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# 212 Barcode Scanner User Manual

*Release v1.1.1*

2026-09-02

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# 1 System Settings

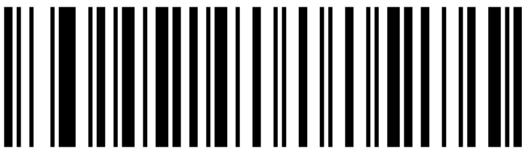
## 1.1 Default Parameter Settings

Scan the following Parameter Barcodes to restore the factory default configuration, or switch to default configuration 1-5.

 **Note**

The factory default configuration of the scan engine depends on the actual factory configuration.

### Factory Default Settings



Factory Default Settings

### Default Configuration 1-5

| Configu-<br>ration              | Application Notes                                                                                                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default<br>Configu-<br>ration 1 | Mainly for POS parameter configuration; the communication mode is serial, the trigger mode is key hold, and the terminator is disabled.                                                                           |
| Default<br>Configu-<br>ration 2 | Mainly for self-service parameter configuration; the communication mode is USB KBW, the scan mode is Presentation Mode, and the terminator is carriage return + line feed ( <code>\r\n</code> ).                  |
| Default<br>Configu-<br>ration 3 | Mainly for Barcode Reader parameter configuration; the communication mode is USB KBW, the trigger mode is key hold, and the terminator is carriage return ( <code>\r</code> ).                                    |
| Default<br>Configu-<br>ration 4 | The communication mode is serial 9600, the trigger mode is key hold, and the terminator is carriage return + line feed ( <code>\r\n</code> ); for 2D barcodes, only QR and DM symbologies are enabled by default. |
| Default<br>Configu-<br>ration 5 | Currently not enabled.                                                                                                                                                                                            |



Default Configuration 1



Default Configuration 2



Default Configuration 3



Default Configuration 4



Default Configuration 5

## 1.2 Output Product Information



Output Product Information

## 1.3 Power Mode

This parameter determines the power mode of the engine.

In low power mode, the scan engine automatically enters sleep after being idle for 800 ms (and can be awakened by a wake-up command). In continuous power mode, the scan engine stays awake after each decode attempt.



Continuous Power



Low Power Mode

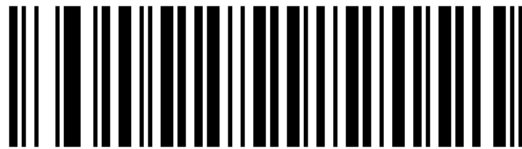
## 1.4 Buzzer

### Buzzer Volume

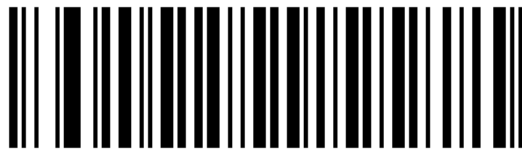
Scan the corresponding Parameter Barcode below to set the buzzer volume.



Low



Medium



\* High



Mute

### Buzzer Type



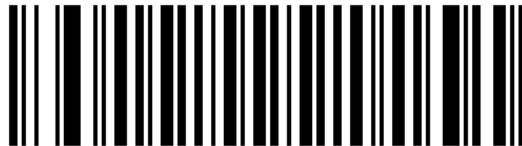
\* Passive Buzzer



Active Buzzer

## 1.5 Successful Decode Beep

Scan the following barcode to set the success beep that sounds when the scan engine decodes successfully.



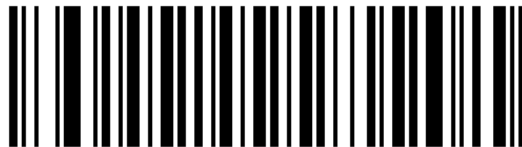
\* Successful Decode Beep



No Beep on Successful Decode

## 1.6 Mute

After mute is enabled, all beeps are turned off; after mute is disabled, the beeps are restored.



\* Disable



Enable

## 1.7 Power-on Beep



Disable



Enable

## 1.8 Parameter Entry Beep



Disable



\* Enable

## 1.9 Event Reporting

This manual does not include the SSI command table. For event-report instructions, refer to the `EVENT` section in the external SSI Commands documentation.

### Power-On Event

Power-on event command: 05 F6 00 00 01 FF 04



\* Disable



Enable

### Trigger Decode Event

When the scan engine is triggered to decode, indication can be provided through commands or GPIO pins; the GPIO pin indication remains low until decoding ends.

