for the host to assert CTS, and then transmits data when asserted. After the timeout, if the CTS line is not asserted, the scanner sounds a transmit error and discards the data.

   3. The scanner deasserts RTS after sending the last character of data.

   4. The host negates CTS. The scanner checks for a deasserted CTS upon the next data transmission.

> **Note**
>
> During data transmission, if CTS is deasserted for more than 50 ms between characters, the scanner sounds a transmit error and discards the data. The data must be re-scanned.

Scan one of the following bar codes to select the hardware handshaking setting. By default, this parameter is set to **None**.



*None

**Standard RTS/CTS**

**RTS/CTS Option 1**

**RTS/CTS Option 2**

**RTS/CTS Option 3**
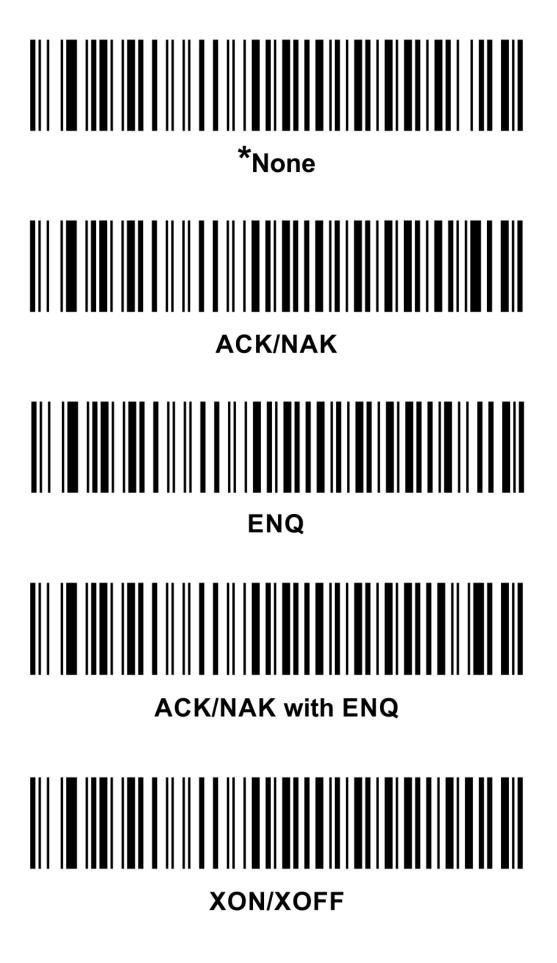
# Software Handshaking

This parameter offers control of data transmission in addition to, or instead of, that offered by hardware handshaking. If software handshaking and hardware handshaking are both enabled, hardware handshaking takes precedence.
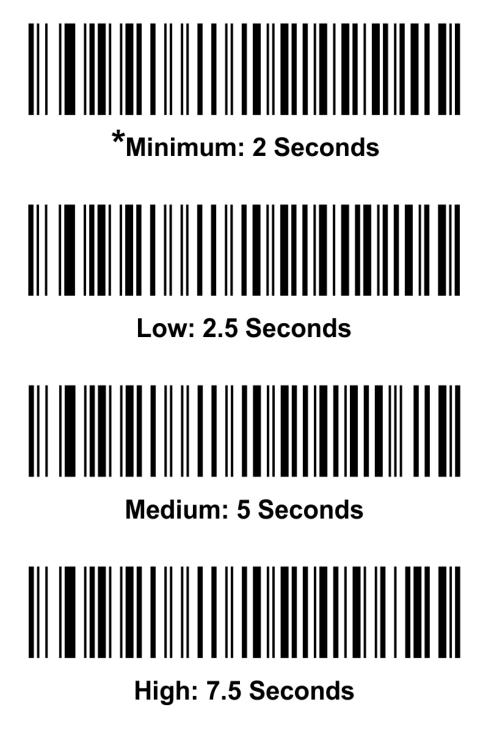
- **None**—transmits data immediately. The scanner expects no response from the host.

- **ACK/NAK**—after transmitting data, the scanner waits for an ACK or NAK response from the host. If it receives a NAK, the scanner transmits the data again and waits for an ACK or NAK. After three unsuccessful attempts to send data after receiving NAKs, the scanner sounds a transmit error and discards the data.
    - The scanner waits up to the programmable **"Hardware Handshaking"** on page 88 to receive an ACK or NAK. If the scanner does not get a response in this time, it sounds a transmit error and discards the data. There are no reattempts.

- **ENQ**—the scanner waits for an ENQ character from the host before transmitting data. If it does not receive an ENQ within the Host Serial Response Timeout, the scanner sounds a transmit error and discards the data. The host must transmit an ENQ character at least every Host Serial Response Timeout to prevent transmission errors.

- **ACK/NAK with ENQ**—combines the two previous options. An additional ENQ is not required to re-transmit data due to a NAK from the host.

- **XON/XOFF**—an XOFF character stops data transmission until the scanner receives an XON character. There are two situations for XON/XOFF:
    - The scanner receives an XOFF before it has data to send. When the scanner has data, it waits up to the Host Serial Response Timeout for an XON character before transmitting. If it does not receive the XON within this time, the scanner sounds a transmit error and discards the data.
    - The scanner receives an XOFF during data transmission and stops transmission after sending the current byte. When the scanner receives an XON character, it sends the rest of the data. The scanner waits indefinitely for the XON.

Scan one of the following bar codes to select the software handshaking setting. By default, this parameter is set to **None**.

**\*None**

**ACK/NAK**

**ENQ**

**ACK/NAK with ENQ**

**XON/XOFF**

# Host Serial Response Timeout

Scan one of the following bar codes to specify how long the scanner waits for an ACK, NAK, or CTS before determining that a transmission error occurred. This only applies when in one of the ACK/NAK software handshaking modes or RTS/CTS hardware handshaking mode. By default, this parameter is set to **Minimum: 2 seconds**.



*Minimum: 2 Seconds



Low: 2.5 Seconds



Medium: 5 Seconds



High: 7.5 Seconds

## Maximum: 9.9 Seconds

# RTS Line State

Scan one of the following bar codes to set the idle state of the serial host RTS line to either low or high. By default, this parameter is set to **Low RTS**.



**\*Host: Low RTS**



**Host: High RTS**
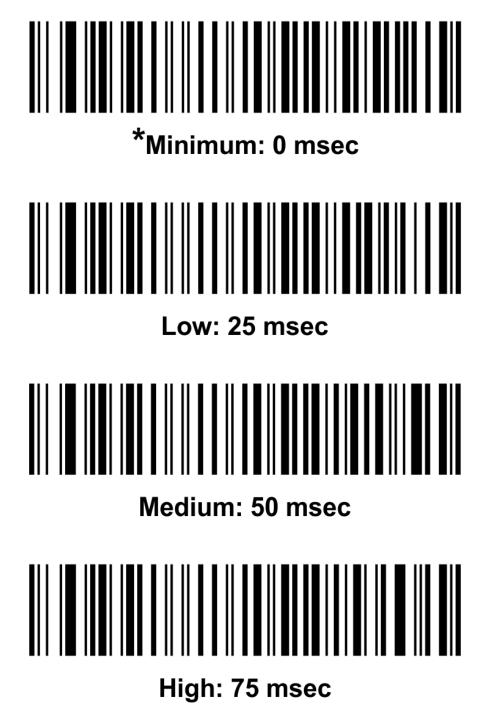
# Beep on <BEL>

Scan one of the following bar codes to set whether the scanner issues a beep when it detects a <BEL> character on the RS-232 serial line. <BEL> indicates an illegal entry or other important event. By default, this parameter is set to **Disable**.



**Beep On <BEL> Character
(Enable)**



***Do Not Beep On <BEL> Character
(Disable)**

# Intercharacter Delay

Scan one of the following bar codes to specify the intercharacter delay inserted between character transmissions. By default, this parameter is set to **Minimum: 0 msec**.



**\*Minimum: 0 msec**



**Low: 25 msec**



**Medium: 50 msec**



**High: 75 msec**

║║║ ║║║ ║║ ║║║ ║║ ║║ ║║║ ║║ ║║║ ║║ ║║
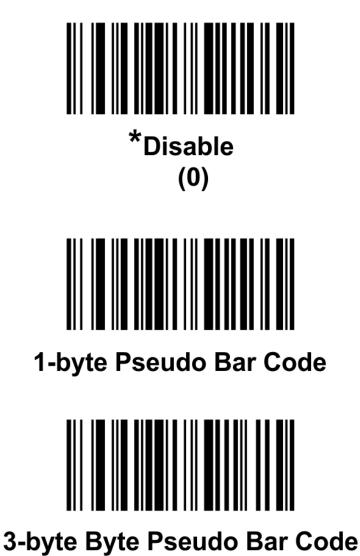
**Maximum: 99 msec**

# RS-232 Power On Mode (Parameter #1939)

Scan the 1-byte, 3-byte, or 13-byte bar code if the first bar code is lost after boot-up. The 1-byte bar code consists of one NULL character, 3-byte bar code consists of three NULL characters, and the 13-byte bar code consists of 13 NULL characters. Depending on the bar code type (1-byte, 3-byte, or 13-byte), the scanner sends the bar code data during the boot-up process.
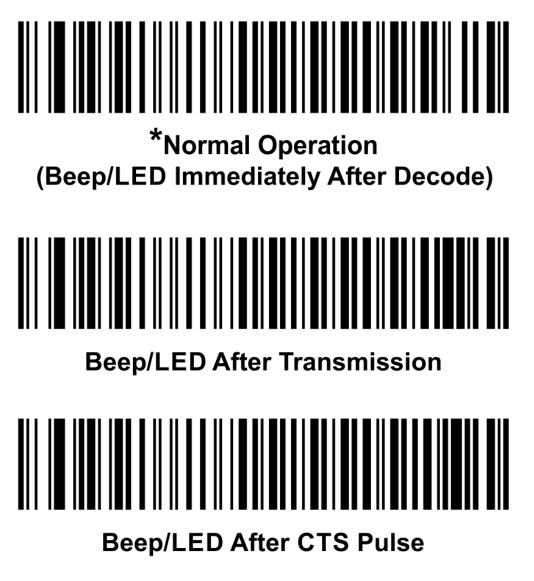
Scan one of the following bar codes to set the power on mode. By default, this parameter is set to **Disable**.

*Disable
(0)

1-byte Pseudo Bar Code

3-byte Byte Pseudo Bar Code

# 13-byte Pseudo Bar Code

# Nixdorf Beep/LED Options

If Nixdorf Mode B is selected as a host type, scan one of the following bar codes to indicate when the scanner beeps and turns on its LED after a decode. By default, this parameter is set to **Normal Operation**.



**\*Normal Operation
(Beep/LED Immediately After Decode)**



**Beep/LED After Transmission**



**Beep/LED After CTS Pulse**

# Bar Codes with Unknown Characters

Unknown characters are characters the host does not recognize.

- **Send Bar Codes With Unknown Characters**—send all bar code data except for unknown characters. The scanner issues no error beeps.

- **Do Not Send Bar Codes With Unknown Characters**—sends bar code data up to the first unknown character. The scanner issues an error beep.
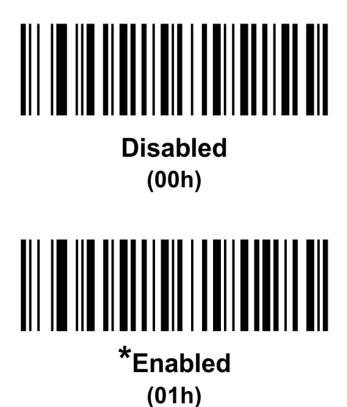
Scan one of the following bar codes to enable or disable sending bar codes with unknown characters. By default, this parameter is set to **Send Bar Codes With Unknown Characters**.



*Send Bar Codes With
Unknown Characters



Do Not Send Bar Codes With
Unknown Characters

# NCR Variant Preferences

## NCR Use Prefix (Parameter #1238)

When **NCR Variant** is selected, this parameter determines whether or not the prefix is used for all communications.

Scan one of the following bar codes to enable or disable the use of prefix. By default, this parameter is set to **Enabled**.

**Disabled**
**(00h)**

**\*Enabled**
**(01h)**

# NCR Prefix (Parameter #1282)

When **NCR Variant** is selected and **NCR Use Prefix** is enabled, this parameter determines the Prefix Character used for all communications. The default is 1002 (STX).

To set a prefix value, scan the bar code below, and then scan four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred character in **"Character Sets"** on page 580.

**NCR Prefix**

# NCR Suffix (Parameter #1283)

When **NCR Variant** is selected, this parameter determines the Suffix (Terminator) Character used for all communications. The default is 1003 (ETX).

To set a suffix value, scan the bar code below, and then scan the four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred character in **"Character Sets"** on page 580.
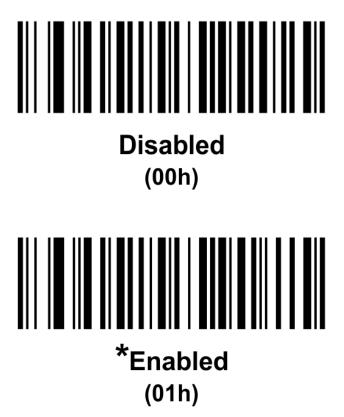


**NCR Suffix**

# NCR Use Block Check Character (BCC) (Parameter #1239)

When **NCR Variant** is selected, this parameter determines whether or not to enable the use of the Block Check Character (after the Terminator byte) for all communications.

Scan one the following bar codes to enable or disable the use of the block check character. By default, this parameter is set to **Enabled**.

**Disabled**
**(00h)**

**\*Enabled**
**(01h)**
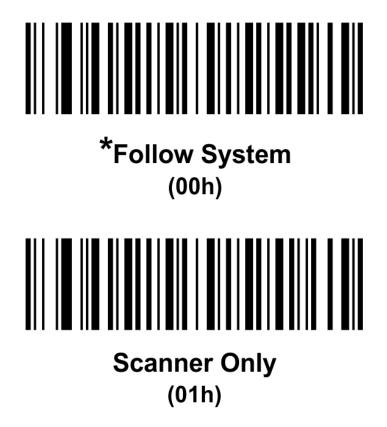
# NCR Interface (Parameter #1240)

When **NCR Variant** is selected, this parameter determines the NCR specific interface to be used for all communications. NCR supports two interfaces: scanner only and scanner/scale.

- **Follow System**—auto-detects the system interface. If the system has a scale installed, the scanner/scale interface is used. If the system has no scale installed, scanner only is used.

- **Scanner Only**—forces the system to use the scanner only interface whether or not a scale is installed.

- **Scanner/Scale**—forces the system to use the scanner/scale interface whether or not a scale is installed.

Scan one the following bar codes to select the NCR interface setting. By default, this parameter is set to **Follow System**.



**\*Follow System**
**(00h)**



**Scanner Only**
**(01h)**

# Scanner/Scale
## (02h)

## NCR Scale Beep After Weight Request (Parameter #1353)

Scan **Enable NCR Scale Beep After Weight** below to sound a beep tone after a successful weight request.

- **Enable NCR Scale Beep After Weight**—the scale beeps a single beep tone after each successful weight request by the POS system.
- **Disable NCR Scale Beep After Weight**—the scale does not beep after a weight request is made by the POS system.

Scan one the following bar codes to enable or disable the beep tone after a successful weight request. By default, this parameter is set to **Disable**.



**\*Disable NCR Beep After Weight Request (0x00h)**
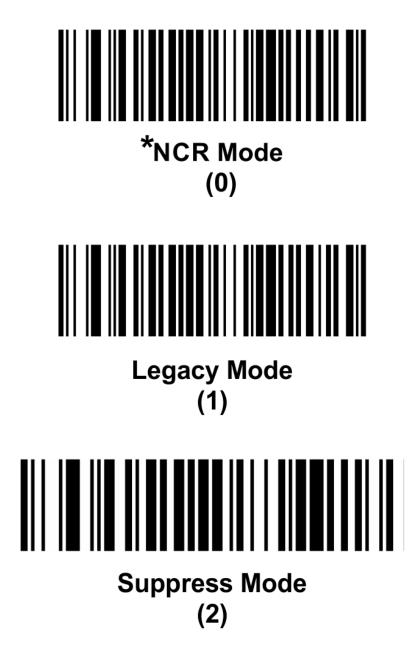


**Enable NCR Beep After Weight Request (0x01h)**

# NCR 2D Label-ID Mode (Parameter #1948)
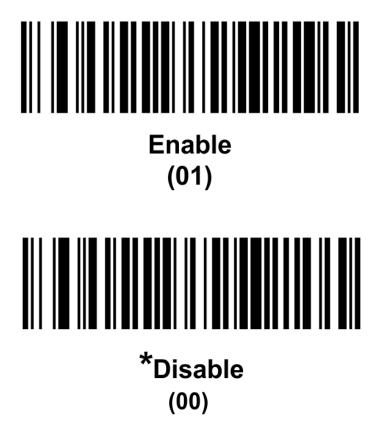
Scan one of the following bar codes for the defined bar code prefix type. By default, this parameter is set to **NCR Mode**.

- **NCR Mode**—adds an NCR prefix to a bar code.

- **Legacy Mode**—adds a non-NCR prefix to a bar code.

- **Suppress Mode**—no prefix is added to a bar code.

**\*NCR Mode
(0)**

**Legacy Mode
(1)**

**Suppress Mode
(2)**

# Reject Same Weight (Parameter #1968)

Scan one of the following the bar codes to enable or disable some variants (NCR or ICL OMRON) from rejecting a request to retransmit an item with the same weight previously transmitted. For example, if this parameter is enabled and an item is placed on the scale, its weight is only transmitted to host one time. By default, the USB device type is set to **Disable**.

**Enable
(01)**

**\*Disable
(00)**

# RS-232 Code ID Suppression (Parameter #2108)
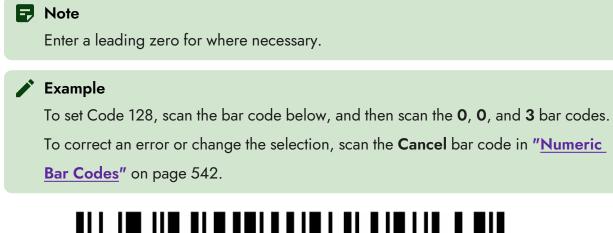
Scan one of the following the bar codes to set the bar code prefix type. By default, the USB device type is set to **Do Not Suppress Code ID**.

- **Do Not Suppress Code ID**—keeps RS-232 variants prefix to a bar code.
- **Suppress Code ID**—suppresses the RS-232 Code ID for the bar code type specified by the **"RS-232 Code ID Suppression Code Type (Parameter #2110)"** on the next page and **"RS-232 Code ID Suppression Host (Parameter #2111)"** on page 116.



\*Do Not Suppress Code ID
(0)



Suppress Code ID
(1)

# RS-232 Code ID Suppression Code Type (Parameter #2110)

To set a Code ID Suppression Code Type, scan the bar code below, and then scan the three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred Code Type in the table shown in this section. By default, this parameter is set to **000 (NONE)**.

> 📝 **Note**
>
> Enter a leading zero for where necessary.

> ✏️ **Example**
>
> To set Code 128, scan the bar code below, and then scan the **0**, **0**, and **3** bar codes.
>
> To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



**RS232 Code ID Suppression Code Type**
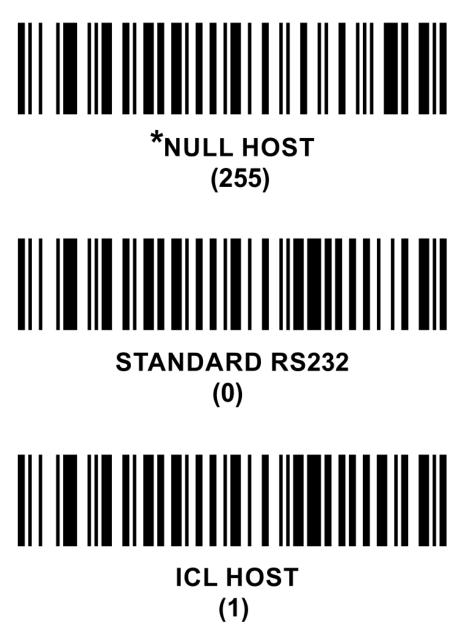
| Code Type | Code Type # |
|---|---|
| None | 000 |
| Code 39 | 001 |
| Codabar | 002 |
| Code 128 | 003 |
| Discrete 2 of 5 | 004 |

| Code Type | Code Type # |
|---|---|
| IATA | 005 |
| Interleaved 2 of 5 | 006 |
| Code 93 | 007 |
| UPC-A | 008 |
| UPC-E | 009 |
| EAN-8 | 010 |
| EAN-13 | 011 |
| Code 11 | 012 |
| MSI | 014 |
| EAN-128 | 015 |
| UPC-E1 | 016 |
| PDF417 | 017 |
| Code 39 Full ASCII | 019 |
| Bookland EAN | 022 |
| UCC Coupon Extended Code | 023 |
| Micro PDF | 026 |
| QR Code | 028 |
| Code 32 | 032 |
| Macro PDF | 040 |
| Micro QR Code | 044 |
| GS1 Databar Limited | 049 |
| GS1 Databar Expanded | 050 |

| Code Type | Code Type # |
|---|---|
| ISSN EAN | 054 |
| UPC-A with 2-Digit Supplemental | 072 |
| UPC-E with 2-Digit Supplemental | 073 |
| EAN-8 with 2-Digit Supplemental | 074 |
| EAN-13 with 2-Digit Supplemental | 075 |
| UPC-A with 5-Digit Supplemental | 136 |
| UPC-E with 5-Digit Supplemental | 137 |
| EAN-8 with 5-Digit Supplemental | 138 |
| EAN-13 with 5-Digit Supplemental | 139 |
| DL Parsed Data | 177 |
| GS1 Databar Coupon Code | 180 |
| Han Xin | 183 |
| GS1 QR | 194 |
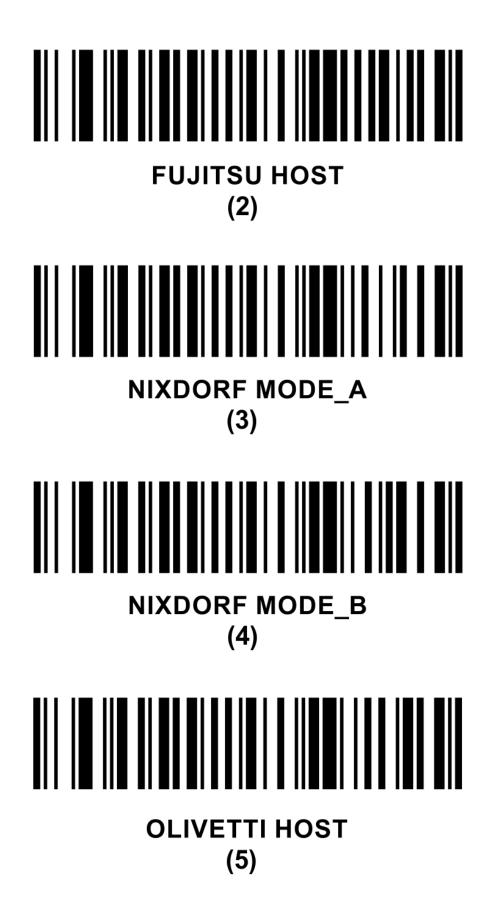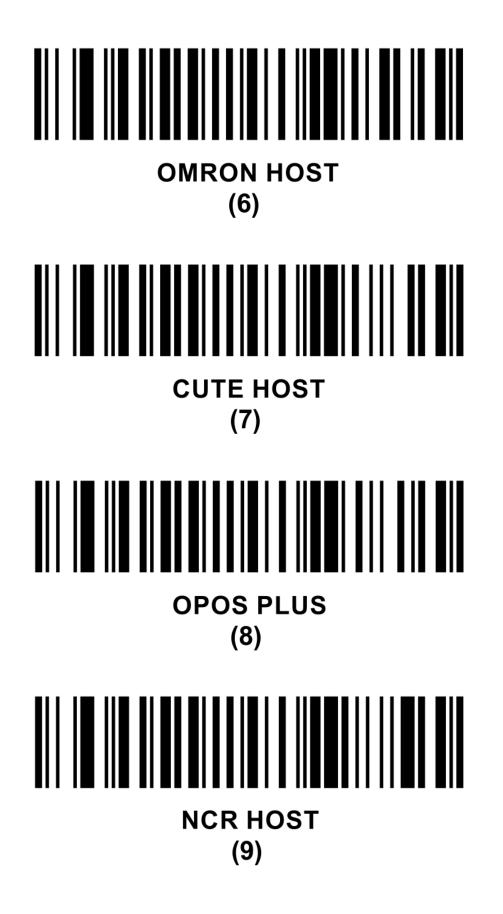
# RS-232 Code ID Suppression Host (Parameter #2111)

Scan one of the following the bar codes to select a RS-232 code ID suppression host. By default, this parameter is set to **NULL HOST**.

**\*NULL HOST
(255)**

**STANDARD RS232
(0)**

**ICL HOST
(1)**

**FUJITSU HOST**
**(2)**

**NIXDORF MODE_A**
**(3)**

**NIXDORF MODE_B**
**(4)**

**OLIVETTI HOST**
**(5)**

**OMRON HOST**
**(6)**



**CUTE HOST**
**(7)**



**OPOS PLUS**
**(8)**



**NCR HOST**
**(9)**

**DATALOGIC HOST
(10)**

# IBM RS-485 Interface

This chapter includes programming bar codes and procedures to set up the scanner for an IBM RS-485 host interface. The NCR 7895 uses the IBM RS-485 interface to connect to POS devices or host computers.

For IBM RS-485 host parameters default settings, refer to **"IBM RS-485 Interface Host Parameters"** on page 516. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.
- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.
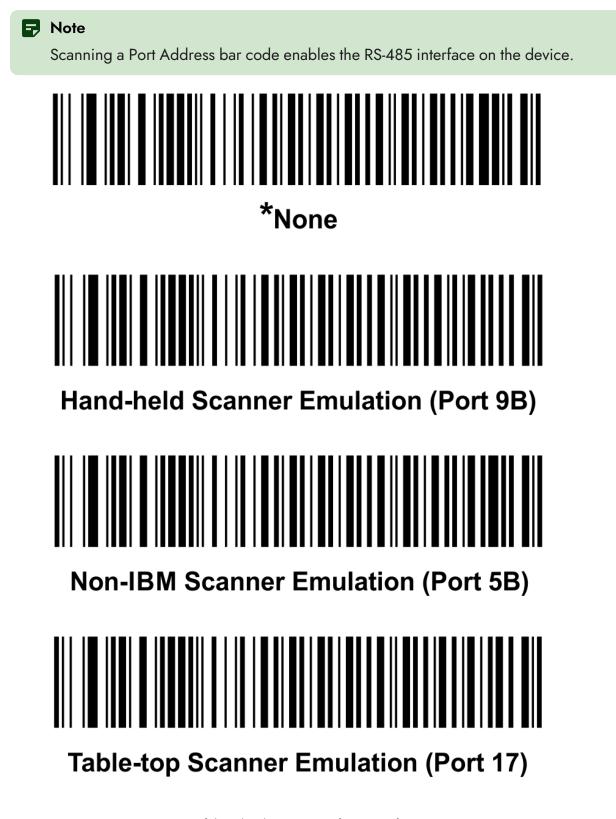
# IBM RS-485 Host Parameters

The following are IBM RS-485 host parameters:

- **"Port Address"** on the next page
- **"Scale Port Address"** on page 143
- **"IBM RS-485 Convert Unknown to Code 39"** on page 123
- **"IBM RS-485 Beep Directive"** on page 124
- **"IBM RS-485 Bar Code Configuration Directive"** on page 125
- **"Scan Disable Mode (Parameter #1214)"** on page 126
- **"IBM RS-485 Specification Version (Parameter #1729)"** on page 128
- **"IBM Commands (Parameter #1345, SSI #F8h 04h 41h)"** on page 129

# Port Address

Scan one of the following bar codes to set the IBM RS-485 port address. By default, this parameter is set to **None**.

> 📝 **Note**
> Scanning a Port Address bar code enables the RS-485 interface on the device.



\*None



**Hand-held Scanner Emulation (Port 9B)**



**Non-IBM Scanner Emulation (Port 5B)**



**Table-top Scanner Emulation (Port 17)**

# Scale Port Address

The scale port address must be configured for the scale to operate on the IBM RS-485 bus.

Scan one of the following bar codes to set the IBM RS-485 scale port address. By default, this parameter is set to **None Selected**.



*None Selected



Port 6A



Port 6B



Port 6E

# IBM RS-485 Convert Unknown to Code 39

Scan one of the following bar codes to enable or disable converting unknown bar code type data to Code 39. By default, this parameter is set to **Disable Convert Unknown to Code 39**.



Enable Convert Unknown to Code 39



*Disable Convert Unknown to Code 39

# IBM RS-485 Beep Directive

The host can send a beeper configuration request to the scanner. Scan **Ignore Beep Directive** to prevent the scanner from processing the host request. All directives are still acknowledged to the host as if they were processed. By default, this parameter is set to **Ignore**.

**Honor Beep Directive**

**\*Ignore Beep Directive**

# IBM RS-485 Bar Code Configuration Directive

The host can enable and disable code types. Scan **Ignore Bar Code Configuration Directive** to prevent the scanner from processing the host request. All directives are still acknowledged to the host as if they were processed. By default, this parameter is set to **Ignore**.

Honor Bar Code Configuration Directive

*Ignore Bar Code Configuration Directive

# Scan Disable Mode (Parameter #1214)

This parameter determines the behavior of the NCR 7895 when it receives a *Scan Disable* directive from the connected host.

- **Full Disable**—scanning bar codes is disabled.

- **Transmit Disable**—may scan bar codes, but transmission of bar code data is disabled.

- **Auto Disable**—disables scanning after transmission of a bar code, and remains disabled until the host sends a *Scan Enable*.

> 📝 **Note**
>
> This feature is currently supported by IBM Table Top USB, IBM Hand-held USB, and all IBM 46XX interfaces.

Scan one of the following bar codes to select the scan disable mode. By default, this parameter is set to **Full Disable**.



**\* Full Disable
(0)**



**Transmit Disable
(1)**

# Auto Disable
# (2)

# IBM RS-485 Specification Version (Parameter #1729)

The IBM interface specification version selected defines how code types are reported over the IBM interface.

- **Original Specification**—only Symbologies that were historically supported on each individual port are reported as known.
- **Version 2.2**—all Symbologies covered in the newer IBM specification are reported as known with their respective code types.

Scan one of the following bar codes to select the IBM RS-485 specification version. By default, this parameter is set to **Version 2.2**.



**Original Specification (0)**



**\*Version 2.2 (1)**

# IBM Commands (Parameter #1345, SSI #F8h 04h 41h)

The IBM/TGCS protocol defines a set of commands that can be sent to the scanner. Among the command set are the following two commands:

- Reset
- Clear Scale Pole Display

This parameter allows each of these commands to be handled uniquely.

Additionally, the IBM/TGCS host may send an unknown or unsupported command. This parameter allows users to specify how these commands are to be processed.

Scan one of the bar codes that follow to match your system requirements.

Scan one of the following bar codes to match the system requirements. By default, this parameter is set to **Ignore Unknown Commands, Reboot on Reset Commands, Honor Clear Scale Pole Display Commands**.



**Honor Unknown Commands
Reboot on Reset Commands
Honor Clear Scale Pole Display Commands
(0)**

**\*Ignore Unknown Commands
Reboot on Reset Commands
Honor Clear Scale Pole Display Commands
(1)**

**Honor Unknown Commands
Do Not Reboot on Reset Commands
Honor Clear Scale Pole Display Commands
(2)**

**Ignore Unknown Commands
Do Not Reboot on Reset Commands
Honor Clear Scale Pole Display Commands
(3)**

**Honor Unknown Commands**
**Reboot on Reset Commands**
**Ignore Clear Scale Pole Display Commands**
**(4)**



**Ignore Unknown Commands**
**Reboot on Reset Commands**
**Ignore Clear Scale Pole Display Commands**
**(5)**



**Honor Unknown Commands**
**Do Not Reboot on Reset Commands**
**Ignore Clear Scale Pole Display Commands**
**(6)**

||||| |||| | ||| ||| || ||| |

**Ignore Unknown Commands
Do Not Reboot on Reset Commands
Ignore Clear Scale Pole Display Commands
(7)**

# Scale Configuration

This chapter includes programming bar codes to configure and calibrate the scale.

For Scale Configuration parameters default settings, refer to **"Scale Parameters"** on page 517. To change the default settings, scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.

# Scale Configuration Parameters

The following are Scale Configuration parameters:

# Legal Scale Units (Parameter #995)

The scale unit of measure is pre-configured to your country or region by model. If reconfiguring is necessary, scan a weight unit bar code below to set the legal weight units for the NCR 7895.

> 📝 **Note**
>
> The scale must be in Calibration Mode to program this parameter. For detailed information about scale calibration, refer to *NCR 7895 Scanner/Scale Installation Guide* (BCC5-0000-5507).

For international or metric unit, scan **Kilograms**.



**Kilograms
(0)**

For US unit, scan **Pounds**.
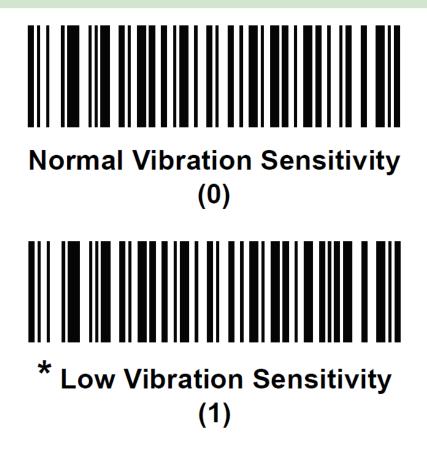


**Pounds
(1)**
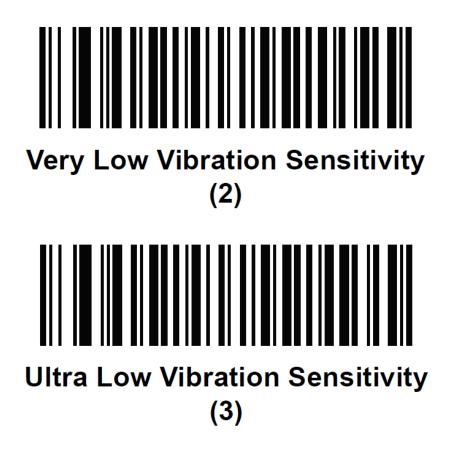
# Legal Scale Dampening Filter (Parameter #996)

Scan one of the following bar codes to set the vibration sensitivity of the scale. The lower the number value, the more sensitive the scale is to vibration. By default, this parameter is set to **Low Vibration Sensitivity**.

> 📝 **Note**
>
> The scale must be in Calibration Mode to program this parameter. For detailed information about scale calibration, refer to *NCR 7895 Scanner/Scale Installation Guide* (BCC5-0000-5507).



**Normal Vibration Sensitivity
(0)**



**\* Low Vibration Sensitivity
(1)**

**Very Low Vibration Sensitivity (2)**

**Ultra Low Vibration Sensitivity (3)**
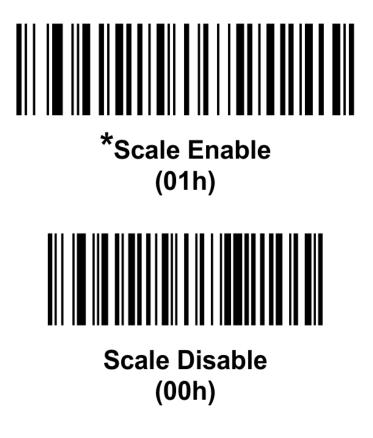
# Scale Enable (Parameter #1197)

This parameter enables and disables the functionality of an already existing scale. If the scale was not properly installed, this parameter will not take effect.

Scan one of the following bar codes to enable or disable the scale functionality. By default, this parameter is set to **Enable**.



*Scale Enable
(01h)



Scale Disable
(00h)

# Scale Reset (Parameter #6009)

Scan the following bar code to reset the scale. The Scale Reset bar code can be scanned anytime during the calibration procedures with no impact, as long as the scale unit of weight was not changed. For detailed information about scale calibration, refer to *NCR 7895 Scanner/Scale Installation Guide* (BCC5-0000-5507).

STISCLRST
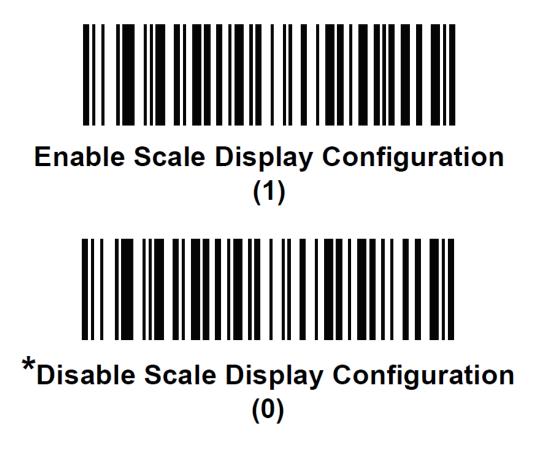
# Scale Display Configuration (Parameter #986)

This parameter enables the pole display to show the product weight and other information related to the scale.

- **Enable Scale Display Configuration**—when a pole display is installed and connected to the NCR 7895, the pole display shows weight and additional alphanumeric information associated with the state of the scale. If a pole display is not connected, and **Enable Scale Display Configuration** is scanned, the 7-segment display scrolls the code *U23* to indicate that there is a remote Scale Display communication error.

- **Disable Scale Display Configuration**—scan this parameter when no Scale Display is installed. When a Scale Display is installed and connected to the NCR 7895, the Scale Display remains blank. The Scale Display can be installed and programmed in any mode of operation.

Scan one of the following bar codes to enable or disable the Scale Display configuration. By default, this parameter is set to **Disable**.



**Enable Scale Display Configuration (1)**



**\*Disable Scale Display Configuration (0)**

# Scale Enforce Zero Return (Parameter #987)

Scan one of the following bar codes to enable or disable enforce zero return. By default, the scan disable mode is set to **Disable**.

- **Disable Scale Enforce Zero Return**—provides live gross weight in real time upon request from a POS system. This is the factory default.

- **Enable Scale Enforce Zero Return**—the scale must return to zero weight between POS weight requests. If the scale fails to return to zero weight between POS weight requests then all subsequent weight requests are returned to the POS as an invalid weight.



**Enable Scale Enforce Zero Return
(1)**



**\*Disable Scale Enforce Zero Return
(0)**
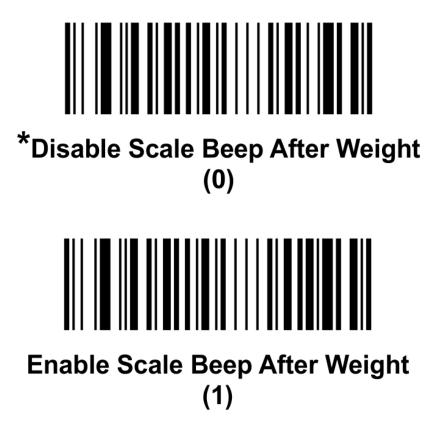
# Scale Beep After Weight Request (Parameter #988)

Scan **Enable Scale Beep After Weight** below to sound a beep tone after a successful weight request.

- **Enable Scale Beep After Weight**—the scale beeps a single beep tone after each successful weight request by the POS system. The beep tone sounds when the weight is above zero, stable, and the previous weight does not equal the present weight.

- **Disable Scale Beep After Weight**—the scale does not beep after a weight request is made by the POS system. This is the factory default.

Scan one of the following bar codes to enable or disable a scale beep after weight request. By default, this parameter is set to **Disable**.



*Disable Scale Beep After Weight
(0)



Enable Scale Beep After Weight
(1)

# Scale Port Address

The scale port address must be configured for the scale to operate on the IBM RS-485 bus.

Scan one of the following bar codes to set the IBM RS-485 scale port address. By default, this parameter is set to **None Selected**.



*None Selected



Port 6A



Port 6B



Port 6E
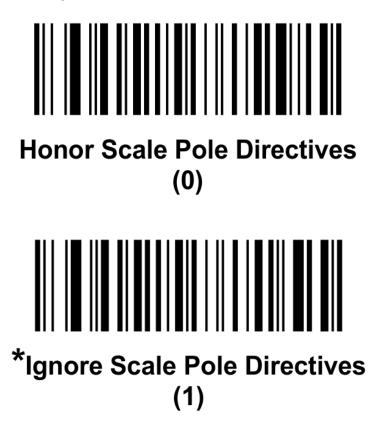
# Ignore Scale Pole Directives (Parameter #1242)

The pole display is required to be consumer facing if the POS system is not certified for displaying live gross weight.

- **Ignore Scale Pole Directives**—always returns the status Remote display required but not detected to the POS system. POS weight display and/or price/weight transactions are enabled whether a pole display is installed or not.

- **Honor Scale Pole Directives**—returns the status "Remote display required but not detected" to the POS system when the Scale Display Configuration is set to **Enable** (refer to **"Scale Display Configuration (Parameter #986)"** on page 140), but either the pole display is uninstalled or the connection to the port is faulty. This prevents live gross weight from displaying on the POS system, and inhibits price/weight scale transactions at the POS until a pole display is installed and shows live gross weight. Under this condition, the 7-segment display also scrolls a *U23* fault code.

Scan one of the following bar codes to ignore or honor the scale pole directives. By default, this parameter is set to **Ignore**.



**Honor Scale Pole Directives
(0)**



**\*Ignore Scale Pole Directives
(1)**

# Maximum Initial Zero Setting Range (Parameter #1285)

In Initial Zero Setting, the scale indication is set to zero automatically when the scanner is powered on, and before it is ready for use.

The default Initial Zero Setting range is set to -5% to +15% (-1.5 lb to 4.5 lb, -0.75 kg to 2.25 kg) of the maximum capacity of the scale.

When an object is left on the scale, and within this weight range at scale power up, it automatically zeroes the weight.

When the object is removed, the scale is in a negative weight condition, and an indication is present on the display (that is, dashes -----, or a blank display).

There are two ways to clear this condition, depending on the weight of the object that was initially on the scale.

- After removing a light weight object, the scale can be zeroed by touching the **Scale Zero** button on the NCR 7895 front panel. This zeros from -2% to 2% (-0.6 lb to 0.6 lb, -0.3 kg to 0.3 kg)of the maximum capacity of the scale. The allowable zeroing weight limit of 0.6 lb and 0.3 kg is configurable (refer to **"Maximum Scale Zeroing Weight Limit (Parameter #1366)"** on page 148).

- After removing a heavy weighted object, the scale can only be zeroed by power cycling the NCR 7895 to reset the scale.

> 🗒 **Note**
>
> Ensure no objects remain on the scale. If so, remove and reapply power.

This parameter allows users to reduce the overall range of Initial Zero Setting by scanning a parameter to adjust the positive limit from 2% to 15% in 1% increments. In addition, this parameter is intended to compensate for scale life time drift.

- Higher values may cause the scale to fail more frequently at power on, requiring users to remove an item from the Top Plate and then reboot.

- Lower values may require more frequent scale calibrations.

If users frequently leave items on the Top Plate during periods of non-use (like a cash drawer), set this value to **2** (0.9 lb, 0.45 kg). This prevents the need to reboot the NCR 7895 due to exceeding this maximum power on weight limit. For more information on values for this parameter, refer to the table included in this section.

For example, the maximum initial zero setting range is programmed for +2% and a weight greater than 2% (0.6 lb, 0.3 kg) is left on the weighing surface at power up and then removed. In this scenario, the scale automatically finds zero with no intervention required from users. In most scenarios, users would only want to program this setting for +2%, or leave the default setting of +15%.

To set this parameter, scan **Set Scale Maximum Initial Zero Setting Range** below, followed by two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred percentage. The range is 2% to 15% (parameter value 02 to 15). By default, the setting is 15% maximum weight capacity (4.5 lb, 2.25 kg).

> 📝 **Note**
> Enter a leading zero for single digit numbers.

> ✏️ **Example**
> To set 2%, scan the bar code below, and then scan the **0** and **2** bar codes. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



## Set Scale Maximum Initial Zero Setting Range

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Use and disclose solely pursuant to company instructions.

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| Percentage | Parameter Value | Pound | Kilogram |
| --- | --- | --- | --- |
| 2% | 02 (minimum) | 0.6 | 0.30 |
| 3% | 03 | 0.9 | 0.45 |
| 4% | 04 | 1.2 | 0.60 |
| 5% | 05 | 1.5 | 0.75 |
| 6% | 06 | 1.8 | 0.90 |
| 7% | 07 | 2.1 | 1.05 |
| 8% | 08 | 2.4 | 1.20 |
| 9% | 09 | 2.7 | 1.35 |
| 10% | 10 | 3.0 | 1.50 |
| 11% | 11 | 3.3 | 1.65 |
| 12% | 12 | 3.6 | 1.80 |
| 13% | 13 | 3.9 | 1.95 |
| 14% | 14 | 4.2 | 2.10 |
| 15% | 15 (maximum, default) | 4.5 | 2.25 |

> **Note**
>
> Take note of the following:
>
> - A lower setting may result in more frequent legal scale calibrations.
> - Regardless of this parameter value, items above 4.5 lb or 2.25 kg also cause a *U13* 7-segment display message, but in this case the user can simply remove the items to clear the fault. A power cycle is not required.

# Maximum Scale Zeroing Weight Limit (Parameter #1366)

This parameter defines how much weight is permitted to be zeroed out when the Zero button is pressed.

- The range of values is 0-60 (default is 60).

- In Lbs Mode, 0 = 0.00 lb to 60 = 0.60 lb (increments of 0.01 lb).

- In Kgs Mode, 0 = 0.00kg to 60 = 0.300 kg (increments of 0.005 kg).

> ⚠ **Caution**
>
> In Lbs Mode, the value is equivalent to the preferred weight (60 = 0.60 lb). In Kgs Mode, the value is twice the preferred weight (60 = 0.300 kg).

To set a Weight Limit value, scan **Set Max Scale Zeroing Weight Limit** below, followed by two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter a leading zero for single digit numbers.

> ✏ **Example**
>
> To set a Weight Limit of 0.05 lb, scan the bar code below, and then scan the **0** and **5** bar codes. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



**Set Max Scale Zeroing Weight Limit**

# Weighing Behind Zero Mode (Parameter #1326)

The scale is below zero when the Top Plate is empty and the pole display shows dashes (—). When the scale is below zero and Weighing Behind Zero Mode is not allowed, adding items to the scale prevents the POS from performing weight transactions. The cashier or operator must press the **Scale Zero** button to clear the under weight condition before weight transactions can be performed.

Scan one of the following bar codes to enable or disable weighing behind zero mode. By default, this parameter is set to **Allowed**.



**Weighing Behind Zero Mode Not Allowed (0)**



***Weighing Behind Zero Mode Allowed (1)**

# Scale 5—Digit Directive (Parameter #1842)

Some POS systems send a command to set the scale to 5—digit mode, even though the POS is expected to function in 4—digit mode. If the POS system sends this command, scan **Ignore 5 Digit Directive** to keep the NCR 7895 in 4—digit mode.

> ❗ **Important**
>
> Verify with Legal Metrology Authorities that your POS system is within specification.

Scan one of the following bar codes to honor or ignore the scale 5—digit directive. By default, this parameter is set to **Honor**.



**\*Honor 5 Digit Directive
(0)**



**Ignore 5 Digit Directive
(1)**

# NCR Report Alternate Weight Status (Parameter #2360)

Scan one of the following bar codes to enable or disable the report alternate weight status feature. By default, this parameter is set to **Disable**.



**Enable Report Alternate Weight Status**



**\*Disable Report Alternate Weight Status**

# User Preferences and Miscellaneous Options

This chapter includes programming bar codes for selecting user preference features.

If not using the default host, select the host type (see each host chapter for specific host information) after the power-up beeps sound. This is only necessary upon the first power-up when connected to a new host.

For User Preferences and Miscellaneous Options parameters default settings, refer to the following:

- **"User Preferences"** on page 518
- **"Miscellaneous Options"** on page 521

To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.
- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.

# User Preferences and Miscellaneous Scanner Parameters

The following are User Preferences and Miscellaneous Scanner parameters:

User Preferences

Miscellaneous Scanner Parameters

# Default Parameters

Scan one of the bar codes below to reset the scanner to its default settings. By default, the standard parameter option is set to **Set Factory Defaults**.

To restore all factory default values listed in **"Standard Parameter Defaults"** on page 511, scan **Set Factory Defaults**.