Trigger decode event command: 05 F6 00 00 02 FF 03



\* Disable



Enable Event



Enable Pin Event



Enable Event and GPIO Pin

## 1.10 Heartbeat Control

Heartbeat control supports the following operating modes.

| Parameter Value | Description                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 00              | Disable the heartbeat function.                                                                                                              |
| 01              | Send the heartbeat packet 04 50 00 00 FF AC every 9 seconds without requiring ACK.                                                           |
| 02              | Send the heartbeat packet 04 51 00 00 FF AB every 9 seconds. If ACK 04 D0 04 00 FF 28 is not received within 3 seconds, the device restarts. |



\* Disable



Heartbeat Without ACK



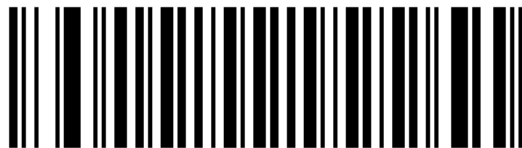
Heartbeat With ACK

### 1.11 Scan Configuration Barcodes

When disabled, normal Parameter Barcodes are not decoded, but “Set Default Parameters” can still be decoded. Re-enable it by scanning “Enable Scan Parameter Barcodes”, setting default parameters, or using a serial command.



\* Enable Scan Configuration Barcodes



Disable Scan Configuration Barcodes

### 1.12 Transmit Parameter Barcodes

When enabled, the device outputs the data value of the Parameter Barcode while the barcode is scanned. Disabled by default.



Enable Transmit Parameter Barcodes



\* Disable Transmit Setting Barcodes

## 1.13 Parameter Barcode Lock Mode

Parameter Barcode password mode protects configuration operations with a lock. When enabled, you must first enter the correct Parameter Barcode password to unlock the device before scanning normal Parameter Barcodes. After one correct password entry, the device remains unlocked until the next power cycle.

### Note

The password is a 2-digit number in the range 00–99.

### Enable Parameter Barcode Lock Mode

When the device switches from disabled to enabled Parameter Barcode password mode, password verification is required first. Password verification is also required before disabling this feature.



\* Disable



Enable

### Enter Parameter Barcode Password

After scanning the following Parameter Barcode, scan a 2-digit Numeric Barcode to enter the password; pad with leading 0 if fewer than 2 digits are entered.

#### Password Range

00–99



Enter Parameter Barcode Password

### Example

To enter password 68: scan this Parameter Barcode, then scan the Numeric Barcodes 6 and 8 in order.  
To cancel an incorrect entry, scan *Cancel Barcode*.

## Change Parameter Barcode Password

The password can be changed only when Parameter Barcode password mode is enabled and password verification has succeeded (the device is unlocked).



Change Parameter Barcode Password

### Example

To set the new password to 96: scan this Parameter Barcode, then scan the Numeric Barcodes 9 and 6 in order.

To cancel an incorrect entry, scan *Cancel Barcode*.

## Log Out Password

After entering the correct password in password mode, scan this Parameter Barcode to clear the current unlocked state. Password entry is required again for subsequent configuration operations.

### Parameter number

0xF2 0xA9

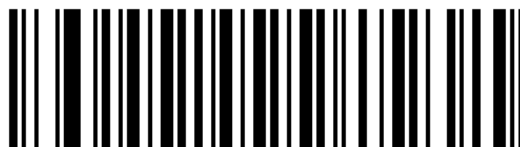


Log Out Password

## 2 Device Feature Settings

### 2.1 Indicator Function

Set which function the indicator represents.



\* Decode Indication



Power Indication

2.2 Decode Success Indicator

The decode indicator stays on for a specified time after a successful decode, provided that the indicator is used for decode indication.



Disable



\* Enable

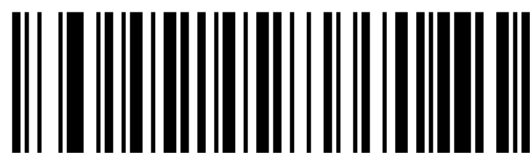
2.3 Decode Indicator Control

The decode indicator supports the following operating modes.

| Mode   | Indicator Logic                                                                                                       |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Mode 0 | Off at power-on, on after a successful decode, and off again after the specified time.                                |
| Mode 1 | On at power-on, off after a successful decode, and on again after the specified time; it also stays on in sleep mode. |
| Mode 2 | On at power-on, off when decoding is triggered, on when decoding succeeds, and off again after the specified time.    |
| Mode 3 | The decode indicator is used as an illumination lamp. It turns on during decoding and turns off when decoding ends.   |



\* Mode 0



Mode 1

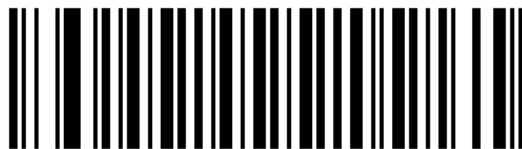


Mode 2



Mode 3

## 2.4 Illumination Control



\* On During Decode



Always On



Always Off

## 2.5 Aiming LED

Supported on 2D products

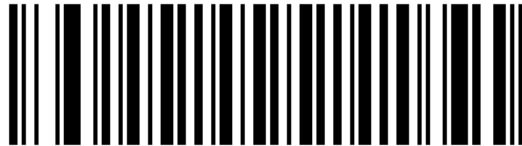
### Aiming LED Control



\* On During Decode



Always On



Always Off

### Whether the aiming LED blinks

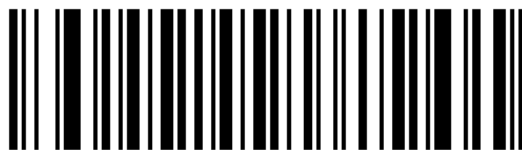


\* Blink



Do Not Blink

## 2.6 URL blocking



\* Disable



Enable

## 2.7 Invoice function

Turn on the invoice function and automatically turn off Code 128. If you need to read Code 128, you can turn on Code 128 again.