**\*Set Factory Defaults**
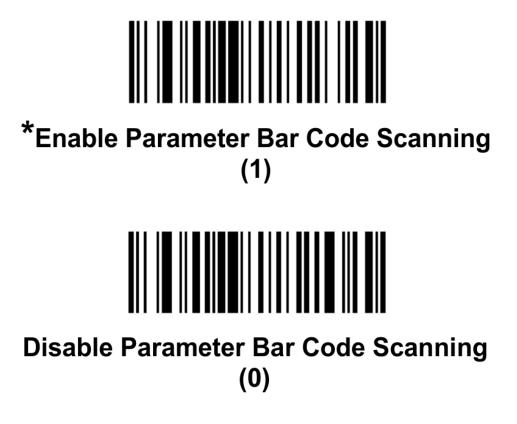
To restore the majority of factory default values listed in **"Standard Parameter Defaults"** on page 511, with the exception of the *User Data (Parameter #1825)*, scan **Restore Defaults**.



**Restore Defaults**

# Parameter Bar Code Scanning (Parameter #236, SSI #ECh)

Scan one of the following bar codes to enable or disable the decoding of parameter bar codes, including the Set Defaults bar codes. By default, this parameter is set to Enable.



\*Enable Parameter Bar Code Scanning
(1)



Disable Parameter Bar Code Scanning
(0)

# Trigger on Scan Enable Disable (Parameter #2398, SSI #F8 09 5E)

This parameter prevents scanning or decoding again the item left on the Top Plate or in the scanner field of view (FOV).

After the item tag is scanned, the host application sends the SCAN-DISABLE command to the scanner. The scanner LED and illumination are off while the tag is in the FOV. When the host application sends the SCAN-ENABLE command but the same item is still on the Top Plate, the following occurs depending on the Trigger on Scan Enable Disable parameter setting:

- **Disable**—the scanner goes back to enable mode and the LED turns green. The illumination remains off until a motion is detected in the FOV. When the scanner detects a motion and the tag is visible in the FOV, the scanner automatically rereads the tag of the item left on the Top Plate.
- **Enable**—the scanner goes back to enable mode, the LED turns green, and the illumination turns on. Even when the scanner detects a motion and the tag is visible in the FOV, the scanner does not automatically reread the tag of the item left on the Top Plate.

Scan one of the following bar codes to enable or disable the scanner to reread the tag of the item left on the Top Plate. By default, this parameter is set to Disable.
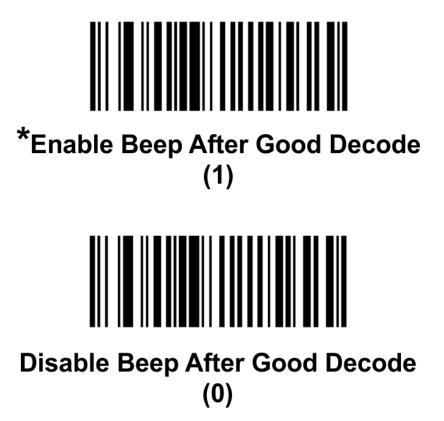


**\*Disable - Trigger on Scan Enable Disable**

**Enable - Trigger on Scan Enable Disable**

# Beep After Good Decode (Parameter #56, SSI #38h)

Scan one of the following bar codes to enable or disable a scanner beep after a good decode. If **Do Not Beep After Good Decode** is selected, the beeper still operates during parameter menu scanning and to indicate error conditions. By default, this parameter is set to **Enable**.

**\*Enable Beep After Good Decode (1)**

**Disable Beep After Good Decode (0)**

# Not on File Number of Beeps (Parameter #2411, SSI #F8 09 6B)

> 📝 **Note**
>
> This feature is used for Not on File events and is supported in RS—232 and NCR CDC interfaces only.

Scan one of the following bar codes to enable or disable select the number of beeps when a "not on file" is received. By default, this parameter is set to **5 beeps**.



1 beep



2 beeps



3 beeps

**4 beeps**



**\*5 beeps**

# Beeper Volume (Parameter #140, SSI #8Ch)

Scan one of the following bar codes to select a beeper volume. By default, this parameter is set to **Highest Volume**.



**Low Volume
(02h)**



**Medium Volume
(01h)**



**High Volume
(00h)**
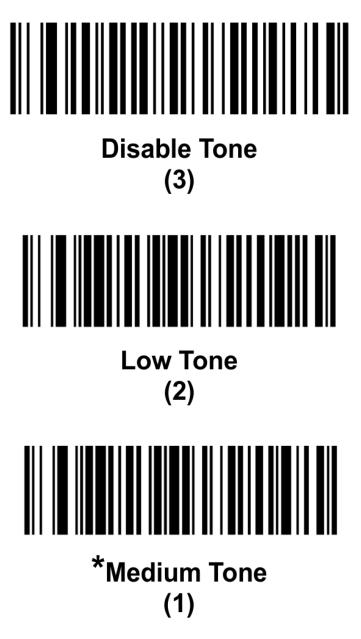
**Higher Volume
(03h)**
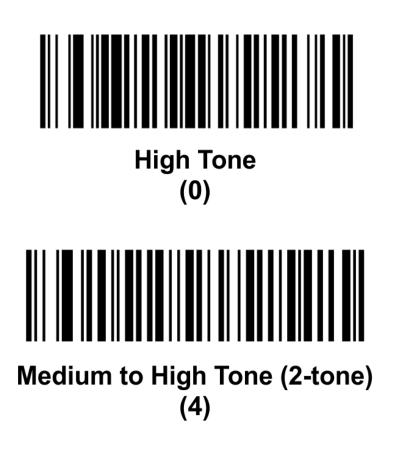
**\*Highest Volume
(04h)**

# Beeper Tone (Parameter #145, SSI #91h)
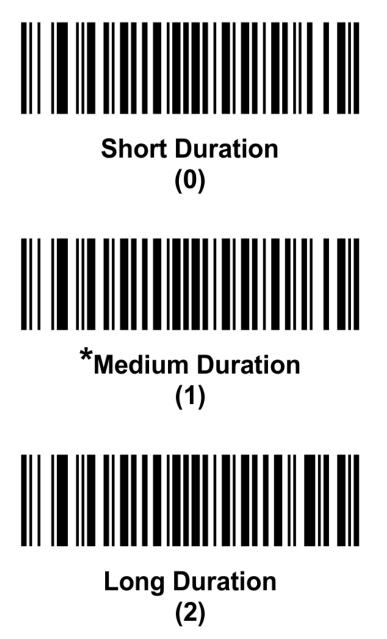
Scan one of the following bar codes to set the beeper tone for the good decode beep. By default, this parameter is set to **Medium Tone**.

**Disable Tone
(3)**

**Low Tone
(2)**

**\*Medium Tone
(1)**

**High Tone
(0)**

**Medium to High Tone (2-tone)
(4)**
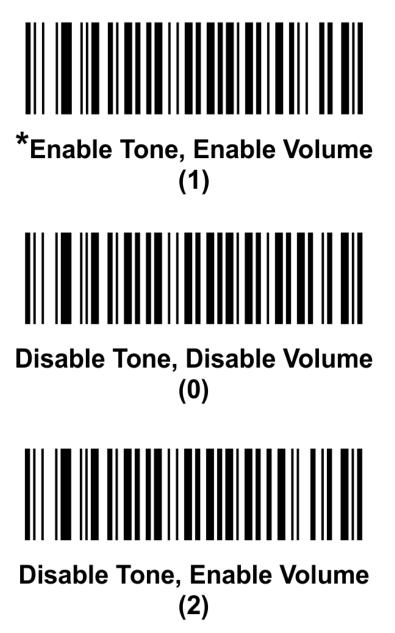
# Beeper Duration (Parameter #628, SSI #F1h 74h)

Scan one of the following bar codes to set the duration for the good decode beep. By default, this parameter is set to **Medium Duration**.

**Short Duration
(0)**

***Medium Duration
(1)**

**Long Duration
(2)**

# Tone/Volume Button (Parameter #1287, SSI #F8h 05h 07h)

Scan one of the following bar codes to enable or disable the use of the front panel Volume button to change the speaker volume and tone. By default, this parameter is set to Enable Tone, Enable Volume.



**\*Enable Tone, Enable Volume (1)**



**Disable Tone, Disable Volume (0)**



**Disable Tone, Enable Volume (2)**
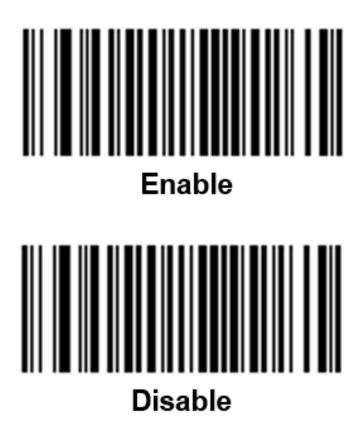
# Enable Tone, Disable Volume (3)

# Volume Button Beep Suppression (Parameter #2375, SSI #F8 09 47)

Scan one of the following bar codes to enable or disable Volume button beep suppression. By default, this parameter is set to **Disable**.
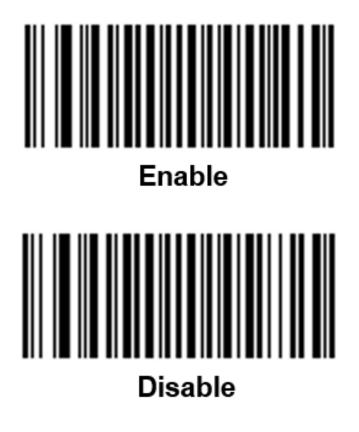
- **Enable**—when the Volume button or the Volume Change option is disabled, the scanner does not beep when the Volume button is pressed.
- **Disable**—when the Volume button or the Volume Change option is disabled, the scanner beeps when the Volume button is pressed.



Enable



Disable

# Alternate Beeper Volume Table (Parameter #2339, SSI #F8 09 23)
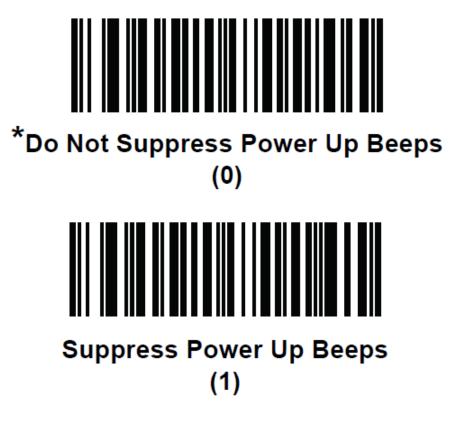
Scan one of the following bar codes to set the number of beeper volume options. By default, this parameter is set to Disable.

- **Enable**—uses the Reduced/Alternate Beeper Volume Table (3 levels).
- **Disable**—uses the Standard Beeper Volume Table (5 levels).
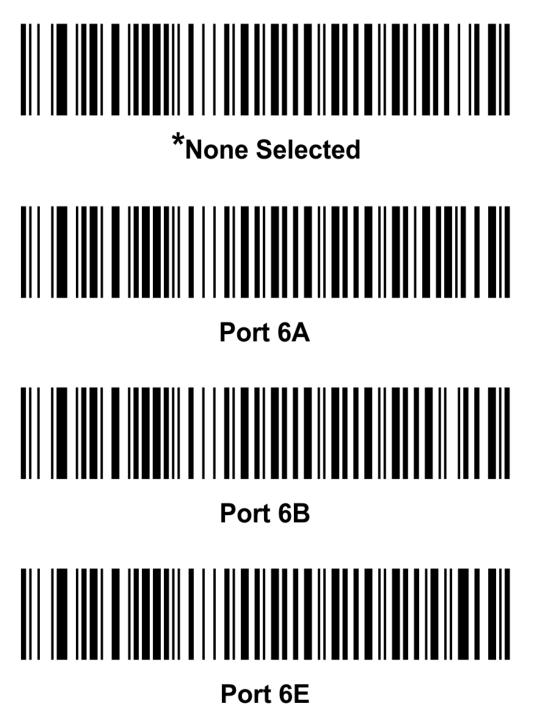


Enable



Disable
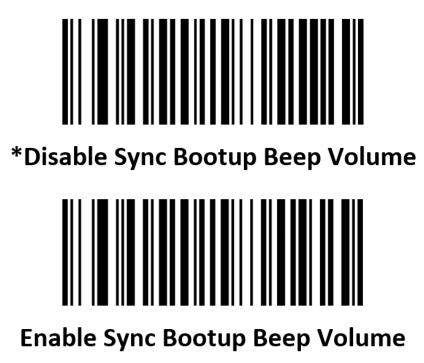
# Suppress Power Up Beeps (Parameter #721, SSI #F1h D1h)

Scan one of the following bar codes to enable or disable scanner beep at power-up. By default, this parameter is set to **Do Not Suppress Power Up Beeps**.

*Do Not Suppress Power Up Beeps
(0)

Suppress Power Up Beeps
(1)

# Sync Bootup Beep Volume (Parameter #2412, SSI #F8 09 6C)

Scan one of the following bar codes to enable or disable synchronization of the Bootup Beep sequence volume with the system volume. If disabled, the Bootup Beep sequence volume is at maximum level. By default, this parameter is set to **Disable**.



**\*Disable Sync Bootup Beep Volume**



**Enable Sync Bootup Beep Volume**
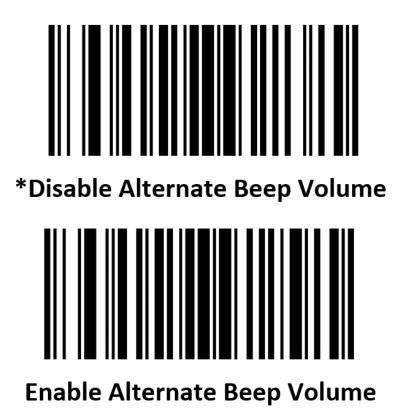
# Enable Alternate Beep Volume (Parameter #2384, SSI #F8 09 50)

> 📝 **Note**
>
> This feature is used for Not on File events and is supported in RS—232 and NCR CDC interfaces only.

Scan one of the following bar codes to enable alternate beep volume options for Not on File events. By default, this parameter is set to **Disable**.

- **Enable**—the scanner uses the Not on File beep volume set in Alternate Beep Volume (parameter #2383).
- **Disable**—the scanner uses the default Not on File beep volume.



**\*Disable Alternate Beep Volume**



**Enable Alternate Beep Volume**
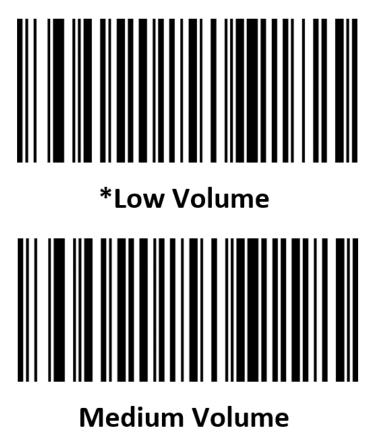
# Alternate Beep Volume (Parameter #2383, SSI #F8 09 4F)
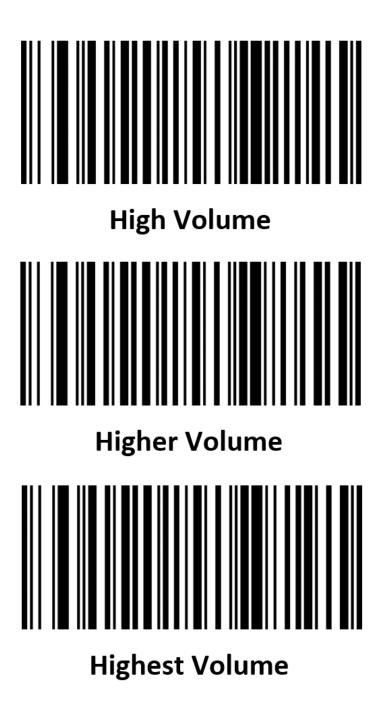
> 📑 **Note**
>
> This feature is used for Not on File events and is supported in RS–232 and NCR CDC interfaces only.

This parameter depends on Enable Alternate Beep Volume (parameter #2384). If Enable Alternate Beep Volume is enabled, the scanner uses the Not on File beep volume set in this parameter. If Enable Alternate Beep Volume is disabled, the scanner uses the default Not on File beep volume and ignores the beep volume set in this parameter.

Scan one of the following bar codes to set the beep volume for Not on File events if Enable Alternate Beep Volume is enabled. By default, this parameter is set to **Low Volume**.



*Low Volume



Medium Volume

**High Volume**



**Higher Volume**



**Highest Volume**

# Decode Session Timeout (Parameter #136, SSI #88h)

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable from 0.5 to 9.9 seconds, with increments of 0.1 second. The default timeout is 9.9 seconds.

To set a Decode Session Timeout, scan the bar code below, and then scan two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred time.

> 📋 **Note**
>
> Enter a leading zero for single—digit numbers.

> ✏️ **Example**
>
> To set a Decode Session Timeout of 0.5 seconds, scan the bar code below, and then scan the **0** and **5** bar codes. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



**Decode Session Timeout**

# Timeout Between Decodes, Same Symbol (Parameter #137, SSI #89h)

Use this option in presentation mode to prevent the scanner from continuously decoding the same bar code when it is left in the scanner's field of view (FOV). The bar code must be out of the FOV for the timeout period before the scanner reads the same consecutive symbol. It is programmable from 0.0 to 9.9 seconds, with increments of 0.1 second. The default interval is 0.5 seconds.

To select the timeout between decodes for the same symbol, scan the bar code below, and then scan two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred interval.

> 📋 **Note**
>
> Enter a leading zero for single digit numbers.

> ✏️ **Example**
>
> To set an interval of 0.5 seconds, scan the bar code below, and then scan the **0** and **5** bar codes. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.
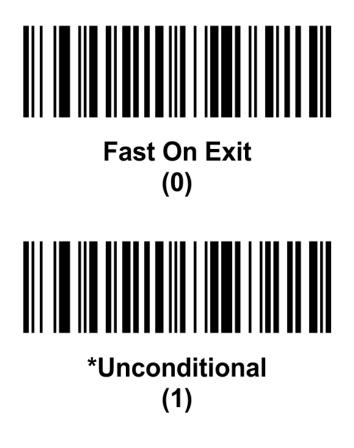


**Timeout Between Decodes, Same Symbol**

# Same Symbol Timeout Mode (Parameter #724, SSI #F8h 02h D4h)

Scan one of the following bar codes to determine how *Timeout Between Decodes, Same Symbol* is applied. By default, this parameter is set to **Unconditional**.

- **Fast On Exit** — a second same item can decode as soon as the first item exits the FOV (possibly in less time than *Timeout Between Decodes, Same Symbol*). This mode may provide faster decode performance.

- **Unconditional** — the time specified by *Timeout Between Decodes, Same Symbol* must fully expire before the next item with the same symbol decodes.



**Fast On Exit
(0)**



**\*Unconditional
(1)**

# Extended Same Symbol Timeout (Parameter #2399, SSI #F8 09 5F)

This parameter increases the time for same symbol decoding of GS1 Databar bar codes. It is programmable from 0 to 9.9 seconds, with increments of 100 ms. The default value is 20 (x100 ms), which is equivalent to 2 seconds.

> **Note**
>
> This parameter only takes effect if its value is greater than the standard Timeout Between Decodes, Same Symbol setting (parameter #137). If it is less, the Timeout Between Decodes, Same Symbol setting takes precedence.

To set the Extended Same Symbol Timeout between GS1 Databar decodes for the same symbol, scan the bar code below, and then scan two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred time. By default, this parameter is set to **20 (x100ms)**.

> **Note**
>
> Enter a leading zero for single—digit numbers.

> **Example**
>
> To set an Extended Same Symbol Timeout of 0.5 seconds, scan the bar code below, and then scan the **0** and **5** bar codes. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



**Extended Same Symbol Timeout**

# Enhanced Same Symbol Timeout Mode (Parameter #1844, SSI #F8h 07h 34h)

Scan one of the following bar codes to enable or disable the Enhanced Same Symbol Timeout Mode. By default, this parameter is set to Disable.

- **Enable** —when two bar codes with the same content but different symbologies are presented at the same time, only one bar code decodes. Bar codes with the same content but different symbologies are common on some mobile phone applications.

- **Disable** — when two bar codes with the same content but different symbologies are presented at the same time, both bar codes decode.



**\*Disable Enhanced Same Symbol Timeout Mode (0)**
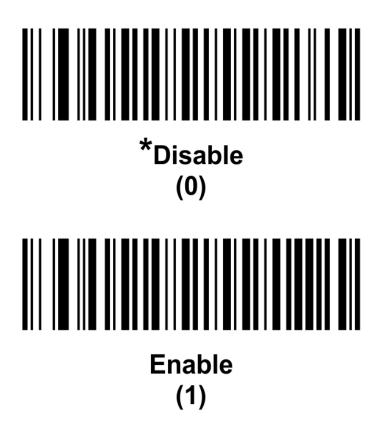


**Enable Enhanced Same Symbol Timeout Mode (1)**

# Same Symbol Report Timeout (Parameter #1284, SSI #F8h 05h 04h)

This parameter affects how the *Timeout Between Decodes, Same Symbol* parameter is applied.

Scan one of the following bar codes to enable or disable the Same Symbol Report Timeout parameter. By default, this parameter is set to **Disable**.

- **Disable** — a bar code in the decode region decodes only once, even if the bar code remains indefinitely in the region. The user must remove the bar code and reintroduce the bar code into the region before it decodes a second time.

- **Enable** — a bar code in the decode region decodes each time the same symbol timeout expires. Use this mode when using fast two-handed scanning of two of the same items. This usage scenario has a tendency to not decode the second of the two items. By enabling this mode, the second item unconditionally decodes after the same symbol timeout expires. After enabling this setting, the user may need to adjust the **"Timeout Between Decodes, Same Symbol (Parameter #137, SSI #89h)"** on page 178 so that the second item does not decode too quickly.

**\*Disable
(0)**

**Enable
(1)**

# Swipe Frame Timeout (Parameter #1226, SSI #F8 04h CAh)

This parameter specifies the amount of time to spend on processing the frame that is optimized to decode images where the bar code is swiped in front of the scanner. The range is 11 to 500 milliseconds. The default is 30 milliseconds.

To set a Swipe Frame Timeout, scan the bar code below, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred timeout.

> 📝 **Note**
> Enter a leading zero for two—digit numbers.



**Swipe Frame Timeout (milliseconds)**

# Presentation Frame Timeout (Parameter #1227, SSI #F8h 04h CBh)

This parameter specifies the amount of time to spend on processing the frame that is optimized to decode images where the bar code is presented to the scanner. The range is 11 to 500 milliseconds. The default is 35 milliseconds.

To set a Presentation Frame Timeout, scan the bar code below, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred timeout.
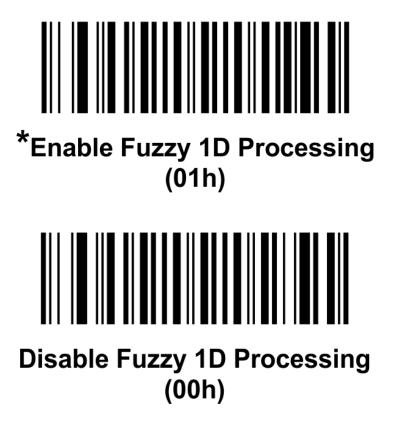
> 📝 **Note**
>
> Enter a leading zero for two—digit numbers.



**Presentation Frame Timeout
(milliseconds)**

# Fuzzy 1D Processing (Parameter #514, SSI #F1h 02h)

This option is enabled by default to optimize decode performance on 1D bar codes, including damaged and poor quality symbols. Disable this only if there are time delays when decoding 2D bar codes, or in detecting a no decode.



**\*Enable Fuzzy 1D Processing (01h)**



**Disable Fuzzy 1D Processing (00h)**

# Cell Phone Frame Timeout (Parameter #1228, SSI #F8h 04h CCh)

This parameter specifies the amount of time to spend on processing the frame that is optimized to decode bar codes from cell phone displays. The range is 11 to 500 milliseconds. The default is 35 milliseconds

To set a Cell Phone Frame Timeout, scan the bar code below, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred timeout.

> 📝 **Note**
>
> Enter a leading zero for two—digit numbers.
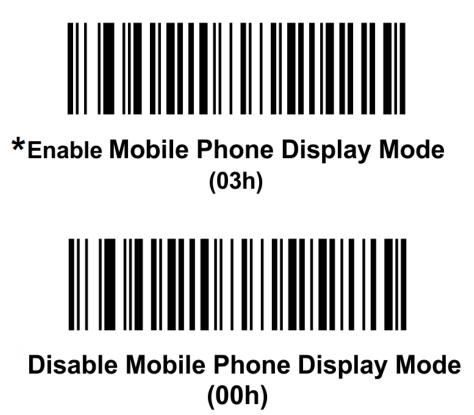


**Cell Phone Frame Timeout (milliseconds)**

# Mobile Phone Display Mode (Parameter #716, SSI #F1h CCh)

This mode improves bar code reading performance off mobile phones and electronic displays.

Scan one of the following bar codes to enable or disable the Mobile Phone Display Mode. By default, this parameter is set to **Enable**.



**\*Enable Mobile Phone Display Mode (03h)**



**Disable Mobile Phone Display Mode (00h)**

# PDF Prioritization (Parameter #719, SSI #F1h CFh)

Scan **Enable PDF Prioritization** to delay decoding certain 1D bar codes by the value specified in *PDF Prioritization Timeout*. During that time the scanner attempts to decode a PDF417 symbol, and if successful, reports this only. If it does not decode (cannot find) a PDF417 symbol, it reports the 1D symbol after the timeout. The 1D symbol must be in the scanner's field of view for the scanner to report it.

> 📝 **Note**
>
> This parameter does not affect decoding other symbologies.

The 1D Code 128 bar code lengths include the following:

- 7 to 10 characters
- 14 to 22 characters
- 27 to 28 characters

In addition, a Code 39 bar code with the following lengths are considered to potentially be part of a US driver's license:

- 8 characters
- 12 characters

Scan one of the following bar codes to enable or disable PDF Prioritization. By default, this parameter is set to Disable.

**Enable PDF Prioritization (1)**

**\*Disable PDF Prioritization (0)**

# PDF Prioritization Timeout (Parameter #720, SSI #F1h D0h)

If PDF Prioritization is enabled, set this timeout to indicate the amount of time the scanner attempts to decode a PDF417 symbol before reporting the 1D bar code in the field of view. The range is 0 to 5000 milliseconds. The default is 300 milliseconds.

To set a PDF Prioritization Timeout, scan the bar code below, and then scan four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred timeout.

> ✏️ **Example**
>
> To set a timeout of 400 milliseconds, scan the bar code below, and then scan the **0**, **4**, **0**, and **0** numeric bar codes. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.

**PDF Prioritization Timeout**

# USB Serial Number Format (Parameter #1832, SSI #F8h 07h 28h)

This parameter determines the format of the iSerial Number USB Descriptor during USB enumeration.

The following table provides an example for each format.

| Value | iSerial Number return |
|---|---|
| 0 (Serial Number) | 17204010505799 |
| 1 (GUID, Firmware, Interface) | S/N:E658CFB6A2654A0EB5E1D1E31EBD00CD Rev:PAADGS00-001-R082 |
| 2 (GUID, Interface) | S/N:E658CFB6A2654A0EB5E1D1E31EBD00CD:2 |
| 3 (Serial Number, Interface) | 17204010505799:2 |

Scan one of the following bar codes to select the serial number format. By default, this parameter is set to Serial Number.



**\*Serial Number
(0)**



**GUID, Firmware, Interface
(1)**

**GUID, Interface**
**(2)**

**Serial Number, Interface**
**(3)**

# RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)

This option allows users to select the devices to be attach to the NCR 7895, and their port assignments.

The following are the available configurations or options:

- *0—Aux 1 Sensormatic, and Aux 2 Scanner
- 1—Aux 1 Dual Cable Scale, and Aux 2 Scanner
- 2—Aux 1 Sensormatic, and Aux 2 Dual Cable Scale
- 4—Aux 1 Third Party Scale, Aux 2 Sensormatic
- 5—Aux 1 Sensormatic, and Aux 2 Disabled
- 6—Aux 1 Dual Cable Scale, and Aux 2 Disabled
- 7—Aux 1 Third Party Scale, and Aux 2 Disabled
- 8—Aux 1 Disabled, and Aux 2 Scanner
- 9—Aux 1 Disabled, and Aux 2 Dual Cable Scale
- 10—Aux 1 Disabled, and Aux 2 Sensormatic
- 11—Aux 1 Disabled, and Aux 2 Disabled

Changes to this parameter do not take effect until the next power cycle (power cycling does not apply to 123Scan). Perform one of the functions below after scanning a device port parameter:

- Cycle power to the scanner (disconnect and then reconnect scanner cable).
- Use the NCR 7895 **Reset** button (a button combination to reboot the NCR 7895).

When selecting any of the device port configuration options, ensure that the devices connected to the NCR 7895 correctly match the devices defined for the option. Turning on the NCR 7895 with connected devices that do not match the option can result in communication failures.

> ✏️ **Example**
>
> If option **4** is scanned, only a third party scale should be connected to the Aux 1 port, and a Sensormatic EAS should be connected to the Aux 2 port.

To ensure successful operation, follow these steps:

1. Power off the NCR 7895.

2. Disconnect all RS-232 devices (RS-232 scanner, Sensormatic, and others).

3. Power on the NCR 7895.

4. Scan the appropriate bar code option that matches the intended configuration.

5. Power off the NCR 7895.

6. Connect the appropriate devices.

7. Power on the NCR 7895.

The following table provides the device specific default values (inherited defaults).

| Device | Baud | Data Bits | Stop Bits | Parity |
|---|---|---|---|---|
| Scanner | 9600 | 8 | 1 | None |
| Sensormatic | 9600 | 8 | 1 | None |
| Dual Cable Scale: SASI Protocol | 9600 | 7 | 1 | Even |
| Dual Cable Scale: DIGI Protocol1 | 9600 | 7 | 2 | Even |
| Dual Cable Scale: ICL Protocol1 | 9600 | 7 | 1 | Even |
| Third Party Scale | N/A | N/A | N/A | N/A |

> **Note**
>
> The details on selecting scale protocols, refer to **"RS-232 Auxiliary Port Scale Protocol (Parameter #1247, SSI #F8h 04h DFh)"** on page 200.

Scan one of the following bar codes to configure the RS-232 device ports. By default, this parameter is set to **Aux 1 Sensormatic and Aux 2 Scanner**.



**\*Aux 1 Sensormatic and Aux 2 Scanner (00h)**

||||  ||| || | ||||| | ||| | ||||| ||||

**Aux 1 Dual Cable Scale and Aux 2 Scanner
(01h)**

||||| || ||| ||| |||| ||| ||| ||||| |||||

**Aux 1 Sensormatic and Aux 2 Dual Cable Scale
(02h)**

|||  || ||| ||| ||| || | ||| | ||| || |||

**Aux 1 Third Party Scale, Aux 2 Sensormatic
(04h)**

|| ||| ||| ||| | ||| || | ||| |||| |||

**Aux 1 Sensormatic, and Aux 2 Disabled
(05h)**

**Aux 1 Dual Cable Scale, and Aux 2 Disabled (06h)**



**Aux 1 Third Party Scale, and Aux 2 Disabled (07h)**



**Aux 1 Disabled, and Aux 2 Scanner (08h)**



**Aux 1 Disabled, and Aux 2 Dual Cable Scale (09h)**

||||| ||| || |||| | ||| || |||| || ||| |||| ||| |||

**Aux 1 Disabled, and Aux 2 Sensormatic (010h)**

||||| ||| || |||| | ||| || |||| || ||| |||| ||| |||

**Aux 1 Disabled, and Aux 2 Disabled (011h)**

# RS-232 Auxiliary Port Scale Protocol (Parameter #1247, SSI #F8h 04h DFh)
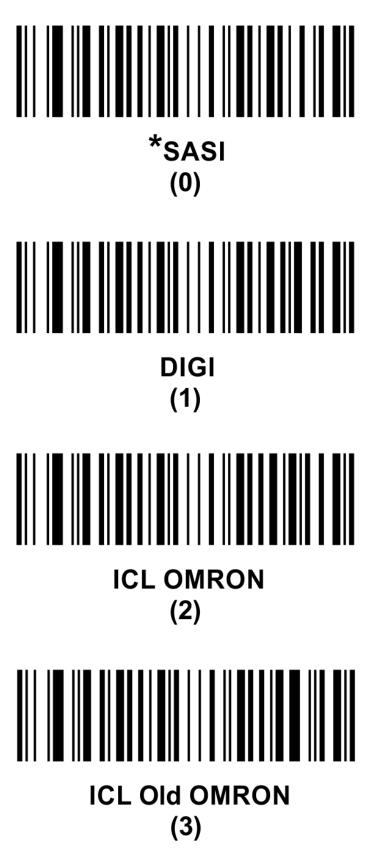
> 📝 **Note**
>
> Take note of the following:
>
> - The Dual Cable Scale option must be used to assign a scale device to either the Aux 1 or Aux 2 port through the *RS-232 Device Port Configuration* setting. For more information, refer to **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194.
> - For details on configuring the RS-232 ports, refer to **"Auxiliary Scanner Bar Codes"** on page 273.

The following are the available options:

- *0/0x00—SASI
- 1/0x01—DIGI
- 2/0x02—ICL OMRON (Requesting zero weight is permitted)
- 3/0x03—ICL Old OMRON (Requesting zero weight is not permitted)
- 4/0x04—ICL Portugal (Identical to ICL / Old OMRON)

Scan one of the following bar codes to set the scale protocol. By default, this parameter is set to **SASI**.



**\*SASI**
**(0)**



**DIGI**
**(1)**



**ICL OMRON**
**(2)**



**ICL Old OMRON**
**(3)**
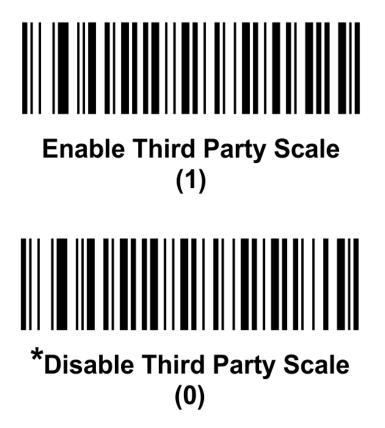
# ICL Portugal
## (4)

# Third Party Scale Parameters

## Third Party Scale (Parameter #1294, SSI #F8 05 0E)

This parameter enables or disables Third Party Scale functionality. When disabled, Third Party Scale LED Pin (parameter #1295) and Third Party Scale Zero Pin (parameter #1296) are ignored or overridden.

Scan one of the following bar codes to enable or disable third party scale functionality. By default, this parameter is set to **Disable**.



**Enable Third Party Scale**
**(1)**



**\*Disable Third Party Scale**
**(0)**

## Third Party Scale LED Pin (Parameter #1295, SSI #F8 05 0F)

This parameter defines the polarity of the LED or Tare input pin that illuminates the scale LED. This parameter has no effect if Third Party Scale (parameter #1294) is disabled.

Scan one of the following bar codes to set the polarity of the third party scale LED pin. By default, this parameter is set to **Active High**.



**Active Low
(0)**



***Active High
(1)**

## Third Party Scale Zero Pin (Parameter #1296, SSI #F8 05 10)

This parameter defines the polarity of the zero output pin when the **Scale Zero** button is pressed. This parameter has no effect if Third Party Scale (parameter #1294) is disabled.

Scan one of the following bar codes to set the polarity of the third party scale zero output pin. By default, this parameter is set to **Active High**.

**Active Low
(0)**

**\*Active High
(1)**

# Illumination Configurations (Parameter #1250, SSI #F8h 04h E2h)

This parameter allows the illumination brightness of each field of view (FOV) to be controlled.

Scan one of the following bar codes to set the illumination brightness of each FOV. By default, this parameter is set to **Full Brightness on both Vertical and Horizontal**.
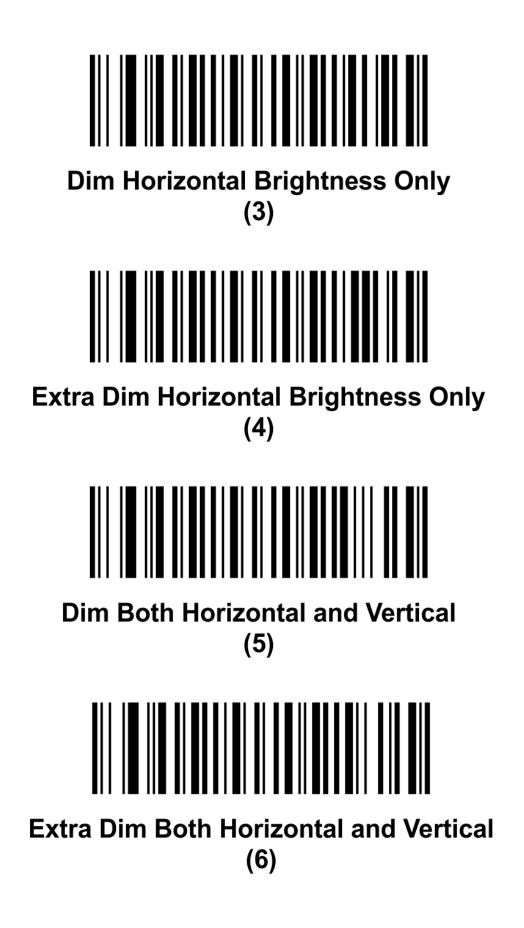


**\*Full Brightness on both Vertical and Horizontal (0)**



**Dim Vertical Brightness Only (1)**



**Extra Dim Vertical Brightness Only (2)**

**Dim Horizontal Brightness Only
(3)**



**Extra Dim Horizontal Brightness Only
(4)**



**Dim Both Horizontal and Vertical
(5)**



**Extra Dim Both Horizontal and Vertical
(6)**
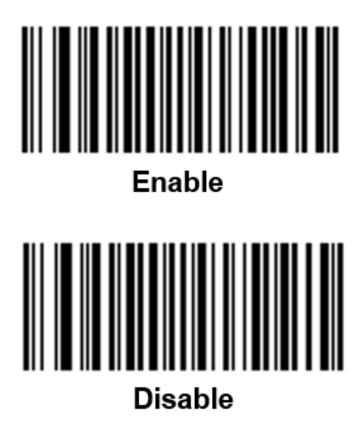
# Illumination Warning (Parameter #2366, SSI #F8 09 3E)

Scan one of the following bar codes to enable or disable reporting of illumination overcurrent warnings. By default, this parameter is set to **Disable**.



Enable



Disable

# Product ID (PID) Type (Parameter #1281, SSI #F8h 05h 01h)

This parameter defines the PID value reported in USB enumeration.

Scan one of the following bar codes to set the PID type. By default, this parameter is set to **IBM Unique**.



**Host Type Unique
(0)**



**Product Unique
(1)**



***IBM Unique
(2)**

# Product ID (PID) Value (Parameter #1725, SSI #F8h 06h BDh)

> **Note**
>
> This parameter is applicable to customers using a Firmware Flash Update per the Toshiba Global Commerce Solutions (TGCS) Universal Serial Bus OEM Point-of-Sale Device Interface.

To set the PID Value, scan the bar code below, and then scan four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the value. The range is (0,1600-1649).

> **Note**
>
> Enter a leading zero for single—digit numbers. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.



**Set PID Value**

# ECLevel (Parameter #1710, SSI #F8h 06h AEh)

To set the ECLevel value, scan the bar code below, and then scan five numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the level.

> **Note**
>
> Enter a leading zero for single—digit numbers. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.
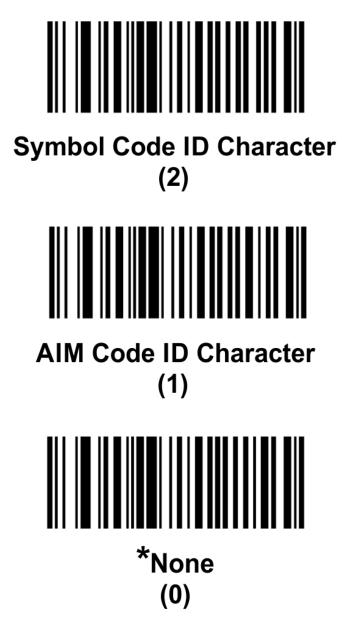


**Set ECLevel**

# Transmit Code ID Character (Parameter #45, SSI #2Dh)

A Code ID character identifies the code type of a scanned bar code. This is useful when decoding more than one code type. In addition to any single character prefix selected, the Code ID character is inserted between the prefix and the decoded symbol. For code characters, refer to **"Programming Reference"** on page 597.

Scan one of the following bar codes to select the code type. By default, this parameter is set to **None**.



**Symbol Code ID Character
(2)**



**AIM Code ID Character
(1)**



**\*None
(0)**

# Prefix/Suffix Values

*Key Category Parameter # P = 99, S1 = 98, S2 = 100*
*SSI # P = 63h, S1 = 62h, S2 = 64h*

*Decimal Value Parameter # P = 105, S1 = 104, S2 = 106*
*SSI # P = 69h, S1 = 68h, S2 = 6Ah*

A prefix, one or two suffixes, or both a prefix and a suffix to scan data for use in data editing. When using host commands to set the prefix or suffix, set the key category parameter to **1**, and then set the 3-digit decimal value.
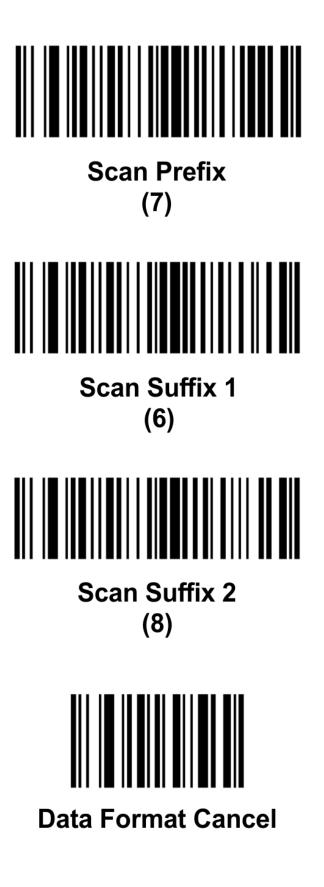
> 📝 **Note**
>
> To use Prefix/Suffix Values, first set the Scan Data Transmission Format. For more information, refer to **"Scan Data Transmission Format (Parameter #235, SSI #EBh)"** on page 215.

To set a value for a prefix or suffix, scan of the following bar codes, and then scan the four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to that value. For the 4-digit codes, refer to **"Character Sets"** on page 580. The default prefix and suffix value is `7013 <CR><LF> (Enter key)`.

> 📝 **Note**
>
> To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.

**Scan Prefix
(7)**

**Scan Suffix 1
(6)**

**Scan Suffix 2
(8)**

**Data Format Cancel**

# Scan Data Transmission Format (Parameter #235, SSI #EBh)

> **📝 Note**
>
> If using this parameter, do not use ADF rules to set the prefix or suffix. To set the values for the prefix or suffix, refer to **"Prefix/Suffix Values"** on page 213.

To change the scan data format, scan one the following bar codes that correspond to the preferred format. By default, this parameter is set to **Data As Is**.



**Data As Is**
**(0)**



**\<DATA\> \<SUFFIX 1\>**
**(1)**

**<DATA> <SUFFIX 2>**
**(2)**



**<DATA> <SUFFIX 1> <SUFFIX 2>**
**(3)**



**<PREFIX> <DATA >**
**(4)**



**<PREFIX> <DATA> <SUFFIX 1>**
**(5)**

<PREFIX> <DATA> <SUFFIX 2>
(6)

<PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>
(7)

# FN1 Substitution Values

*Key Category Parameter #103, SSI #67h*
*Decimal Value Parameter #109, SSI #6Dh*

Keyboard wedge and USB HID keyboard hosts support an FN1 substitution feature. Enabling this parameter substitutes any FN1 character (`0x1b`) in an EAN128 bar code with a value. This value defaults to `7013 <CR><LF> (Enter key).`

When using host commands to set the FN1 substitution value, set the key category parameter to **1**, and then set the 3-digit keystroke value. For the current host interface for the desired value, refer to **"Character Sets"** on page 580.

To select an FN1 substitution value thru bar code menus, follow these steps:

1.  Scan the following bar code.



**Set FN1 Substitution Value**

2.  Locate the keystroke for FN1 Substitution in the ASCII Character Set table for the current host interface, and enter the 4-digit ASCII value by scanning four bar codes from **"Numeric Bar Codes"** on page 542.

> 📝 **Note**
>
> To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.

# Copy Statistics to a Staging Flash Drive (Parameter #1137, SSI #F8h 04h 71h)

If disabled, scan **Enable Copy Statistics to a Staging Flash Drive** to copy all data or configurations from the NCR 7895 to a staging USB flash drive.

> 📋 **Note**
>
> For detailed information about the staging flash drive cloning, refer to *NCR 7895 Scanner/Scale User Guide* (BCC5-0000-5508).

Scan one of the following bar codes to enable or disable the copying of statistics to a staging USB flash drive. By default, this parameter is set to **Enable**.



**Disable Copy Statistics to a Staging Flash Drive (00h)**



**\*Enable Copy Statistics to a Staging Flash Drive (01h)**

# IR Interference Filter (Parameter #1831, SSI #F8h 07h 27h)

When disabled, external IR (from other equipment in the environment within the vicinity of the NCR 7895 scanner) can interfere with the NCR 7895 internal IR system. This interference can result in false triggering of the NCR 7895 item detection/wakeup system.

Scan one of the following bar codes to enable or disable the IR interference filter. By default, this parameter is set to **Enable**.



**Disable IR Interference Filter (0)**



**\*Enable IR Interference Filter (1)**
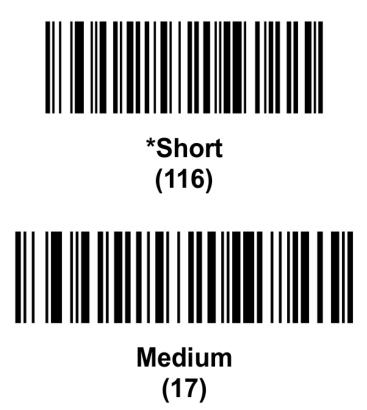
# Left and Right IR Wakeup Sensitivity

Left and Right IR Wakeup Sensitivity parameters control the distance at which items are detected and decoded on each side of the NCR 7895 Top Plate.

The left and right IRs refer to the location of the IR emitter/sensor within the NCR 7895 cavity. The left IR is physically located on the left side of the cavity and points diagonally across the Top Plate to the right side of the Top Plate. The right IR is physically located on the right side of the cavity and points diagonally across the Top Plate to the left side of the Top Plate.
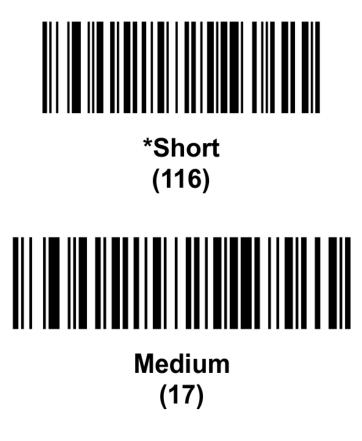
## Left IR/Wakeup Sensitivity (Parameter #1218, SSI #F8h 04h C2h)

Scan one of the following bar codes to control the distance at which items are detected and decoded on the right side of the Top Plate. By default, this parameter is set to **Short**.



**\*Short
(116)**



**Medium
(17)**

## Right IR/Wakeup Sensitivity (Parameter #1220, SSI #F8h 04h C4h)

Scan one of the following bar codes to to control the distance at which items are detected and decoded on the left side of the Top Plate. By default, this parameter is set to **Short**.



**\*Short
(116)**



**Medium
(17)**

# User Data (Parameter #1825, SSI #F8h 07h 11h)

*User Data* is a 50-character string, programmable by the customer, that can include any information the customer prefers.

For example, this field could be used to program a store number, a lane number, or both for each NCR 7895 across the customer enterprise.

This parameter persists upon scanning **Restore Defaults** but reverts to the default value (Null String) upon scanning **Set Factory Defaults**. For more information, refer to **"Default Parameters"** on page 156.

# Report Software Version

When contacting support, a support representative may ask you to scan the bar code below to determine the version of software installed in the digital scanner.



**Report Software Version**

# Image Capture Preferences

This chapter describes image capture preference features and provides programming bar codes for selecting these features.

> **📝 Note**
>
> Only the Symbol Native API (SNAPI) with Imaging interface supports image capture. To enable this host, refer to **"USB Device Type"** on page 39.

For image capture preferences default settings, refer to **"Imaging Preferences"** on page 522. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.

- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.
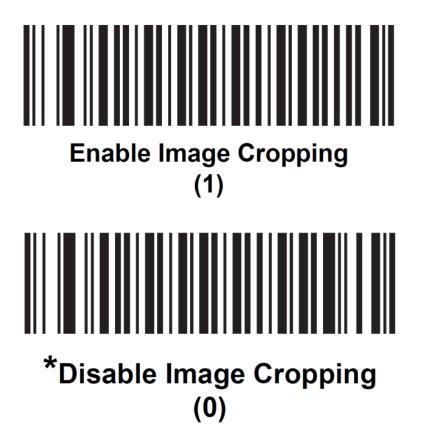
# Image Capture Parameters

The following are Image Capture parameters:

# Image Cropping (Parameter #301, SSI #FF0h 2Dh)

Scan the **Enable Image Cropping** bar code to crop a captured image to the pixel addresses set in **"Crop to Pixel Addresses"** on the next page. Scan **Disable Image Cropping** to present the full 1280 x 960 pixels. By default, this parameter is set to **Disable**.



**Enable Image Cropping
(1)**



**\*Disable Image Cropping
(0)**

# Crop to Pixel Addresses

*Parameter # 315, SSI # F4h F0h 3Bh (Top)*
*Parameter # 316, SSI # F4h F0h 3Ch (Left)*
*Parameter # 317, SSI # F4h F0h 3Dh (Bottom)*
*Parameter # 318, SSI # F4h F0h 3Eh (Right)*

If Image Cropping is enabled, set the pixel addresses from (0,0) to (1279 x 959) to crop to.

Columns are numbered from 0 to 1279, rows from 0 to 956. Specify values for Top, Left, Bottom, and Right, where Top and Bottom correspond to row pixel addresses, and Left and Right correspond to column pixel addresses.

> ✏️ **Example**
>
> For a 4 row x 8 column image in the extreme bottom-right section of the image, set the following values:
>
> ```
> Top = 959, Bottom = 959, Left = 1272, Right =
> 1279
> ```

To set the pixel address, scan each of the following bar codes, and then scan four numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 🗒️ **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.

> ✏️ **Example**
>
> To crop the top pixel address to 3, scan 0003. The default values are the following:
>
> ```
> Top = 0, Bottom = 959, Left = 0, Right = 1279
> ```

> 🗒️ **Note**
>
> The scanner has a cropping resolution of 4 pixels. Setting the cropping area to less than 4 pixels (after resolution adjustment, refer to **"Image Size (Number of Pixels) (Parameter #302, SSI #F0h 2Eh)"** on page 229) transfers the entire image.

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**Top Pixel Address
(0 - 959 Decimal)**

||||| |||| | || ||| | ||| || || | || || | |||||

**Left Pixel Address
(0 - 1279 Decimal)**

||||| |||| | | ||| | || || ||| | | || ||| | |||||

**Bottom Pixel Address
(0 - 959 Decimal)**

||||| |||| || | | ||| || | ||| | || | ||| | |||||

**Right Pixel Address
(0 - 1279 Decimal)**
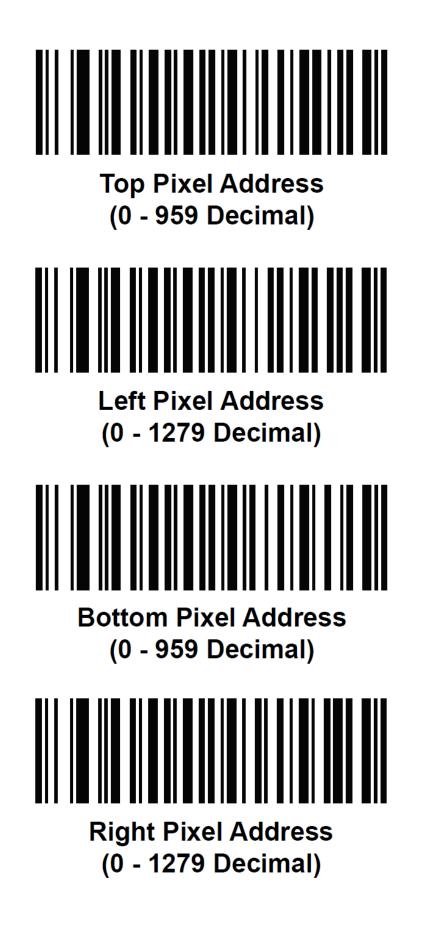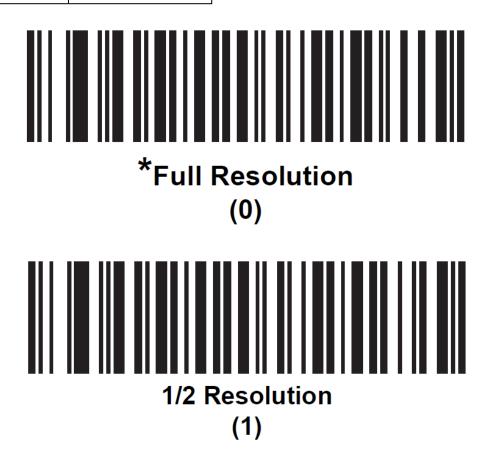
# Image Size (Number of Pixels) (Parameter #302, SSI #F0h 2Eh)

This option alters image resolution before compression. Multiple pixels are combined to one pixel, resulting in a smaller image containing the original content with reduced resolution.

Scan one of the following bar codes to select an image size. By default, this parameter is set to **Full Resolution**.

| Resolution Value | Uncropped Image Size |
|---|---|
| Full | 1280 x 960 |
| 1/2 | 640 x 480 |
| 1/4 | 320 x 240 |



*Full Resolution
(0)



1/2 Resolution
(1)

**1/4 Resolution
(3)**

# JPEG Image Options (Parameter #299, SSI #F0h 2Bh)

Scan one of the following bar codes to optimize JPEG images for either size or quality. By default, this parameter is set to **JPEG Quality Selector**.

- **JPEG Quality Selector**—enter a quality value through the JPEG Quality Value parameter. The imager then selects the corresponding image size.
- **JPEG Size Selector**—enter a size value through the JPEG Size Value parameter. The imager then selects the best image quality.



**\*JPEG Quality Selector
(1)**



**JPEG Size Selector
(0)**

# JPEG Size Value (Parameter #561, SSI #F1h 31h)

- Type: Word
- Range: 5-350

If **JPEG Size Selector** is selected, scan the **JPEG Size Value** bar code, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the target JPEG file size in kilobytes (KB).

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.

> ✏️ **Example**
>
> To set an image file size value of **99**, scan **099**.

> ⚠️ **Caution**
>
> JPEG compression may take 10 to 15 seconds based on the amount of information in the target image. Scanning **JPEG Quality Selector** (default setting) on JPEG Image Options produces a compressed image that is consistent in quality and compression time.



**JPEG Target File Size
(3 digits)**

# JPEG Quality Value (Parameter #305, SSI #F0h 31h)

If **JPEG Quality Selector** is selected, scan the **JPEG Size Value** bar code, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to a value from 5 to 100, where 100 represents the highest quality image.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.

> ✏️ **Example**
>
> To set an image quality value of 55, scan 055. The default value is 065.



**JPEG Quality Value
(5 - 100 Decimal)**

# Image Enhancement (Parameter #564, SSI #F1h 34h)

This parameter uses a combination of edge sharpening and contrast enhancement to produce an image that is visually pleasing.

Scan one of the following bar codes to select the level of image enhancement. By default, this parameter is set to **Off**.



**\*Off**
**(0)**



**Low**
**(1)**



**Medium**
**(2)**

**High
(3)**

# Image File Format Selector (Parameter #304, SSI #F0h 30h)

Scan one of the following bar codes to select an image format appropriate for the system (BMP, TIFF, or JPEG). The imager stores captured images in the selected format. By default, this parameter is set to **JPEG File Format**.

**BMP File Format**
**(3)**

**\*JPEG File Format**
**(1)**

**TIFF File Format**
**(4)**
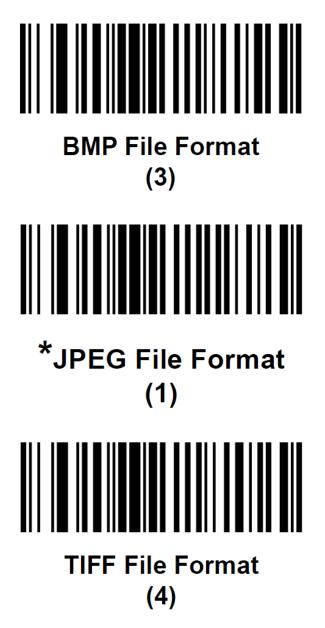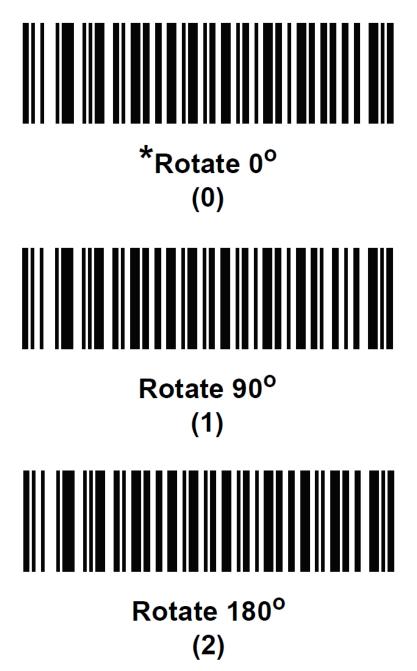
# Image Rotation (Parameter #665, SSI #F1h 99h)
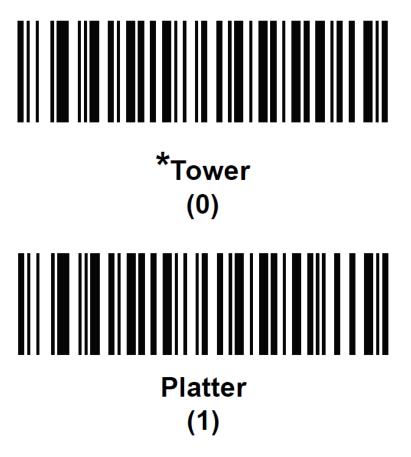
Scan one of the following bar codes to rotate the image 0, 90,180, or 270 degrees. By default, this parameter is set to **Rotate 0°**.



**\*Rotate 0°**
**(0)**



**Rotate 90°**
**(1)**



**Rotate 180°**
**(2)**

**Rotate 270⁰**

**(3)**

# Image Capture Camera Selection (Parameter #1715, SSI #F8h 05h B3h)

Scan one of the following bar codes to select the camera that will be used to capture images. By default, this parameter is set to **Tower**.



**\*Tower
(0)**



**Platter
(1)**
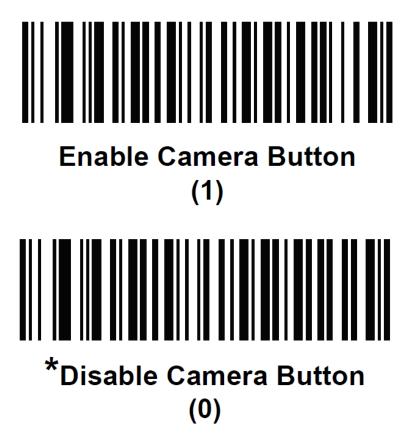
# Camera Button (Parameter #1716, SSI #F8h 06h B4h)

Scan **Enable Camera Button** to use the camera button on the front of the tower to capture images.

> 📑 **Note**
>
> The parameter is only valid if the scanner is in USB SNAPI with Imaging mode. To set this mode, scan Symbol Native API (SNAPI) with Imaging Interface in **"USB Device Type"** on page 39.

Scan one of the following bar codes to enable or disable the use of the camera button to capture images. By default, this parameter is set to **Disable**.



**Enable Camera Button
(1)**



***Disable Camera Button
(0)**

# Camera Button Delay (Parameter #1717, SSI #F8h 06h B5h)

This parameter controls the camera shutter delay, or the time delay between pressing the camera button and actually capturing the image. This delay allows the user time to place the item into the proper position for capturing the image. The range is 0 to 255 ms, with increments of 100 ms. The default value is 20 (2 seconds).

To set the time delay value, scan the bar code below, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.



**Camera Shutter Delay**

# Electronic Article Surveillance (EAS) Parameters

This chapter describes the EAS features, and provides programming bar codes for selecting these features.

For EAS parameter default settings, refer to **"Electronic Article Surveillance (EAS) Parameters"** on page 523. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.

- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.

> **Note**
>
> The EAS LED, located on the front of the NCR 7895, works in conjunction with the type of EAS device used. With a Sensormatic EAS system, the EAS LED is always on and blinks when a tag is deactivated. With a Checkpoint EAS system, the EAS LED can be turned on by scanning **EAS LED On Mode** in this chapter. The LED does not blink.

# EAS Parameters

The following are EAS parameters:

- **"EAS Operating Modes (Parameter #977)"** on the next page
- **"Sensormatic Deactivation Timeout (Parameter #982)"** on page 255
- **"Sensormatic EAS Deactivation (Parameter #979)"** on page 256
- **"Sensormatic EAS Beeps"** on page 257
- **"Sensormatic Request Messages"** on page 264
- **"Checkpoint Interlock Polarity (Parameter #983)"** on page 268
- **"Deactivation Override Button (Parameter #981)"** on page 270
- **"EAS Checkpoint Pulse (Parameter #2102)"** on page 272

# EAS Operating Modes (Parameter #977)

In addition to EAS preferences in this chapter, there are 10 EAS operating modes for the NCR 7895, as listed below. EAS operating modes control whether or not EAS functionality is enabled, and is independent of whether or not EAS equipment is connected. It is the responsibility of the installer to match these modes with the installed equipment. Enabling one of these modes without EAS equipment or with the wrong equipment installed results in EAS error messages.

Scan the appropriate bar codes to configure the NCR 7895 with these modes.

# Sensormatic Auto Mode

This mode is dependent on the *Scan Enable Time* that the NCR 7895 reads from the ScanMax Pro control box (this value is set by Sensormatic in the control box during installation).

If the *Scan Enable Time* equals 0 seconds or 30 seconds, the NCR 7895 works in

Otherwise, *Scan Enable Time* is from 1 second to 29 seconds. In this mode, tag deactivation is active following a bar code decode, and remains active until this timer expires.

> 📝 **Note**
>
> More than one tag can be deactivated during this time.



**Sensormatic Auto Mode (00h)**

# Sensormatic Always Enable Deactivation Mode

This mode always enables tag deactivation when the NCR 7895 is powered on.
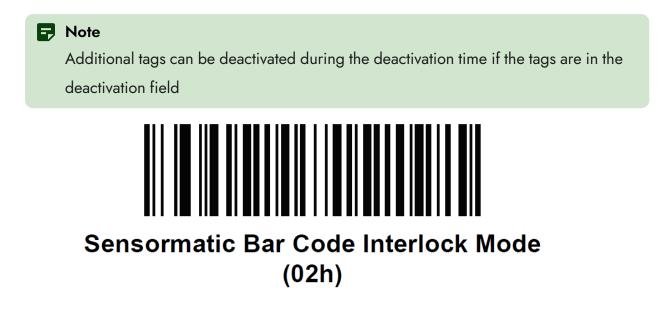
> 📝 **Note**
>
> When the NCR 7895 is in *Sensormatic Always Enable Deactivation* mode, the tags are always deactivated by the NCR 7895 if the tags are in the deactivation field.



**Sensormatic Always Enable Deactivation Mode (01h)**

# Sensormatic Bar Code Interlock Mode

This mode enables tag deactivation only after a bar code is decoded. The tag deactivation time uses the time value set with **"Sensormatic Deactivation Timeout (Parameter #982)"** on page 255.

> 📝 **Note**
>
> Additional tags can be deactivated during the deactivation time if the tags are in the deactivation field



**Sensormatic Bar Code Interlock Mode (02h)**

## Sensormatic Bar Code Auto Interlock Mode

The NCR 7895 enables deactivation only when a bar code decodes. The deactivation state only lasts for 1.2 seconds to avoid subsequent tag deactivation.

**Sensormatic Bar Code Auto Interlock Mode (03h)**

# Bar Code Hold Off Mode

In this mode, if a tag is detected, bar codes are not decoded (no beep, no transmission to host) until the tag is deactivated.

> 📝 **Note**
>
> A bar code decode does not occur if a hard tag is detected and until the hard tag is removed from the detection field.



**Hold Off Mode**
**(04h)**

# Sensormatic Scan Enable Interlock Mode

In this mode, if the POS application sends a Scan Enable message to the NCR 7895, then the tag deactivated is enabled. If the POS application sends a Scan Disable message to the NCR 7895, then the tag deactivated is disabled.



**Sensormatic Scan Enable Interlock Mode (05h)**

# Checkpoint Bar Code Interlock Mode

This mode enables Checkpoint tag deactivation for three seconds after a bar code is decoded. The Checkpoint device controls all audible and visual feedback (the device does not produce any audio and visual feedback for tag detection nor tag deactivation).
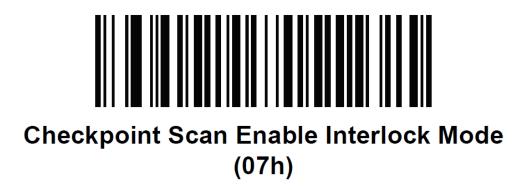
This is also programmable inside the Checkpoint device by the Checkpoint installer.



**Bar Code Interlock Mode
(6)**

# Checkpoint Scan Enable Interlock Mode
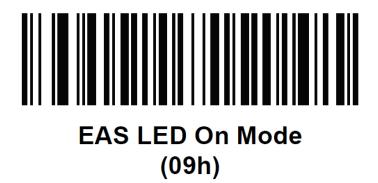
In this mode, the following occurs:

- Tag deactivation is active after the NCR 7895 receives a *Scan Enable* command from a host (POS application).

- Tag deactivation is inactive after the NCR 7895 receives a *Scan Disable* command from a host (POS application).

- Tag deactivation is enabled on power on.



**Checkpoint Scan Enable Interlock Mode (07h)**

# EAS LED On Mode

This mode turns on the EAS LED. If there is an EAS equipment, it controls the EAS tag detection and deactivation by itself.



**EAS LED On Mode
(09h)**

# EAS Disable Mode (Parameter #977)

In this mode, EAS tags are not detected nor deactivated.



*Disable EAS
(08h)

# Sensormatic Deactivation Timeout (Parameter #982)

> **Note**
>
> This option determines the period of time in which EAS tag deactivation is allowed following a good bar code decode. This option only applies to **"Sensormatic Bar Code Interlock Mode"** on page 247.

To set the EAS deactivation window to a time from 1 to 29 seconds, scan the bar code below, and then scan two numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the value.

> **Note**
>
> Enter a leading zero for single-digit values. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.

> **Example**
>
> To set the deactivation time period to 8 seconds, scan **08**.
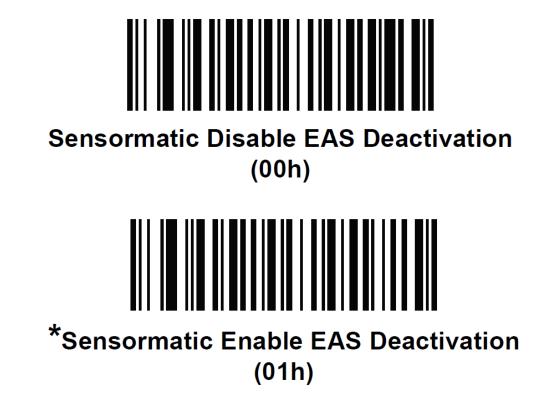
When a tag is successfully deactivated, the deactivation time period is still active, and additional deactivations can occur.



**Sensormatic Deactivation Timeout**

# Sensormatic EAS Deactivation (Parameter #979)

Scan one of the following bar codes to enable or disable Sensormatic EAS deactivation. By default, this parameter is set to **Enable**.

- **Sensormatic Disable EAS Deactivation**—scan to prevent any soft tags from being deactivated.

- **Sensormatic Enable EAS Deactivation**—scan to allow soft tags to be deactivated.



**Sensormatic Disable EAS Deactivation (00h)**



**\*Sensormatic Enable EAS Deactivation (01h)**

# Sensormatic EAS Beeps

This section provides different modes to set the audible alerts upon Sensormatic EAS tag detection, deactivation, or both. These modes have no affect if using the Checkpoint equipment.

The following are the types of Sensormatic beeps. Scan the appropriate bar codes to configure the NCR 7895 with these beeps.

| Beep Type | Description |
|---|---|
| EAS Soft Tag Beeps | The NCR 7895 sounds a soft tag beep when a soft tag is deactivated. |
| EAS Hard Tag Beeps | The NCR 7895 sounds a hard tag beep when the NCR 7895 conclusively detects a hard tag. |
| Detected Any Time Beep | The NCR 7895 sounds a beep when a soft or hard tag is in the detected field. |
| EAS Deactivation Fail Beeps | The NCR 7895 generates a deactivation fail beep if a tag is not deactivated, and is considered live, and the type of tag (soft or hard) cannot be determined. |
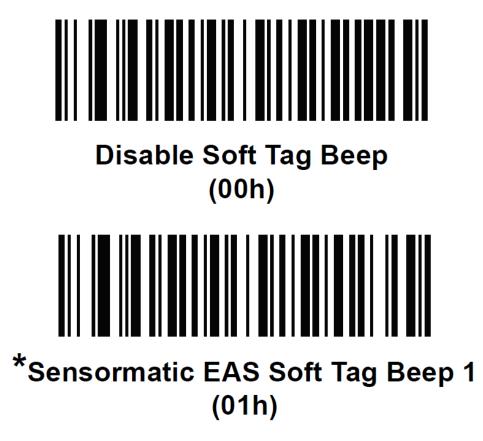
# Sensormatic EAS Soft Tag Beeps (Parameter #984)

In this mode, the NCR 7895 sounds a soft tag beep when a soft tag is deactivated.

The following are the soft tag beep options:

- **Disable Soft Tag Beep**—no audible beep sounds when an EAS soft tag is deactivated.
- **Sensormatic EAS Soft Tag Beep 1**—a low tone short beep sounds when an EAS soft tag is deactivated.
- **Sensormatic EAS Soft Tag Beep 2**—a low tone medium duration beep sounds when an EAS soft tag is deactivated.

Scan of the following bar codes to set the beep option for soft tag deactivation. By default, this parameter is set to **Sensormatic EAS Soft Tag Beep 1**.



**Disable Soft Tag Beep
(00h)**



**\*Sensormatic EAS Soft Tag Beep 1
(01h)**

**Sensormatic Soft Tag Beep 2
(02h)**
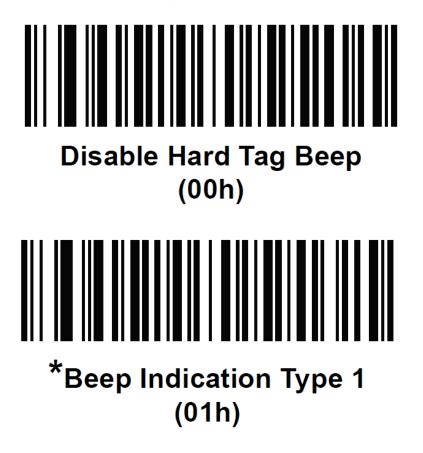
# Sensormatic EAS Hard Tag Beeps (Parameter #985)

In this mode, the NCR 7895 sounds a hard tag beep when it conclusively detects a hard tag.

The following are the hard tag beep options:

- **Disable Hard Tag Beep**—no audible beep sounds when an EAS hard tag is deactivated.

- **Beep Indication Type 1**—a high tone short beep sounds when an EAS hard tag is deactivated.

- **Beep Indication Type 2**—a high tone medium duration beep sounds when an EAS hard tag is deactivated.

Scan of the following bar codes to set the beep option for hard tag detection. By default, this parameter is set to **Beep Indication Type 1**.



**Disable Hard Tag Beep
(00h)**



**\*Beep Indication Type 1
(01h)**

**Beep Indication Type 2
(02h)**

## Sensormatic EAS Tag Detected Any Time Beep (Parameter #980)

In this mode, the NCR 7895 sounds a beep when a soft or hard tag is in the detected field.
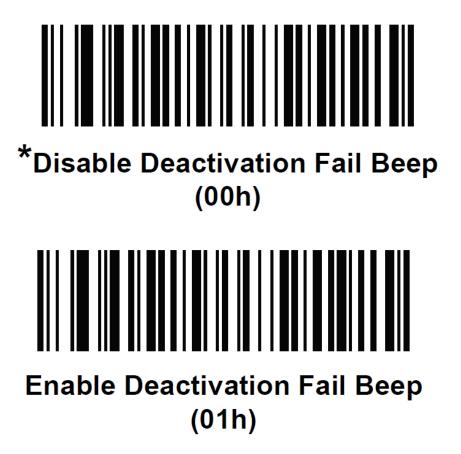
Scan one of the following bar codes to enable or disable a beep when a soft or hard tag is detected. By default, this parameter is set to **Enable**.



**\*Enable Detected Any Time Beep (01h)**



**Disable Detected Any Time Beep (00h)**

## Sensormatic EAS Deactivation Fail Beep (Parameter #1213)

In this mode, the NCR 7895 generates a deactivation fail beep if a tag is not deactivated, and is considered live, and the type of tag (soft or hard) cannot be determined.

Scan one of the following bar codes to enable or disable a beep when tag deactivation fails. By default, this parameter is set to **Disable**.



**\*Disable Deactivation Fail Beep (00h)**



**Enable Deactivation Fail Beep (01h)**

# Sensormatic Request Messages

When any of Sensormatic request message types are enabled, messages are sent between the NCR 7895 and the control box periodically (approximately every 2 seconds). Error messages display on the 7-Segment Diagnostic Displays. For more information on error messages, refer to *NCR 7895 Scanner/Scale User Guide* (BCC5-0000-5508).

The following are the types of Sensormatic messages. Scan the appropriate bar codes to configure the NCR 7895 with these messages.

| Message Type | Description |
|---|---|
| Request Communication or Connection Message | Enabling this feature allows communication with the control box. |
| Request Voltage Message | Enabling this feature sends messages about dangerous voltage levels. |
| Request Scan Time Message | This message is only available in Auto Interlock Mode. The messages sent check to validate that the scan time is synchronized between the NCR 7895 and the control box. |

## Sensormatic Request Communication/Connection Message (Parameter #978)

In this mode, communication is allowed between the NCR 7895 and the control box.

Scan one of the following bar codes to enable or disable communication with the control box. By default, this parameter is set to **Enable**.
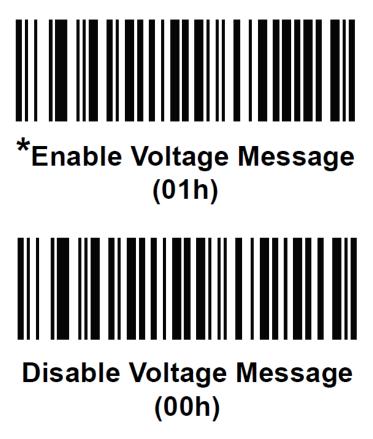


**\*Enable Communication/Connection Message (01h)**



**Disable Communication/Connection Message (00h)**

# Sensormatic Request Voltage Message (Parameter #1130)

In this mode, messages about dangerous voltage levels are sent between the NCR 7895 and the control box.

Scan one of the following bar codes to enable or disable voltage messages. By default, this parameter is set to **Enable**.



*Enable Voltage Message (01h)



Disable Voltage Message (00h)

## Sensormatic Request Scan Time Message (Parameter #1136)

In this mode, the messages sent check to validate that the scan time is synchronized between the NCR 7895 and the control box.

Scan one of the following bar codes to enable or disable scan time messages. By default, this parameter is set to **Enable**.



*Enable Scan Time Message
(01h)



Disable Scan Time Message
(00h)

# Checkpoint Interlock Polarity (Parameter #983)

EAS Checkpoint Interlock Polarity determines the interlock pulse polarity required to deactivate a tag.

> 📝 **Note**
>
> The polarity must match the setting in the EAS control box.

The following are the polarity options:

- **Active Low**—tag deactivation is initiated by an active low pulse.
- **Active High**—tag deactivation is initiated by an active high pulse.

Scan one of the following bar codes to set the polarity for Checkpoint interlock. By default, this parameter is set to **Active Low**.



\*Active Low
(00h)



Active High
(01h)

## Sensormatic Soft Tag Beep 2 (02h)

# Deactivation Override Button (Parameter #981)
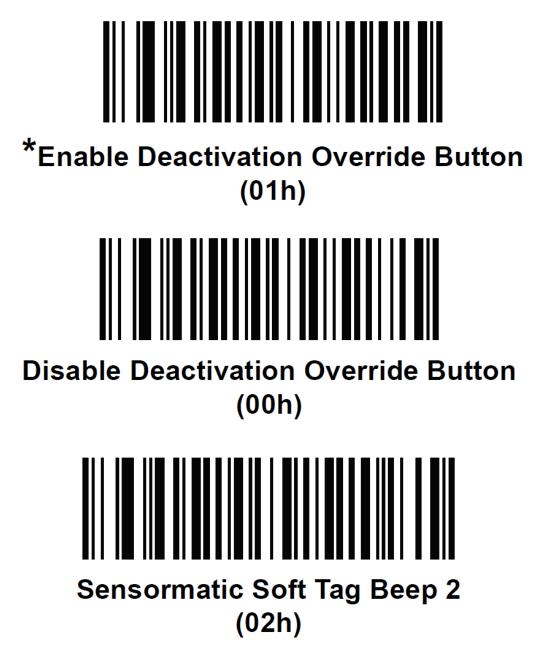
The **EAS** button on the NCR 7895 can be pressed to deactivate soft tags on items without decoding the bar code on the item.

When this parameter is enabled, the operator can press the **EAS** button on the NCR 7895 to override the EAS settings. After pressing the **EAS** button, the operator has the next 3 seconds to present a soft tag for deactivation. During this override period, bar codes are not decoded. The NCR 7895 exits the override mode, and then returns to normal operation after either a tag deactivation or the 3-second timeout.

Enabling this override can be useful in the following situations:

- When using Interlock mode and a bar code cannot be scanned, the operator must physically enter the bar code data. In this case, after the operator enters the bar code data and presses the **EAS** button, the operator has the next 3 seconds to present a soft tag to deactivate.

- When a bar code is scanned but the tag was not deactivated, the operator cannot pass the item through the deactivation area a second time to deactivate the tag because the bar code would decode a second time (charging the item twice). Instead, the operator presses the **EAS** button, wait for the next 3 seconds, and then present a soft tag which will be deactivated without re-reading the bar code.
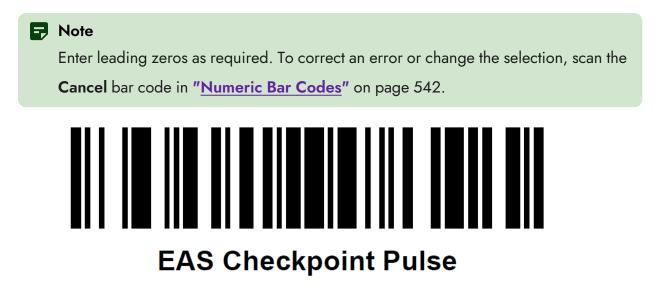
Scan one of the following bar codes to enable or disable the override option. By default, this parameter is set to **Enable**.

![barcode]

**\*Enable Deactivation Override Button (01h)**

![barcode]

**Disable Deactivation Override Button (00h)**

![barcode]

**Sensormatic Soft Tag Beep 2 (02h)**

# EAS Checkpoint Pulse (Parameter #2102)

This option sets the EAS Checkpoint Pulse. The range is from 0 to 255. The default is 0.

To set a value, scan the bar code below, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.



**EAS Checkpoint Pulse**

# Auxiliary Scanner Bar Codes

This chapter includes programming bar codes to configure NCR 7895 for connection to an auxiliary scanner. These bar codes are solely for NCR 7895. The auxiliary scanner requires its own configuration, and should be programmed with matching settings found in the auxiliary scanner's Product Reference Guide.

> **Note**
>
> Auxiliary RS-232 scanners should only be attached or detached when the NCR 7895 is powered off.

In addition to these settings the auxiliary scanner must be independently configured as a standalone scanner, as though it were connected directly to a host. An auxiliary scanner connected to NCR 7895 does not assume the NCR 7895 configuration.

> **Note**
>
> For additional information on auxiliary port configuration, refer to **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194.

For auxiliary scanner default settings, refer to **"Auxiliary Parameters"** on page 524.

# Auxiliary Scanner Parameters

The following are auxiliary scanner parameters:

# Auxiliary Scanner Decode with Unknown Type (Parameter #1124, SSI #F8h 04h 64h)

If an auxiliary scanner is connected through SSI over RS-232 for Zebra scanners, HID Keyboard for non-Zebra scanners, or standard RS-232, and the Send Raw Decode Data option is enabled, the NCR 7895 transmits decode data with the code type set by this parameter.

> 📝 **Note**
>
> If the device is set to any IBM host type, this parameter is not applicable.

Scan one of the following bar codes to set the code type. By default, this parameter is set to **Send Unknown as Code 39**.



\*Send Unknown as Code 39
(01h)



Send Unknown as Code 128
(03h)

**Send Unknown as PDF417
(11h)**

**Send Unknown as Data Matrix
(1Bh)**

# Host Type

The NCR 7895 only supports standard RS-232, Wincor-Nixdorf B for non-Zebra scanners, and additionally SSI over RS-232 for Zebra scanners. Scan one of the bar codes that follow to select RS-232 as the host interface for the Zebra auxiliary scanner.

> 📝 **Note**
>
> Take note of the following:
>
> - Disconnect the auxiliary scanner from the NCR 7895 prior to changing the auxiliary scanner host type. If the auxiliary scanner is not disconnected from the NCR 7895, reboot the NCR 7895 after changing the host type.
>
> - The Zebra Scanner Auto Switch mode only applies to Zebra RS-232 scanners. In this mode, the NCR 7895 decides which protocol a scanner uses based on the primary host. For example, if the NCR 7895 is using SSI over CDC, it automatically switches the auxiliary serial scanner to SSI over RS-232. If the user selects Wincor-Nixdorf B, the auxiliary RS-232 port only uses the Wincor-Nixdorf B protocol, and that does not change unless another auxiliary RS-232 protocol setting is scanned.

Scan one of the following bar codes to select RS-232 as the host interface for the Zebra auxiliary scanner. By default, this parameter is set to **Zebra Scanner Auto Switch Mode**.



**Standard RS-232**

**Wincor-Nixdorf RS-232 Mode B**

**\*Zebra Scanner Auto Switch**

# Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the NCR 7895 baud rate to match the baud rate setting of the auxiliary scanner. Otherwise, data may not reach the host device or may reach it but in distorted form.

> 📝 **Note**
>
> The NCR 7895 does not support baud rates below 9600.

Scan one of the following bar codes to set the baud rate. By default, this parameter is set to **9600**.


*Baud Rate 9600


Baud Rate 19200


Baud Rate 38400

**Baud Rate 115200**

**Baud Rate 230400**

**Baud Rate 460800**

**Baud Rate 921600**

# Data Bits

This parameter allows the NCR 7895 to interface with auxiliary scanners requiring a 7-bit or 8-bit ASCII protocol.
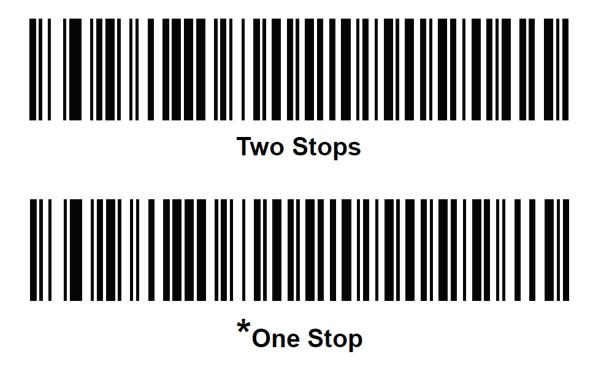
Scan one of the following bar codes to set the data bits. By default, this parameter is set to **8 Data Bits**.

**7 Data Bits**

**\*8 Data Bits**

# Stop Bits

The stop bit at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. Select the number of stop bits (one or two) based on the number the receiving terminal is programmed to accommodate. Set the number of stop bits to match auxiliary scanner requirements.

Scan one of the following bar codes to set the stop bit. By default, this parameter is set to **One Stop**.



Two Stops



*One Stop

# Parity
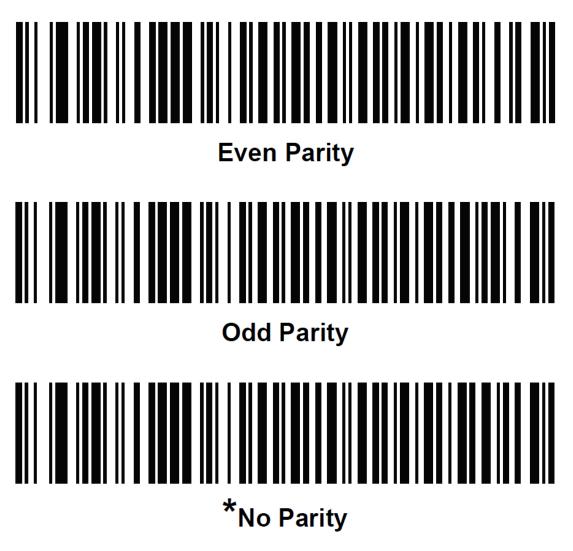
A parity check bit is the most significant bit of each ASCII coded character. Select the parity type according to host device requirements.

- **Odd Parity**—the parity bit has a value 0 or 1, based on data, to ensure that an odd number of 1 bits is contained in the coded character.

- **Even Parity**—the parity bit has a value 0 or 1, based on data, to ensure that an even number of 1 bits is contained in the coded character.

- **No Parity**—no parity is required.
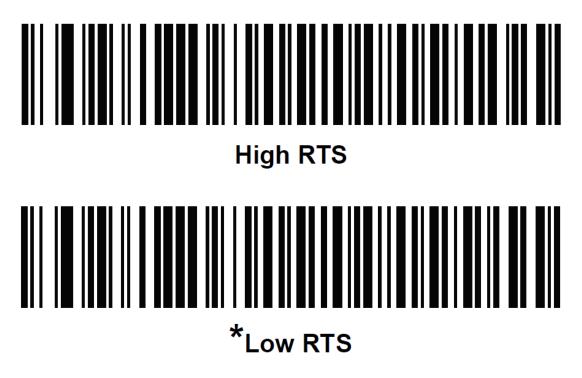
Scan one of the following bar codes to set the parity type. By default, this parameter is set to **No Parity**.



**Even Parity**



**Odd Parity**



**\*No Parity**

# Host RTS State

This parameter sets the idle state of the auxiliary serial host RTS line.

Scan one of the following bar codes to set the host RTS state. By default, this parameter is set to **Low RTS**.



**High RTS**



**\*Low RTS**

# USB Auxiliary Ports (Parameter #1822, SSI #F8h 07h 1Eh)

Scan one of the following bar codes to enable or disable all three USB auxiliary ports. By default, this parameter is set to **Enable**.



**Disable All USB Auxiliary Ports (0)**



***Enable All USB Auxiliary Ports (1)**

# Aux 1 Baud Rate (Parameter #1328, SSI #F8h 05h 30h)

Set this parameter to match the device connected to the auxiliary 1 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the baud rate for auxiliary 1 port. By default, this parameter is set to **Inherit**.



*Aux 1 Baud Rate Inherit
(0x0Fh)



Aux 1 Baud Rate 2400
(0x04h)

**Aux 1 Baud Rate 4800
(0x05h)**

**Aux 1 Baud Rate 9600
(0x06h)**

**Aux 1 Baud Rate 19200
(0x07h)**

**Aux 1 Baud Rate 38400
(0x08h)**

**Aux 1 Baud Rate 115200 (0x0Bh)**

# Aux 1 Data Bits (Parameter #1331, SSI #F8h 05h 33h)

Set this parameter to match the device connected to the auxiliary 1 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the data bits for auxiliary 1 port. By default, this parameter is set to **Inherit**.



\*Aux 1 Data Bits Inherit
(0x03h)



Aux 1 Data Bits 7
(0x00h)
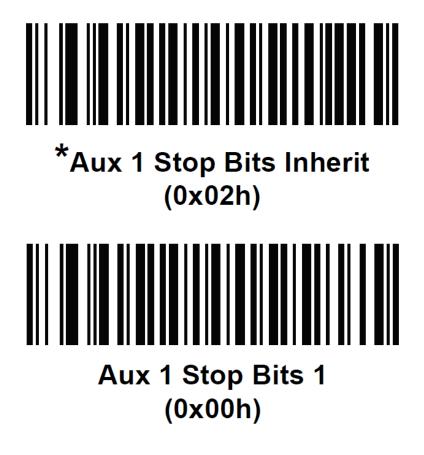
## Aux 1 Data Bits 8
## (0x01h)

# Aux 1 Stop Bits (Parameter #1329, SSI #F8h 05h 31h)

Set this parameter to match the device connected to the auxiliary 1 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the stop bits for auxiliary 1 port. By default, this parameter is set to **Inherit**.



*Aux 1 Stop Bits Inherit
(0x02h)



Aux 1 Stop Bits 1
(0x00h)

## Aux 1 Stop Bits 2
## (0x01h)

# Aux 1 Parity (Parameter #1330, SSI #F8h 05h 32h)

Set this parameter to match the device connected to the auxiliary 1 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the parity for auxiliary 1 port. By default, this parameter is set to **Inherit**.



**\*Aux 1 Parity Inherit (0x06h)**



**Aux 1 Parity Odd (0x00h)**

**Aux 1 Parity Even
(0x01h)**

**Aux 1 Parity Mark
(0x02h)**

**Aux 1 Parity Space
(0x03h)**

**Aux 1 Parity None
(0x04h)**

# Aux 2 Baud Rate (Parameter #1332, SSI #F8h 05h 34h)

Set this parameter to match the device connected to the auxiliary 2 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the baud rate for auxiliary 2 port. By default, this parameter is set to **Inherit**.



**\*Aux 2 Baud Rate Inherit (0x0Fh)**



**Aux 2 Baud Rate 2400 (0x04h)**

**Aux 2 Baud Rate 4800
(0x05h)**

**Aux 2 Baud Rate 9600
(0x06h)**

**Aux 2 Baud Rate 19200
(0x07h)**

**Aux 2 Baud Rate 38400
(0x08h)**

||||||| |||| |||| ||| ||| |||| ||||| |||| |||

## Aux 2 Baud Rate 115200
## (0x0Bh)

# Aux 2 Data Bits (Parameter #1335, SSI #F8h 05h 37h)

Set this parameter to match the device connected to the auxiliary 2 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the data bits for auxiliary 2 port. By default, this parameter is set to **Inherit**.



*\*Aux 2 Data Bits Inherit (0x03h)*



Aux 2 Data Bits 7 (0x00h)
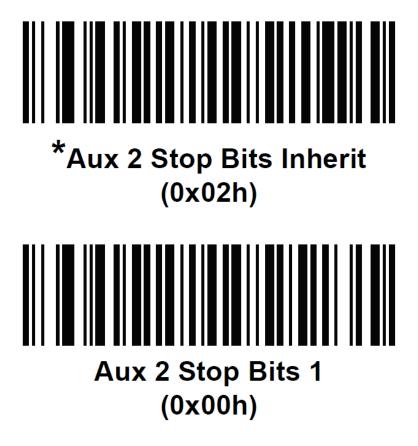
## Aux 2 Data Bits 8
## (0x01h)

# Aux 2 Stop Bits (Parameter #1333, SSI #F8h 05h 35h)

Set this parameter to match the device connected to the auxiliary 2 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the stop bits for auxiliary 2 port. By default, this parameter is set to **Inherit**.



**\*Aux 2 Stop Bits Inherit (0x02h)**



**Aux 2 Stop Bits 1 (0x00h)**

**Aux 2 Stop Bits 2
(0x01h)**

# Aux 2 Parity (Parameter #1334, SSI #F8h 05h 36h)

Set this parameter to match the device connected to the auxiliary 2 port. The default value is based on the information on the table found in **"RS-232 Device Port Configuration (Parameter #1246, SSI #F8h 04h DEh)"** on page 194. In many cases, the value matches the connected device.

Scan one of the following bar codes to set the parity for auxiliary 2 port. By default, this parameter is set to **Inherit**.



**\*Aux 2 Parity Inherit (0x06h)**



**Aux 2 Parity Odd (0x00h)**

**Aux 2 Parity Even
(0x01h)**

**Aux 2 Parity Mark
(0x02h)**

**Aux 2 Parity Space
(0x03h)**

**Aux 2 Parity None
(0x04h)**
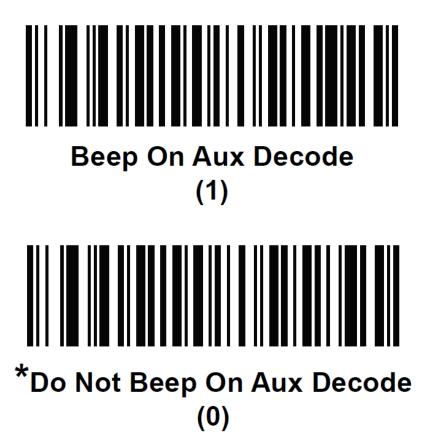
# Beep on Aux Decode (Parameter #1695, SSI #F8h 06h 9Fh)

Scan one of the following bar codes to set whether the scanner issues a beep when it receives a decode from an attached auxiliary scanner. By default, this parameter is set to **Do Not Beep**.



**Beep On Aux Decode
(1)**



**\*Do Not Beep On Aux Decode
(0)**

# SSI Interface

Customers using RS-232 OPOS require the Simple Serial Interface (SSI), which provides a communications link between the NCR 7895 scanner and a serial host. NCR 7895 includes a limited SSI implementation for special purposes. For more information, contact Zebra Customer Support Center online at **www.zebra.com/support**.

All communication between the decoder and host occurs over the hardware interface lines using the SSI protocol. For more information on SSI, refer to *Simple Serial Interface Programmer's Guide* (72E-40451-xxxx) at **www.zebra.com/support**.

# SNAPI Interface

Customers using USB OPOS often require the USB-SNAPI Interface, which provides a communications link between the NCR 7895 scanner and a USB host. NCR 7895 includes a limited SNAPI implementation for special purposes. All communication between the decoder and host occurs over the hardware interface lines using the SNAPI protocol.

For more information on SNAPI, contact Zebra Customer Support Center online at **www.zebra.com/support**.

# Symbologies

The scanner can be programmed to perform various functions, or activate different features. This chapter describes symbology features and provides programming bar codes for selecting these features.

If not using a USB cable, select a host type (see each host chapter for specific host information) after the power-up beeps sound. This is only necessary upon the first power-up when connected to a new host.

For Symbologies default settings, refer to **"Symbologies"** on page 526. To change the default settings, do any of the following:

- Scan the appropriate bar codes in this chapter. The new value replaces the standard default value in memory.
- Configure the scanner using the 123Scan configuration program. For more information, refer to **"123Scan and Software Tools"** on page 31.

# Symbologies Parameters

The following are symbologies parameters:

# Enable/Disable All Code Types

Scan one of the following bar codes to enable or disable all symbologies.

- **Disable All Code Types**—disables all symbologies. This is useful when enabling only a few code types.
- **Enable All Code Types**—enables all symbologies. This is useful when disabling only a few code types.



**Disable All Code Types**



**Enable All Code Types**
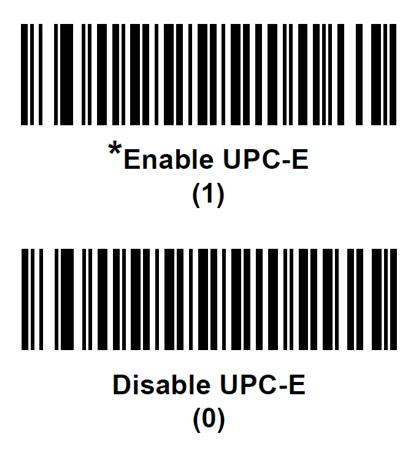
# UPC/EAN/JAN

## UPC-A (Parameter #1, SSI #01h)

Scan one of the following bar codes to enable or disable UPC-A. By default, this parameter is set to **Enable**.

**\*Enable UPC-A
(1)**

**Disable UPC-A
(0)**

# UPC-E (Parameter #2, SSI #02h)

Scan one of the following bar codes to enable or disable UPC-E. By default, this parameter is set to **Enable**.



*Enable UPC-E
(1)



Disable UPC-E
(0)
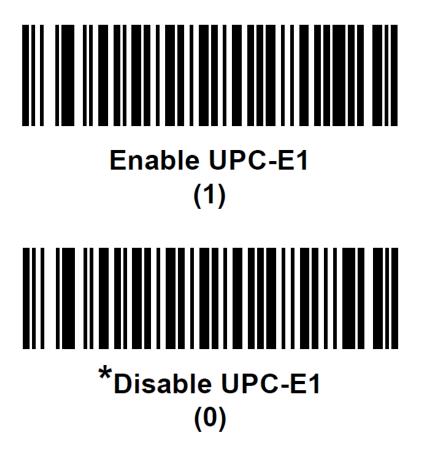
# UPC-E1 (Parameter #12, SSI #0Ch)
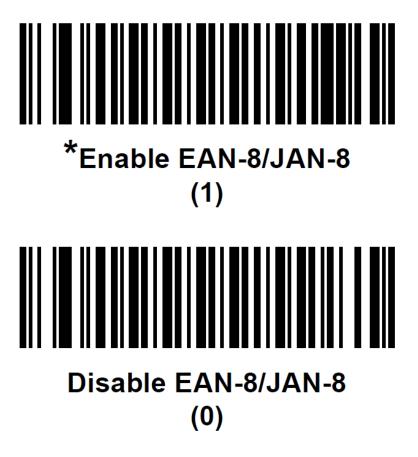
> 📝 **Note**
>
> UPC-E1 is not a UCC (Uniform Code Council) approved symbology.

Scan one of the following bar codes to enable or disable UPC-E1. By default, this parameter is set to **Enable**.



**Enable UPC-E1**
**(1)**



**\*Disable UPC-E1**
**(0)**
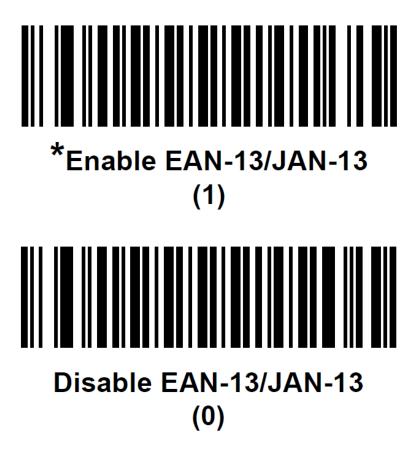
# EAN-8/JAN-8 (Parameter #4, SSI #04h)

Scan one of the following bar codes to enable or disable EAN-8/JAN-8. By default, this parameter is set to **Enable**.



**\*Enable EAN-8/JAN-8
(1)**



**Disable EAN-8/JAN-8
(0)**

# EAN-13/JAN-13 (Parameter #3, SSI #03h)

Scan one of the following bar codes to enable or disable EAN-13/JAN-13. By default, this parameter is set to **Enable**.



**\*Enable EAN-13/JAN-13
(1)**



**Disable EAN-13/JAN-13
(0)**

# Bookland EAN (Parameter #83, SSI #53h)

Scan one of the following bar codes to enable or disable Bookland EAN. By default, this parameter is set to **Disable**.



**Enable Bookland EAN
(1)**



**\*Disable Bookland EAN
(0)**

> 📝 **Note**
>
> If Bookland EAN is enabled, select a **"Bookland ISBN Format (Parameter #576, SSI #F1h 40h)"** on the next page. Also set **"Decode UPC/EAN/JAN Supplementals (Parameter #16, SSI #10h)"** on page 320 to either Decode UPC/EAN/JAN with Supplementals Only, Autodiscriminate UPC/EAN/JAN With Supplementals, or Enable 978/979 Supplemental Mode.

# Bookland ISBN Format (Parameter #576, SSI #F1h 40h)
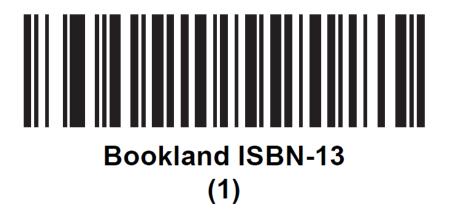
> 📝 **Note**
>
> For Bookland EAN to function properly, first enable Bookland EAN using **"Bookland EAN (Parameter #83, SSI #53h)"** on the previous page, and then set **"Decode UPC/EAN/JAN Supplementals (Parameter #16, SSI #10h)"** on page 320 to either Decode UPC/EAN/JAN with Supplementals Only, Autodiscriminate UPC/EAN/JAN With Supplementals, or Enable 978/979 Supplemental Mode.

If Bookland EAN is enabled, select one of the following formats for Bookland data:

- **Bookland ISBN-10**—the scanner reports Bookland data starting with 978 in traditional 10-digit format with the special Bookland check digit for backward-compatibility. Data starting with 979 is not considered Bookland in this mode.

- **Bookland ISBN-13**—the scanner reports Bookland data, starting with either 978 or 979, as EAN-13 in 13-digit format to meet the 2007 ISBN-13 protocol.
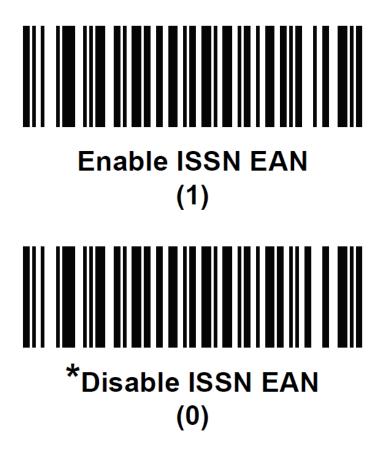
Scan one of the following bar codes to select the Bookland ISBN format. By default, this parameter is set to **Bookland ISBN-10**.



\*Bookland ISBN-10
(0)

**Bookland ISBN-13
(1)**

# ISSN EAN (Parameter #617, SSI #F1h 69h)

Scan one of the following bar codes to enable or disable ISSN EAN. By default, this parameter is set to **Disable**.



**Enable ISSN EAN
(1)**



***Disable ISSN EAN
(0)**

# Decode UPC/EAN/JAN Supplementals (Parameter #16, SSI #10h)

Supplementals are bar codes appended according to specific format conventions (for example, UPC-A+2, UPC-E+2, EAN-13+2). The following options are available:

- **Decode UPC/EAN/JAN with Supplementals Only**—the scanner only decodes UPC/EAN/JAN symbols with supplemental characters and ignores symbols without supplementals.

- **Ignore UPC/EAN/JAN Supplementals**—when presented with a UPC/EAN/JAN plus supplemental symbol, the scanner decodes UPC/EAN/JAN and ignores the supplemental characters.

- **Autodiscriminate UPC/EAN/JAN with Supplementals**—the scanner decodes UPC/EAN/JAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the scanner must decode the bar code the number of times set via **"UPC/EAN/JAN Supplemental Redundancy (Parameter #80, SSI #50h)"** on page 327 before transmitting its data to confirm that there is no supplemental.
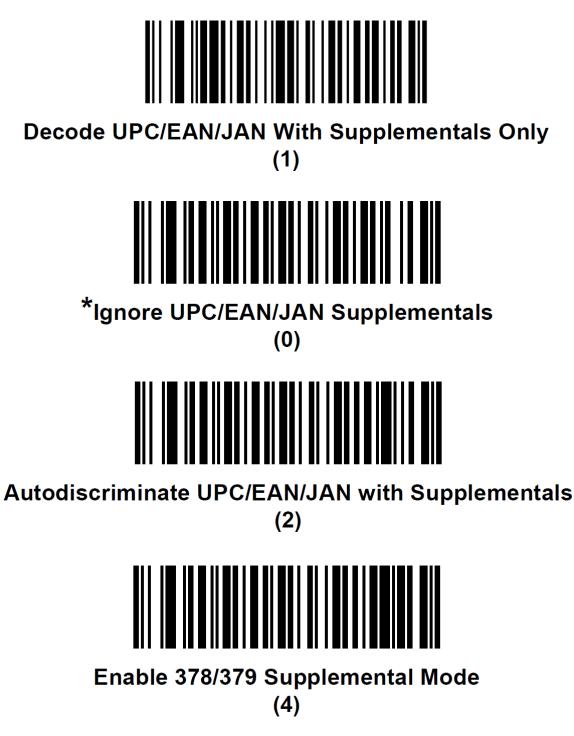
Select one of the following **Supplemental Mode** options to immediately transmit EAN-13 bar codes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the scanner must decode the bar code the number of times set via **"UPC/EAN/JAN Supplemental Redundancy (Parameter #80, SSI #50h)"** on page 327 before transmitting the data to confirm that there is no supplemental. The scanner transmits UPC/EAN/JAN bar codes that do not have that prefix immediately.
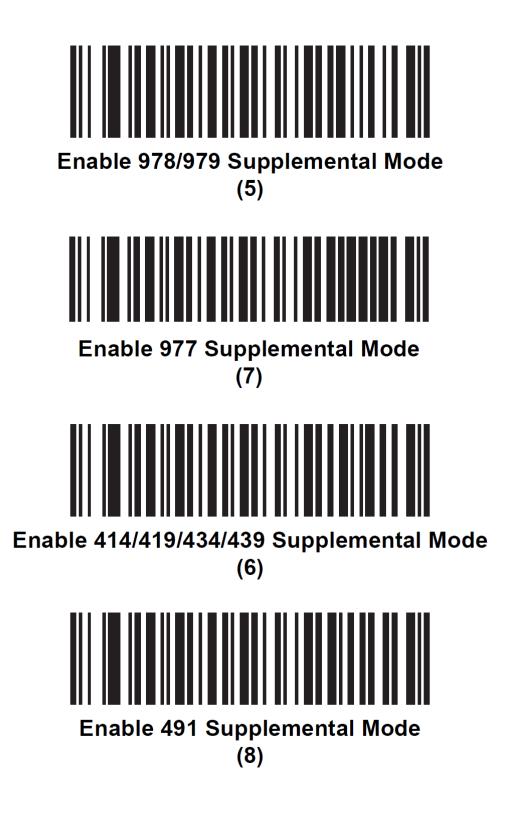
- **Enable 378/379 Supplemental Mode**
- **Enable 978/979 Supplemental Mode**—if the user selects this mode and is scanning Bookland EAN bar codes, refer to **"Bookland EAN (Parameter #83, SSI #53h)"** on page 316 to enable Bookland EAN, and select a format using **"Bookland ISBN Format (Parameter #576, SSI #F1h 40h)"** on page 317.
- **Enable 977 Supplemental Mode**
- **Enable 414/419/434/439 Supplemental Mode**
- **Enable 491 Supplemental Mode**
- **Enable Smart Supplemental Mode**—applies to EAN-13 bar codes starting with any prefix listed previously.
- **Supplemental User Programmable Type 1**—applies to EAN-13 bar codes starting with a 3-digit user-defined prefix. Set this using **"User Programmable Supplementals"** on page 325.
- **Supplemental User Programmable Type 1 and 2**—applies to EAN-13 bar codes starting with either of two 3-digit user-defined prefixes. Set the prefixes using **"User Programmable Supplementals"** on page 325.
- **Smart Supplemental Plus User Programmable 1**—applies to EAN-13 bar codes starting with any prefix listed previously or the prefix set using **"User Programmable Supplementals"** on page 325.
- **Smart Supplemental Plus User Programmable 1 and 2**—applies to EAN-13 bar codes starting with any prefix listed previously or one of the two user-defined prefixes set using **"User Programmable Supplementals"** on page 325.
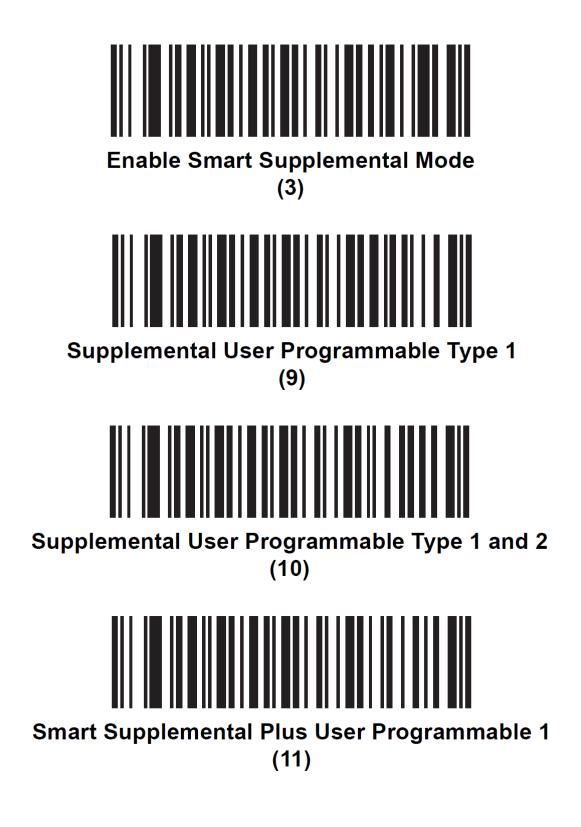
> 📝 **Note**
>
> To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.

Scan one of the following bar codes to set an option for supplementals. By default, this parameter is set to **Ignore UPC/EAN/JAN Supplementals**.

||||||||| ||| || ||||| |||||||||

**Decode UPC/EAN/JAN With Supplementals Only**
**(1)**

||||||||| ||| || ||||| |||||||||

**\*Ignore UPC/EAN/JAN Supplementals**
**(0)**

||||||||| ||| || ||||| |||||||||

**Autodiscriminate UPC/EAN/JAN with Supplementals**
**(2)**

||||||||| ||| || ||||| |||||||||

**Enable 378/379 Supplemental Mode**
**(4)**

**Enable 978/979 Supplemental Mode (5)**

**Enable 977 Supplemental Mode (7)**

**Enable 414/419/434/439 Supplemental Mode (6)**

**Enable 491 Supplemental Mode (8)**

**Enable Smart Supplemental Mode
(3)**



**Supplemental User Programmable Type 1
(9)**



**Supplemental User Programmable Type 1 and 2
(10)**



**Smart Supplemental Plus User Programmable 1
(11)**

## Smart Supplemental Plus User Programmable 1 and 2 (12)

## User Programmable Supplementals

*Supplemental 1: Parameter #579, SSI #F1h 43h*
*Supplemental 2: Parameter# 580, SSI #F1h 44h*

If a Supplemental User Programmable option is selected from **"Decode UPC/EAN/JAN Supplementals (Parameter #16, SSI #10h)"** on page 320, scan **User Programmable Supplemental 1**, and then scan three numeric bar codes from **"Numeric Bar Codes"** on page 542 to set the 3-digit prefix. To set a second 3-digit prefix, scan **User Programmable Supplemental 2**, and then scan again three numeric bar codes. The default is 0 (zero).



**User Programmable Supplemental 1**
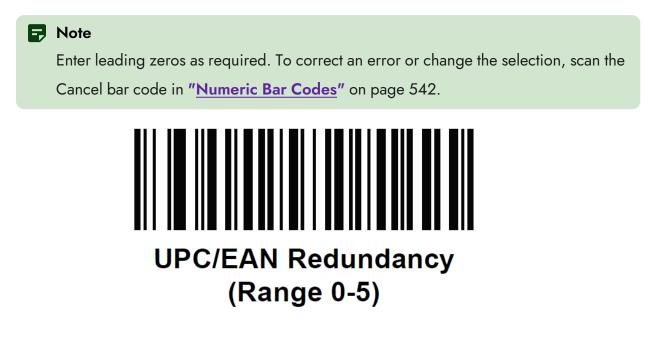


**User Programmable Supplemental 2**

# UPC/EAN Redundancy (Parameter #1225)

This option adjusts the number of additional times to decode a UPC/EAN symbol before decode data is transmitted. The range is from 0 to 5 times. The default is 1.

To set a decode redundancy value, scan the bar code below, and then scan one numeric bar code from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.



**UPC/EAN Redundancy**
**(Range 0-5)**

# UPC/EAN/JAN Supplemental Redundancy (Parameter #80, SSI #50h)

If **Autodiscriminate UPC/EAN/JAN with Supplementals** is selected, this option sets the number of times to decode a symbol without supplementals before transmission. The range is from 2 to 25. Five or above is recommended when decoding a mix of UPC/EAN/JAN symbols with and without supplementals. The default is 10.

To set a redundancy value, scan the bar code below, and then scan two bar codes from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.



**UPC/EAN/JAN Supplemental Redundancy**

# UPC/EAN/JAN Supplemental AIM ID Format (Parameter #672, SSI #F1h A0h)

If **"Transmit Code ID Character (Parameter #45, SSI #2Dh)"** on page 212 is set to **AIM Code ID Character**, this parameter selects an output format when reporting UPC/EAN/JAN bar codes with supplementals.

- **Separate**—transmits UPC/EAN/JAN with supplementals with separate AIM IDs but one transmission.

  > ✏️ **Example**
  > ```
  > ]E<0 or 4><data>]E<1 or 2>[supplemental data]
  > ```
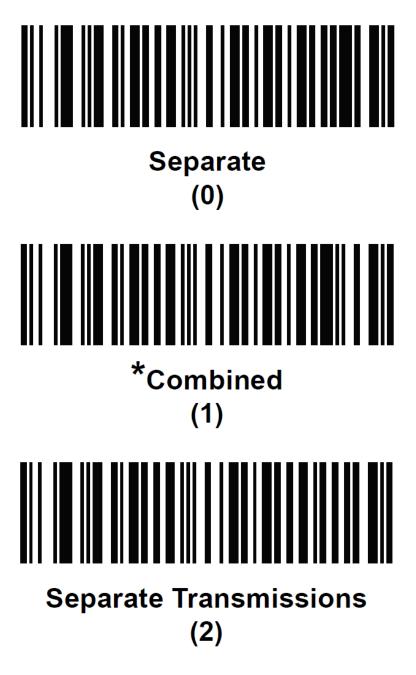
- **Combined**—transmits UPC/EAN/JAN with supplementals with one AIM ID and one transmission, i.e.:

  > ✏️ **Example**
  > ```
  > ]E3<data+supplemental data>
  > ```

- **Separate Transmissions**—transmits UPC/EAN/JAN with supplementals with separate AIM IDs and separate transmissions, i.e.:

  > ✏️ **Example**
  > ```
  > ]E<0 or 4><data>
  > ]E<1 or 2>[supplemental data]
  > ```
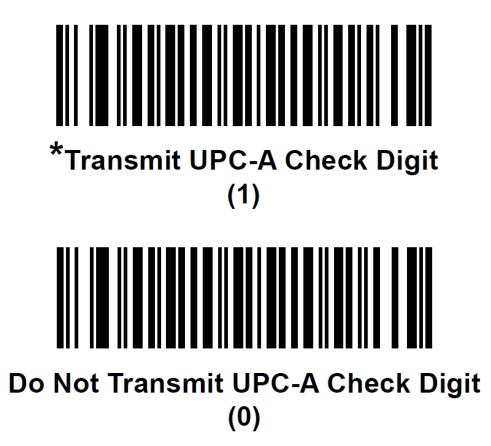
Scan one of the following bar codes to select an output format. By default, this parameter is set to **Combined**.



**Separate**
**(0)**



***Combined**
**(1)**



**Separate Transmissions**
**(2)**

# Transmit UPC-A Check Digit (Parameter #40, SSI #28h)

The check digit is the last character of the symbol used to verify the integrity of the data. This parameter provides options to transmit the bar code data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.
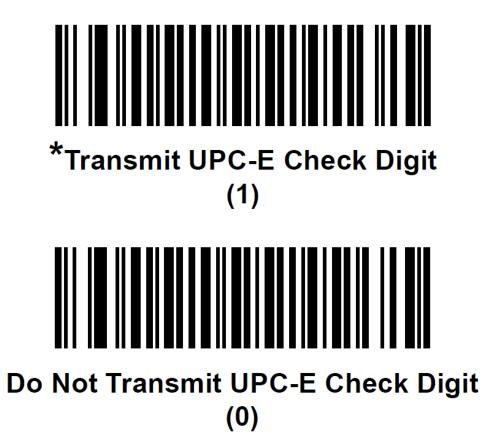
Scan one of the following bar codes to set the transmit option. By default, this parameter is set to **Transmit UPC-A Check Digit**.



**\*Transmit UPC-A Check Digit
(1)**



**Do Not Transmit UPC-A Check Digit
(0)**

# Transmit UPC-E Check Digit (Parameter #41, SSI #29h)

The check digit is the last character of the symbol used to verify the integrity of the data. This parameter provides options to transmit the bar code data with or without the UPC-E check digit. It is always verified to guarantee the integrity of the data.
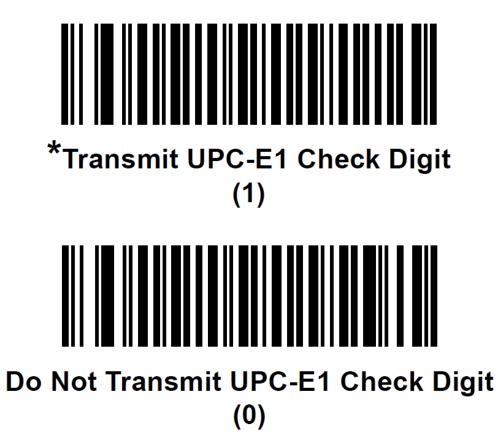
Scan one of the following bar codes to set the transmit option. By default, this parameter is set to **Transmit UPC-E Check Digit**.



**\*Transmit UPC-E Check Digit
(1)**



**Do Not Transmit UPC-E Check Digit
(0)**

# Transmit UPC-E1 Check Digit (Parameter #42, SSI #2Ah)

The check digit is the last character of the symbol used to verify the integrity of the data. This parameter provides options to transmit the bar code data with or without the UPC-E1 check digit. It is always verified to guarantee the integrity of the data.
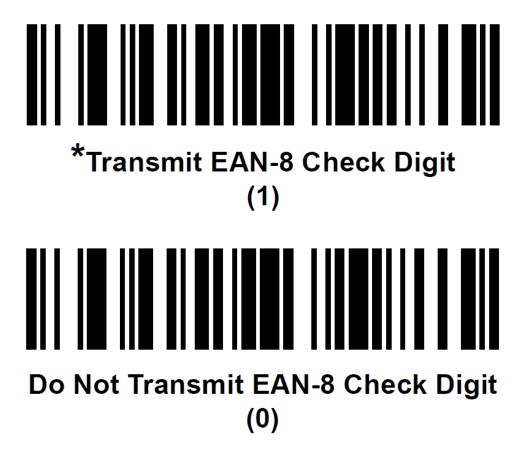
Scan one of the following bar codes to set the transmit option. By default, this parameter is set to **Transmit UPC-E1 Check Digit**.



**\*Transmit UPC-E1 Check Digit
(1)**



**Do Not Transmit UPC-E1 Check Digit
(0)**

# Transmit EAN-8 Check Digit (Parameter #1881, SSI #F8 07 59h)

The check digit is the last character of the symbol used to verify the integrity of the data. This parameter provides options to transmit the bar code data with or without the EAN-8 check digit. It is always verified to guarantee the integrity of the data.
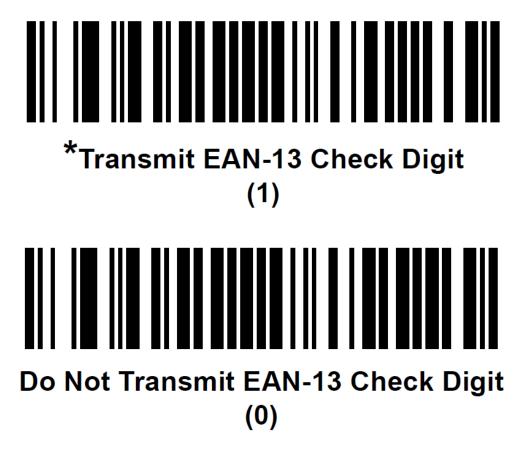
Scan one of the following bar codes to set the transmit option. By default, this parameter is set to **Transmit EAN-8 Check Digit**.



**\*Transmit EAN-8 Check Digit (1)**



**Do Not Transmit EAN-8 Check Digit (0)**

## Transmit EAN-13 Check Digit (Parameter #1882, SSI #F8 07 5Ah)

The check digit is the last character of the symbol used to verify the integrity of the data. This parameter provides options to transmit the bar code data with or without the EAN-13 check digit. It is always verified to guarantee the integrity of the data.

Scan one of the following bar codes to set the transmit option. By default, this parameter is set to **Transmit EAN-13 Check Digit**.



**\*Transmit EAN-13 Check Digit
(1)**



**Do Not Transmit EAN-13 Check Digit
(0)**
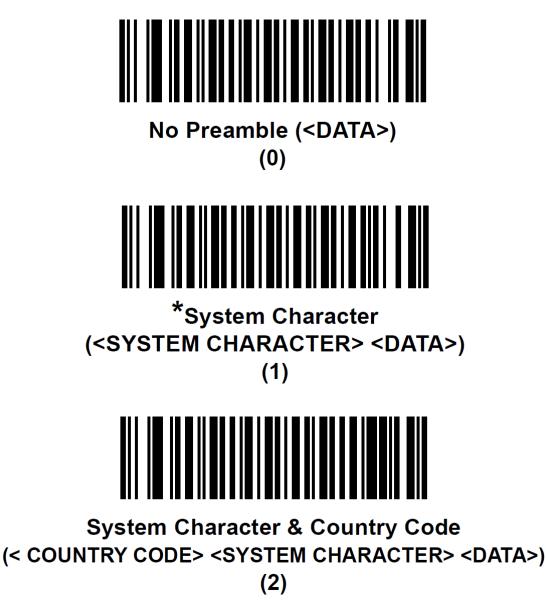
# UPC-A Preamble (Parameter #34, SSI #22h)

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-A preamble to match the host system:

- Transmit System Character only

- Transmit System Character and Country Code ("0" for USA)

- Transmit no preamble.

Scan one of the following bar codes to set the preamble option for UPC-A. By default, this parameter is set to **System Character**.

**No Preamble (<DATA>)**
**(0)**

**\*System Character**
**(<SYSTEM CHARACTER> <DATA>)**
**(1)**

**System Character & Country Code**
**(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)**
**(2)**
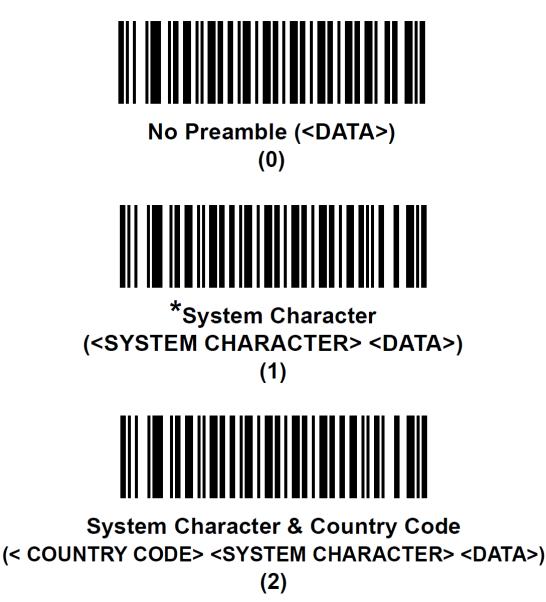
# UPC-E Preamble (Parameter #35, SSI #23h)

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-E preamble to match the host system:

- Transmit System Character only

- Transmit System Character and Country Code ("0" for USA)

- Transmit no preamble.

Scan one of the following bar codes to set the preamble option for UPC-E. By default, this parameter is set to **System Character**.



**No Preamble (<DATA>)**
**(0)**



**\*System Character**
**(<SYSTEM CHARACTER> <DATA>)**
**(1)**



**System Character & Country Code**
**(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)**
**(2)**
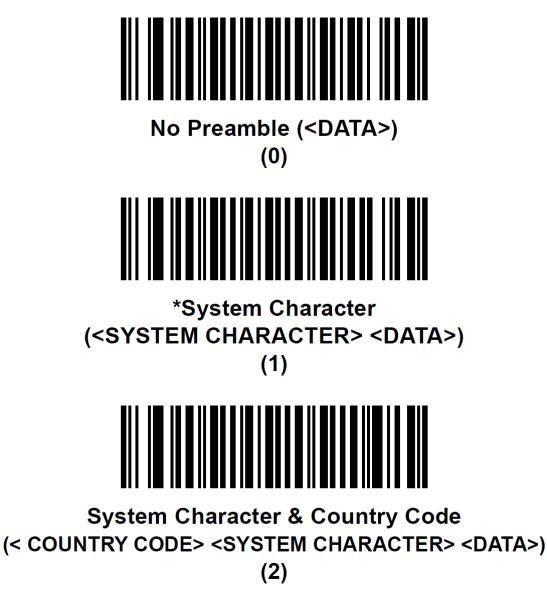
# UPC-E1 Preamble (Parameter #36, SSI #24h)

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-E1 preamble to match the host system:

- Transmit System Character only

- Transmit System Character and Country Code ("0" for USA)

- Transmit no preamble.

Scan one of the following bar codes to set the preamble option for UPC-E1. By default, this parameter is set to **System Character**.



**No Preamble (<DATA>)**
**(0)**



**\*System Character**
**(<SYSTEM CHARACTER> <DATA>)**
**(1)**



**System Character & Country Code**
**(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)**
**(2)**
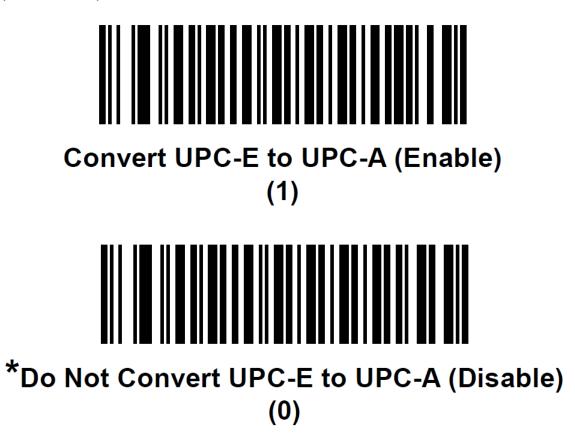
## Convert UPC-E to UPC-A (Parameter #37, SSI #25h)

If enabled, this option converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (for example, Preamble, Check Digit).

If disabled, this option transmits UPC-E decoded data as UPC-E data, without conversion.

Scan one of the following bar codes to enable or disable conversion from UPC-E to UPC-A. By default, this parameter is set to **Disable**.



**Convert UPC-E to UPC-A (Enable)
(1)**



**\*Do Not Convert UPC-E to UPC-A (Disable)
(0)**
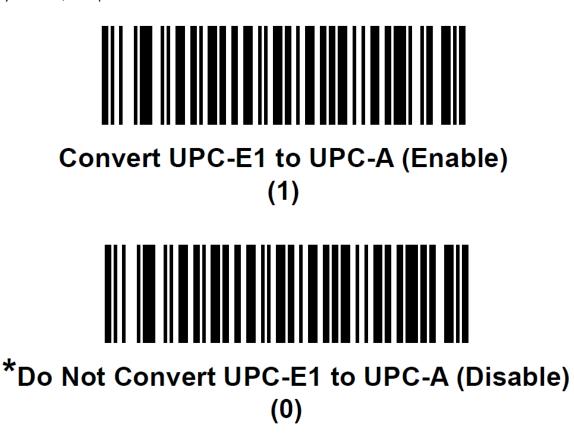
## Convert UPC-E1 to UPC-A (Parameter #38, SSI #26h)

If enabled, this option converts UPC-E1 decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (for example, Preamble, Check Digit).

If disabled, this option transmits UPC-E1 decoded data as UPC-E1 data, without conversion.

Scan one of the following bar codes to enable or disable conversion from UPC-E to UPC-A. By default, this parameter is set to **Disable**.

**Convert UPC-E1 to UPC-A (Enable)**
**(1)**

**\*Do Not Convert UPC-E1 to UPC-A (Disable)**
**(0)**
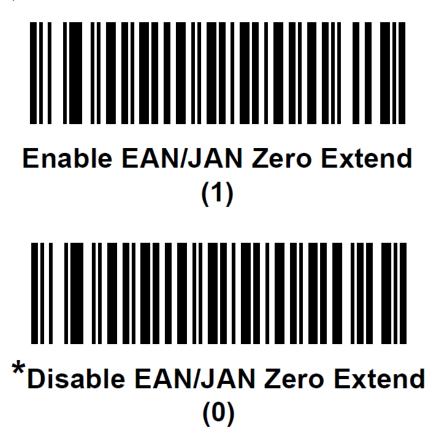
# EAN/JAN Zero Extend (Parameter #39, SSI #27h)

If enabled, this option adds five leading zeros to decoded EAN-8 symbols to make them compatible in length to EAN-13 symbols.
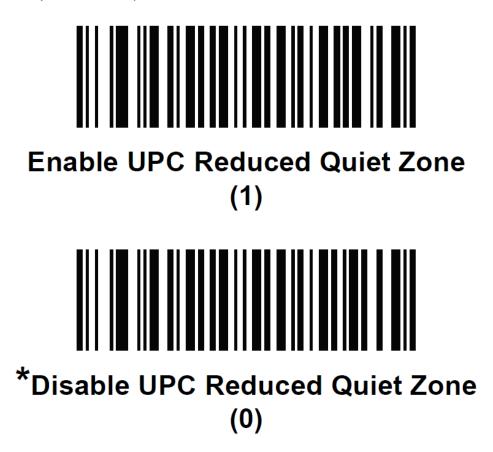
If disabled, this option transmits EAN-8 symbols as is.

Scan one of the following bar codes to enable or disable zero extend for EAN/JAN. By default, this parameter is set to **Disable**.



**Enable EAN/JAN Zero Extend
(1)**



**\*Disable EAN/JAN Zero Extend
(0)**
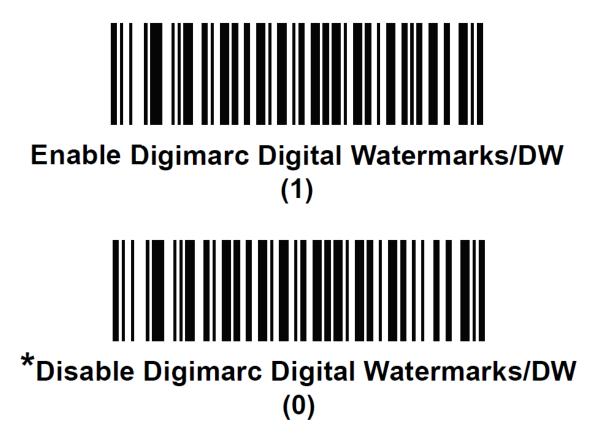
# UPC Reduced Quiet Zone (Parameter #1289, SSI #F8h 05h 09h)

Scan one of the following bar codes to enable or disable decoding UPC bar codes with reduced quiet zones, which is the margins on either side of the bar code. If this option is enabled, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433. By default, this parameter is set to **Disable**.



**Enable UPC Reduced Quiet Zone (1)**



**\*Disable UPC Reduced Quiet Zone (0)**

## Digimarc Digital Watermarks (Parameter #1687, SSI #F8h 06h 97h)

Scan one of the following bar codes to enable or disable the Digimarc Digital Watermarks code. By default, this parameter is set to **Disable**.



**Enable Digimarc Digital Watermarks/DW (1)**



***Disable Digimarc Digital Watermarks/DW (0)**

# UPC/EAN Block Life Span (Parameter #1291, SSI #F8h 05h 08h)

Each UPC/EAN block is tagged with time at which it was decoded. This parameter determines the maximum time difference (in milliseconds) of two UPC/EAN blocks that form a bar code. If the time difference is larger than this threshold, the two blocks are not used to construct a bar code. This threshold is the value of this parameter multiplied by 10 ms. The range is 0 to 50; Byte parameter. The default is 10.

To set a decode redundancy value, scan the bar code below, and then scan two numeric bar code from **"Numeric Bar Codes"** on page 542 that correspond to the preferred value.

> 📝 **Note**
>
> Enter leading zeros as required. To correct an error or change the selection, scan the Cancel bar code in **"Numeric Bar Codes"** on page 542.



**Set UPC/EAN Block Life Span**
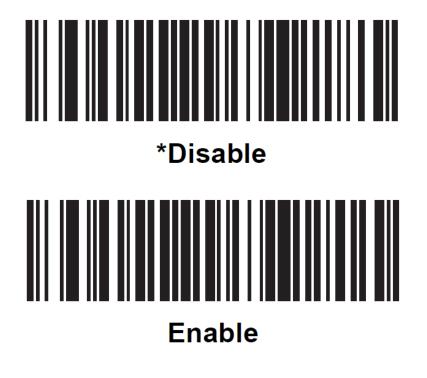
## Decode UPC-A/EAN-13 with Voids (Parameter #1901, SSI #F8h 07h 6Dh)

This option allows the decoding of UPC-A and EAN-13 bar codes that are incorrectly printed where entire columns of dark color can be missing. This is used together with **"Decode UPC-A/EAN-13 with Voids Redundancy (Parameter #1902, SSI #F8h 07h 6Eh)"** on the next page.

Scan one of the following bar codes to enable or disable decoding of UPC-A and EAN-13 bar codes with voids. By default, this parameter is set to **Disable**.



**\*Disable**



**Enable**
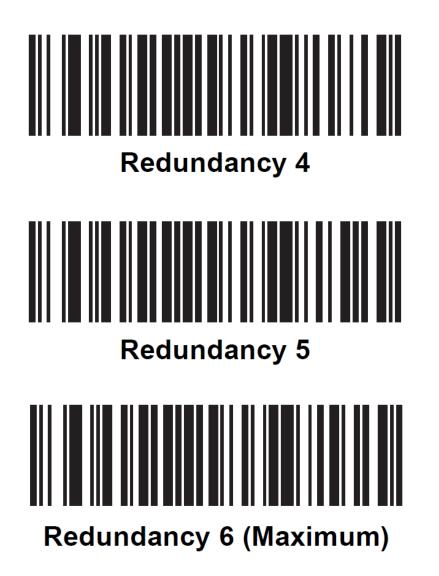
# Decode UPC-A/EAN-13 with Voids Redundancy (Parameter #1902, SSI #F8h 07h 6Eh)

This options increases the redundancy setting when mis-decodes are detected. This is used together with **"Decode UPC-A/EAN-13 with Voids (Parameter #1901, SSI #F8h 07h 6Dh)"** on the previous page.

Scan one of the following bar codes to select the redundancy setting. By default, this parameter is set to **Redundancy Off**.



**\*Redundancy Off**



**Redundancy 2 (Minimum)**



**Redundancy 3**

**Redundancy 4**

**Redundancy 5**

**Redundancy 6 (Maximum)**

# Code 128 (Parameter #8, SSI #08h)

Scan one of the following bar codes to enable or disable Code 128. By default, this parameter is set to **Enable**.



**\* Enable Code 128
(1)**



**Disable Code 128
(0)**

# Set Lengths for Code 128

*L1 = Parameter #209, SSI #D1h*

*L2 = Parameter #210, SSI #D2h*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

The following are length options for Code 128:

- **One Discrete Length**—decodes only Code 128 symbols containing a selected length.

  > ✏️ **Example**
  >
  > To decode only Code 128 symbols with 14 characters, scan **Code 128 - One Discrete Length**, and then scan the numeric bar codes **1** and **4** from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Code 128 symbols containing either of two lengths.

  > ✏️ **Example**
  >
  > To decode only Code 128 symbols containing either 2 or 14 characters, scan Code 128 - Two Discrete Lengths, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Code 128 symbols with a specific length range.

  > ✏️ **Example**
  >
  > To decode only Code 128 symbols containing between 4 and 12 characters, scan Code 128 - Length Within Range, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Code 128 symbols containing any number of characters within the capability of the scanner.

The following are length ranges:

- L1: 0 to 55
- L2: 0 to 55

Scan one of the following bar codes to set the length for Code 128. By default, this parameter is set to **Any Length**.



**Code 128 - One Discrete Length**



**Code 128 - Two Discrete Lengths**



**Code 128 - Length Within Range**



**\*Code 128 - Any Length**

## GS1-128 (formerly UCC/EAN-128) (Parameter #14, SSI #0Eh)
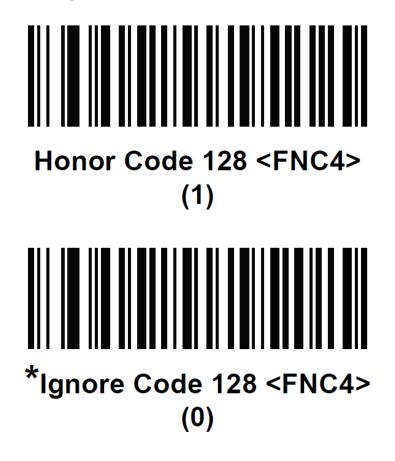
Scan one of the following bar codes to enable or disable GS1-128. By default, this parameter is set to **Disable**.



**Enable GS1-128**
**(1)**



**\*Disable GS1-128**
**(0)**

# Code 128 <FNC4> (Parameter #1254, SSI #F8h 04h E6h)

This feature applies to Code 128 bar codes with an embedded <FNC4> character. When enabled, the <FNC4> character is stripped from the decode data. The remaining characters are sent to the host unchanged. When disabled, the <FNC4> character is processed normally based on Code 128 standard.

Scan one of the following bar codes to honor or ignore the <FNC4> character. By default, this parameter is set to **Ignore**.



**Honor Code 128 <FNC4>**
**(1)**



***Ignore Code 128 <FNC4>**
**(0)**

# Code 128 Security Level (Parameter #751, SSI #F1h EFh)
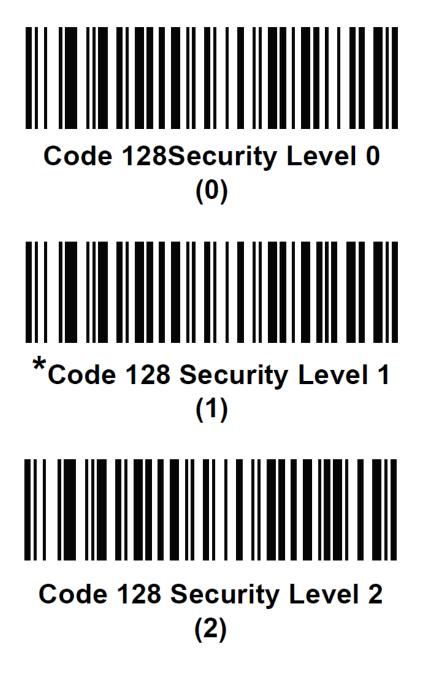
Code 128 bar codes are vulnerable to mis-decodes, particularly when Code 128 Lengths is set to **Any Length**. The scanner offers four levels of decode security for Code 128 bar codes. There is an inverse relationship between security and scanner aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Code 128 Security Level 0**—allows the scanner to operate in its most aggressive state, while providing sufficient security in decoding most in-spec bar codes.
- **Code 128 Security Level 1**—eliminates most mis-decodes while maintaining reasonable aggressiveness.
- **Code 128 Security Level 2**—applies greater bar code security requirements if Security Level 1 fails to eliminate mis-decodes.
- **Code 128 Security Level 3**—if Security Level 2 is selected and mis-decodes still occur, select this security level to apply the highest safety requirements.

> ❗ **Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes, and significantly impairs the decoding ability of the scanner. If this level of security is required, try to improve the quality of the bar codes.

Scan one of the following bar codes to set the Code 128 security level. By default, this parameter is set to **Level 1**.



Code 128Security Level 0
(0)



*Code 128 Security Level 1
(1)



Code 128 Security Level 2
(2)

# Code 128 Security Level 3 (3)

# Code 128 Stitching (Parameter #72, SSI #72 48h)

Enabling this parameter is helpful for decoding longer bar codes.

Scan one of the following bar codes to enable or disable Code 128 stitching. By default, this parameter is set to **Disable**.



**Enable Code 128 Stitching**



***Disable Code 128 Stitching**
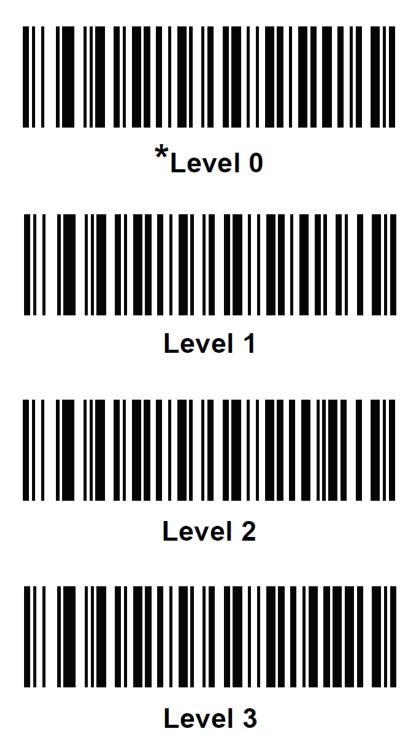
# Code 128 Stitching Security Level (Parameter #1205, SSI #F8h 04h B5h)

This parameter sets the security level for Code 128 bar codes. Select increasing levels of security for decreasing levels of bar code quality. There is an inverse relationship between security and digital scanner aggressiveness, so choose only that level of security necessary for any given application.

- **Security Level 0**—allows the digital scanner to operate in its most aggressive state, while providing sufficient security in decoding most "in-spec" bar codes.
- **Security Level 1**—eliminates most mis-decodes.
- **Security Level 2**—applies greater bar code security requirements if Security Level 1 fails to eliminate mis-decodes.
- **Security Level 3**—select this option if Security Level 2 is selected but mis-decodes still occur.

> **❗ Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes. Selecting this level of security significantly impairs the decoding ability of the digital scanner. If this level of security is needed, try to improve the quality of the bar codes.
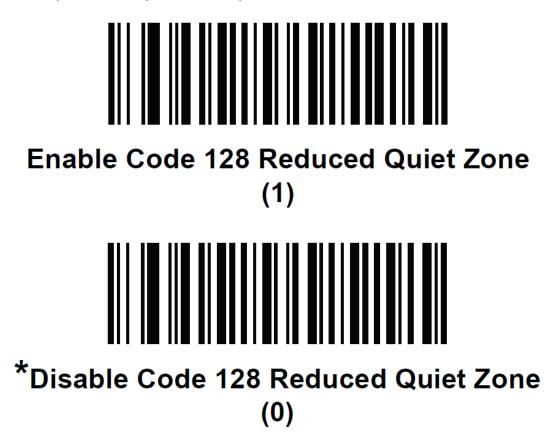
Scan one of the following bar codes to set the Code 128 stitching security level. By default, this parameter is set to **Level 0**.



*Level 0



Level 1



Level 2



Level 3

## Code 128 Reduced Quiet Zone (Parameter #1208, SSI #F8h 04h B8h)

If enabled, this parameter decodes Code 128 bar codes with reduced quiet zones (the margins on either side of the bar code). After enabling, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433.

Scan one of the following bar codes to enable or disable decoding Code 128 bar codes with reduced quiet zones. By default, this parameter is set to **Disable**.



**Enable Code 128 Reduced Quiet Zone (1)**



**\*Disable Code 128 Reduced Quiet Zone (0)**
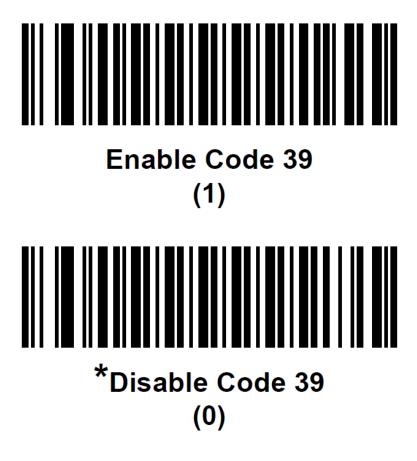
# Code 39 (Parameter #0, SSI #00h)

> 📝 **Note**
>
> Because Code 39 is a variable length bar code without a checking character, stitching might yield a mis-decode, especially when encoded content has repeat patterns or characters. It is recommended to limit the decode length range as much as possible when stitching is enabled. This is accomplished by setting lengths for Code 39 one or two discrete lengths.
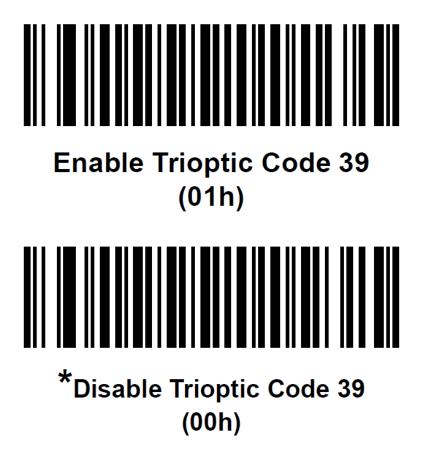
Scan one of the following bar codes to enable or disable Code 39. By default, this parameter is set to **Disable**.



**Enable Code 39
(1)**



***Disable Code 39
(0)**

# Trioptic Code 39 (Parameter #13, SSI #0Dh)

Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. Trioptic Code 39 symbols always contain six characters.

Scan one of the following bar codes to enable or disable Trioptic Code 39. By default, this parameter is set to **Disable**.



**Enable Trioptic Code 39
(01h)**



**\*Disable Trioptic Code 39
(00h)**
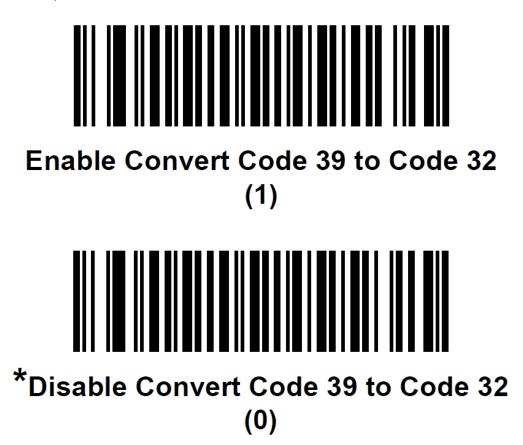
## Convert Code 39 to Code 32 (Parameter #86, SSI #56h)

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry.

> **📝 Note**
>
> Code 39 must be enabled for this parameter to function.

Scan one of the following bar codes to enable or disable converting Code 39 to Code 32. By default, this parameter is set to **Disable**.



**Enable Convert Code 39 to Code 32 (1)**



**\*Disable Convert Code 39 to Code 32 (0)**
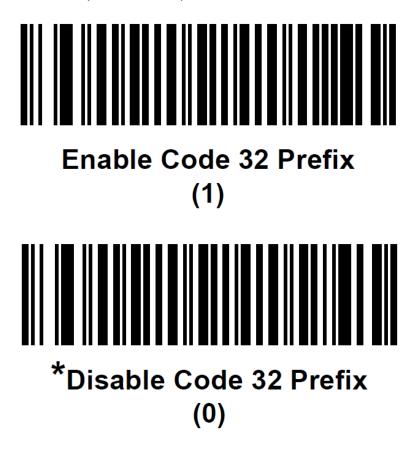
# Code 32 Prefix (Parameter #231, SSI #E7h)

> 📝 **Note**
>
> Convert Code 39 to Code 32 must be enabled for this parameter to function.

Scan one of the following bar codes to enable or disable adding the prefix character "A" to all Code 32 bar codes. By default, this parameter is set to **Disable**.



**Enable Code 32 Prefix**
**(1)**



***Disable Code 32 Prefix**
**(0)**

# Set Lengths for Code 39

*L1 = Parameter #18, SSI #12h*
*L2 = Parameter #19, SSI #13h*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

The following are length options for Code 39:

- **One Discrete Length**—decodes only Code 39 symbols containing a selected length.

  > ✏️ **Example**
  >
  > To decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, and then scan the numeric bar codes 1 and 4 from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Code 39 symbols containing either of two lengths.

  > ✏️ **Example**
  >
  > To decode only Code 39 symbols containing either 2 or 14 characters, scan **Code 39 - Two Discrete Lengths**, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Code 39 symbols with a specific length range (2 to 55).

  > 🗒️ **Note**
  >
  > To decode only Code 39 symbols containing between 4 and 12 characters, scan **Code 39 - Length Within Range**, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Code 39 symbols containing any number of characters within the capability of the scanner.

The following are length ranges:

- L1: 0 to 80
- L2: 0 to 80

Scan one of the following bar codes to set the length for Code 39. By default, this parameter is set to **Length Within Range**.



**Code 39 - One Discrete Length**



**Code 39 - Two Discrete Lengths**



**\*Code 39 - Length Within Range**
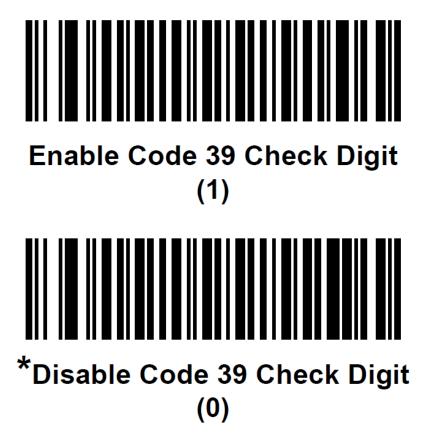
## Code 39 - Any Length

# Code 39 Check Digit Verification (Parameter #48, SSI #30h)

This parameter checks the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only Code 39 symbols which include a Modulo 43 check digit are decoded. Enable this feature if the Code 39 symbols contain a Modulo 43 check digit.

Scan one of the following bar codes to enable or disable verification of Code 39 check digit. By default, this parameter is set to **Disable**.



**Enable Code 39 Check Digit (1)**



*****Disable Code 39 Check Digit (0)**

# Transmit Code 39 Check Digit (Parameter #43, SSI #2Bh)

> 📝 **Note**
>
> Code 39 Check Digit Verification must be enabled for this parameter to function.

Scan one of the following bar codes to transmit Code 39 data with or without the check digit. By default, this parameter is set to **Disable**.



**Transmit Code 39 Check Digit (Enable) (1)**



***Do Not Transmit Code 39 Check Digit (Disable) (0)**

# Code 39 Full ASCII Conversion (Parameter #17, SSI #11h)
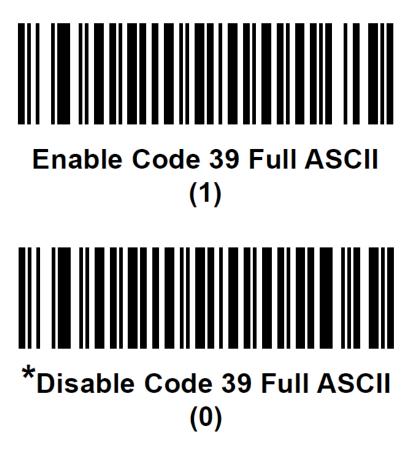
Code 39 Full ASCII is a variant of Code 39 that pairs characters to encode the full ASCII character set.

Code 39 Full ASCII to Full ASCII Correlation is host-dependent, and is therefore described in the ASCII character set table for the appropriate interface. For more information, refer to **"ASCII Character Set"** on page 581.

> 📝 **Note**
>
> Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously.

Scan one of the following bar codes to enable or disable Code 39 Full ASCII. By default, this parameter is set to **Disable**.



**Enable Code 39 Full ASCII
(1)**



**\*Disable Code 39 Full ASCII
(0)**

# Code 39 Security Level (Parameter #750, SSI #F1h EEh
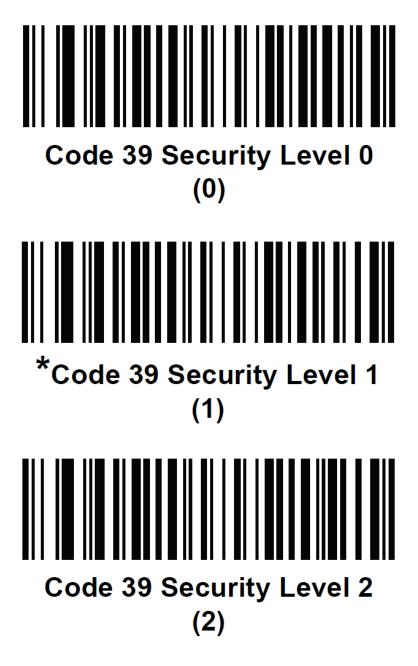
The scanner offers four levels of decode security for Code 39 bar codes. There is an inverse relationship between security and scanner aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Code 39 Security Level 0**—allows the scanner to operate in its most aggressive state, while providing sufficient security in decoding most in-spec bar codes.

- **Code 39 Security Level 1**—eliminates most mis-decodes while maintaining reasonable aggressiveness.

- **Code 39 Security Level 2**—applies greater bar code security requirements if Security Level 1 fails to eliminate mis-decodes.

- **Code 39 Security Level 3**—if Security Level 2 is selected and mis-decodes still occur, select this security level to apply the highest safety requirements.

> ❗ **Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes, and significantly impairs the decoding ability of the scanner. If this level of security is required, try to improve the quality of the bar codes.

Scan one of the following bar codes to set the Code 39 security level. By default, this parameter is set to **Level 1**.



**Code 39 Security Level 0
(0)**



***Code 39 Security Level 1
(1)**



**Code 39 Security Level 2
(2)**

**Code 39 Security Level 3 (3)**

# Code 39 Stitching (Parameter #70, SSI #46h)

Enabling this parameter is helpful for decoding longer bar codes.

> 📝 **Note**
>
> Because Code 39 is a variable length bar code without a checking character, stitching might yield a mis-decode, especially when encoded content has repeat patterns or characters. It is recommended to limit the decode length range as much as possible when stitching is enabled. This is accomplished by setting lengths for Code 39 one or two discrete lengths. For more information, refer to **"Set Lengths for Code 39"** on page 363.

Scan one of the following bar codes to enable or disable Code 39 stitching. By default, this parameter is set to **Disable**.



**Enable Code 39 Stitching**



*Disable Code 39 Stitching

# Code 39 Stitching Security Level (Parameter #1206, SSI #F8h 04h B6h)

This parameter sets the security level for Code 39 bar codes. Select increasing levels of security for decreasing levels of bar code quality. There is an inverse relationship between security and digital scanner aggressiveness, so choose only that level of security necessary for any given application.
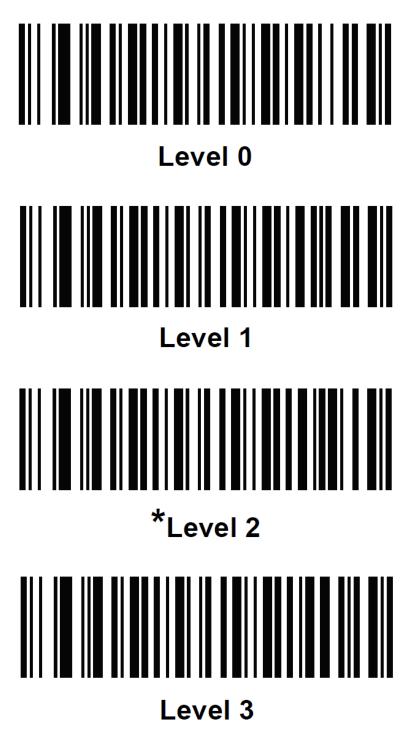
For fastest and most secure decoding, it is recommended to limit bar code lengths to one or two discrete values, especially valid for symbols with no check sum.

- **Security Level 0**—allows the digital scanner to operate in its most aggressive state, while providing sufficient security in decoding most "in-spec" bar codes.
- **Security Level 1**—eliminates some mis-decodes. This level is less aggressive but has more secure decoding than Level 0.
- **Security Level 2**—eliminates most mis-decodes. This level ia more secure than Level 1 but is slightly less aggressive.
- **Security Level 3**—allows secure decoding for bar codes with a physical length less than 4 inches at any orientation. For bar codes without check sum, limiting the length is highly recommended to minimize the possibility of a short read. If Security Level 2 does not eliminate mis-decodes, select this security level.

> **! Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes. Selecting this level of security significantly impairs the decoding ability of the digital scanner. If this level of security is needed, try to improve the quality of the bar codes.

Scan one of the following bar codes to set the Code 128 stitching security level. By default, this parameter is set to **Level 2**.



Level 0



Level 1



*Level 2



Level 3
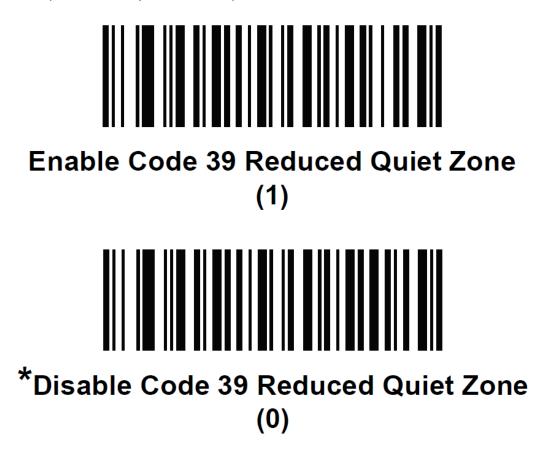
## Code 39 Reduced Quiet Zone (Parameter #1209, SSI #F8h 04h B9h)
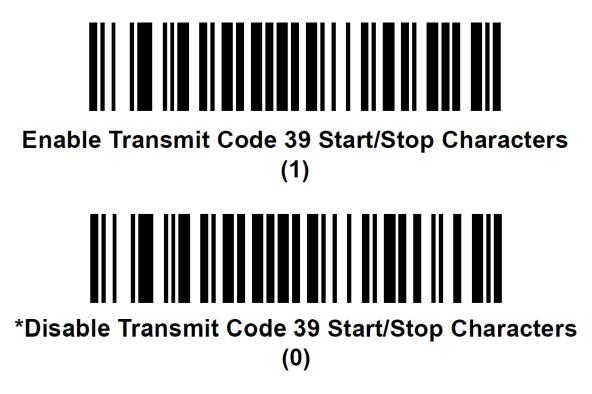
If enabled, this parameter decodes Code 39 bar codes with reduced quiet zones (the margins on either side of the bar code). After enabling, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433.

Scan one of the following bar codes to enable or disable decoding Code 39 bar codes with reduced quiet zones. By default, this parameter is set to **Disable**.



**Enable Code 39 Reduced Quiet Zone (1)**



**\*Disable Code 39 Reduced Quiet Zone (0)**
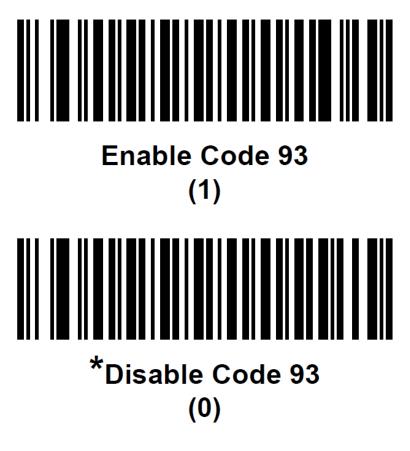
# Transmit Code 39 Start/Stop Characters (Parameter #1900, SSI #F8 07 6Ch)

Scan one of the following bar codes to select whether to transmit Code 39 start/stop characters. By default, this parameter is set to **Disable**.



**Enable Transmit Code 39 Start/Stop Characters (1)**



**\*Disable Transmit Code 39 Start/Stop Characters (0)**

# Code 93 (Parameter #9, SSI #09h)

Scan one of the following bar codes to enable or disable Code 93. By default, this parameter is set to **Disable**.



**Enable Code 93**
**(1)**



***Disable Code 93**
**(0)**

# Set Lengths for Code 93

*L1 = Parameter #26, SSI #1Ah*
*L2 = Parameter #27, SSI #1Bh*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

The following are length options for Code 93:

- **One Discrete Length**—decodes only Code 93 symbols containing a selected length.

    > ✏️ **Example**
    >
    > To decode only Code 93 symbols with 14 characters, scan **Code 93 - One Discrete Length**, and then scan the numeric bar codes **1** and **4** from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Code 93 symbols containing either of two lengths.

    > ✏️ **Example**
    >
    > To decode only Code 93 symbols containing either 2 or 14 characters, scan **Code 93 - Two Discrete Lengths**, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Code 93 symbols with a specific length range (4 to 55).

    > ✏️ **Example**
    >
    > To decode only Code 93 symbols containing between 4 and 12 characters, scan **Code 93 - Length Within Range**, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Code 93 symbols containing any number of characters within the capability of the scanner.
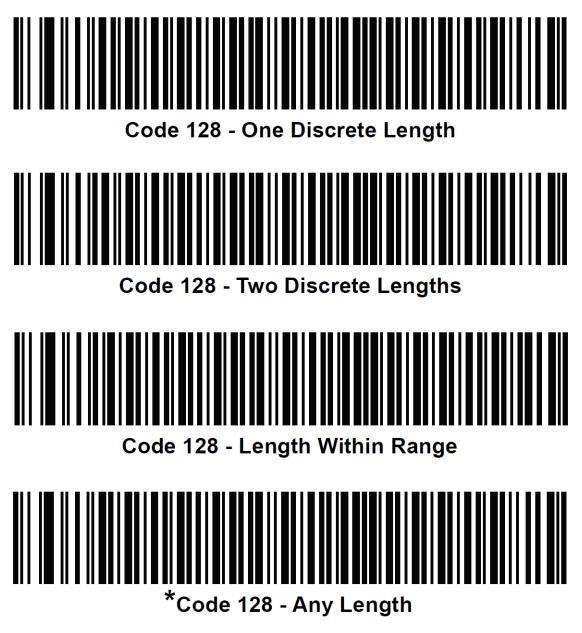
The following are length ranges:

- L1: 0 to 80
- L2: 0 to 80
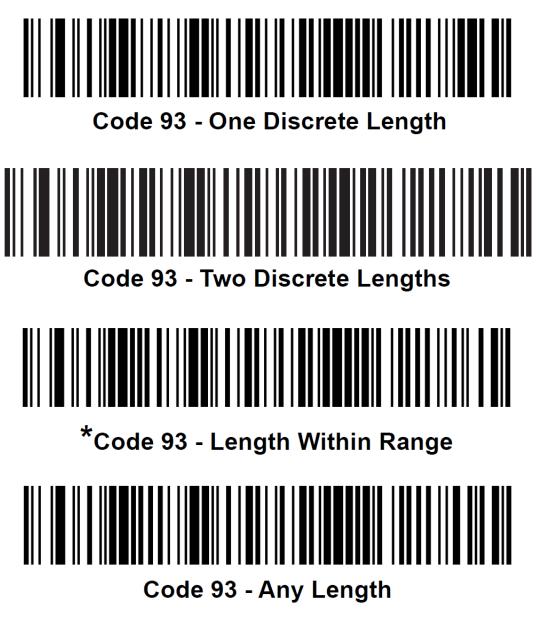
Scan one of the following bar codes to set the length for Code 93. By default, this parameter is set to **Length Within Range**.

**Code 93 - One Discrete Length**

**Code 93 - Two Discrete Lengths**

**\*Code 93 - Length Within Range**

**Code 93 - Any Length**

## Code 93 Stitching (Parameter #1224, SSI #F8h 04h C8h)

Enabling this parameter is helpful for decoding longer bar codes.

Scan one of the following bar codes to enable or disable Code 93 stitching. By default, this parameter is set to **Disable**.



**Enable Code 93 Stitching**



**\*Disable Code 93 Stitching**

# Code 93 Reduced Quiet Zone (Parameter #1223, SSI #F8h 04h C7h)

If enabled, this parameter decodes Code 93 bar codes with reduced quiet zones (the margins on either side of the bar code). After enabling, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433.

Scan one of the following bar codes to enable or disable decoding Code 93 bar codes with reduced quiet zones. By default, this parameter is set to **Disable**.



**Enable Code 93 Reduced Quiet Zone**



**\*Disable Code 93 Reduced Quiet Zone**

# Interleaved 2 of 5 (ITF) (Parameter #6, SSI #06h)

Scan one of the following bar codes to enable or disable Interleaved 2 of 5. By default, this parameter is set to **Disable**.

**Enable Interleaved 2 of 5
(1)**

**\*Disable Interleaved 2 of 5
(0)**

# Set Lengths for Interleaved 2 of 5

*L1 = Parameter #22, SSI #16h*
*L2 = Parameter #23, SSI #17h*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

> 🗒 **Note**
>
> Due to the construction of the Interleaved 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (Interleaved 2 of 5 - One Discrete Length, Two Discrete Lengths) for Interleaved 2 of 5 applications, or increase the Interleaved 2 of 5 Security Level. For more information, refer to **"Interleaved 2 of 5 Security Level (Parameter #1121, SSI #F8h 04h 61h)"** on page 389.

The following are length options for Interleaved 2 of 5:

- **One Discrete Length**—decodes only Interleaved 2 of 5 symbols containing a selected length (14).

  > ✏ **Example**
  >
  > To decode only Interleaved 2 of 5 symbols with 14 characters, scan **Interleaved 2 of 5 - One Discrete Length**, and then scan the numeric bar codes **1** and **4** from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Interleaved 2 of 5 symbols containing either of two lengths.

  > ✏ **Example**
  >
  > To decode only Interleaved 2 of 5 symbols containing either 2 or 14 characters, scan **Interleaved 2 of 5 - Two Discrete Lengths**, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Interleaved 2 of 5 symbols with a specific length range.

> ✏️ **Example**
>
> To decode only Interleaved 2 of 5 symbols containing between 4 and 12 characters, scan **Interleaved 2 of 5 - Length Within Range**, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Interleaved 2 of 5 symbols containing any number of characters within the capability of the scanner.

> 📝 **Note**
>
> Enter a leading zero for single-digit numbers. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.

The following are length ranges:

- L1: 0 to 55
- L2: 0 to 55

Scan one of the following bar codes to set the length for Interleaved 2 of 5. By default, this parameter is set to **One Discrete Length**.



**\*Interleaved 2 of 5 - One Discrete Length**



**Interleaved 2 of 5 - Two Discrete Lengths**



**Interleaved 2 of 5 - Length Within Range**



**Interleaved 2 of 5 - Any Length**

# Interleaved 2 of 5 Check Digit Verification (Parameter #49, SSI #31h)

This parameter checks the integrity of all Interleaved 2 of 5 symbols to verify that the data complies with either the specified Uniform Symbology Specification (USS) or the Optical Product Code Council (OPCC) check digit algorithm.

Scan one of the following bar codes to set the Code 39 check digit verification. By default, this parameter is set to **Disable**.



**\*Disable
(0)**



**USS Check Digit
(1)**



**OPCC Check Digit
(2)**

# Transmit Interleaved 2 of 5 Check Digit ( Parameter #44, SSI #2Ch)

Scan one of the following bar codes to transmit Interleaved 2 of 5 data with or without the check digit. By default, this parameter is set to **Disable**.



**Transmit Interleaved 2 of 5 Check Digit (Enable)
(1)**



**Transmit Interleaved 2 of 5 Check Digit (Enable)
(1)**
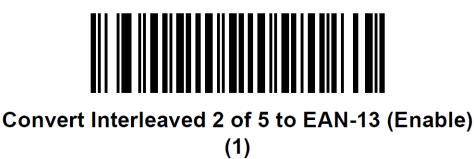
# Convert Interleaved 2 of 5 to EAN-13 (Parameter #82, SSI #52h)

This parameter converts 14-character Interleaved 2 of 5 codes to EAN-13, and transmit to the host as EAN-13.

> 📝 **Note**
>
> For this parameter to function, the Interleaved 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.

Scan one of the following bar codes to enable or disable converting Interleaved 2 of 5 to EAN-13. By default, this parameter is set to **Disable**.



**Convert Interleaved 2 of 5 to EAN-13 (Enable)**
**(1)**



***Do Not Convert Interleaved 2 of 5 to EAN-13 (Disable)**
**(0)**

# Interleaved 2 of 5 Security Level (Parameter #1121, SSI #F8h 04h 61h)

Interleaved 2 of 5 bar codes are vulnerable to mis-decodes, particularly when Interleaved 2 of 5 Lengths is set to **Any Length**. The scanner offers four levels of decode security for Interleaved 2 of 5 bar codes. There is an inverse relationship between security and scanner aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Interleaved 2 of 5 Security Level 0**—allows the scanner to operate in its most aggressive state, while providing sufficient security in decoding most in-spec bar codes.

- **Interleaved 2 of 5 Security Level 1**—eliminates most mis-decodes. A bar code must be successfully read twice, and satisfy certain safety requirements before being decoded.

- **Interleaved 2 of 5 Security Level 2**—applies greater bar code security requirements if Security Level 1 fails to eliminate mis-decodes.

- **Interleaved 2 of 5 Security Level 3**—if Security Level 2 is selected and mis-decodes still occur, select this security level to apply the highest safety requirements. A bar code must be successfully read three times before being decoded.

> **❗ Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes, and significantly impairs the decoding ability of the scanner. If this level of security is required, try to improve the quality of the bar codes.

Scan one of the following bar codes to set the Interleaved 2 of 5 security level. By default, this parameter is set to **Level 1**.



**Interleaved 2 of 5 Security Level 0
(0)**



***Interleaved 2 of 5 Security Level 1
(1)**



**Interleaved 2 of 5 Security Level 2
(2)**

# Interleaved 2 of 5 Security Level 3 (3)

# Interleaved 2 of 5 Stitching (Parameter #72, SSI #72 48h)

Enabling this parameter is helpful for decoding longer bar codes.

Scan one of the following bar codes to enable or disable Interleaved 2 of 5 stitching. By default, this parameter is set to **Disable**.



**Enable Interleaved 2 of 5 Stitching**



**\*Disable Interleaved 2 of 5 Stitching**

# Interleaved 2 of 5 Reduced Quiet Zone (Parameter #1210, SSI #F8h 04h BAh)

If enabled, this parameter decodes Interleaved 2 of 5 bar codes with reduced quiet zones (the margins on either side of the bar code). After enabling, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433.

Scan one of the following bar codes to enable or disable decoding Interleaved 2 of 5 bar codes with reduced quiet zones. By default, this parameter is set to **Disable**.



**Enable Interleaved 2 of 5 Reduced Quiet Zone (1)**



**\*Disable Interleaved 2 of 5 Reduced Quiet Zone (0)**

# Discrete 2 of 5 (DTF) (Parameter #5, SSI #05h)

Scan one of the following bar codes to enable or disable Discrete 2 of 5. By default, this parameter is set to **Disable**.

Enable Discrete 2 of 5
(1)

*Disable Discrete 2 of 5
(0)

# Set Lengths for Discrete 2 of 5

*L1 = Parameter #20, SSI #14h*
*L2 = Parameter #21, SSI #15h*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

> 📝 **Note**
>
> Due to the construction of the Discrete 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (Discrete 2 of 5 - One Discrete Length, Two Discrete Lengths) for Discrete 2 of 5 applications.

The following are length options for Discrete 2 of 5:

- **One Discrete Length**—decodes only Discrete 2 of 5 symbols containing a selected length (12).

  > ✏️ **Example**
  >
  > To decode only Discrete 2 of 5 symbols with 14 characters, scan
  > **Discrete 2 of 5 - One Discrete Length**, and then scan the numeric bar codes
  > **1** and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Discrete 2 of 5 symbols with a specific length range.

  > ✏️ **Example**
  >
  > To decode only Discrete 2 of 5 symbols containing between 4 and 12 characters, scan **Discrete 2 of 5 - Length Within Range**, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Discrete 2 of 5 symbols containing either of two lengths.

> ✏️ **Example**
>
> To decode only Discrete 2 of 5 symbols containing either 2 or 14 characters, scan **Discrete 2 of 5 - Two Discrete Lengths**, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Discrete 2 of 5 symbols containing any number of characters within the capability of the scanner.

> 📑 **Note**
>
> Enter a leading zero for single-digit numbers. To correct an error or change the selection, scan the **Cancel** bar code in **"Numeric Bar Codes"** on page 542.

The following are length ranges:

- L1: 0 to 55
- L2: 0 to 55
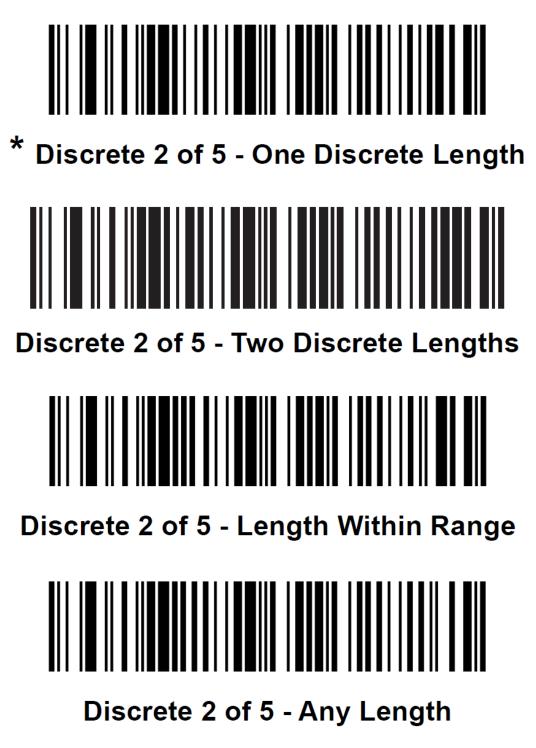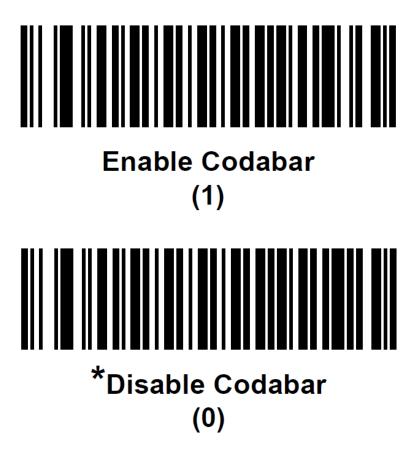
Scan one of the following bar codes to set the length for Discrete 2 of 5. By default, this parameter is set to **One Discrete Length**.



**\* Discrete 2 of 5 - One Discrete Length**



**Discrete 2 of 5 - Two Discrete Lengths**



**Discrete 2 of 5 - Length Within Range**



**Discrete 2 of 5 - Any Length**

# Codabar (NW - 7) (Parameter #7, SSI #07h)

Scan one of the following bar codes to enable or disable Codabar. By default, this parameter is set to **Disable**.



**Enable Codabar
(1)**



***Disable Codabar
(0)**

# Set Lengths for Codabar

*L1 = Parameter #24, SSI #18h*
*L2 = Parameter #25, SSI #19h*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

The following are length options for Codabar:

- **One Discrete Length**—decodes only Codabar symbols containing a selected length.

  > ✏️ **Example**
  >
  > To decode only Codabar symbols with 14 characters, scan Codabar - One Discrete Length, and then scan the numeric bar codes 1 and 4 from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only Codabar symbols containing either of two lengths.

  > ✏️ **Example**
  >
  > To decode only Codabar symbols containing either 2 or 14 characters, scan Codabar - Two Discrete Lengths, and then scan the numeric bar codes 0, 2, 1, and 4 from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only Codabar symbols with a specific length range (5 to 55).

  > 🗒️ **Note**
  >
  > To decode only Codabar symbols containing between 4 and 12 characters, scan Codabar - Length Within Range, and then scan the numeric bar codes **0**, **4**, **1**, and **2** from **"Numeric Bar Codes"** on page 542.

- **Any Length**—decodes only Codabar symbols containing any number of characters within the capability of the scanner.

The following are length ranges:

- L1: 0 to 80
- L2: 0 to 80
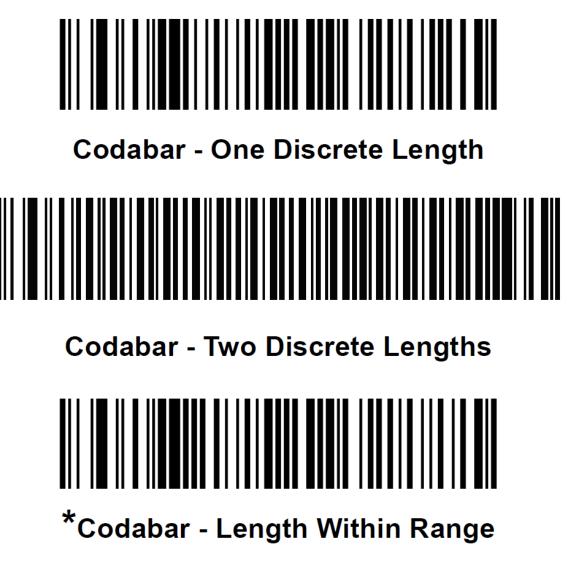
Scan one of the following bar codes to set the length for Codabar. By default, this parameter is set to **Length Within Range**.



**Codabar - One Discrete Length**



**Codabar - Two Discrete Lengths**



***Codabar - Length Within Range**

## Codabar - Any Length

# CLSI Editing ( Parameter #54, SSI #36h)

This parameter strips the start and stop characters and insert a space after the first, fifth, and tenth characters of a 14-character Codabar symbol if the host system requires this data format.

> 📝 **Note**
>
> Symbol length does not include start and stop characters.
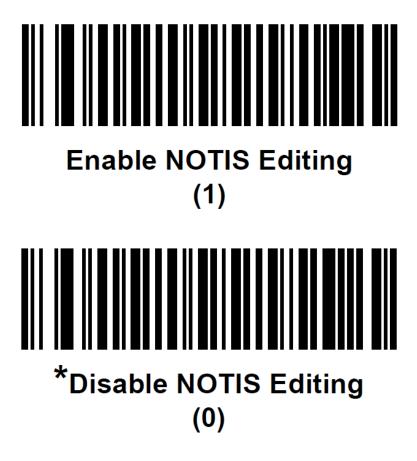
Scan one of the following bar codes to enable or disable CLSI editing. By default, this parameter is set to **Disable**.

**Enable CLSI Editing
(1)**

**\*Disable CLSI Editing
(0)**

# NOTIS Editing ( Parameter #55, SSI #37h)

This parameter strips the start and stop characters from a decoded Codabar symbol if the host system requires this data format.

Scan one of the following bar codes to enable or disable NOTIS editing. By default, this parameter is set to **Disable**.

**Enable NOTIS Editing
(1)**

**\*Disable NOTIS Editing
(0)**

# Codabar Upper or Lower Case Start/Stop Characters (Parameter #885, SSI #F2h 57h)
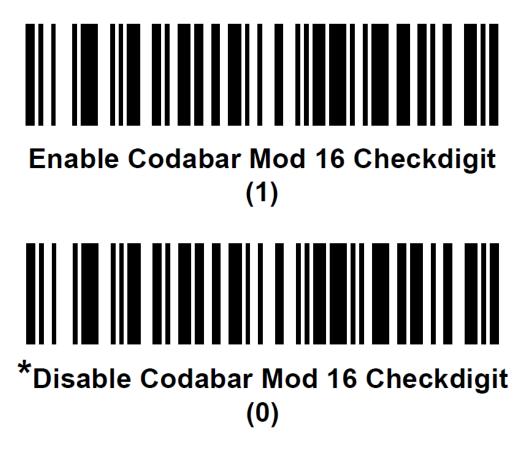
Scan one of the following bar codes to select select whether to transmit upper case or lower case Codabar start/stop characters. By default, this parameter is set to **Lower Case**.



**\*Lower Case
(1)**



**Upper Case
(0)**

## Codabar Mod 16 Check Digit Verification (Parameter #1784, SSI #F8h 06h F8h)
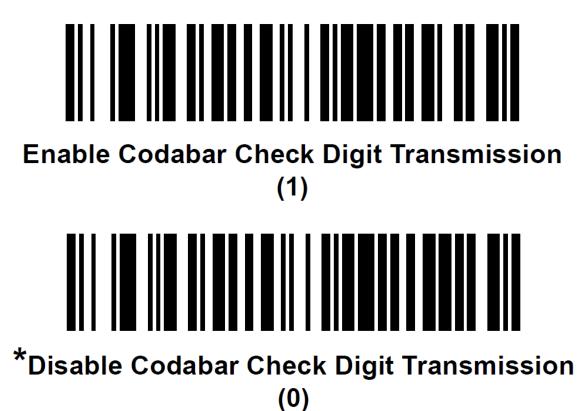
This parameter checks the Codabar Mod 16 Check Digit to verify that the data complies with the specified check digit algorithm.

Scan one of the following bar codes to enable or disable verification of Codabar Mod 16 check digit. By default, this parameter is set to **Disable**.



**Enable Codabar Mod 16 Checkdigit (1)**



**\*Disable Codabar Mod 16 Checkdigit (0)**

## Transmit Codabar Check Digit (Parameter #704, SSI #F1h C0h)

Scan one of the following bar codes to select whether or not to transmit the Codabar check digit. By default, this parameter is set to **Disable**.



**Enable Codabar Check Digit Transmission (1)**



***Disable Codabar Check Digit Transmission (0)**

# MSI (Parameter #11, SSI #0Bh)

Scan one of the following bar codes to enable or disable MSI. By default, this parameter is set to **Disable**.



**Enable MSI**
**(1)**



***Disable MSI**
**(0)**

# Set Lengths for MSI

*L1 = Parameter #30, SSI #1Eh*

*L2 = Parameter #31, SSI #1Fh*

The length of a code refers to the number of characters (that is, human readable characters), including check digits the code contains.

> 📑 **Note**
>
> Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (Discrete 2 of 5 - One Discrete Length, Two Discrete Lengths) for MSI applications.

The following are length options for MSI:

- **One Discrete Length**—decodes only MSI symbols containing a selected length.

  > ✏️ **Example**
  >
  > To decode only MSI symbols with 14 characters, scan **MSI - One Discrete Length**, and then scan the numeric bar codes **1** and **4** from **"Numeric Bar Codes"** on page 542.

- **Two Discrete Lengths**—decodes only MSI symbols containing either of two lengths.

  > ✏️ **Example**
  >
  > To decode only MSI symbols containing either 2 or 14 characters, scan **MSI - Two Discrete Lengths**, and then scan the numeric bar codes **0**, **2**, **1**, and **4** from **"Numeric Bar Codes"** on page 542.

- **Length Within Range**—decodes only MSI symbols with a specific length range (4 to 55).

- **Any Length**—decodes only MSI symbols containing any number of characters within the capability of the scanner.

The following are length ranges:

- L1: 0 to 80

- L2: 0 to 80

Scan one of the following bar codes to set the length for MSI. By default, this parameter is set to **Length Within Range**.



**MSI - One Discrete Length**



**MSI - Two Discrete Lengths**

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**\*MSI - Length Within Range**

**MSI - Any Length**
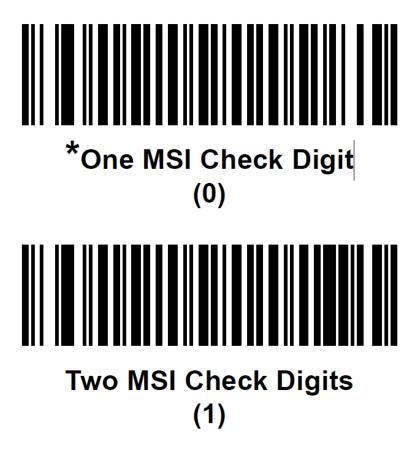
# MSI Check Digits (Parameter #50, SSI #32h)

With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional. If the MSI codes include two check digits, scan the **Two MSI Check Digits** bar code to enable verification of the second check digit.

> 📝 **Note**
>
> To select second digit algorithms, refer to **"MSI Check Digit Algorithm (Parameter #51, SSI #33h)"** on page 413.
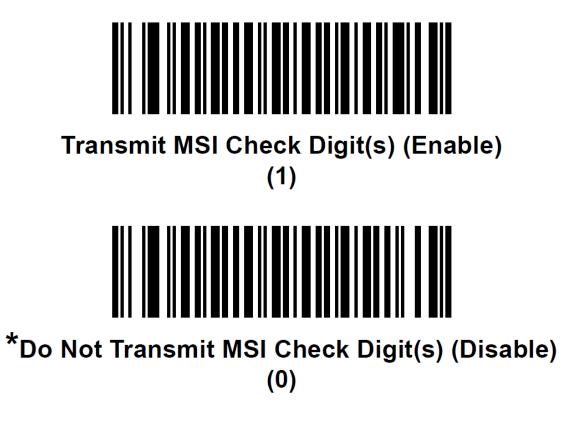
Scan one of the following bar codes to set the number of check digits to be verified. By default, this parameter is set to **One MSI Check Digit**.



**\*One MSI Check Digit (0)**



**Two MSI Check Digits (1)**

## Transmit MSI Check Digits (Parameter #46, SSI #2Eh)

Scan one of the following bar codes to transmit MSI data with or without the check digit. By default, this parameter is set to **Disable**.



**Transmit MSI Check Digit(s) (Enable)
(1)**



**\*Do Not Transmit MSI Check Digit(s) (Disable)
(0)**

# MSI Check Digit Algorithm (Parameter #51, SSI #33h)

Two algorithms are available for verifying the second MSI check digit.
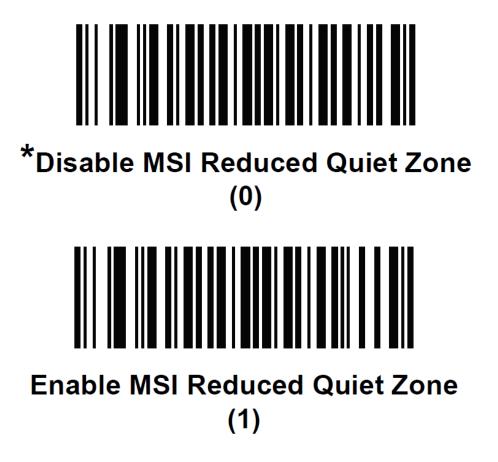
Scan one of the following bar codes to select the algorithm used to encode the check digit.
By default, this parameter is set to **MOD 10/MOD 10**.



**MOD 11/MOD 10
(0)**



**\*MOD 10/MOD 10
(1)**

# MSI Reduced Quiet Zone (Parameter #1392, SSI #F8h 05h 70h)

If enabled, this parameter decodes MSI bar codes with reduced quiet zones (the margins on either side of the bar code). After enabling, select a **"1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)"** on page 433.

Scan one of the following bar codes to enable or disable decoding MSI bar codes with reduced quiet zones. By default, this parameter is set to **Disable**.



**\*Disable MSI Reduced Quiet Zone (0)**



**Enable MSI Reduced Quiet Zone (1)**

# Chinese 2 of 5 (Parameter #408, SSI #F0h 98h)

Scan one of the following bar codes to enable or disable Chinese 2 of 5. By default, this parameter is set to **Disable**.

**Enable Chinese 2 of 5
(1)**

**\*Disable Chinese 2 of 5
(0)**

# Inverse 1D (Parameter #586, SSI #F1h 4Ah)

This parameter provides the following options for 1D inverse decoder setting:

- **Regular Only**—decodes regular 1D bar codes only.

- **Inverse Only**—decodes inverse 1D bar codes only.

- **Inverse Autodetect**—decodes both regular and inverse 1D bar codes.

> 📝 **Note**
>
> The Inverse 1D setting may impact Composite or Inverse Composite decoding. For more information, refer to **"Composite Inverse (Parameter #1113, SSI #F8h 04h 59h)"** on page 460.

Scan one of the following bar codes to set the 1D inverse decoder setting. By default, this parameter is set to **Regular**.



**\*Regular
(0)**



**Inverse Only
(1)**

# Inverse Autodetect
# (2)

# GS1 DataBar

The following are variants of GS1 DataBar:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional
- DataBar Expanded
- GS1 DataBar Expanded Stacked
- DataBar Limited

The limited and expanded versions have stacked variants.

Scan the appropriate bar codes to enable or disable each variant of GS1 DataBar.

# GS1 DataBar Omnidirectional Variants (Parameter #338, SSI #F0h 52h)
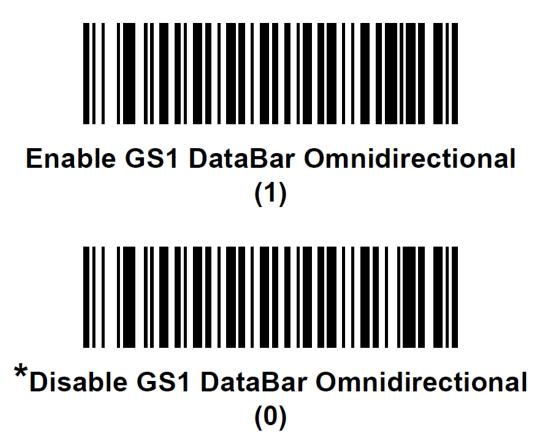
This parameter covers the following variants:

- GS1 DataBar Omnidirectional (formerly GS1 DataBar-14)

- GS1 DataBar Truncated

- GS1 DataBar Stacked

- GS1 DataBar Stacked Omnidirectional

> 📝 **Note**
>
> When GS1 DataBar Omnidirectional is enabled, the variants are also enabled.

Scan one of the following bar codes to enable or disable GS1 Databar Omnidirectional. By default, this parameter is set to **Disable**.



**Enable GS1 DataBar Omnidirectional (1)**



**\*Disable GS1 DataBar Omnidirectional (0)**

# GS1 DataBar Limited (Parameter #339, SSI #F0h 53h)

Scan one of the following bar codes to enable or disable GS1 DataBar Limited. By default, this parameter is set to **Disable**.

**Enable GS1 DataBar Limited (1)**

**\*Disable GS1 DataBar Limited (0)**

# GS1 DataBar Expanded Variants (Parameter #340, SSI #F0h 54h)

This parameter covers the following variants:

- DataBar Expanded
- GS1 DataBar Expanded Stacked

> 📝 **Note**
>
> When GS1 DataBar Expanded is enabled, GS1 DataBar Expanded Stacked is also enabled.

Scan one of the following bar codes to enable or disable GS1 Databar Expanded. By default, this parameter is set to **Disable**.



**Enable GS1 DataBar Expanded (1)**



**\*Disable GS1 DataBar Expanded (0)**

# Convert GS1 DataBar to UPC/EAN/JAN (Parameter #397, SSI #F0h, 8Dh)

This parameter only applies to GS1 DataBar Omnidirectional and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. If enabled, the leading '010' is stripped from DataBar-14 and DataBar Limited symbols, encoding a single zero as the first digit, and then the bar code is reported as EAN-13.

For bar codes beginning with between two and five zeros, this strips the leading '0100' and reports the bar code as UPC-A. The UPC-A Preamble option that transmits the system character and country code applies to converted bar codes. Note that neither the system character nor the check digit can be stripped. For more information on UPC-A Preamble, refer to **"UPC-A Preamble (Parameter #34, SSI #22h)"** on page 335.

Scan one of the following bar codes to enable or disable converting GS1 DataBar to UPC/EAN/JAN. By default, this parameter is set to **Disable**.



**Enable Convert GS1 DataBar to UPC/EAN/JAN (1)**



**\*Disable Convert GS1 DataBar to UPC/EAN/JAN (0)**

# GS1 DataBar Security Level (Parameter #1706, SSI#F8h 06h AAh)

The scanner offers four levels of decode security for GS1 DataBar (GS1 DataBar Omnidirectional, GS1 DataBar Limited, GS1 DataBar Expanded) bar codes.

- **Security Level 0**—allows the scanner to operate in its most aggressive state, while providing sufficient security decoding most in-spec bar codes.

- **Security Level 1**—eliminates most mis-decodes while maintaining reasonable aggressiveness.

- **Security Level 2**—select this option with greater bar code security requirements if Security Level 1 fails to eliminate mis-decodes.

- **Security Level 3**—select this option to apply the highest safety requirements if mis-decodes still occur at Security Level 2.

Scan one of the following bar codes to set the GS1 DataBar security level. By default, this parameter is set to Level 1.



**GS1 DataBar Security Level 0
(0)**



**\*GS1 DataBar Security Level 1
(1)**

**GS1 DataBar Security Level 2
(2)**



**GS1 DataBar Security Level 3
(3)**

# GS1 DataBar Limited Margin Check (Parameter #728, SSI #F1h D8h)

The scanner offers four levels of decode security for GS1 DataBar Limited bar codes. There is an inverse relationship between the level of margin check and scanner aggressiveness. Increasing the level of margin check can reduce scanning aggressiveness, so select only the level of margin check necessary.

- **Margin Check Level 1**—no clear margin required. This complies with the original GS1 standard, yet can result in erroneous decoding of a DataBar Limited bar code when scanning some UPC symbols that start with digits 9 and 7.

- **Margin Check Level 2**—automatic risk detection. This level of margin check can result in erroneous decoding of DataBar Limited bar codes when scanning some UPC symbols. If a mis-decode is detected, the scanner operates in Level 3 or Level 1.

- **Margin Check Level 3**—margin check level reflects the newly proposed GS1 standard that requires a five times trailing clear margin.

- **Margin Check Level 4**—security level extends beyond the standard required by GS1. This level of margin check requires a five times leading and trailing clear margin.
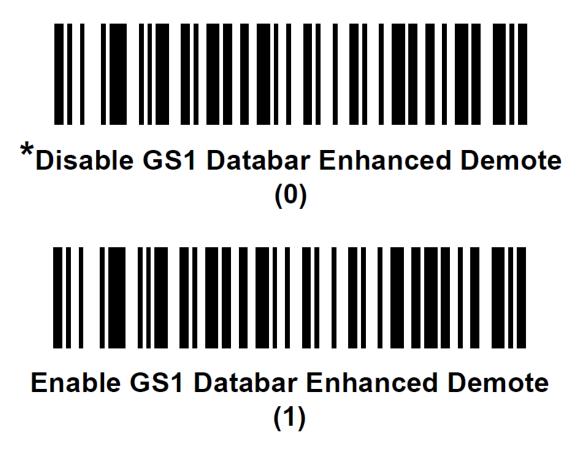
Scan one of the following bar codes to set the GS1 DataBar Limited margin check level. By default, this parameter is set to **Level 3**.



## GS1 DataBar Limited Margin Check Level 1 (1)



## GS1 DataBar Limited Margin Check Level 2 (2)



## *GS1 DataBar Limited Margin Check Level 3 (3)

## GS1 DataBar Limited Margin Check Level 4 (4)

## GS1 Databar Enhanced Demote (Parameter #1774, SSI #F8 06 Eeh)

Scan one of the following bar codes to enable or disable GS1 Databar Enhanced Demote. By default, this parameter is set to **Disable**.



*Disable GS1 Databar Enhanced Demote
(0)



Enable GS1 Databar Enhanced Demote
(1)
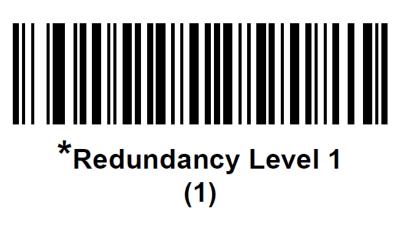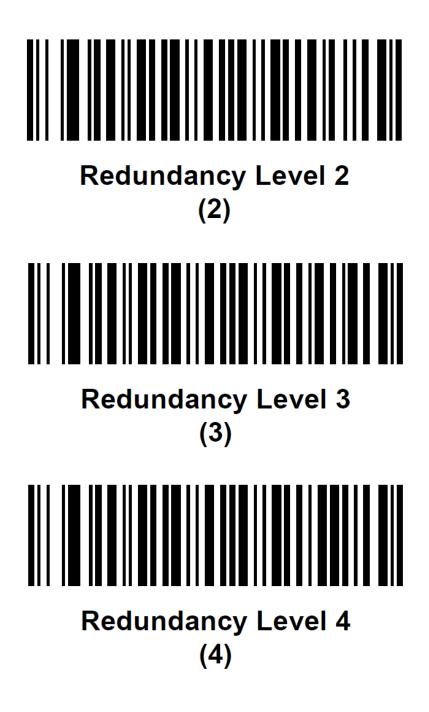
# Symbology-Specific Security Features

## Redundancy Level (Parameter #78, SSI #4Eh)

The scanner offers four levels of decode redundancy. There is an inverse relationship between redundancy level and scanner aggressiveness. Increasing the level of redundancy can reduce scanning aggressiveness, so select only the level of redundancy necessary.

- **Redundancy Level 1**—the scanner reads the following code types twice before decoding the following:
  - Codabar (8 characters or less)
  - MSI (4 characters or less)
  - Discrete 2 of 5 (8 characters or less)
  - Interleaved 2 of 5 (8 characters or less)

- **Redundancy Level 2**—the scanner reads all code types twice before decoding.

- **Redundancy Level 3**—the scanner reads code types other than the following twice before decoding, but must read the following codes three times:
  - Codabar (8 characters or less)
  - MSI (4 characters or less)
  - Discrete 2 of 5 (8 characters or less)
  - Interleaved 2 of 5 (8 characters or less)

- **Redundancy Level 4**—the scanner reads all code types three times before decoding.

Scan one of the following bar codes to set the redundancy level. By default, this parameter is set to **Level 1**.



**\*Redundancy Level 1
(1)**

**Redundancy Level 2**
**(2)**

**Redundancy Level 3**
**(3)**

**Redundancy Level 4**
**(4)**

# Security Level (Parameter #77, SSI #4Dh)

The scanner offers four levels of decode security for delta bar codes, which include the Code 128 family, UPC/EAN/JAN, and Code. Select increasing levels of security for decreasing levels of bar code quality. There is an inverse relationship between security and scanner aggressiveness, so choose only that level of security necessary for the application.

- **Security Level 0**—allows the scanner to operate in its most aggressive state, while providing sufficient security decoding most in-spec bar codes.
- **Security Level 1**—eliminates most mis-decodes.
- **Security Level 2**—select this option if Security Level 1 fails to eliminate mis-decodes.
- **Security Level 3**—select this option to apply the highest safety requirements if mis-decodes still occur at Security Level 2.

> ⓘ **Important**
>
> Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes, and significantly impairs the decoding ability of the scanner. If this level of security is required, try to improve the quality of the bar codes.

Scan one of the following bar codes to set the delta bar codes security level. By default, this parameter is set to **Level 1**.



**Security Level 0**
**(0)**

**\*Security Level 1
(1)**

**Security Level 2
(2)**

**Security Level 3
(3)**
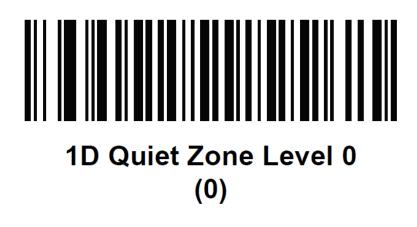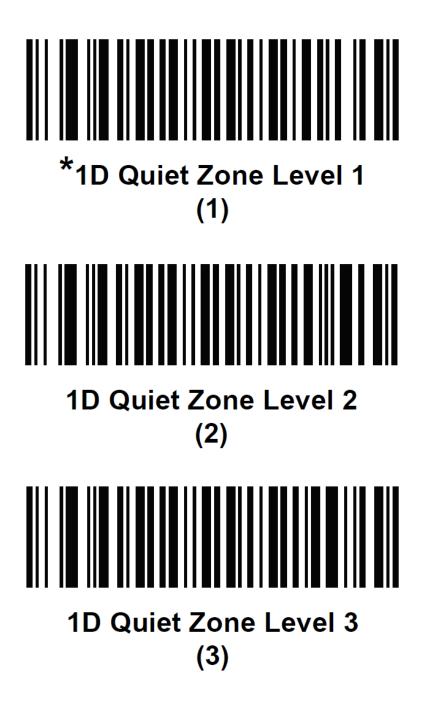
# 1D Quiet Zone Level (Parameter #1288, SSI #F8h 05h 08h)

This feature sets the level of aggressiveness when decoding bar codes with a reduced quiet zone (the margin on either side of a bar code), and applies to symbologies enabled by a Reduced Quiet Zone parameter. Because higher levels increase the decoding time and risk of mis-decodes, it is strongly recommended to enable only the symbologies that require higher quiet zone levels, and leaving Reduced Quiet Zone disabled for all other symbologies.

- **1D Quiet Zone Level 0**—the scanner performs normally in terms of quiet zone.
- **1D Quiet Zone Level 1**—the scanner performs more aggressively in terms of quiet zone.
- **1D Quiet Zone Level 2**—the scanner only requires a quiet zone at the end of bar code for decoding.
- **1D Quiet Zone Level 3**—the scanner decodes anything in terms of quiet zone or end of bar code.

Scan one of the following bar codes to set the 1D quiet zone level. By default, this parameter is set to **Level 1**.



**1D Quiet Zone Level 0
(0)**

**\*1D Quiet Zone Level 1**
**(1)**

**1D Quiet Zone Level 2**
**(2)**

**1D Quiet Zone Level 3**
**(3)**
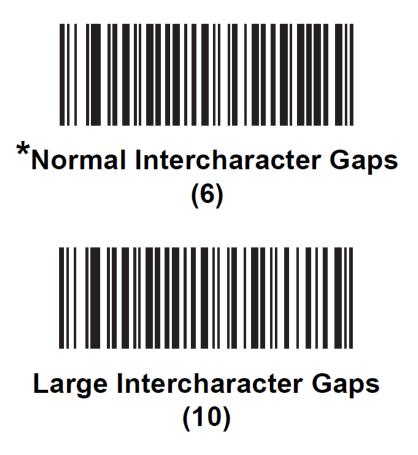
# Intercharacter Gap Size (Parameter #381, SSI #F0h, 7Dh)

The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various bar code printing technologies, this gap can grow larger than the maximum size allowed, preventing the scanner from decoding the symbol. If this problem occurs, scan the **Large Intercharacter Gaps** parameter to tolerate these out-of-specification bar codes.

Scan one of the following bar codes to set the allowed intercharacter gap size. By default, this parameter is set to **Normal**.



**\*Normal Intercharacter Gaps (6)**



**Large Intercharacter Gaps (10)**

# Random Weight Check Digits

## Random Weight Check Digits: UPC-A Starting with '2' (Parameter #1867, SSI #F8 07 4Bh)

Scan one of the following bar codes to select the appropriate random weight check option to the UPC-A format starting with '2'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

# Random Weight Check Digits: EAN-13 Starting with '20' (Parameter #1868, SSI #F8 07 4Ch)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '20'. By default, this parameter is set to **No Check Digits**.

**\*No Check Digits
(0)**

**4 Price Check Digits
(1)**

**5 Price Check Digits
(2)**

## Not Random Weight Barcode (3)

## Random Weight Check Digits: EAN-13 Starting with '21' (Parameter #1869, SSI #F8 07 4Dh)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '21'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**

# Random Weight Check Digits: EAN-13 Starting with '22' (Parameter #1870, SSI #F8 07 4Eh)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '22'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**

# Random Weight Check Digits: EAN-13 Starting with '23' (Parameter #1871, SSI #F8 07 4Fh)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '23'. By default, this parameter is set to **No Check Digits**.

**\*No Check Digits
(0)**

**4 Price Check Digits
(1)**

**5 Price Check Digits
(2)**

## Not Random Weight Barcode (3)

# Random Weight Check Digits: EAN-13 Starting with '24' (Parameter #1872, SSI #F8 07 50h)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '24'. By default, this parameter is set to **No Check Digits**.

**\*No Check Digits
(0)**

**4 Price Check Digits
(1)**

**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**

# Random Weight Check Digits: EAN-13 Starting with '25' (Parameter #1873, SSI #F8 07 51h

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '25'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**

## Random Weight Check Digits: EAN-13 Starting with '26' (Parameter #1874, SSI #F8 07 52h)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '26'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

## Not Random Weight Barcode (3)

# Random Weight Check Digits: EAN-13 Starting with '27' (Parameter #1875, SSI #F8 07 53h)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '27'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**

# Random Weight Check Digits: EAN-13 Starting with '28' (Parameter #1876, SSI #F8 07 54h)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '28'. By default, this parameter is set to **No Check Digits**.



**\*No Check Digits
(0)**



**4 Price Check Digits
(1)**



**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**
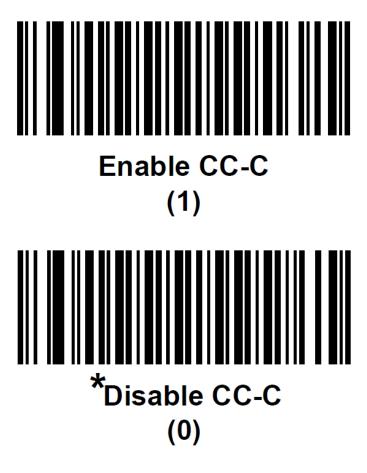
## Random Weight Check Digits: EAN-13 Starting with '29' (Parameter #1877, SSI #F8 07 55h)

Scan one of the following bar codes to select the appropriate random weight check option to the EAN-13 format starting with '29'. By default, this parameter is set to **No Check Digits**.

**\*No Check Digits
(0)**

**4 Price Check Digits
(1)**

**5 Price Check Digits
(2)**

**Not Random Weight Barcode (3)**
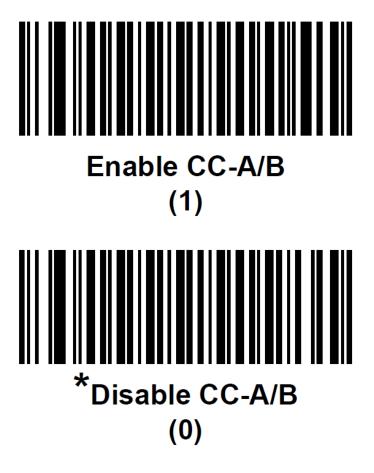
# Composite

## Composite CC-C (Parameter #341, SSI #F0h 55h)

Scan one of the following bar codes to enable or disable Composite bar codes of type CC-C.

By default, this parameter is set to **Disable**.

**Enable CC-C
(1)**

***Disable CC-C
(0)**
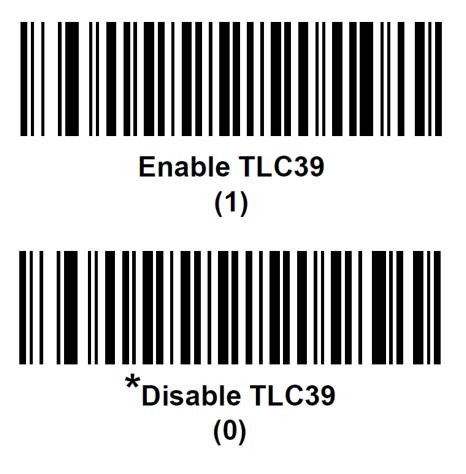
## Composite CC-A/B (Parameter #342, SSI #F0h 56h)

Scan one of the following bar codes to enable or disable Composite bar codes of type CC-A/B. By default, this parameter is set to **Disable**.

**Enable CC-A/B (1)**

**\*Disable CC-A/B (0)**

## Composite TLC-39 (Parameter #371, SSI #F0h 73h)

Scan one of the following bar codes to enable or disable Composite bar codes of type TLC-39. By default, this parameter is set to **Disable**.

**Enable TLC39**
**(1)**

***Disable TLC39**
**(0)**

# Composite Inverse (Parameter #1113, SSI #F8h 04h 59h)

This parameter sets Composite for either regular decode or inverse decode.

- **Regular Only**—the digital scanner decodes regular Composite bar codes only (default).

- **Inverse Only**—the digital scanner decodes inverse Composite bar codes only. This mode only supports Inverse Composite that has DataBar combined with CCAB. No other 1D/2D combinations. For this parameter to work as expected, enable the following parameters:

  - **"Composite CC-A/B (Parameter #342, SSI #F0h 56h)"** on page 458 and the corresponding 1D Inverse or 1D Inverse Autodetect. For 1D Inverse settings, refer to **"Inverse 1D (Parameter #586, SSI #F1h 4Ah)"** on page 416

  - **"GS1 DataBar"** on page 418

> 📝 **Note**
>
> Take note of the following:
>
> - To decode regular Composite, Inverse Composite must be set to **Regular Only** and Inverse 1D must be set to **Regular Only** or **Autodetect**.
>
> - To decode inverse Composite, Inverse Composite must be set to Inverse Only and Inverse 1D must be set to **Inverse Only** or **Autodetect**.

Scan one of the following bar codes to set the Composite Inverse option. By default, this parameter is set to **Regular Only**.



\* **Regular Only**
**(0)**



**Inverse Only**
**(1)**
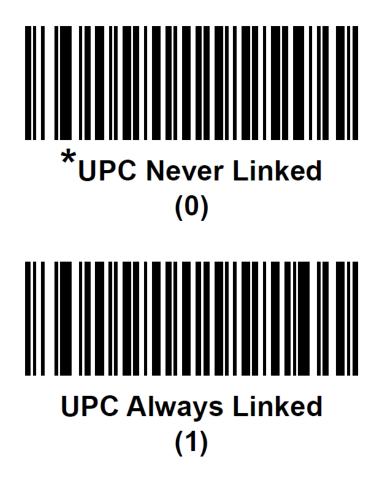
# UPC Composite Mode (Parameter #344, SSI #F0h 58h)

Select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

- **UPC Never Linked**—transmits UPC bar codes regardless of whether a 2D symbol is detected.

- **UPC Always Linked**—transmits UPC bar codes and the 2D portion. If 2D is not present, the UPC bar code does not transmit.

- **Autodiscriminate UPC Composites**—determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.
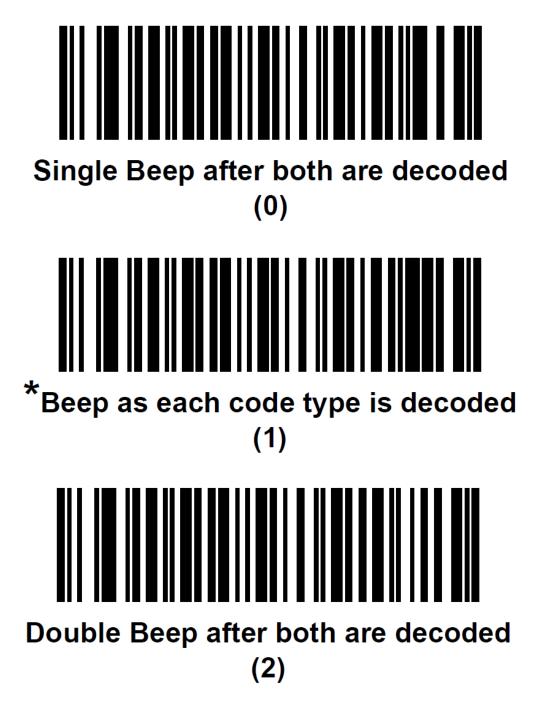
Scan one of the following bar codes to set the UPC Composite mode. By default, this parameter is set to **UPC Never Linked**.



**\*UPC Never Linked
(0)**



**UPC Always Linked
(1)**

## Autodiscriminate UPC Composites (2)
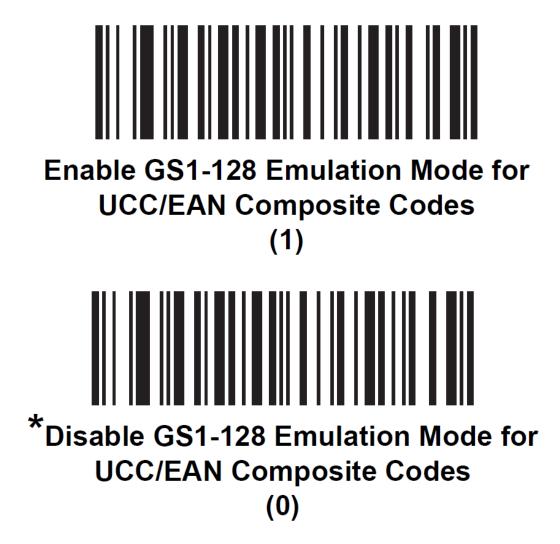
## Composite Beep Mode (Parameter #398, SSI #F0h, 8Eh)

Scan one of the following bar codes to select the number of decode beeps when a composite bar code is decoded. By default, this parameter is set to **Beep as each code type is decoded**.

**Single Beep after both are decoded (0)**

**\*Beep as each code type is decoded (1)**

**Double Beep after both are decoded (2)**

## GS1-128 Emulation Mode for UCC/EAN Composite Codes (Parameter #427, SSI #F0h, ABh)

Scan one of the following bar codes to enable or disable this feature. By default, this parameter is set to **Disable**.

**Enable GS1-128 Emulation Mode for UCC/EAN Composite Codes (1)**

*Disable GS1-128 Emulation Mode for UCC/EAN Composite Codes (0)**

# PDF417 (Parameter #15, SSI #0Fh)

Scan one of the following bar codes to enable or disable PDF417. By default, this parameter is set to **Disable**.



**Enable PDF417
(1)**



**\*Disable PDF417
(0)**

# MicroPDF417 (Parameter #227, SSI #E3h)

Scan one of the following bar codes to enable or disable MicroPDF417. By default, this parameter is set to **Disable**.



**Enable MicroPDF417
(01h)**



\*Disable MicroPDF417
(00h)

# Code 128 Emulation (Parameter #123, SSI #7Bh)

This parameter transmits data from certain MicroPDF417 symbols as Code 128. For this parameter to work, **"AIM Code Identifiers"** on page 599 must be enabled.
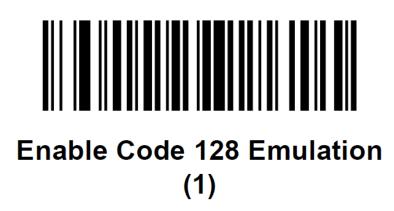
Enable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

- `]C1` if the first codeword is 903-905
- `]C2` if the first codeword is 908 or 909
- `]C0` if the first codeword is 910 or 911

Disable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

- `]L3` if the first codeword is 903-905
- `]L4` if the first codeword is 908 or 909
- `]L5` if the first codeword is 910 or 911

Scan one of the following bar codes to enable or disable Code 128 Emulation. By default, this parameter is set to **Disable**.



**Enable Code 128 Emulation
(1)**

**\*Disable Code 128 Emulation (0)**

# Data Matrix (Parameter #292, SSI #F0h, 24h)

Scan one of the following bar codes to enable or disable Data Matrix. By default, this parameter is set to **Disable**.



**Enable Data Matrix
(1)**



***Disable Data Matrix
(0)**

# GS1 Data Matrix (Parameter #1336, SSI #F8h 05h 38h)

Scan one of the following bar codes to enable or disable GS1 Data Matrix. By default, this parameter is set to **Disable**.



Enable GS1 Data Matrix
(1)



*Disable GS1 Data Matrix
(0)

# Data Matrix Inverse (Parameter #588, SSI #F1h 4Ch)

This parameter provides options for Data Matrix inverse decoder setting.

- **Regular Only**—decodes regular Data Matrix bar codes only.
- **Inverse Only**—decodes inverse Data Matrix bar codes only.
- **Inverse Autodetect**—decodes both regular and inverse Data Matrix bar codes.
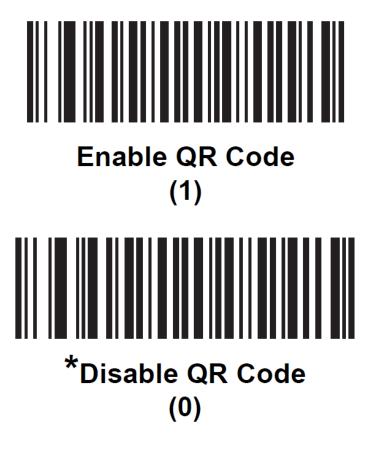
Scan one of the following bar codes to select the Data Matrix inverse decoder setting. By default, this parameter is set to **Regular Only**.



**\*Regular Only
(0)**



**Inverse Only
(1)**

**Inverse Autodetect
(2)**
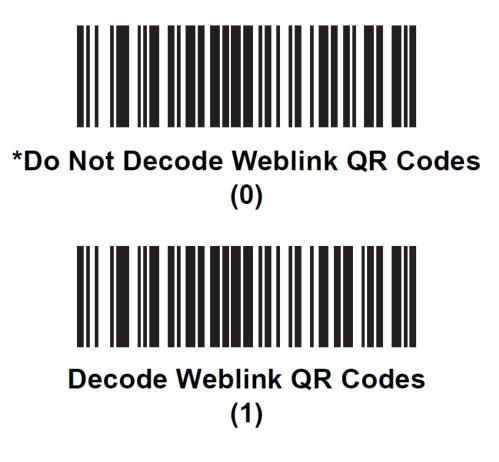
# QR Code (Parameter #293, SSI #F0h, 25h)

Scan one of the following bar codes to enable or disable QR Code. By default, this parameter is set to **Disable**.



**Enable QR Code
(1)**



**\*Disable QR Code
(0)**

# Weblink QR (Parameter #1947, SSI #F8 07 9Bh)

Scan one of the following bar codes to decode or not decode Weblink QR bar codes. By default, this parameter is set to **Do Not Decode**.



**\*Do Not Decode Weblink QR Codes (0)**



**Decode Weblink QR Codes (1)**
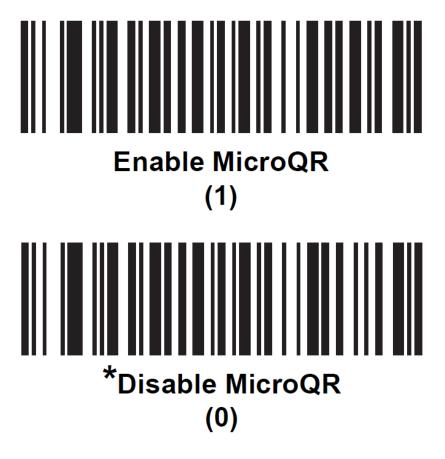
# GS1 QR (Parameter #1343, SSI #F8h 05h 3Fh)

Scan one of the following bar codes to enable or disable GS1 QR. By default, this parameter is set to **Disable**.

Enable GS1 QR
(1)

*Disable GS1 QR
(0)

# MicroQR (Parameter #573, SSI #F1h 3Dh)

Scan one of the following bar codes to enable or disable MicroQR. By default, this parameter is set to **Disable**.



**Enable MicroQR
(1)**



**\*Disable MicroQR
(0)**
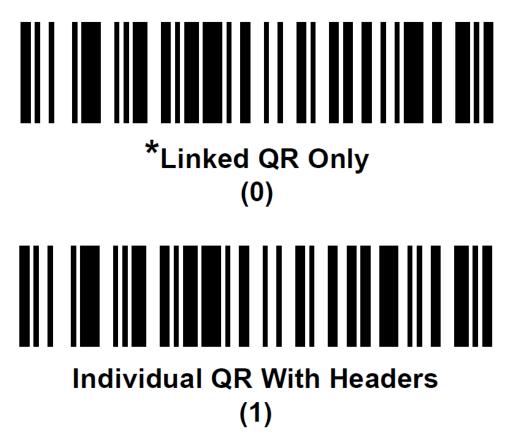
# Linked QR Mode (Parameter #1847, SSI #737h)

This parameter provides options for Linked QR mode.

- **Linked QR Only**—does not decode individual QR symbols from a set of Linked QR codes.

- **Individual QR With Headers**—decodes individual QR symbols from a set of Linked QR codes and retains the header information and data.

- **Individual QR No Headers**—decodes individual QR symbols from a set of Linked QR codes and transmits the data without header information.

Scan one of the following bar codes to select a linked QR mode. By default, this parameter is set to **Linked QR Only**.



**\*Linked QR Only
(0)**



**Individual QR With Headers
(1)**

**Individual QR No Headers (2)**

# NCR QR Filter HTTP (Parameter #2298, SSI #F8h 08h FAh)

If this feature is disabled, the scanner reads all kinds of QR codes. If this feature is enabled, the scanner ignores any QR Code that has "HTTP" anywhere in the tag data. This QR Code is commonly placed next to the UPC bar code on consumer packages. By default, this parameter is set to **Disable**.



Enable QR Filter HTTP



*Disable QR Filter HTTP

# NCR QR Filter WWW (Parameter #2299, SSI #F8h 08h FBh)

If this feature is disabled, the scanner reads all kinds of QR codes. If this feature is enabled, the scanner ignores any QR Code that has "WWW" at the start of the tag data. This QR Code is commonly placed next to the UPC bar code on consumer packages. By default, this parameter is set to **Disable**.



Enable QR Filter WWW



*Disable QR Filter WWW

# Aztec (Parameter #574, SSI #F1h 3Eh)

Scan one of the following bar codes to enable or disable Aztec. By default, this parameter is set to **Disable**.



**Enable Aztec
(1)**



**\*Disable Aztec
(0)**

# Aztec Inverse (Parameter #589, SSI #F1h 4Dh)

This parameter provides options for Aztec inverse decoder setting.

- **Regular Only**—decodes regular Aztec bar codes only.

- **Inverse Only**—decodes inverse Aztec bar codes only.

- **Inverse Autodetect**—decodes both regular and inverse Aztec bar codes.

Scan one of the following bar codes to select the Aztec inverse decoder setting. By default, this parameter is set to **Regular Only**.



**\*Regular Only
(0)**



**Inverse Only
(1)**

**Inverse Autodetect (2)**

# Han Xin (Parameter #1167, SSI #F8h 04h 8Fh)

Scan one of the following bar codes to enable or disable Han Xin. By default, this parameter is set to **Disable**.



**Enable Han Xin
(1)**



**\*Disable Han Xin
(0)**

# Han Xin Inverse (Parameter #1168, SSI #F8h 04h 90h)

This parameter provides options for Han Xin inverse decoder setting.

- **Regular Only**—decodes Han Xin bar codes with normal reflectance only.

- **Inverse Only**—decodes Han Xin with inverse reflectance bar codes only.

- **Inverse Autodetect**—decodes both regular and inverse Han Xin bar codes.
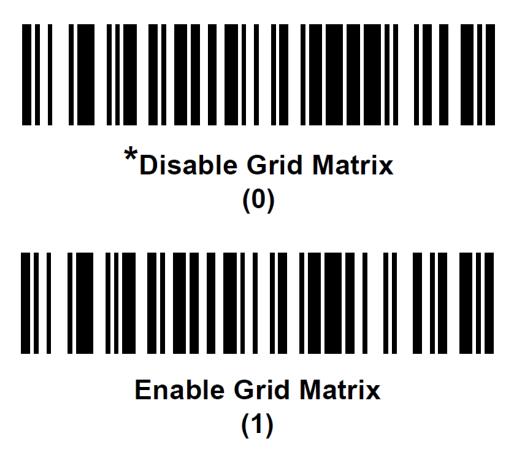
Scan one of the following bar codes to select the Han Xin inverse decoder setting. By default, this parameter is set to **Regular Only**.



**\*Regular Only
(0)**



**Inverse Only
(1)**

**Inverse Autodetect
(2)**

# Grid Matrix (Parameter #1718, SSI #F8h 06h B6h)

Scan one of the following bar codes to enable or disable Grid Matrix. By default, this parameter is set to **Disable**.



*Disable Grid Matrix
(0)



Enable Grid Matrix
(1)

# Grid Matrix Inverse (Parameter #1719, SSI #F8h 06h B7h)

This parameter provides options for Grid Matrix inverse decoder setting.

- **Regular Only**—decodes Grid Matrix bar codes with normal reflectance only.

- **Inverse Only**—decodes Grid Matrix bar codes with inverse reflectance only.

- **Inverse Autodetect**—decodes both regular and inverse Grid Matrix bar codes.

Scan one of the following bar codes to select the Grid Matrix inverse decoder setting. By default, this parameter is set to **Inverse Autodetect**.



**Regular
(0)**



**Inverse Only
(1)**

## *Inverse Autodetect
## (2)

# Grid Matrix Mirrored (Parameter #1736, SSI #F8h 06h C8h)

This parameter provides options for mirror image Grid Matrix setting.

- **Non-Mirrored Only**—decodes non-mirrored Grid Matrix bar codes only.

- **Mirrored Only**—decodes mirrored Grid Matrix bar codes only.

- **Autodetect**—decodes both mirrored and non-mirrored Grid Matrix bar codes.

Scan one of the following bar codes to select the mirror image Grid Matrix setting. By default, this parameter is set to **Autodetect**.



**Non-Mirrored Only
(0)**



**Mirrored Only
(1)**
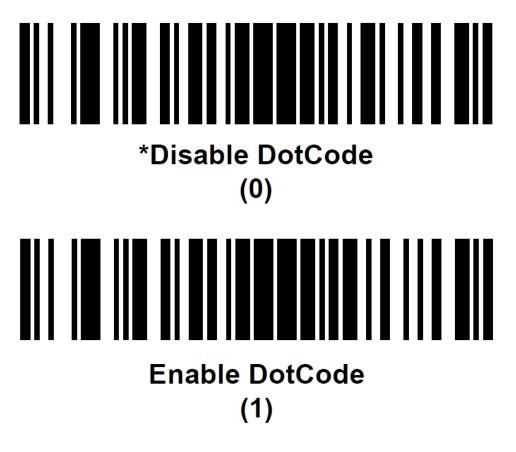
**\*Mirrored Autodetect
(2)**

# DotCode (Parameter #1906, SSI #F8 07 72h)

Scan one of the following bar codes to enable or disable DotCode. By default, this parameter is set to **Disable**.

**\*Disable DotCode
(0)**

**Enable DotCode
(1)**

# DotCode Prioritize (Parameter #1937, SSI #F8 07 91h)

When enabled, this parameter gives priority to DotCode decoding as compared to other symbologies.

Scan one of the following bar codes to enable or disable DotCode prioritization. By default, this parameter is set to **Enable**.



**Disable
(0)**



**\*Enable
(1)**

# DotCode Inverse (Parameter #1907, SSI #F8 07 73h)

This parameter provides options for DotCode inverse decoder setting.

- **Regular Only**—decodes DotCode bar codes with normal reflectance only.
- **Inverse Only**—decodes DotCode bar codes with inverse reflectance only.
- **Inverse Autodetect**—decodes both regular and inverse DotCode bar codes.

Scan one of the following bar codes to select the DotCode inverse decoder setting. By default, this parameter is set to **Autodetect**.



**Regular
(0)**



**Inverse Only
(1)**

**\*Autodetect
(2)**

# DotCode Mirrored (Parameter #1908, SSI #F8 07 74h)

This parameter provides options for mirror image DotCode setting.

- **Non-Mirrored Only**—decodes non-mirrored DotCode bar codes only.

- **Mirrored Only**—decodes mirrored DotCode bar codes only.

- **Autodetect**—decodes both mirrored and non-mirrored DotCode bar codes.

Scan one of the following bar codes to select the mirror image DotCode setting. By default, this parameter is set to **Autodetect**.



**Non-Mirrored Only
(0)**



**Mirrored Only
(1)**

**\*Mirrored Autodetect
(2)**

# Macro PDF Features

Macro PDF is a special feature for concatenating multiple PDF symbols into one file. The scanner can decode symbols encoded with this feature, and can store more than 64 Kb of decoded data from up to 50 MacroPDF symbols.

> ⚠ **Caution**
>
> When printing, keep each Macro PDF sequence separate, as each sequence has unique identifiers. Do not mix bar codes from several Macro PDF sequences, even if they encode the same data. When scanning a Macro PDF sequence, scan the entire sequence without interruption. When scanning a mixed sequence, two long low beeps (low/low) indicate an inconsistent file ID or inconsistent symbology error.

# Macro PDF User Indications

In this mode, the scanner provides the following feedback.

| User Scans | Passthrough All Symbols | | Transmit Any Symbol in Set | | Buffer All Symbols | |
|---|---|---|---|---|---|---|
| | Beep | T | Beep | T | Beep | T |
| Last Macro PDF in set | Decode beep | Y | Decode beep | Y | Decode beep | Y |
| Any Macro PDF in set except last | Decode beep | Y | Decode beep | Y | 2 short low | N |
| Macro PDF is not in current set | Decode beep | Y | 2 long low | N | 2 long low | N |
| Invalid Macro PDF formatting | Decode beep | Y | 2 long low | N | 2 long low | N |
| Macro PDF from set was already scanned | Decode beep | Y | 4 long low | N | 4 long low | N |
| Out of Macro PDF memory | N/A | - | 3 long low | N | 3 long low | N |
| A non-Macro PDF scanned during a set | N/A | - | 4 long low | N | 4 long low | N |
| Flush Macro PDF | Low high | N | 5 long low | N | 5 long low | Y |
| Abort Macro PDF | High low high low | N | High low high low | N | High low high low | N |

> **Note**
>
> Take note of the following:
>
> - The beep only sounds if the *BEEPER_ON signal is connected.
>
> - The T columns indicate whether the symbol is transmitted to the host (N = No transmission).

# Flush Macro Buffer

Scan the following bar code to flush the buffer of all decoded Macro PDF data stored to that point, transmit it to the host device, and abort from Macro PDF mode.



**Flush Macro PDF Buffer**

# Abort Macro PDF Entry

Scan the following bar code to clear all currently-stored Macro PDF data in the buffer without transmission and abort from Macro PDF mode.

**Abort Macro PDF Entry**

# Data Formatting

This chapter briefly describes the software tools available for customizing scanner operation.

# Advanced Data Formatting (ADF)

Advanced Data Formatting (ADF) is a means of customizing data from before transmission to the host device. Use ADF to edit scan data to suit the host requirements. With ADF, one bar code can be scanned per trigger pull. ADF is programmed using 123Scan.

For an ADF tutorial and a 123Scan programming example, go to the 123Scan section of our How To Videos: **http://www.zebra.com/ScannerHowToVideos**.

For more information, refer to the *Advanced Data Formatting Programmer Guide* (72E-69680-xx) at **http://www.zebra.com/support**.

# Multicode Data Formatting (MDF)

Multicode Data Formatting (MDF) enables a 2D imaging scanner to scan all bar codes on a label with a single trigger pull, and then modify and transmit the data to meet host application requirements. MDF supports programming up to nine unique labels into one scanner. MDF also supports scanning multiple bar codes on opposite sides of a box by holding the trigger.

Programming options include:

- Output all or specific bar codes.

- Control the bar code output sequence.

- Apply unique MDF to each output bar code.

- Discard scanned data if all required bar codes are not present.

For more information, refer to *Multicode Data Formatting and Preferred Symbol User Guide* (MN-002895-xx) at **www.zebra.com/support**.

To watch a video on Creating an Multicode Data Formatting (MDF) Rule using 123Scan, go to How To Videos: **http://www.zebra.com/ScannerHowToVideos**.

# MDF in Hands-Free Mode
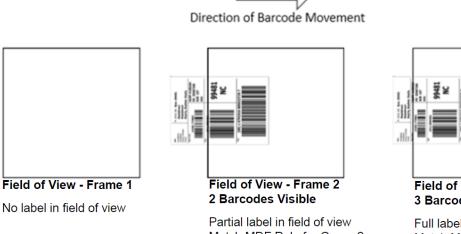
MDF in a hands-free scanning mode may yield multiple unexpected and undesired outputs when a label (most likely on a complex label) passes through the scanner field of view. This problem happens when bar codes of a complex label can be matched by more than one group (for example, Group 1 represents all bar codes present and Group 2 represent some bar codes present).

> 📝 **Note**
>
> A similar problem can also occur in the handheld trigger mode. If multiple MDF rules or groups exist and all the label is not in the field of view when pressing the trigger, the output may vary depending on which MDF rules or groups match.

The problem is demonstrated as follows:

1. As the label is moving through the field of view, it is first partially read (some of the bar codes in the field of view in Frame 2).

2. The second decode occurs as it is fully read (all the bar codes in the field of view in Frame 3).

3. This yields two different outputs (instead of the expected single output) from the presentation of a label. This problem is driven by a complex label inadvertently matching two different MDF rules or groups, thereby yielding two outputs.



Direction of Barcode Movement

**Field of View - Frame 1**

No label in field of view

**Field of View - Frame 2**
**2 Barcodes Visible**

Partial label in field of view
Match MDF Rule for Group 2
Output 2 barcodes

**Field of View - Frame 3**
**3 Barcodes Visible**

Full label in field of view
Match MDF Rule for Group 1
Output 3 barcodes

> **Note**
>
> To minimize issues associated with MDF hands-free mode, refer to **"MDF Best Practices"** on the next page
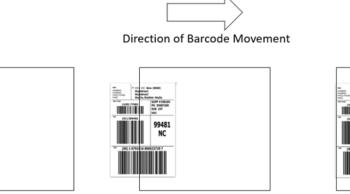
# MDF Best Practices

To minimize the undesired multiple outputs during the MDF scanning in hands-free mode, the following are recommended:

- Scan bar codes in a vertical orientation



Direction of Barcode Movement

**Field of View – Frame 1**

No label in field of view

**Field of View – Frame 2**
No Partial label in field of view Issue.

**Field of View – Frame 3**
3 Barcodes Visible

Full label in field of view
Match MDF Rule for Group 1
Output 3 barcodes

- When creating the MDF programming with multiple groups, the pattern match of should be the most complicated (hardest to match), which equals to the most number of bar codes and criteria. Then Group 2, 3, and so on should be progressively matched more easily.

- When defining criteria, avoid enabling an output when the pattern is not matched. Set **Output if NO pattern match set** as **Discard bar code**.

Pattern Match

A pattern match is the criteria used to determine if a set of scanned bar codes qualify for manipulation with Multicode Data Formatting.
If the pattern match criteria are met, the MDF will be applied to the output of "Output if pattern match".
If the pattern match criteria are not met, the MDF will be applied to the output of "Output if NO pattern match".

Is bar code required for pattern match   *What is this?*

◉ Required for match

○ Not part of match

Output if pattern match.

| Transmit bar code ⌄ |   *What is this?*

Output if NO pattern match.

| Discard bar code · ⌄ |   *What is this?*

- Select **Discard scanned bar code(s) NOT within pattern match** in the 123Scan MDF setting. For more details, select **What is this?** located next to this selection.

☒ Discard scanned bar code(s) NOT within pattern match   *What is this?*

- To prevent double decodes of the same symbol, increase the **Timeout Between Same Symbols** setting. For more information, refer to **"Timeout Between Decodes, Same Symbol (Parameter #137, SSI #89h)"** on page 178.

- Turn on the aimer of the scanner to assist operators in scanning the bar code in a more consistent manner.

- The following are other reasons a label or bar code may not be decoded while in the field of view:

- The label is out of focus (too close or too far away).

- Specular reflection (reflection off a shiny surface).

- The label is presented at extreme angle to scanner.

# Preferred Symbol

Preferred Symbol is a bar code prioritization technique that enables favored decoding of high priority bar code(s). The Preferred Symbol is the only bar code that is decoded and output within the preset Preferred Symbol Timeout. During this time, the scanner attempts to decode the prioritized bar code and reports only this bar code.

For more information, refer to *Multicode Data Formatting and Preferred Symbol User Guide* (MN-002895-xx) at **www.zebra.com/support**.

To program Preferred Symbol via 123Scan, select
**123Scan**→ **Configuration Wizard**→ **Symbologies**, and then select **Preferred Symbol** from the drop-down menu. Preferred Symbol programming is saved in the 123Scan configuration file.

# Standard Parameter Defaults

This section provides information for all user preference, host, symbology, and miscellaneous default parameters.

# USB Interface Host Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| USB Device Type | N/A | N/A | IBM Table-top |
| USB Country Keyboard Types Country Codes | N/A | N/A | US English (North American) |
| USB Keystroke Delay | N/A | N/A | No Delay |
| USB Caps Lock Override | N/A | N/A | Disable |
| Scan Disable Mode | N/A | N/A | Full Disable |
| Bar Codes with Unknown Characters | N/A | N/A | Send Bar Codes with Unknown Characters |
| USB Convert Unknown to Code 39 | N/A | N/A | Disable |
| USB Fast HID | N/A | N/A | Disable |
| USB Polling Interval | N/A | N/A | 8 msec |
| Keypad Emulation | N/A | N/A | Disable |
| Quick Keypad Emulation | N/A | N/A | Disable |
| Keypad Emulation with Leading Zero | N/A | N/A | Disable |
| USB FN1 Substitution | N/A | N/A | Disable |
| Function Key Mapping | N/A | N/A | Disable |
| Simulated Caps Lock | N/A | N/A | Disable |
| Convert Case | N/A | N/A | No Case Conversion |
| USB Static CDC | N/A | N/A | Enable |
| TGCS (IBM) USB Direct I/O Beep | N/A | N/A | Honor |
| TGCS (IBM) USB Beep Directive | N/A | N/A | Ignore |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| TGCS (IBM) USB Bar Code Configuration Directive | N/A | N/A | Ignore |
| TGCS (IBM) USB Specification Version | N/A | N/A | Version 0 (Original) |
| IBM USB Scale Default Response Status | N/A | N/A | Disabled |
| NCR Change Host Code Type | 2297 | F8h 08h F9h | Disabled |
| CDC Host Variant Type | 1713 | F8h06h B1h | Standard CDC Variant |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# RS-232 Interface Host Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| RS-232 Host Types | N/A | N/A | Standard |
| Baud Rate | N/A | N/A | 9600 |
| Parity | N/A | N/A | None |
| Stop Bits | N/A | N/A | 1 Stop Bit |
| Data Bits | N/A | N/A | 8-bit |
| Check Receive Errors | N/A | N/A | Enable |
| Hardware Handshaking | N/A | N/A | None |
| Software Handshaking | N/A | N/A | None |
| Host Serial Response Timeout | N/A | N/A | 2 sec |
| RTS Line State | N/A | N/A | Low RTS |
| Beep on <BEL> | N/A | N/A | Disable |
| Intercharacter Delay | N/A | N/A | 0 msec |
| RS-232 Power On Mode | 1939 | N/A | Disable |
| Nixdorf Beep/LED Options | N/A | N/A | Normal Operation |
| Bar Codes with Unknown Characters | N/A | N/A | Send Bar Code With Unknown Characters |
| NCR Use Prefix | N/A | N/A | Enabled |
| NCR Prefix | N/A | N/A | 1002 (STX) |

> **📋 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# IBM RS-485 Interface Host Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Port Address | N/A | N/A | None |
| Scale Port Address | N/A | N/A | None |
| Convert Unknown to Code 39 | N/A | N/A | Disable |
| RS-485 Beep Directive | N/A | N/A | Ignore |
| RS-485 Bar Code Configuration Directive | N/A | N/A | Ignore |
| Scan Disable Mode | N/A | N/A | Full Disable |
| IBM-485 Specification Version | N/A | N/A | Original Specification |
| IBM Commands | N/A | N/A | Ignore Unknown Commands Reboot on Reset Commands<br><br>Honor Clear Scale Pole Display Commands |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Scale Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Legal Scale Units | 995 | N/A | N/A |
| Legal Scale Dampening Filter Setting | 996 | N/A | Low Vibration Sensitivity |
| Scale Enable | 1197 | N/A | Enable |
| Scale Reset | 6019 | N/A | N/A |
| Scale Display Configuration | 986 | N/A | Disable |
| Scale Enforce Zero Return | 987 | N/A | Disable |
| Scale Beep After Weight Request | 988 | N/A | Disable |
| Scale Port Address | N/A | N/A | Not Selected |
| Ignore Scale Pole Directives | 1242 | N/A | Ignore |
| Maximum Initial Zero Setting Range | 1285 | N/A | 15% maximum weight capacity |
| Maximum Scale Zeroing Weight Limit | 1366 | N/A | 60 |
| Weighing Behind Zero Mode | 1326 | F8h 05h 2Eh | Allowed |
| Scale 5 Digit Directive | 1842 | F8h 07h 32h | Honor |
| NCR Report Alternate Weight Status | 2360 | N/A | Disable |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# User Preferences

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Set Default Parameter | N/A | N/A | Set Factory Defaults |
| Parameter Bar Code Scanning | 236 | ECh | Enable |
| Trigger on Scan Enable Disable | 2398 | F8 09 5E | Disable |
| Beep After Good Decode | 56 | 38h | Enable |
| Not on File Number of Beeps | 2411 | F8 09 6B | 5 |
| Beeper Volume | 140 | 8Ch | Highest |
| Beeper Tone | 145 | 91h | Medium |
| Beeper Duration | 628 | F1h 74h | Medium |
| Tone/Volume Button | 1287 | F8h 05h 07h | Enable Tone, Enable Volume |
| Suppress Power Up Beeps | 721 | F1h D1h | Do Not Suppress |
| Sync Bootup Beep Volume | 2412 | F8 09 6C | Disable |
| Enable Alternate Beep Volume | 2384 | F8 09 50 | Disable |
| Alternate Beep Volume | 2383 | F8 09 4F | Low |
| Alternate Beeper Volume Table | 2339 | F8 09 23 | Disable |
| Volume Button Beep Suppression | 2375 | F8 09 47 | Disable |
| Decode Session Timeout | 136 | 88h | 9.9 seconds |
| Timeout Between Decodes, Same Symbol | 137 | 89h | 0.5 seconds |
| Same Symbol Timeout Mode | 724 | F8h 2h D4h | Unconditional |
| Extended Same Symbol Timeout | 2399 | F8 09 5F | 20 (x100ms) |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Enhanced Same Symbol Timeout Mode | 1844 | F8h 07h 34h | Disable |
| Same Symbol Report Timeout | 1284 | F8h 05h 04h | Disable |
| Swipe Frame Timeout | 1226 | F8 04h CAh | 30 ms |
| Presentation Frame Timeout | 1227 | F8h 04h CBh | 35 ms |
| Fuzzy 1D Processing | 514 | F1h 02h | Enable |
| Cell Phone Frame Timeout | 1228 | F8h 04h CCh | 35 ms |
| Mobile Phone Display Mode | 716 | F1h CCh | Disable |
| PDF Prioritization | 719 | F1h CFh | Disable |
| PDF Prioritization Timeout | 720 | F1h D0h | 300 ms |
| USB Serial Number Format | 1832 | F8h 07h 28h | Serial Number |
| RS-232 Device Port Configuration | 1246 | F8h 04h DEh | Aux 1 Sensormatic and Aux 2 Scanner |
| RS-232 Auxiliary Port Scale Protocol | 1247 | F8h 04h DFh | SASI |
| Third Party Scale | 1294 | F8h 05h 0Eh | Disable Third Party Scale |
| Third Party Scale LED Pin | 1295 | F8h 05h 0Fh | Active High |
| Third Party Scale Zero Pin | 1296 | F8h 05h 10h | Active High |
| Illumination Configurations | 1250 | F8h 04h E2h | Full Brightness on Both Vertical and Horizontal |
| Illumination Warnings | 2336 | F8 09 3E | Disable |
| Product ID (PID) Type | 1281 | F8h 05h 01h | IBM Unique |
| Product ID (PID) Value | 1725 | F8h 06h BDh | 0 |
| ECLevel | 1710 | F8h 06h AEh | 0 |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Miscellaneous Options

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Transmit Code ID Character | 45 | 2Dh | None |
| Prefix Value | 99, 105 | 63h, 69h | 7013 <CR><LF> |
| Suffix 1 Value | 98, 104 | 62h, 68h | 7013 <CR><LF> |
| Suffix 2 Value | 100, 106 | 64h, 6Ah | |
| Scan Data Transmission Format | 235 | EBh | Data As Is |
| FN1 Substitution Values | 103, 109 | 67h, 6Dh | 7013 <CR><LF> |
| Copy Statistics to a Staging Flash Drive | 1137 | F8h 04h 71h | Enable |
| IR Interference Filter | 1831 | F8h 07h 27h | Enable |
| Left IR/Wakeup Sensitivity | 1218 | F8h 04h C2h | Short |
| Right IR/Wakeup Sensitivity | 1220 | F8h 04h C4h | Short |
| User Data | 1825 | F8h 07h 21h | Null String |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Imaging Preferences

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Image Cropping | 301 | F0h 2Dh | Disable |
| Crop to Pixel Addresses | 315 | F4h F0h 3Bh | 0 top |
| | 316 | F4h F0h 3Ch | 0 left |
| | 317 | F4h F0h 3Dh | 959 bottom |
| | 318 | F4h F0h 3Eh | 1279 right |
| Image Size (Number of Pixels) | 302 | F0h 2Eh | Full |
| JPEG Image Options | 299 | F0h 2Bh | Quality |
| JPEG Size Value | 561 | F1h 31h | 160 kB |
| JPEG Quality Value | 305 | F0h 31h | 065 |
| Image Enhancement | 564 | F1h 34h | Off (0) |
| Image File Format Selection | 304 | F0h 30h | JPEG |
| Image Rotation | 665 | F1h 99h | Rotate 0° |
| Image Capture Camera Selection | 1715 | F8h 05h 3h | Tower |
| Camera Button | 1716 | F8h 06h B4h | Disable |
| Camera Button Delay | 1717 | F8h 06h B5h | 20 (2 seconds) |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Electronic Article Surveillance (EAS) Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Operating Modes | 977 | N/A | Disable |
| Sensormatic Deactivation Timeout | 982 | N/A | 10 sec |
| Sensormatic EAS Deactivation | 979 | N/A | Enable |
| Sensormatic Soft Tag Beeps | 984 | N/A | Soft Tag Beep 1 |
| Sensormatic Hard Tag Beeps | 985 | N/A | Hard Tag Beep 1 |
| Sensormatic Detected Any Time Beep | 980 | N/A | Enable |
| Sensormatic Deactivation Fail Beep | 1213 | N/A | Disable |
| Sensormatic Request Communication Message | 978 | N/A | Enable |
| Sensormatic Request Voltage Message | 1130 | N/A | Enable |
| Sensormatic Request Scan Time Message | 1136 | N/A | Enable |
| Checkpoint Interlock Polarity | 983 | N/A | Active Low |
| EAS Deactivation Override Button | 981 | N/A | Enable |
| EAS Checkpoint Pulse | 2102 | N/A | 0 |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Auxiliary Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Auxiliary Scanner Decode with Unknown Type | 1124 | F8h 04h 64h | Send Unknown as Code 39 |
| Host Type | N/A | N/A | Zebra Scanner Auto Switch |
| Baud Rate[3] | N/A | N/A | 9600 |
| Data Bits[3] | N/A | N/A | 8 Data Bits |
| Stop Bits[3] | N/A | N/A | One Stop |
| Parity[3] | N/A | N/A | No Parity |
| Host RTS State | N/A | N/A | Low RTS |
| USB Auxiliary Ports | 1822 | F8h 07h 1Eh | Enable |
| Aux 1 Baud[4] | 1328 | F8h 05h 30h | 15/Inherit[6] |
| Aux 1 Data Bits[4] | 1331 | F8h 05h 33h | 3/Inherit[6] |
| Aux 1 Stop Bits[4] | 1329 | F8h 05h 31h | 2/Inherit[6] |
| Aux 1 Parity[4] | 1330 | F8h 05h 32h | 6/Inherit[6] |
| Aux 2 Baud Rate[5] | 1332 | F8h 05h 34h | 15/Inherit[6] |
| Aux 2 Data Bits[5] | 1335 | F8h 05h 37h | 3/Inherit[6] |
| Aux 2 Stop Bits[5] | 1333 | F8h 05h 35h | 2/Inherit[6] |
| Aux 2 Parity[5] | 1334 | F8h 05h 36h | 6/Inherit[6] |
| Beep On Aux Decode | 1695 | F8h 06h 9Fh | Disable |

> **📑 Note**
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.
>
> - [3]Applies to an attached scanner regardless of whether or not it is connected to the auxiliary 1 port or the auxiliary 2 port.
>
> - [4]Setting applies specifically to the Aux 1 port.
>
> - [5]Setting applies specifically to the Aux 2 port.
>
> - [6]Inherit means the default is based on the device assigned to the auxiliary port.

# Symbologies

The following are symbologies used in NCR 7895:

- **"UPC/EAN/JAN Parameters"** on the next page
- **"Code 128 Parameters"** on page 528
- **"Code 39 Parameters"** on page 529
- **"Code 93 Parameters"** on page 530
- **"Interleaved 2 of 5 (ITF) Parameters"** on page 531
- **"Discrete 2 of 5 (DTF) Parameters"** on page 532
- **"Codabar (NW - 7) Parameters"** on page 532
- **"MSI Parameters"** on page 533
- **"Chinese 2 of 5 Parameters"** on page 533
- **"Inverse 1D Parameters"** on page 534
- **"GS1 DataBar Parameters"** on page 534
- **"Symbology-Specific Security Feature Parameters"** on page 535
- **"Random Weight Check Digits Parameters"** on page 536
- **"2D Symbologies Parameters"** on page 536
- **"Macro PDF Parameters"** on page 538

# UPC/EAN/JAN Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| UPC-A | 1 | 01h | Enable |
| UPC-E | 2 | 02h | Enable |
| UPC-E1 | 12 | 0Ch | Disable |
| EAN-8/JAN 8 | 4 | 04h | Enable |
| EAN-13/JAN-13 | 3 | 03h | Enable |
| Bookland EAN | 83 | 53h | Disable |
| Bookland ISBN Format | 576 | F1h 40h | ISBN-10 |
| ISSN EAN | 617 | F1h 69h | Disable |
| Decode UPC/EAN/JAN Supplementals (2 and 5 digits) | 16 | 10h | Ignore |
| User Programmable Supplementals<br>Supplemental 1:<br>Supplemental 2: | <br>579<br>580 | <br>F1h 43h<br>F1h 44h | 0 |
| UPC/EAN Redundancy | 1225 | N/A | 1 |
| UPC/EAN/JAN Supplemental Redundancy | 80 | 50h | 10 |
| UPC/EAN/JAN Supplemental AIM ID Format | 672 | F1h A0h | Combined |
| Transmit UPC-A Check Digit | 40 | 28h | Enable |
| Transmit UPC-E Check Digit | 41 | 29h | Enable |
| Transmit UPC-E1 Check Digit | 42 | 2Ah | Enable |
| Transmit EAN-8 Check Digit | 1881 | F8 07 59h | Enable |
| Transmit EAN-13 Check Digit | 1882 | F8 07 5Ah | Enable |

| Parameter | Parameter Number | SSI Number | Default |
|-----------|------------------|------------|---------|
| UPC-A Preamble | 34 | 22h | System Character |
| UPC-E Preamble | 35 | 23h | System Character |
| UPC-E1 Preamble | 36 | 24h | System Character |
| Convert UPC-E to A | 37 | 25h | Disable |
| Convert UPC-E1 to A | 38 | 26h | Disable |
| EAN/JAN Zero Extend | 39 | 27h | Disable |
| UPC Reduced Quiet Zone | 1289 | F8h 05h 09h | Disable |
| Digimarc Digital Watermarks | 1687 | F8h 06h 97h | Disable |
| UPC/EAN Block Life Span | 1291 | F8h 05h 08h | 10 |
| Decode UPC-A/EAN-13 with Voids | 1901 | F8h 07h 6Dh | Disable |
| Decode UPC-A/EAN-13 with Voids Redundancy | 1902 | F8h 07h 6Eh | Redundancy Off |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Code 128 Parameters

| Parameter | Parameter Number | SSI Number | Default |
|-----------|------------------|------------|---------|
| Code 128 | 8 | 08h | Disable |
| Set Length(s) for Code 128 | 209, 210 | D1h, D2h | Any Length |
| GS1-128 (formerly UCC/EAN-128) | 14 | 0Eh | Disable |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Code 128 <FNC4> | 1254 | F8h 04h E6h | Ignore |
| Code 128 Stitching | 72 | 48h | Disable |
| Code 128 Stitching Security Level | 1205 | F8h 04h B5h | Level 0 |
| Code 128 Security Level | 751 | F1h EFh | Security Level 1 |
| Code 128 Reduced Quiet Zone | 1208 | F8h 04h B8h | Disable |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Code 39 Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Code 39 | 0 | 00h | Disable |
| Trioptic Code 39 | 13 | 0Dh | Disable |
| Convert Code 39 to Code 32 (Italian Pharmacy Code) | 86 | 56h | Disable |
| Code 32 Prefix | 231 | E7h | Disable |
| Set Length(s) for Code 39 | 18, 19 | 12h, 13h | Length Within Range (2-55) |
| Code 39 Check Digit Verification | 48 | 30h | Disable |
| Transmit Code 39 Check Digit | 43 | 2Bh | Disable |
| Code 39 Full ASCII Conversion | 17 | 11h | Disable |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Code 39 Security Level | 750 | F1h EEh | Security Level 1 |
| Code 39 Stitching | 70 | 46h | Disable |
| Code 39 Stitching Security Level | 1206 | F8h 04h B6h | Level 2 |
| Code 39 Reduced Quiet Zone | 1209 | F8h 04h B9h | Disable |
| Transmit Code 39 Start/Stop Characters | 1900 | F8 07 6Ch | Disable |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Code 93 Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Code 93 | 9 | 09h | Disable |
| Set Length(s) for Code 93 | 26, 27 | 1Ah, 1Bh | Length Within Range (4-55) |
| Code 93 Stitching | 1224 | F8h 04h C8h | Disable |
| Code 93 Reduce Quiet Zone | 1223 | F8h 04h C7h | Disable |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Interleaved 2 of 5 (ITF) Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Interleaved 2 of 5 (ITF) | 6 | 06h | Disable |
| Set Lengths for Interleaved 2 of 5 | 22, 23 | 16h, 17h | 1 Discrete Length Length (14) |
| Interleaved 2 of 5 Check Digit Verification | 49 | 31h | Disable |
| Transmit Interleaved 2 of 5 Check Digit | 44 | 2Ch | Disable |
| Convert Interleaved 2 of 5 to EAN-13 | 82 | 52h | Disable |
| Interleaved 2 of 5 Security Level | 1121 | F8h 04h 61h | Security Level 1 |
| Interleaved 2 of 5 Stitching | 1204 | F8h 04h B4h | Disable |
| Interleaved 2 of 5 Reduced Quiet Zone | 1210 | F8h 04h BAh | Disable |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Discrete 2 of 5 (DTF) Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Discrete 2 of 5 | 5 | 05h | Disable |
| Set Length(s) for Discrete 2 of 5 | 20, 21 | 14h 15h | One Discrete Length (12) |

> 📝 **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Codabar (NW - 7) Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Codabar | 7 | 07h | Disable |
| Set Lengths for Codabar | 24, 25 | 18h, 19h | Length Within Range (5-55) |
| CLSI Editing | 54 | 36h | Disable |
| NOTIS Editing | 55 | 37h | Disable |
| Codabar Upper or Lower Case Start/ Stop Characters Detection | 855 | F2h 57h | Lower Case |
| Codabar Mod 16 Check Digit Verification | 1784 | F8h 06h F8h | Disable |
| Transmit Codabar Check Digit | 704 | F1h C0h | Disable |

# MSI Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| MSI | 11 | 0Bh | Disable |
| Set Length(s) for MSI | 30, 31 | 1Eh, 1Fh | Length Within Range (4-55) |
| MSI Check Digits | 50 | 32h | One |
| Transmit MSI Check Digit | 46 | 2Eh | Disable |
| MSI Check Digit Algorithm | 51 | 33h | Mod 10/Mod 10 |
| MSI Reduced Quiet Zone | 1392 | F8h 05h 70h | Disable |

# Chinese 2 of 5 Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Chinese 2 of 5 | 408 | F0h 98h | Disable |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Inverse 1D Parameters

| Parameter | Parameter Number | SSI Number | Default |
|-----------|------------------|------------|---------|
| Inverse 1D | 586 | F1h 4Ah | Regular |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# GS1 DataBar Parameters

| Parameter | Parameter Number | SSI Number | Default |
|-----------|------------------|------------|---------|
| GS1 DataBar Omnidirectional (formerly GS1 DataBar-14), GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional | 338 | F0h 52h | Disable |
| GS1 DataBar Limited | 339 | F0h 53h | Disable |
| GS1 DataBar Expanded, GS1 DataBar Expanded Stacked | 340 | F0h 54h | Disable |
| Convert GS1 DataBar to UPC/EAN/JAN | 397 | F0h 8Dh | Disable |
| GS1 DataBar Security Level | 1706 | F8h 06h AAh | Security Level 1 |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| GS1 DataBar Limited Margin Check | 728 | F1h D8h | Level 3 |
| GS1 Databar Enhanced Demote | 1774 | F8 06 Eeh | Disable |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Symbology-Specific Security Feature Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Redundancy Level | 78 | 4Eh | 1 |
| Security Level | 77 | 4Dh | Security Level 1 |
| 1D Quiet Zone Level | 1288 | F8h 05h 08h | Level 1 |
| Intercharacter Gap Size | 381 | F0h 7Dh | Normal |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Random Weight Check Digits Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Random Weight Check Digits: UPC-A Starting with '2' | 1867 | F8 07 4Bh | Disable |
| Random Weight Check Digits: EAN-13 Starting with '20' | 1868 | F8 07 4Ch | Disable |
| Random Weight Check Digits: EAN-13 Starting with '21' | 1869 | F8 07 4Dh | Disable |
| Random Weight Check Digits: EAN-13 Starting with '22' | 1870 | F8 07 4Eh | Disable |
| Random Weight Check Digits: EAN-13 Starting with '23' | 1871 | F8 07 4Fh | Disable |
| Random Weight Check Digits: EAN-13 Starting with '24' | 1872 | F8 07 50h | Disable |
| Random Weight Check Digits: EAN-13 Starting with '25' | 1873 | F8 07 51h | Disable |
| Random Weight Check Digits: EAN-13 Starting with '26' | 1874 | F8 07 52h | Disable |
| Random Weight Check Digits: EAN-13 Starting with '27' | 1875 | F8 07 53h | Disable |
| Random Weight Check Digits: EAN-13 Starting with '28' | 1876 | F8 07 54h | Disable |
| Random Weight Check Digits: EAN-13 Starting with '29' | 1877 | F8 07 55h | Disable |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# 2D Symbologies Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| PDF417 | 15 | 0Fh | Disable |
| MicroPDF417 | 227 | E3h | Disable |

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Code 128 Emulation | 123 | 7Bh | Disable |
| Data Matrix | 292 | F0h 24h | Disable |
| GS1 Data Matrix | 1336 | F8h 05h 38h | Disable |
| Data Matrix Inverse | 588 | F1h 4Ch | Regular Only |
| Weblink QR | 1947 | F8 07 9B | Do Not Decode |
| QR Code | 293 | F0h 25h | Disable |
| GS1 QR | 1343 | F8h 05h 3Fh | Disable |
| MicroQR | 573 | F1h 3Dh | Disable |
| Linked QR Mode | 1847 | 737h | Linked QR Only |
| NCR QR Filter HTTP | 2298 | F8h 08h FAh | Disable |
| NCR QR Filter WWW | 2299 | F8h 08h FBh | Disable |
| Aztec | 574 | F1h 3Eh | Disable |
| Aztec Inverse | 589 | F1h 4Dh | Regular Only |
| Han Xin | 1167 | F8h 04h 8Fh | Disable |
| Han Xin Inverse | 1168 | F8h 04h 90h | Regular |
| Grid Matrix | 1718 | F8h 06h B6h | Disable |
| Grid Matrix Inverse | 1719 | F8h 06h B7h | Autodetect |
| Grid Matrix Mirrored | 1736 | F8h 06h C8h | Autodetect |
| DotCode | 1906 | F8 07 72h | Disable |
| DotCode Prioritize | 1937 | F8 07 91h | Enable |
| DotCode Inverse | 1907 | F8 07 73h | Autodetect |
| DotCode Mirrored | 1908 | F8 07 74h | Autodetect |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Macro PDF Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Flush Macro PDF Buffer | N/A | N/A | N/A |
| Abort Macro PDF Entry | N/A | N/A | N/A |

> **📝 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
>
> - SSI number hex values are used for programming via SSI commands.

# Driver's License Parsing Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Driver's License Parsing | N/A | N/A | No Driver's License Parsing |
| Parsing Driver's License Data Fields | N/A | N/A | N/A |
| Driver's License Parse Field BarCodes | N/A | N/A | N/A |
| AAMVA Parse Field Bar Codes | N/A | N/A | N/A |
| Set Default Parameter | N/A | N/A | N/A |
| Output Gender as M or F | N/A | N/A | N/A |
| Date Format | N/A | N/A | CCYYMMDD |
| No Separator | N/A | N/A | N/A |
| Send Keystroke<br><br>• Control Characters<br>• Keyboard Characters | N/A | N/A | N/A |
| Parsing Rule Example | N/A | N/A | N/A |
| Embedded Driver's License Parsing ADF Example | N/A | N/A | N/A |

> **📑 Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Country Codes Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| USB Country Keyboard Types | 960 | F2h C0h | US English (North American) |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Country Code Pages Parameters

| Parameter | Parameter Number | SSI Number | Default |
|---|---|---|---|
| Country Code Page Bar Codes | 961 | N/A | Default value for a set country code is 0 |

> **Note**
>
> Take note of the following:
>
> - Parameter number decimal values are used for programming via RSM commands.
> - SSI number hex values are used for programming via SSI commands.

# Chinese, Japanese, Korean (CJK) Decode Control Parameters

| Parameter | Parameter Number | SSI Number | Default |
|-----------|------------------|------------|---------|
| Unicode Output Control | 973 | N/A | Universal Output |
| CJK Output Method to Windows Host | 972 | N/A | Universal CJK Output |
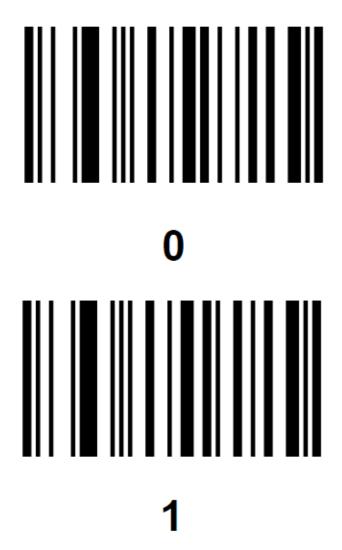
📝 **Note**

Take note of the following:

- Parameter number decimal values are used for programming via RSM commands.

- SSI number hex values are used for programming via SSI commands.

# Numeric Bar Codes

For parameters requiring specific numeric values, scan the appropriately numbered bar codes.



0



1

**2**



**3**



**4**

**5**



**6**



**7**

**8**

**9**

## Cancel
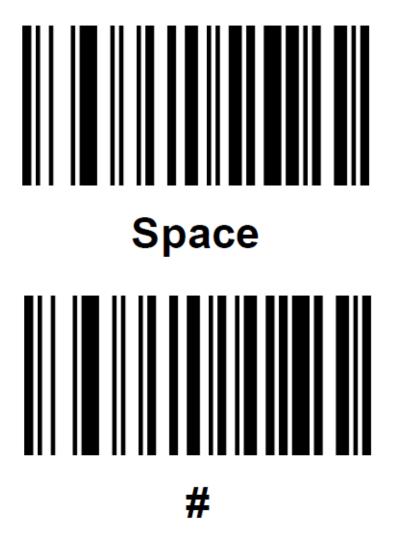
To correct an error or change a selection, scan the following bar code.
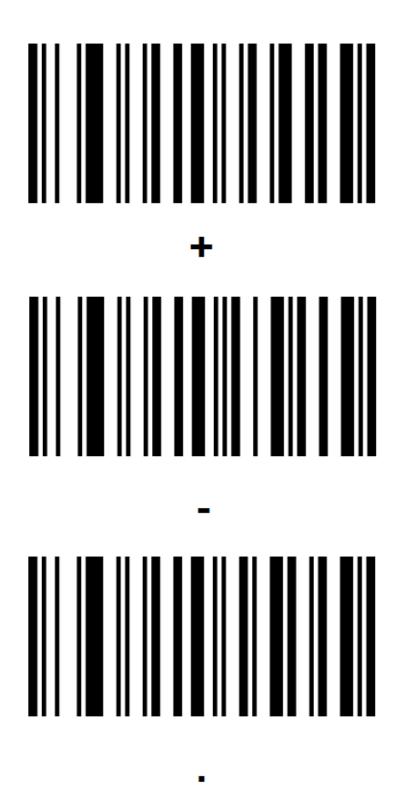
**Cancel**

# Alphanumeric Bar Codes
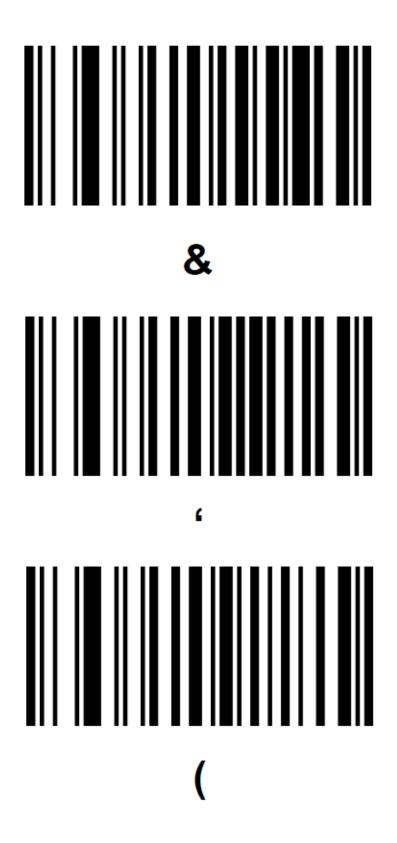
This chapter contains the alphanumeric bar codes that can be used for NCR 7895.
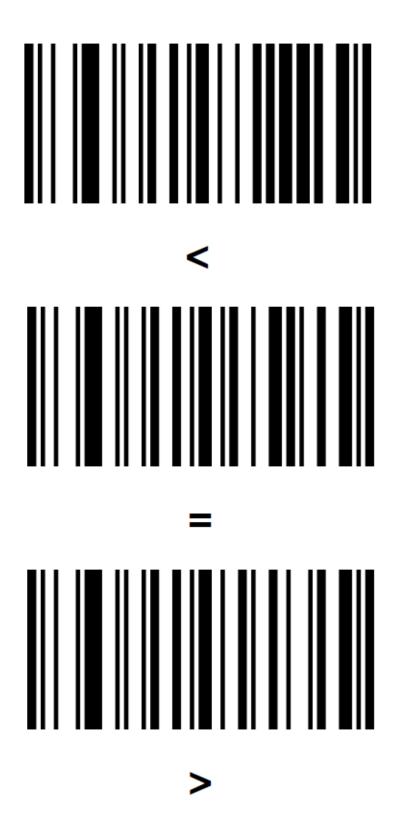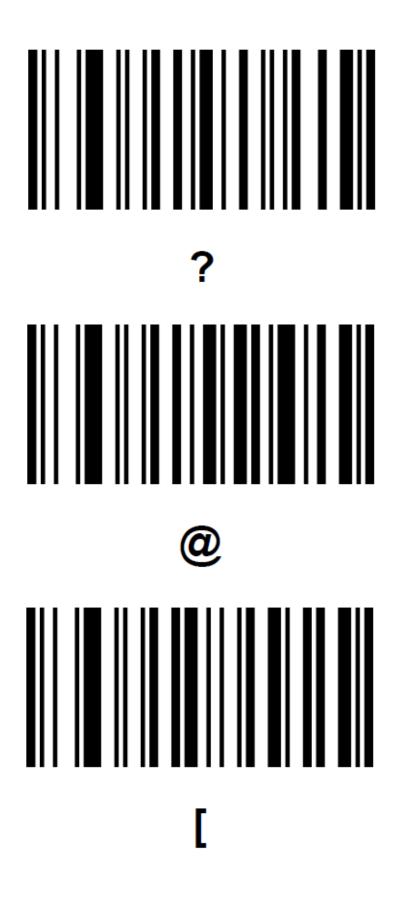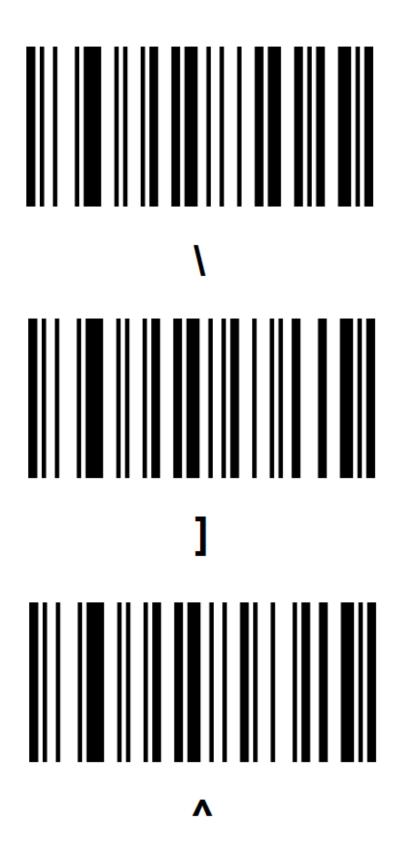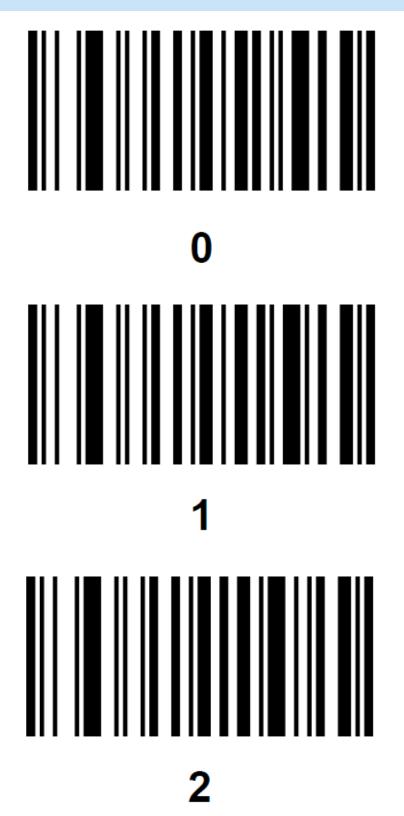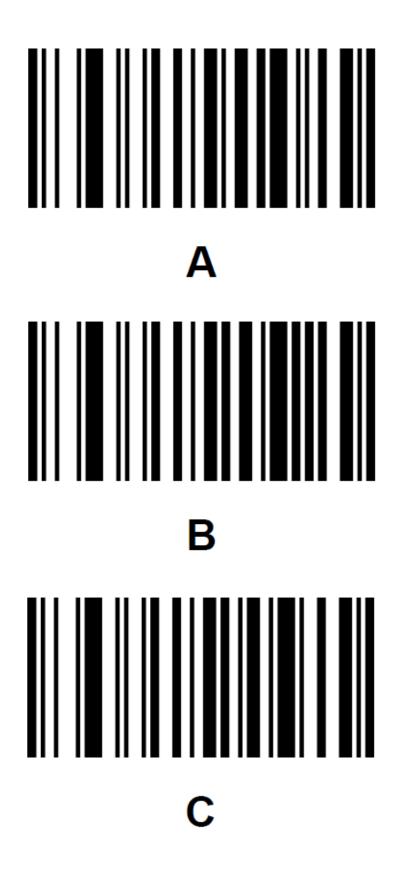


Space



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**9**

**End of Message**

**Cancel**

A



B



C

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## Cancel

To correct an error or change a selection, scan the following bar code.



Cancel
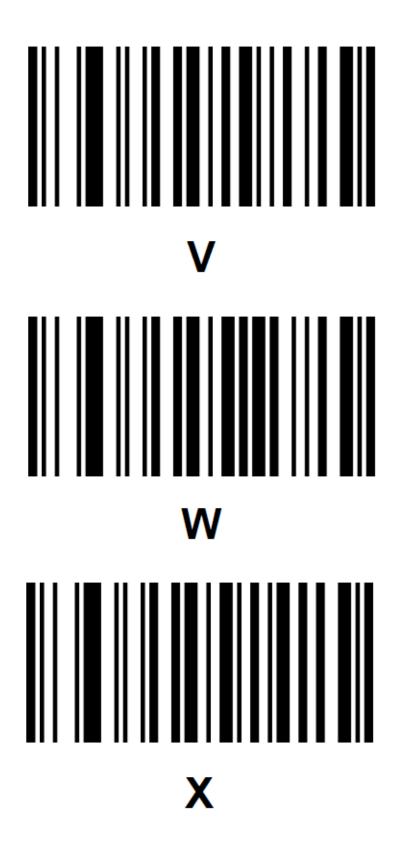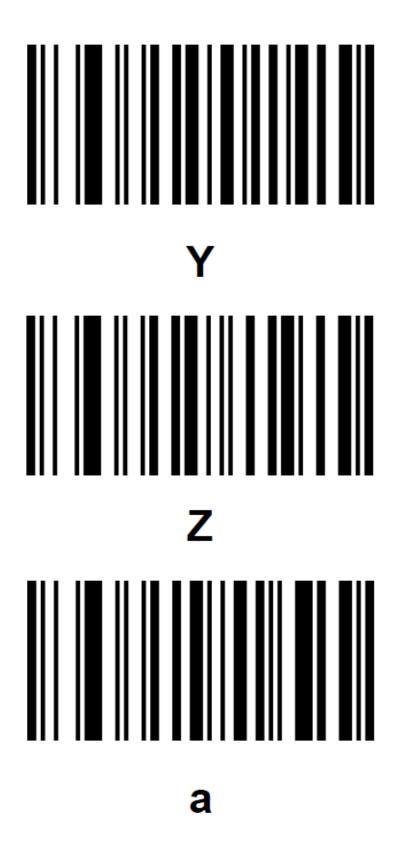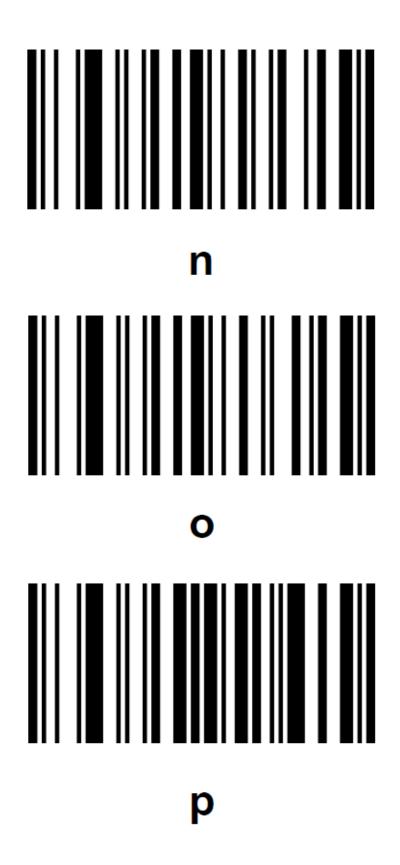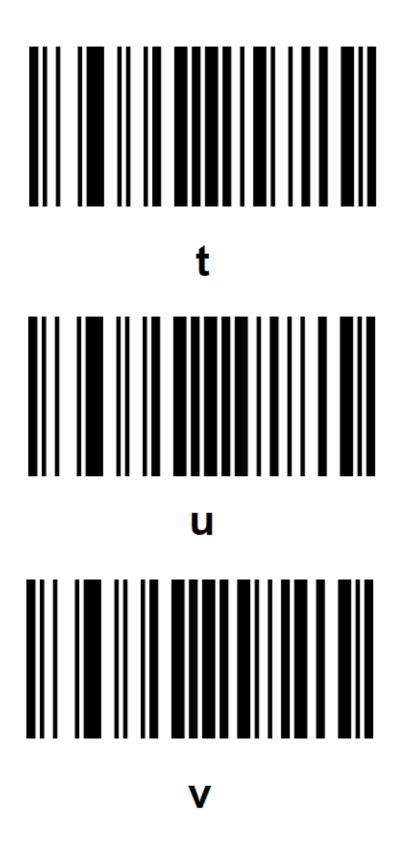
# Character Sets

This section provides the character sets available for NCR 7895.

# ASCII Character Set

For the Keyboard Wedge Interface, Code 39 Full ASCII interprets the bar code special character ($ + % /) preceding a Code 39 character and assigns an ASCII character value to the pair. For example, if you enable Code 39 Full ASCII and scan **+B**, it transmits as b, **%J** as **?**, and **%V** as **@**. Scanning **ABC%I** outputs the keystroke equivalent of **ABC >**.

> 📝 **Note**
>
> The keystroke in **bold** transmits only if the Function Key Mapping is enabled. Otherwise, the regular keystroke transmits. For more information on Function Key Mapping, refer to **"Function Key Mapping"** on page 57.

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1000 | %U | CTRL 2 | NUL |
| 1001 | $A | CTRL A | SOH |
| 1002 | $B | CTRL B | STX |
| 1003 | $C | CTRL C | ETX |
| 1004 | $D | CTRL D | EOT |
| 1005 | $E | CTRL E | ENQ |
| 1006 | $F | CTRL F | ACK |
| 1007 | $G | CTRL G | BELL |
| 1008 | $H | CTRL H or BACKSPACE | BCKSPC |
| 1009 | $I | CTRL I or HORIZONTAL TAB | HORIZ TAB |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1010 | $J | CTRL J | LF or NW LN |
| 1011 | $K | CTRL K | VT |
| 1012 | $L | CTRL L | FF |
| 1013 | $M | CTRL M or ENTER | CR or ENTER |
| 1014 | $N | CTRL N | SO |
| 1015 | $O | CTRL O | SI |
| 1016 | $P | CTRL P | DLE |
| 1017 | $Q | CTRL Q | DC1 or XON |
| 1018 | $R | CTRL R | DC2 |
| 1019 | $S | CTRL S | DC3 or XOFF |
| 1020 | $T | CTRL T | DC4 |
| 1021 | $U | CTRL U | NAK |
| 1022 | $V | CTRL V | SYN |
| 1023 | $W | CTRL W | ETB |
| 1024 | $X | CTRL X | CAN |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1025 | $Y | CTRL Y | EM |
| 1026 | $Z | CTRL Z | SUB |
| 1027 | %A | CTRL [ | ESC |
| 1028 | %B | CTRL \ | FS |
| 1029 | %C | CTRL ] | GS |
| 1030 | %D | CTRL 6 | RS |
| 1031 | %E | CTRL - | US |
| 1032 | Space | Space | Space |
| 1033 | /A | ! | ! |
| 1034 | /B | " | " |
| 1035 | /C | # | # |
| 1036 | /D | $ | $ |
| 1037 | /E | % | % |
| 1038 | /F | & | & |
| 1039 | /G | ' | ' |
| 1040 | /H | ( | ( |
| 1041 | /I | ) | ) |
| 1042 | /J | * | * |
| 1043 | /K | + | + |
| 1044 | /L | , | , |
| 1045 | - | - | - |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1046 | . | . | . |
| 1047 | /o | / | / |
| 1048 | 0 | 0 | 0 |
| 1049 | 1 | 1 | 1 |
| 1050 | 2 | 2 | 2 |
| 1051 | 3 | 3 | 3 |
| 1052 | 4 | 4 | 4 |
| 1053 | 5 | 5 | 5 |
| 1054 | 6 | 6 | 6 |
| 1055 | 7 | 7 | 7 |
| 1056 | 8 | 8 | 8 |
| 1057 | 9 | 9 | 9 |
| 1058 | /Z | : | : |
| 1059 | %F | ; | ; |
| 1060 | %G | < | < |
| 1061 | %H | = | = |
| 1062 | %I | > | > |
| 1063 | %J | ? | ? |
| 1064 | %V | @ | @ |
| 1065 | A | A | A |
| 1066 | B | B | B |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1067 | C | C | C |
| 1068 | D | D | D |
| 1069 | E | E | E |
| 1070 | F | F | F |
| 1071 | G | G | G |
| 1072 | H | H | H |
| 1073 | I | I | I |
| 1074 | J | J | J |
| 1075 | K | K | K |
| 1076 | L | L | L |
| 1077 | M | M | M |
| 1078 | N | N | N |
| 1079 | O | O | O |
| 1080 | P | P | P |
| 1081 | Q | Q | Q |
| 1082 | R | R | R |
| 1083 | S | S | S |
| 1084 | T | T | T |
| 1085 | U | U | U |
| 1086 | V | V | V |
| 1087 | W | W | W |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1088 | X | X | X |
| 1089 | Y | Y | Y |
| 1090 | Z | Z | Z |
| 1091 | %K | [ | [ |
| 1092 | %L | \ | \ |
| 1093 | %M | ] | ] |
| 1094 | %N | ^ | ^ |
| 1095 | %O | _ | _ |
| 1096 | %W | ' | ` |
| 1097 | +A | a | a |
| 1098 | +B | b | b |
| 1099 | +C | c | c |
| 1100 | +D | d | d |
| 1101 | +E | e | e |
| 1102 | +F | f | f |
| 1103 | +G | g | g |
| 1104 | +H | h | h |
| 1105 | +I | i | i |
| 1106 | +J | j | j |
| 1107 | +K | k | k |
| 1108 | +L | l | l |

| ASCII Value (Prefix/Suffix Value) | Full ASCII Code 39 Encode Char | Keystroke | ASCII Character (Applies to RS-232 Only) |
|---|---|---|---|
| 1109 | +M | m | m |
| 1110 | +N | n | n |
| 1111 | +O | o | o |
| 1112 | +P | p | p |
| 1113 | +Q | q | q |
| 1114 | +R | r | r |
| 1115 | +S | s | s |
| 1116 | +T | t | t |
| 1117 | +U | u | u |
| 1118 | +V | v | v |
| 1119 | +W | w | w |
| 1120 | +X | x | x |
| 1121 | +Y | y | y |
| 1122 | +Z | z | z |
| 1123 | %P | { | { |
| 1124 | %Q | I | \| |
| 1125 | %R | } | } |
| 1126 | %S | ~ | ~ |
| 1127 | | | Undefined |
| 7013 | | | ENTER |

# ALT Key Character Set

| ALT Keys | Keystroke |
| --- | --- |
| 2064 | ALT 2 |
| 2065 | ALT A |
| 2066 | ALT B |
| 2067 | ALT C |
| 2068 | ALT D |
| 2069 | ALT E |
| 2070 | ALT F |
| 2071 | ALT G |
| 2072 | ALT H |
| 2073 | ALT I |
| 2074 | ALT J |
| 2075 | ALT K |
| 2076 | ALT L |
| 2077 | ALT M |
| 2078 | ALT N |
| 2079 | ALT O |
| 2080 | ALT P |
| 2081 | ALT Q |
| 2082 | ALT R |
| 2083 | ALT S |

| ALT Keys | Keystroke |
|----------|-----------|
| 2084 | ALT T |
| 2085 | ALT U |
| 2086 | ALT V |
| 2087 | ALT W |
| 2088 | ALT X |
| 2089 | ALT Y |
| 2090 | ALT Z |

# GUI Key Character Set

For GUI Shift Keys, the Apple™ iMac keyboard has an apple key on either side of the space bar. Windows-based systems have a GUI key to the left of the left ALT key and to the right of the right ALT key.

| GUI Key | Keystroke |
|---------|-----------|
| 3000 | Right Control Key |
| 3048 | GUI 0 |
| 3049 | GUI 1 |
| 3050 | GUI 2 |
| 3051 | GUI 3 |
| 3052 | GUI 4 |
| 3053 | GUI 5 |
| 3054 | GUI 6 |
| 3055 | GUI 7 |
| 3056 | GUI 8 |
| 3057 | GUI 9 |
| 3065 | GUI A |
| 3066 | GUI B |
| 3067 | GUI C |
| 3068 | GUI D |
| 3069 | GUI E |
| 3070 | GUI F |
| 3071 | GUI G |

| GUI Key | Keystroke |
|---------|-----------|
| 3072 | GUI H |
| 3073 | GUI I |
| 3074 | GUI J |
| 3075 | GUI K |
| 3076 | GUI L |
| 3077 | GUI M |
| 3078 | GUI N |
| 3079 | GUI O |
| 3080 | GUI P |
| 3081 | GUI Q |
| 3082 | GUI R |
| 3083 | GUI S |
| 3084 | GUI T |
| 3085 | GUI U |
| 3086 | GUI V |
| 3087 | GUI W |
| 3088 | GUI X |
| 3089 | GUI Y |
| 3090 | GUI Z |

# PF Key Character Set

| PF Keys | Keystroke |
|---------|-----------|
| 4001 | PF 1 |
| 4002 | PF 2 |
| 4003 | PF 3 |
| 4004 | PF 4 |
| 4005 | PF 5 |
| 4006 | PF 6 |
| 4007 | PF 7 |
| 4008 | PF 8 |
| 4009 | PF 9 |
| 4010 | PF 10 |
| 4011 | PF 11 |
| 4012 | PF 12 |
| 4013 | PF 13 |
| 4014 | PF 14 |
| 4015 | PF 15 |
| 4016 | PF 16 |

# F Key Character Set

| F Keys | Keystroke |
|--------|-----------|
| 5001 | F 1 |
| 5002 | F 2 |
| 5003 | F 3 |
| 5004 | F 4 |
| 5005 | F 5 |
| 5006 | F 6 |
| 5007 | F 7 |
| 5008 | F 8 |
| 5009 | F 9 |
| 5010 | F 10 |
| 5011 | F 11 |
| 5012 | F 12 |
| 5013 | F 13 |
| 5014 | F 14 |
| 5015 | F 15 |
| 5016 | F 16 |
| 5017 | F 17 |
| 5018 | F 18 |
| 5019 | F 19 |
| 5020 | F 20 |

| F Keys | Keystroke |
|--------|-----------|
| 5021 | F 21 |
| 5022 | F 22 |
| 5023 | F 23 |
| 5024 | F 24 |

# Numeric Key Character Set

| Numeric Keypad | Keystroke |
|---|---|
| 6042 | * |
| 6043 | + |
| 6044 | Undefined |
| 6045 | - |
| 6046 | . |
| 6047 | / |
| 6048 | 0 |
| 6049 | 1 |
| 6050 | 2 |
| 6051 | 3 |
| 6052 | 4 |
| 6053 | 5 |
| 6054 | 6 |
| 6055 | 7 |
| 6056 | 8 |
| 6057 | 9 |
| 6058 | Enter |
| 6059 | Num Lock |

# Extended Key Character Set

| Extended Keypad | Keystroke |
| --- | --- |
| 7001 | Break |
| 7002 | Delete |
| 7003 | Pg Up |
| 7004 | End |
| 7005 | Pg Dn |
| 7006 | Pause |
| 7007 | Scroll Lock |
| 7008 | Backspace |
| 7009 | Tab |
| 7010 | Print Screen |
| 7011 | Insert |
| 7012 | Home |
| 7013 | Enter |
| 7014 | Escape |
| 7015 | Up Arrow |
| 7016 | Dn Arrow |
| 7017 | Left Arrow |
| 7018 | Right Arrow |

# Programming Reference

This chapter provides programming reference for Symbol Code Identifiers and AIM Code Identifiers.

> **Note**
>
> The Code Characters in this chapter only apply if the scanner supports the symbology listed. For more information, refer to **"Symbologies"** on page 307.

# Symbol Code Identifiers

| Code Character | Code Type |
|---|---|
| A | UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13 |
| B | Code 39, Code 32 |
| C | Codabar |
| D | Code 128 |
| E | Code 93 |
| F | Interleaved 2 of 5 |
| G | Discrete 2 of 5, or Discrete 2 of 5 IATA |
| J | MSI |
| K | GS1-128 |
| L | Bookland EAN |
| R | GS1 DataBar Family |
| T | UCC Composite |
| U | Chinese 2 of 5 |
| X | ISSN EAN, PDF417, Macro PDF417 |
| z | Aztec, Aztec Rune |
| P00 | Data Matrix |
| P01 | QR Code, MicroQR |
| P0G | GS1 Data Matrix |
| P0H | Han Xin |
| P0Q | GS1 QR |

# AIM Code Identifiers

Each AIM Code Identifier contains the three-character string ]cm where:

- ] = Flag Character (ASCII 93)

- c = Code Character

- m = Modifier Character

# AIM Code Characters

| Code Character | Code Type |
|---|---|
| A | Code 39, Code 39 Full ASCII, Code 32 |
| C | Code 128, GS1-128, Coupon (Code 128 portion) |
| d | Data Matrix, GS1 Data Matrix |
| E | UPC/EAN, Coupon (UPC portion) |
| e | GS1 DataBar Family |
| F | Codabar |
| G | Code 93 |
| h | Han Xin |
| I | Interleaved 2 of 5 |
| L | PDF417, Macro PDF417 |
| L2 | TLC 39 |
| M | MSI |
| Q | QR Code, MicroQR, GS1 QR |
| S | Discrete 2 of 5, IATA 2 of 5 |
| z | Aztec, Aztec Rune |
| X | Bookland EAN, ISSN EAN, Chinese 2 of 5 |

# Modifier Characters

The modifier character is the sum of the applicable option values based on AIM Code Characters.

| Code Type | Option Value | Option |
|-----------|--------------|--------|
| Code 39 | 0 | No check character or Full ASCII processing. |
| | 1 | Reader has checked one check character. |
| | 3 | Reader has checked and stripped check character. |
| | 4 | Reader has performed Full ASCII character conversion. |
| | 5 | Reader has performed Full ASCII character conversion and checked one check character. |
| | 7 | Reader has performed Full ASCII character conversion and checked and stripped check character. |
| | **Example**<br>A Full ASCII bar code with check character W, **A+I+MI+DW**, is transmitted as **]A7**AIMID where 7 = (3+4). | |
| Code 128 | 0 | Standard data packet, no Function code 1 in first symbol position. |
| | 1 | Function code 1 in first symbol character position. |
| | 2 | Function code 1 in second symbol character position. |
| | **Example**<br>A Code (EAN) 128 bar code with Function 1 character FNC1 in the first position, AIMID is transmitted as **]C1**AIMID | |

| Code Type | Option Value | Option |
|---|---|---|
| I 2 of 5 | 0 | No check digit processing. |
| | 1 | Reader has validated check digit. |
| | 3 | Reader has validated and stripped check digit. |
| | **Example**<br><br>An I 2 of 5 bar code without check digit, 4123, is transmitted as **]I0**4123 | |
| Codabar | 0 | No check digit processing. |
| | 1 | Reader has checked check digit. |
| | 3 | Reader has stripped check digit before transmission. |
| | **Example**<br><br>A Codabar bar code without check digit, 4123, is transmitted as **]F0**4123 | |
| Code 93 | 0 | No options specified at this time. Always transmit 0. |
| | **Example**<br><br>A Code 93 bar code 012345678905 is transmitted as **]G0**012345678905 | |
| MSI | 0 | Check digits are sent. |
| | 1 | No check digit is sent. |
| | **Example**<br><br>An MSI bar code 4123, with a single check digit checked, is transmitted as **]M1**4123 | |
| D 2 of 5 | 0 | No options specified at this time. Always transmit 0. |
| | **Example**<br><br>A D 2 of 5 bar code 4123, is transmitted as **]S0**4123 | |

| Code Type | Option Value | Option |
|---|---|---|
| UPC/EAN | 0 | Standard data packet in full EAN format, i.e. 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data). |
| | 1 | Two digit supplemental data only. |
| | 2 | Five digit supplemental data only. |
| | 3 | Combined data packet comprising 13 digits from EAN-13, UPC-A or UPC-E symbol and 2 or 5 digits from supplemental symbol. |
| | 4 | EAN-8 data packet. |
| | **Example**<br>A UPC-A bar code 012345678905 is transmitted as **]E0**012345678905 | |
| Bookland EAN | 0 | No options specified at this time. Always transmit 0. |
| | **Example**<br>A Bookland EAN bar code 123456789X is transmitted as **]X0**123456789X | |
| ISSN EAN | 0 | No options specified at this time. Always transmit 0. |
| | **Example**<br>An ISSN EAN bar code 123456789X is transmitted as **]X0**123456789X | |
| GS1 DataBar Family | N/A | No option specified at this time. Always transmit 0. GS1 DataBar Omnidirectional and GS1 DataBar Limited transmit with an Application Identifier "01". |
| | **Example**<br>A GS1 DataBar Omnidirectional bar code 0110012345678902 is transmitted as **]e**00110012345678902. | |

| Code Type | Option Value | Option |
|---|---|---|
| EAN.UCC<br><br>Composites<br>(GS1 DataBar, GS1-128,<br>2D portion of<br>UPC composite) | N/A | Native mode transmission.<br><br>Note: UPC portion of composite is transmitted using UPC rules. |
| | 0 | Standard data packet. |
| | 1 | Data packet containing the data following an encoded symbol separator character. |
| | 2 | Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol. |
| | 3 | Data packet containing the data following an escape mechanism character. The data packet supports the ECI protocol. |
| | 1 | Data packet is a GS1-128 symbol (that is, data is preceded with ]JC1). |

| Code Type | Option Value | Option |
|---|---|---|
| PDF417 | 0 | Reader set to conform to protocol defined in 1994 PDF417 symbology specifications.<br><br>**Note**<br>When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte $92_{DEC}$ has been doubled in transmission. |
| | 1 | Reader set to follow the ECI protocol (Extended Channel Interpretation). All data characters $92_{DEC}$ are doubled. |
| | 2 | Reader set for Basic Channel operation (no escape character transmission protocol). Data characters $92_{DEC}$ are not doubled.<br><br>**Note**<br>When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted. |
| | 3 | The bar code contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915. |
| | 4 | The bar code contains a GS1-128 symbol, and the first codeword is in the range 908-909. |
| | 5 | The bar code contains a GS1-128 symbol, and the first codeword is in the range 910-911. |
| | **Example** | A PDF417 bar code ABCD, with no transmission protocol enabled, is transmitted as ]L2ABCD. |

| Code Type | Option Value | Option |
|---|---|---|
| Data Matrix | 0 | ECC 000-140, not supported. |
| | 1 | ECC 200. |
| | 2 | ECC 200, FNC1 in first or fifth position. |
| | 3 | ECC 200, FNC1 in second or sixth position. |
| | 4 | ECC 200, ECI protocol implemented. |
| | 5 | ECC 200, FNC1 in first or fifth position, ECI protocol implemented. |
| | 6 | ECC 200, FNC1 in second or sixth position, ECI protocol implemented. |
| GS1 Data Matrix | 2 | ECC 200, FNC1 in first or fifth position. |

| Code Type | Option Value | Option |
|-----------|--------------|--------|
| QR Code | 0 | Model 1 symbol. |
| | 1 | Model 2 / MicroQR symbol, ECI protocol not implemented. |
| | 2 | Model 2 symbol, ECI protocol implemented. |
| | 3 | Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position. |
| | 4 | Model 2 symbol, ECI protocol implemented, FNC1 implied in first position. |
| | 5 | Model 2 symbol, ECI protocol not implemented, FNC1 implied in second position. |
| | 6 | Model 2 symbol, ECI protocol implemented, FNC1 implied in second position. |
| GS1 QR | 3 | Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position. |
| Aztec | 0 | Aztec symbol. |
| | C | Aztec Rune symbol. |
| Han Xin | 0 | Generic data, no special features are set. The transmitted data does not follow the AIM ECI protocol. |
| | 1 | ECI protocol enabled. There is at least one ECI mode encoded. Transmitted data must follow the AIM ECI protocol. |
| Mailmark | 0 | No option specified at this time. Always transmit 0. |

# Country Codes

This chapter provides instructions for programming the keyboard to interface with a USB or keyboard wedge host. The host powers the scanner. For host setup information, refer to **"USB Interface"** on page 37.

> 📝 **Note**
>
> To select a code page for the country keyboard type, refer to **"Country Code Page Defaults"** on page 634.

# USB Country Keyboard Types (Country Codes) (Parameter #960)

Scan the bar code corresponding to the keyboard type. For a USB host, this setting applies only to the USB Keyboard (HID) device. If the keyboard type is not listed, refer to **"Keypad Emulation"** on page 53 for the USB HID host.

> **❗ Important**
>
> Take note of the following:
>
> - Some country keyboard bar code types are specific to certain Windows operating systems (that is, XP and Windows 7 or higher). Bar codes requiring a specific Windows OS are noted in the bar code captions.
>
> - For Belgian French key boards, use the **French International** bar code.
>
> - When changing USB country keyboard types, the scanner automatically resets and issues the standard startup beep sequences.
>
> - For best results when using international keyboards, enable **"Quick Keypad Emulation"** on page 54.

**\*US English (North American)**

**US English (Mac)**

**Albanian**

**Arabic (101)**

**Arabic (102)**

**Arabic (102) AZERTY**

**Azeri (Latin)**

**Azeri (Cyrillic)**

**Belarusian**

**Bosnian (Latin)**

**Bosnian (Cyrillic)**

**Bulgarian (Latin)**

**Bulgarian Cyrillic (Typewriter)
(Bulgarian -Windows XP
Typewriter - Windows 7 or higher)**

**Canadian French Win7**

**Canadian French (Legacy)**

**Canadian Multilingual Standard**



**Chinese (ASCII)**



**Chinese (Simplified)**
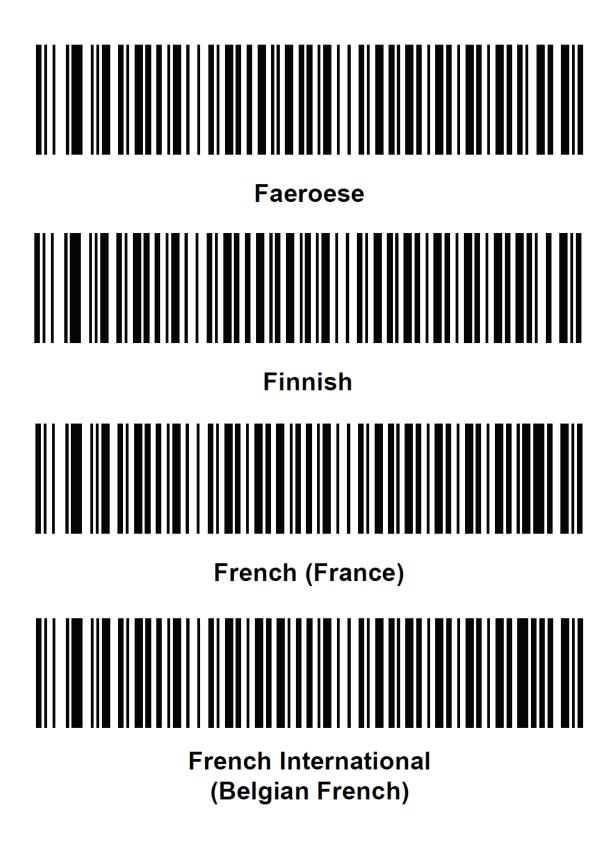
> 📝 **Note**
>
> For Chinese (Simplified), refer to **"Chinese, Japanese, Korean (CJK) Decode Control"** on page 652 for CJK keyboard types.

**Chinese (Traditional)**

> **Note**
>
> For Chinese (Traditional), refer to **"Chinese, Japanese, Korean (CJK) Decode Control"** on page 652 for CJK keyboard types.



**Croatian**



**Czech**



**Czech (Programmer)**

**Czech (QWERTY)**

**Danish**

**Dutch (Netherlands)**

**Estonian**

||||| |||| || ||| ||||| |||| ||| |||||

**Faeroese**

||||| |||| || ||| ||||| |||| ||| |||||

**Finnish**

||||| |||| || ||| ||||| |||| ||| |||||

**French (France)**

||||| |||| || ||| ||||| |||| ||| |||||

**French International
(Belgian French)**

**French (Canada) 95/98**



**French (Canada) 2000/XP**

> 📝 **Note**
>
> There is also a country code bar code for **Canadian Multilingual Standard** in this section. Be sure to select the appropriate bar code for the host system.



**Galician**



**German**

**Greek Latin**

**Greek (220) Latin**

**Greek (319) Latin**

**Greek**

**Greek (220)**

**Greek (319)**

**Greek Polytonic**

**Hebrew Israel**

**Hungarian**

**Hungarian_101KEY**

**Icelandic**

**Irish**

**Italian**



**Italian (142)**



**Japanese (ASCII)**



**Japanese (SHIFT-JIS)**
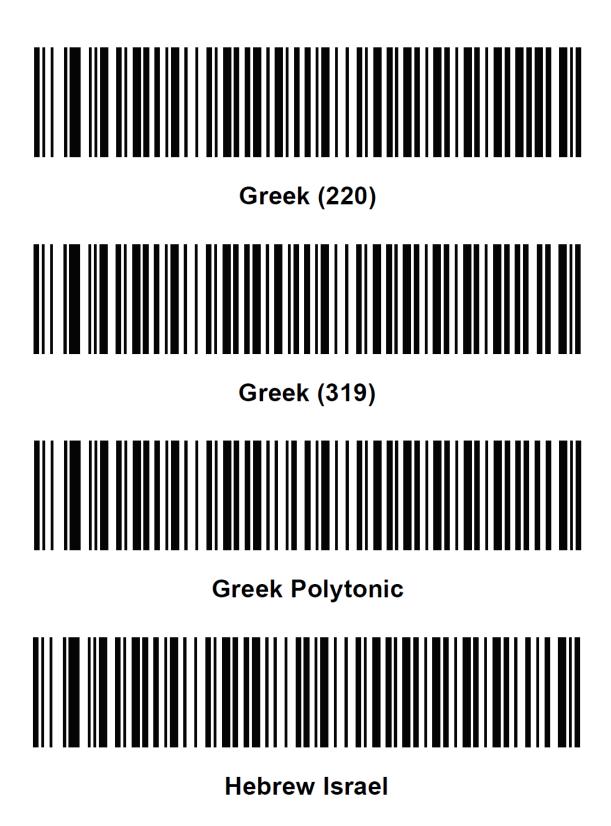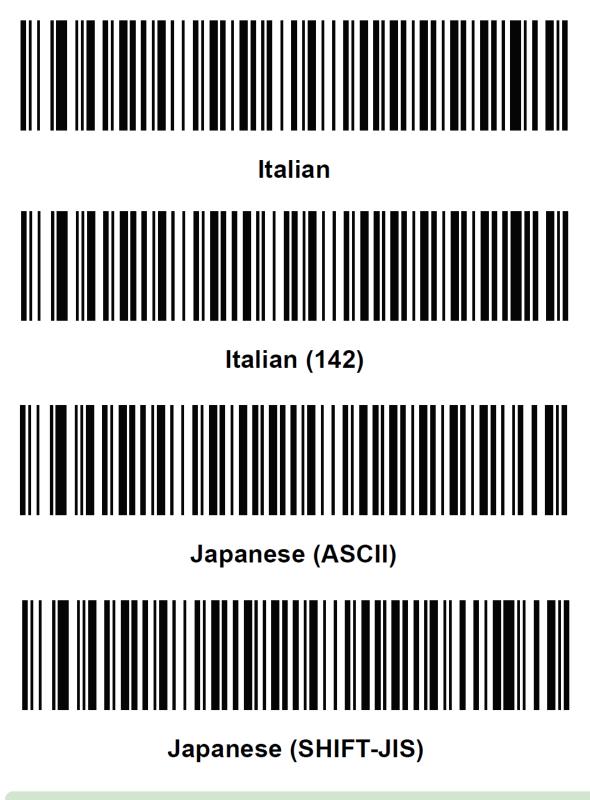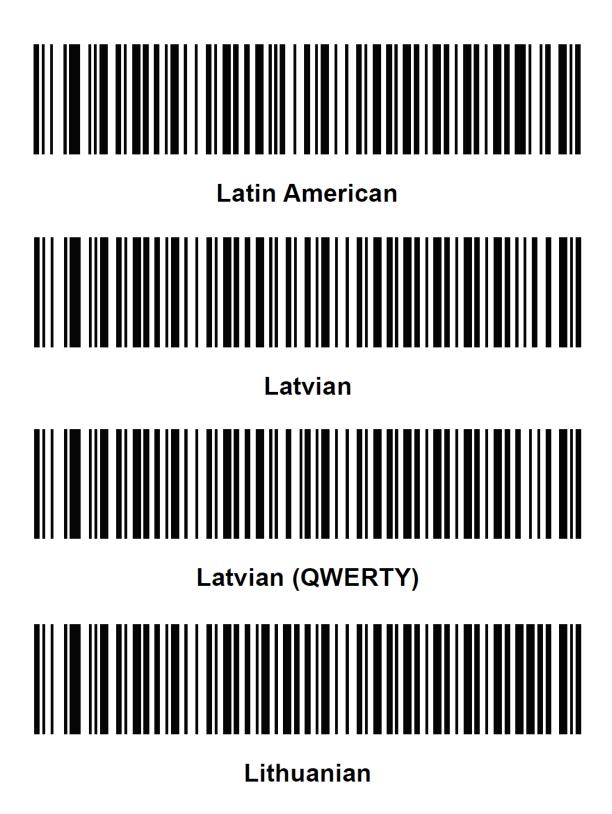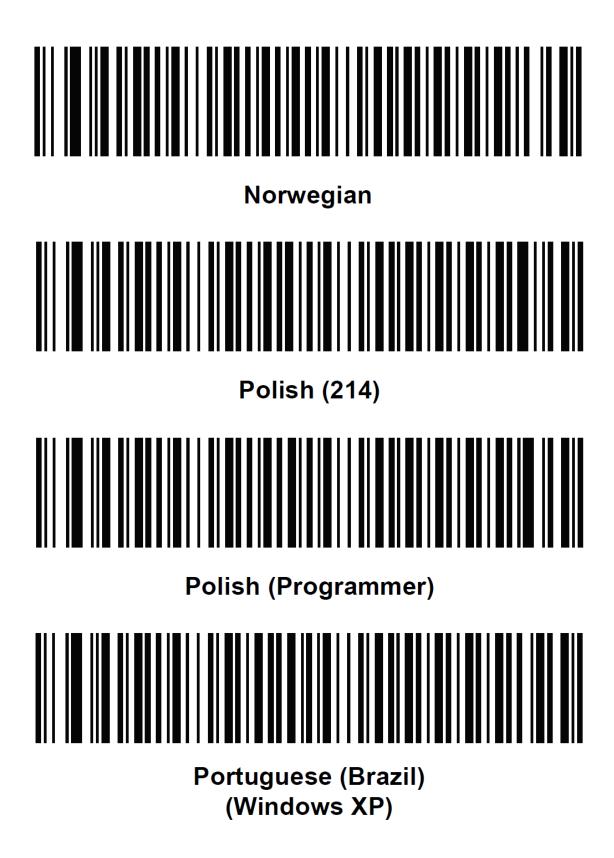
> 📝 **Note**
>
> For Japanese (SHIFT-JIS), refer to **"Chinese, Japanese, Korean (CJK) Decode Control"** on page 652 for CJK keyboard types.

**Kazakh**



**Korean (ASCII)**



**Korean (Hangul)**

> 📝 **Note**
>
> For Korean (Hangul), refer to **"Chinese, Japanese, Korean (CJK) Decode Control"** on page 652 for CJK keyboard types.



**Kyrgyz**

**Latin American**

**Latvian**

**Latvian (QWERTY)**

**Lithuanian**

**Lithuanian (IBM)**

**Macedonian (FYROM)**

**Maltese_47KEY**

**Mongolian**

**Norwegian**

**Polish (214)**

**Polish (Programmer)**

**Portuguese (Brazil)
(Windows XP)**

**Portuguese (Brazilian ABNT)**

**Portuguese (Brazilian ABNT2)**

**Portuguese (Portugal)**

**Romanian
(Windows XP)**

**Romanian (Legacy)
(Windows 7 or higher)**
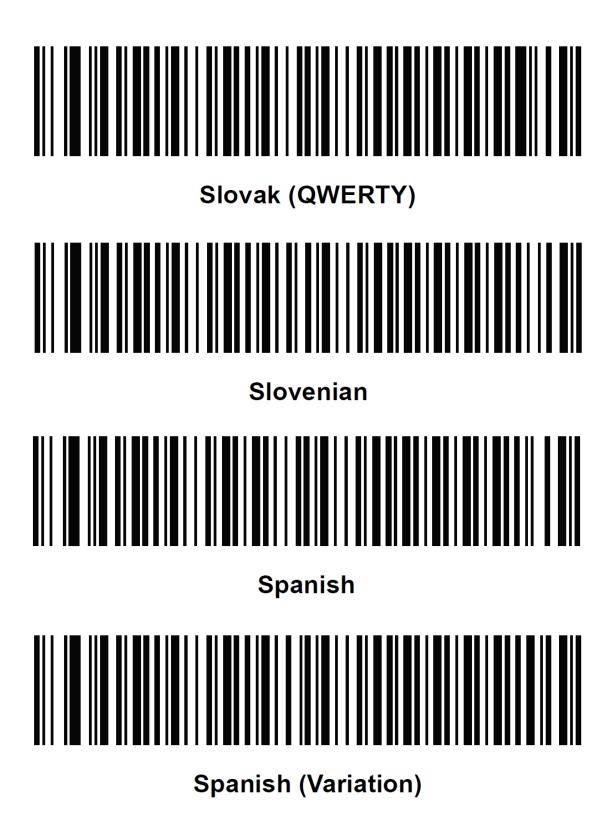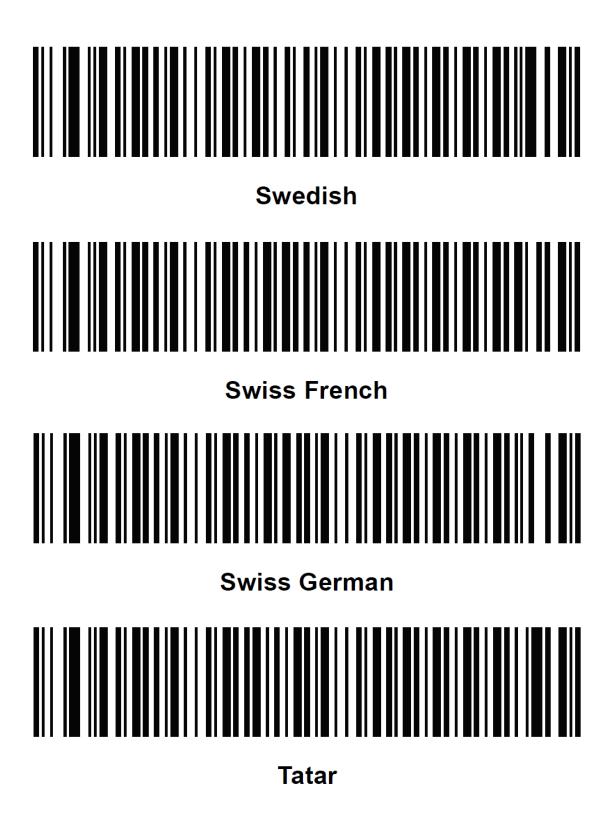
**Romanian (Standard)
(Windows 7 or higher)**
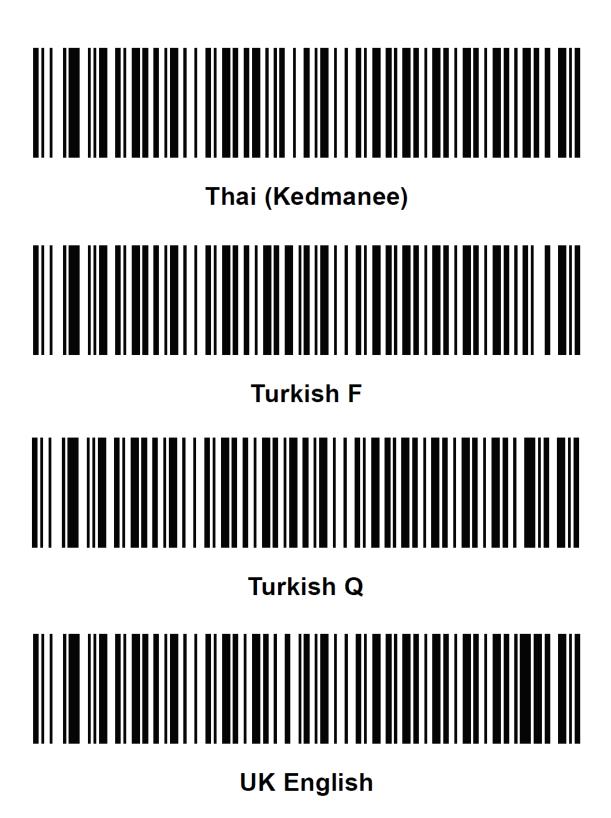
**Romanian (Programmer)
(Windows 7 or higher)**

**Russian**

**Russian (Typewriter)**

**Serbian (Latin)**

**Serbian (Cyrillic)**

**Slovak**

**Slovak (QWERTY)**



**Slovenian**



**Spanish**



**Spanish (Variation)**

**Swedish**

**Swiss French**

**Swiss German**

**Tatar**

**Thai (Kedmanee)**

**Turkish F**

**Turkish Q**

**UK English**

**Ukrainian**

**US Dvorak**

**US Dvorak Left**

**US Dvorak Right**
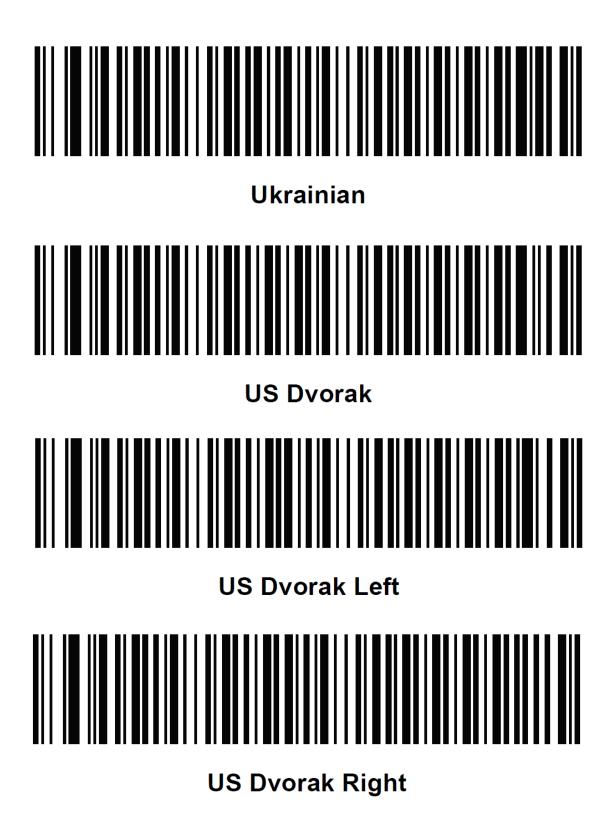
**US International**

**Uzbek**

**Vietnamese**

# Country Code Pages

This chapter provides bar codes for selecting code pages for the country keyboard type selected in **"Country Codes"** on page 607. If the default code page in **"Country Code Page Defaults"** on the next page is appropriate for the selected country keyboard type, there is no need to scan a country code page bar code.

> **Note**
>
> ADF rules can also specify a code page based on the symbology and other ADF criteria. Refer to the *Advanced Data Formatting Programmer Guide* (72E-69680-xx) at **http://www.zebra.com/support**.

# Country Code Page Defaults

The following table provides the code page default for each country keyboard.

| Country Keyboard | Code Page Default |
|---|---|
| US English (North American) | Windows 1252 |
| US English (Mac) | Mac CP10000 |
| Albanian | Windows 1250 |
| Arabic 101 | Windows 1256 |
| Arabic 102 | Windows 1256 |
| Arabic 102 AZERTY | Windows 1256 |
| Azeri Latin | Windows 1254 |
| Azeri Cyrillic | Windows 1251 |
| Belarusian | Windows 1251 |
| Bosnian Latin | Windows 1250 |
| Bosnian Cyrillic | Windows 1251 |
| Bulgarian Latin | Windows 1250 |
| Bulgarian Cyrillic | Windows 1251 |
| Canadian French Win7 | Windows 1252 |
| Canadian French (Legacy) | Windows 1252 |
| Canadian Multilingual | Windows 1252 |
| Croatian | Windows 1250 |
| Chinese ASCII | Windows 1252 |
| Chinese (Simplified) | Windows 936, GBK |

| Country Keyboard | Code Page Default |
|---|---|
| Chinese (Traditional) | Windows 950, Big5 |
| Czech | Windows 1250 |
| Czech Programmers | Windows 1250 |
| Czech QWERTY | Windows 1250 |
| Danish | Windows 1252 |
| Dutch Netherland | Windows 1252 |
| Estonian | Windows 1257 |
| Faeroese | Windows 1252 |
| Finnish | Windows 1252 |
| French (France) | Windows 1252 |
| French (Canada) 95/98 | Windows 1252 |
| French (Canada) 2000/XP | Windows 1252 |
| French International (Belgian French) | Windows 1252 |
| Galician | Windows 1252 |
| German | Windows 1252 |
| Greek Latin | Windows 1252 |
| Greek220 Latin | Windows 1253 |
| Greek319 Latin | Windows 1252 |
| Greek | Windows 1253 |
| Greek220 | Windows 1253 |
| Greek319 | Windows 1253 |
| Greek Polytonic | Windows 1253 |

| Country Keyboard | Code Page Default |
|---|---|
| Hebrew Israel | Windows 1255 |
| Hungarian | Windows 1250 |
| Hungarian_101KEY | Windows 1250 |
| Icelandic | Windows 1252 |
| Irish | Windows 1252 |
| Italian | Windows 1252 |
| Italian_142 | Windows 1252 |
| Japanese ASCII | Windows 1252 |
| Japanese (Shift-JIS) | Windows 932, Shift-JIS |
| Kazakh | Windows 1251 |
| Korean ASCII | Windows 1252 |
| Korean (Hangul) | Windows 949, Hangul |
| Kyrgyz Cyrillic | Windows 1251 |
| Latin America | Windows 1252 |
| Latvian | Windows 1257 |
| Latvian QWERTY | Windows 1257 |
| Lithuanian | Windows 1257 |
| Lithuanian_IBM | Windows 1257 |
| Macedonian -FYROM | Windows 1251 |
| Maltese_47KEY | Windows 1252 |
| Mongolian-Cyrillic | Windows 1251 |
| Norwegian | Windows 1252 |

| Country Keyboard | Code Page Default |
| --- | --- |
| Polish_214 | Windows 1250 |
| Polish Programmer | Windows 1250 |
| Portuguese Brazil | Windows 1252 |
| Portuguese Brazilian ABNT | Windows 1252 |
| Portuguese Brazilian ABNT2 | Windows 1252 |
| Portuguese Portugal | Windows 1252 |
| Romanian | Windows 1250 |
| Romanian Legacy | Windows 1250 |
| Romanian Standard | Windows 1250 |
| Romanian Programmer | Windows 1250 |
| Russian | Windows 1251 |
| Russian Typewriter | Windows 1251 |
| Serbian Latin | Windows 1250 |
| Serbian Cyrillic | Windows 1251 |
| Slovak | Windows 1250 |
| Slovak QWERTY | Windows 1250 |
| Slovenian | Windows 1250 |
| Spanish | Windows 1252 |
| Spanish Variation | Windows 1252 |
| Swedish | Windows 1252 |
| Swiss French | Windows 1252 |
| Swiss German | Windows 1252 |

| Country Keyboard | Code Page Default |
| --- | --- |
| Tatar | Windows 1251 |
| Thai-Kedmanee | Windows 874 |
| Turkish F | Windows 1254 |
| Turkish Q | Windows 1254 |
| Ukrainian | Windows 1251 |
| United Kingdom | Windows 1252 |
| United States | Windows 1252 |
| US Dvorak | Windows 1252 |
| US Dvorak Left Hand | Windows 1252 |
| US Dvorak Right Hand | Windows 1252 |
| US International | Windows 1252 |
| Uzbek Cyrillic | Windows 1251 |
| Vietnamese | Windows 1258 |

# Country Code Page Bar Codes (Parameter #961)

Scan the bar code that corresponds to the country keyboard code page.

**Windows 1250**
**Latin 2, Central European**

**Windows 1251**
**Cyrillic, Slavic**

**Windows 1252**
**Latin 1, Western European**

**Windows 1253**
**Greek**



**Windows 1254**
**Latin 5, Turkish**



**Windows 1255**
**Hebrew**



**Windows 1256**
**Arabic**

**Windows 1257
Baltic**

**Windows 1258
Vietnamese**

**Windows 874
Thai**

**Windows 20866
Cyrillic KOI8-R**
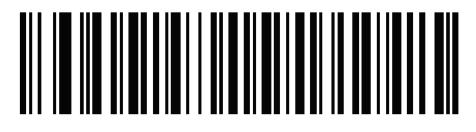
**Windows 932**
**Japanese Shift-JIS**

**Windows 936**
**Simplified Chinese GBK**

**Windows 54936**
**Simplified Chinese GB18030**

**Windows 949**
**Korean Hangul**

**Windows 950
Traditional Chinese Big5**
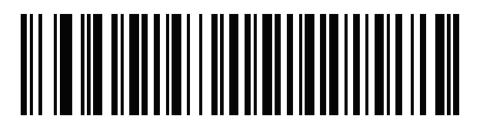
**MS-DOS 437
Latin US**

**MS-DOS 737
Greek**

**MS-DOS 775
Baltic**

**MS-DOS 850**

**Latin 1**

**MS-DOS 852**

**Latin 2**

**MS-DOS 855**

**Cyrillic**

**MS-DOS 857**

**Turkish**

||||||| ||| || ||| ||||| || ||| |||| |||||

**MS-DOS 860**
**Portuguese**

||||||| ||| || ||| ||||| || ||| |||| |||||

**MS-DOS 861**
**Icelandic**

||||||| ||| || ||| ||||| || ||| |||| |||||
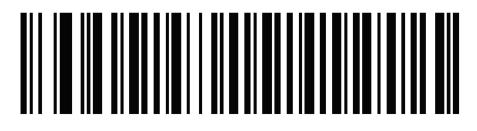
**MS-DOS 862**
**Hebrew**

||||||| ||| || ||| ||||| || ||| |||| |||||

**MS-DOS 863**
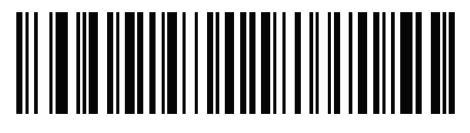**French Canada**

**MS-DOS 865
Nordic**

**MS-DOS 866
Cyrillic**

**MS-DOS 869
Greek 2**

**ISO 8859-1
Latin 1, Western European**

**ISO 8859-2
Latin 2, Central European**
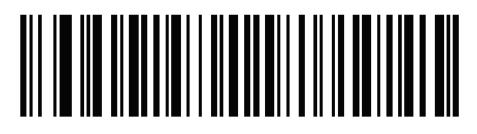
**ISO 8859-3
Latin 3, South European**

**ISO 8859-4
Latin 4, North European**

**ISO 8859-5
Cyrillic**

**ISO 8859-6**
**Arabic**

**ISO 8859-7**
**Greek**

**ISO 8859-8**
**Hebrew**

**ISO 8859-9**
**Latin 5, Turkish**

**ISO 8859-10**
**Latin 6, Nordic**



**ISO 8859-11**
**Thai**



**ISO 8859-13**
**Latin 7, Baltic**



**ISO 8859-14**
**Latin 8, Celtic**
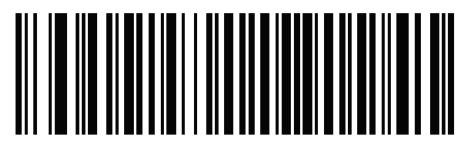
**ISO 8859-15**
**Latin 9**

**ISO 8859-16**
**Latin 10, South-Eastern European**

**UTF-8**

**UTF-16LE**
**UTF-16 Little Endian**

||||||| (barcode)

## UTF-16BE
## UTF-16 Big Endian

||||||| (barcode)

## Mac CP10000
## Roman

# Chinese, Japanese, Korean (CJK) Decode Control

This chapter describes control parameters for CJK (Chinese, Japanese, Korean) bar code decode through USB HID Keyboard Emulation mode.

> 📝 **Note**
>
> Because ADF does not support CJK character processing, there is no format manipulation for CJK output.

# CJK Control Parameters
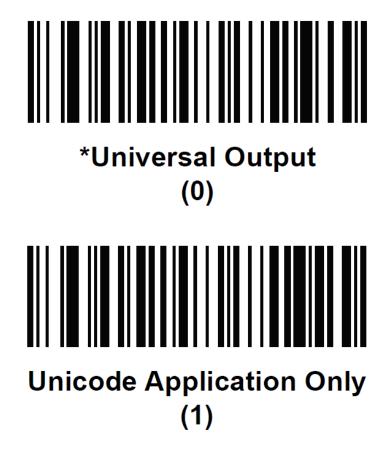
The following are CJK Control parameters:

- **"Unicode Output Control (Parameter #973)"** on the next page
- **"CJK Output Method to Windows Host (Parameter #972)"** on page 655
- **"Non-CJK UTF Bar Code Output (Parameter #960)"** on page 660

# Unicode Output Control (Parameter #973)

For a Unicode encoded CJK bar code, the following are options for Unicode output:

- **Universal Output to Unicode and MBCS Application**—applies to Unicode and MBCS expected applications, such as MS Word and Notepad on a Windows host.

> 📝 **Note**
>
> To support Unicode universal output, set up the registry table for the Windows host. For more information, refer to **"Unicode/CJK Decode Setup with Windows Host"** on page 666.

- **Output to Unicode Application Only**—applies only to Unicode expected applications, such as MS Word and WordPad, but not Notepad.

Scan one of the following bar codes to set the Unicode output. By default, this parameter is set to **Universal Output**.



**\*Universal Output
(0)**



**Unicode Application Only
(1)**

# CJK Output Method to Windows Host (Parameter #972)

For a national standard encoded CJK bar code, the following are options for CJK output to a Windows host:

- **Universal CJK Output**—default universal CJK output method for US English IME or Chinese/Japanese/Korean ASCII IME on a Windows host. This method converts CJK characters to Unicode and emulates the characters when transmitting to the host. Use the **"Unicode Output Control (Parameter #973)"** on the previous page to control the Unicode output.
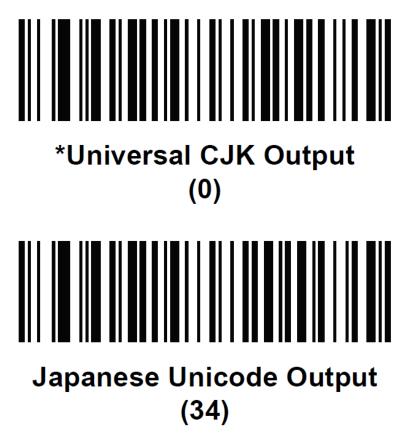
> 📑 **Note**
>
> To support universal CJK output, set up the registry table for the Windows host. For more information, refer to **"Unicode/CJK Decode Setup with Windows Host"** on page 666.

- **Other options for CJK output**—with the following methods, the scanner sends the CJK character hexadecimal internal code (Nei Ma) value to the host, or converts the CJK character to Unicode and sends the hexadecimal Unicode value to the host. When using these methods, the Windows host must select the corresponding IME to accept the CJK character. For more information, refer to **"Unicode/CJK Decode Setup with Windows Host"** on page 666.
    - Japanese Unicode Output
    - Simplified Chinese GBK Code Output
    - Simplified Chinese Unicode Output
    - Korean Unicode Code Output
    - Traditional Chinese Big5 Code Output (Windows XP)
    - Traditional Chinese Big5 Code Output (Windows 7)
    - Traditional Chinese Unicode Code Output (Windows XP)
    - Traditional Chinese Unicode Code Output (Windows 7)

> 📝 **Note**
>
> The Unicode emulate output method depends on the host system (Windows XP or Windows 7).

Scan one of the following bar codes to set the CJK output to a Windows host. By default, this parameter is set to **Universal CJK Output**.



**\*Universal CJK Output
(0)**



**Japanese Unicode Output
(34)**

> 📝 **Note**
>
> For Japanese Unicode Output, select Simplified Chinese Unicode IME on the Windows host.



**Chinese (Simplified) GBK Output
(1)**

**Chinese (Simplified) Unicode Output
(2)**



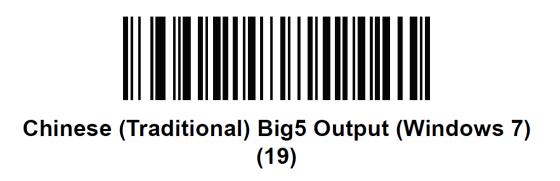**Korean Unicode Output
(50)**

> 📝 **Note**
>
> For Korean Unicode Output, select Simplified Chinese Unicode IME on the Windows host.



**Chinese (Traditional) Big5 Output (Windows XP)
(17)**



**Chinese (Traditional) Big5 Output (Windows 7)
(19)**

**Chinese (Traditional) Unicode Output (Windows XP)
(18)**

**Chinese (Traditional) Unicode Output (Windows 7)
(20)**

# Non-CJK UTF Bar Code Output (Parameter #960)

Some country keyboard type layouts contain characters that do not exist in the default code page, such as the characters in **"Country Keyboard Type Missing Characters"** on the next page. Although the default code page cannot encode these characters in a bar code, they can be encoded in the UTF-8 bar code.

> 📝 **Note**
>
> Take note of the following:
>
> - Use this special country keyboard type to decode the non-CJK UTF-8 bar code. After decoding, reconfigure the scanner to use the original country keyboard type.
>
> - Use US English IME on Windows. For more information, refer to **"Unicode Output Control (Parameter #973)"** on page 654.

Scan the bar code below to output the Unicode values by emulation mode.



**Non-CJK UTF-8 Emulation Output**

# Country Keyboard Type Missing Characters

## Country keyboard type: Tatar, Uzbek, Mongolian, Kyrgyz, Kazakh and Azeri

- Default code page: CP1251

- Missing characters:

| | |
|---|---|
| ғ | Ғ |
| х̣ | Х̣ |
| қ | Қ |
| һ | һ |
| ө | Ө |
| ә | Ә |
| ү | Ү |
| ң | Ң |
| җ | Җ |
| ғ̧ | |
| ң | Ң |
| ұ | Ұ |
| қ | Қ |
| ҷ | Ҷ |
| ҝ | Ҝ |

## Country keyboard type: Romanian (Standard)

- Default code page: CP1250

- Missing characters:

| | |
|---|---|
| ş | Ş |
| ţ | Ţ |

## Country keyboard type: Portuguese-Brazilian (ABNT), Portuguese-Brazilian (ABNT2)

- Default code page: CP1252

- Missing character:

₢

## Country keyboard type: Azeri-Latin

- Default code page: CP1254

- Missing characters:

ə, Ə

Scan one of the following bar codes to set the CJK output to a Windows host. By default, this parameter is set to **Universal CJK Output**.



**\*Universal CJK Output
(0)**



**Japanese Unicode Output
(34)**

> 📝 **Note**
>
> For Japanese Unicode Output, select Simplified Chinese Unicode IME on the Windows host.



**Chinese (Simplified) GBK Output
(1)**

**Chinese (Simplified) Unicode Output
(2)**



**Korean Unicode Output
(50)**

> 📝 **Note**
>
> For Korean Unicode Output, select Simplified Chinese Unicode IME on the Windows host.



**Chinese (Traditional) Big5 Output (Windows XP)
(17)**



**Chinese (Traditional) Big5 Output (Windows 7)
(19)**

**Chinese (Traditional) Unicode Output (Windows XP) (18)**

**Chinese (Traditional) Unicode Output (Windows 7) (20)**

# Unicode/CJK Decode Setup with Windows Host

This section provides the following procedures in setting up CJK decode with a Windows host:

- **"Setting Up the Windows Registry Table for Unicode Universal Output"** on the next page
- **"Adding CJK IME on Windows"** on page 668
- **"Selecting the Simplified Chinese Input Method on the Host"** on page 670
- **"Selecting the Traditional Chinese Input Method on the Host"** on page 671

# Setting Up the Windows Registry Table for Unicode Universal Output

To support the Unicode universal output method, set up the Windows host registry table using the following procedure:

1. Select **Start→ Run→ regedt32** to start the registry editor.

2. Under **HKEY_Current_User\Control Panel\Input Method**, set **EnableHexNumpad** to **1** as follows:

   ```
   [HKEY_CURRENT_USER\Control Panel\Input Method]
   "EnableHexNumpad"="1"
   ```

   > 📝 **Note**
   >
   > If this key does not exist, add it as type **REG_SZ** (string value).

3. Reboot the computer to implement the registry change.

# Adding CJK IME on Windows

To add the preferred CJK input language, follow these steps:

1. Select **Start→ Control Panel**.

2. If the Control Panel opens in category view, select **Switch to Classic View** in the top left corner.

3. Select **Regional and Language Options**.

4. Select the **Language** tab.

5. Under **Supplemental Language Support**, select the **Install Files for East Asian Languages** check box if not already selected, and select **Apply**.

> 📋 **Note**
>
> This may require a Windows installation CD to install the required files. This step ensures that the East Asian Languages (CJK) are available.

6. Under **Text Services and Input Language**, select **Details**.

7. Under **Installed Services**, select **Add**.

8. In the **Add Input Language** dialog box, select the CJK input language and keyboard layout or Input Method Editor (IME) to add.

9. Select **OK** twice. The language indicator appears in the system tray (at bottom right corner of the desktop by default).
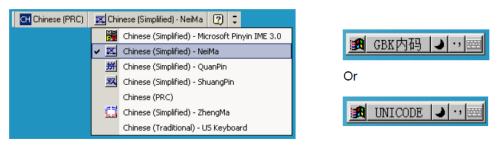
> 📋 **Note**
>
> To switch between input languages (keyboard languages) select the language indicator in the system tray.

10. Select the language indicator in the system tray to select the desired country keyboard type.

11. Verify that the characters displayed on each country's keyboard appear.

# Selecting the Simplified Chinese Input Method on the Host

To select the Simplified Chinese input method, do one of the following:

- To select Unicode/GBK input on Windows XP, select **Chinese (Simplified) - NeiMa**, then select the input bar to select **Unicode** or **GBK NeiMa** input.



- To select Unicode/GBK input on Windows 7, select **Chinese (Simplified) - Microsoft Pinyin New Experience Input Style**, then select **Tool Menu→ Secondary Inputs→ Unicode Input** or **GB Code** Input.

# Selecting the Traditional Chinese Input Method on the Host

To select the Traditional Chinese input method, do one of the following:

- To select Unicode input on Windows XP, select **Chinese (Traditional) - Unicode**.



- To select Big5 input on Windows XP, select **Chinese (Traditional) - Big5 Code**.

- To select Unicode/Big5 input on Windows 7, select **Chinese (Traditional) - New Quick**. This option support both Unicode and Big5 input.

# Sample Bar Codes

This chapter contains the alphanumeric bar codes that can be used for NCR 7895.

> **❶ Important**
>
> To read a sample bar code, the parameter must be enabled. To enable a parameter, scan the appropriate enable bar code in **"Symbologies"** on page 307.
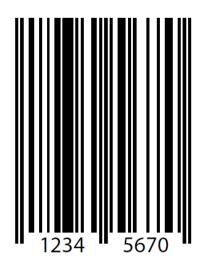
# UPC/EAN

## UPC-A, 100%



0 12345 67890 5

UPC-A with 2-digit Add-on



0 12345 67890 34

## UPC-A with 5-digit Add-on



0  12345  67890  98765

## UPC-E



0  425261  4

## UPC-E with 2-digit Add-on



0  425261  98
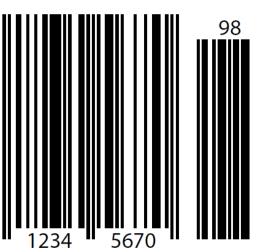
## UPC-E with 5-digit Add-on



0 425261 87654

## EAN-8



1234 5670

## EAN-8 with 2-digit Add-on



1234 5670 98

## EAN-8 with 5-digit Add-on



98765

1234 5670

## EAN-13, 100%



3 456789 012340

## EAN-13 with 2-digit Add-on



3 456789 012340 12

## EAN-13 with 5-digit Add-on



3 456789 012340 54321

## Code 128



1234567890

## GS1-128



(01)94019097685457(13)170119(30)17

# Code 39
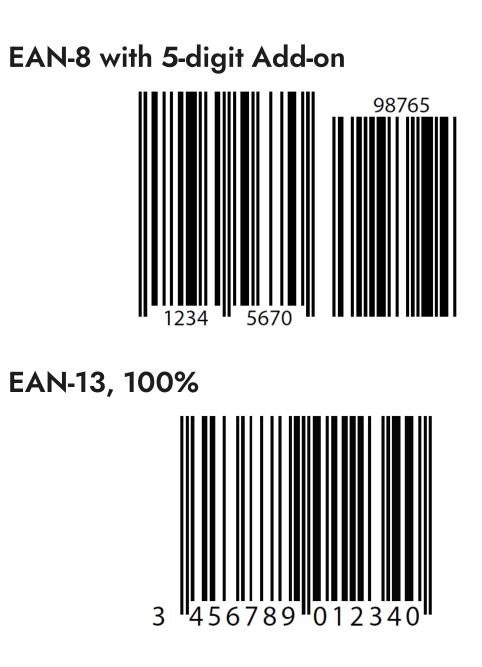
123ABC

# Code 93



1234567890

# Interleaved 2 of 5



12345678901231

# MSI with 2 Check Digits

123455834

# Chinese 2 of 5
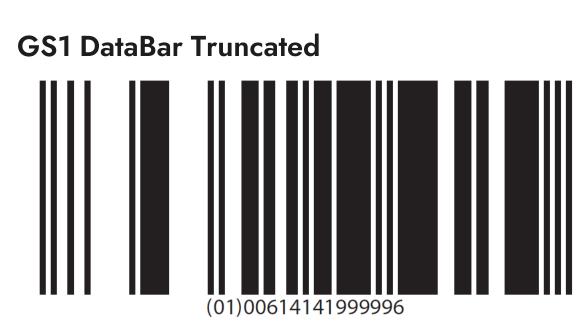
45454545454

# GS1 DataBar

## GS1 DataBar Omnidirectional (formerly GS1 DataBar-14)

7612341562341

## GS1 DataBar Truncated

(01)00614141999996

## GS1 DataBar Stacked

# GS1 DataBar Stacked Omnidirectional

# GS1 DataBar Limited

(01)00012345678905

## GS1 DataBar Expanded

(01)12345678901231
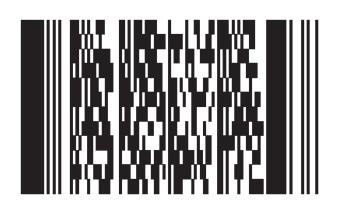
## GS1 DataBar Expanded Stacked

# 2D Symbologies

## PDF417



## Data Matrix



## GS1 Data Matrix

# QR Code



# GS1 QR



# MicroQR

## Aztec



0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
OPQRSTUVWXYZ012345678901234567890123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ01
23456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

## Han Xin