---

## Automatic identification and output of VAT invoices



\* Disable

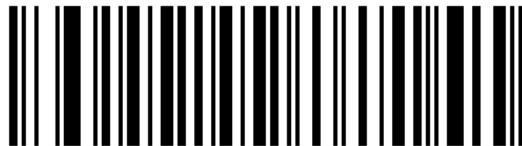


Enable

## Invoice type



\* Special invoice



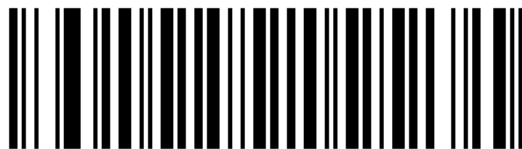
Ordinary invoice

## 3 Trigger Settings

### 3.1 Trigger Mode

#### Trigger Hold (Level)

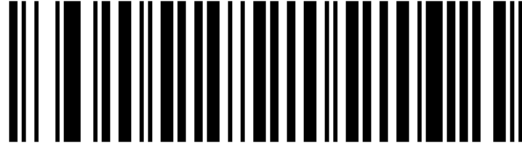
Press the trigger button to start decoding, and release it to stop decoding. This decode cycle also ends after a successful decode or when the single-scan time times out.



\* Trigger Hold (Level)

## One-Shot Trigger (Pulse)

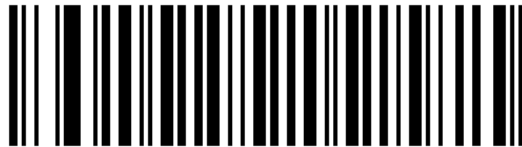
Decoding starts after a trigger-level change is detected and maintained for about 30 ms (the exact time depends on the product). Decoding ends when another trigger-level change is detected. This decode cycle also ends after a successful decode or when the single-scan time times out.



One-Shot Trigger (Pulse)

## Continuous Mode

The scan engine operates continuously. After each successful decode or single-scan timeout, the current decode cycle ends and the next decode cycle starts automatically when the continuous decode interval is reached.



Continuous Mode

## Presentation Mode

The scan engine monitors ambient brightness and starts decoding when the brightness changes. After a successful decode or a single-scan timeout, the current decode cycle ends and ambient-brightness monitoring resumes.



Presentation Mode

## Host Mode

Decoding can be triggered by host commands, and it can also be stopped proactively by host commands. This decode cycle also ends after a successful decode or when the single-scan time times out.



Host Mode

### **Note**

Trigger-button activation (level and pulse) remains effective in other modes.

## Trigger Continuous Mode

Press the trigger button to enter continuous decoding, and press it again to exit continuous decoding. The interval between the two button presses is one decode cycle, which differs from a single scan.



Trigger Continuous Mode

## Trigger Auto-Sensing Mode

When the trigger button is held down, the device enters auto-sensing mode; release the button to stop scanning. The aimer turns on while pressed and turns off after release.



Trigger Auto-Sensing Mode

## Single-Scan Time (Scan Duration)

Set the maximum duration of a single scan. After scanning this Parameter Barcode, scan three Numeric Barcodes to enter the time coefficient. If the value has fewer than three digits, pad it with leading 0.

### default

3000 ms

### Unit

100 ms

### Range

500–25500 ms



Single-Scan Time

### **Example**

To set 500 ms, scan this Parameter Barcode, then scan Numeric Barcodes 0, 0, and 5 in sequence.

To set 10500 ms, scan this Parameter Barcode, then scan Numeric Barcodes 1, 0, and 5 in sequence.  
To change the selection or cancel an incorrect setting, scan *Cancel Barcode*.

### Single Scan Time (Scan Duration) Quick Setup

To select a commonly used duration directly, scan one of the quick Parameter Barcodes below.



Unlimited



3 s



5 s



10 s



15 s



20 s



30 s



60 s

### Continuous Decode Interval

In Continuous Mode, this parameter defines the wait time between two scan attempts. After the configured interval elapses, the next scan starts automatically whether the previous attempt succeeded or failed.

After scanning this Parameter Barcode, scan two Numeric Barcodes to enter the time coefficient. If the value has fewer than two digits, pad it with a leading 0.

#### default

500 ms

#### Unit

100 ms

#### Range

0–9900 ms



Continuous Decode Interval

#### Example

To set 500 ms, scan this Parameter Barcode, then scan Numeric Barcodes 0 and 5 in sequence.

To change the selection or cancel an incorrect setting, scan *Cancel Barcode*.

### Same Symbol Timeout

To prevent the same barcode from being decoded repeatedly in Continuous Mode or Presentation Mode, configure the Scan Engine to accept the same barcode again only after the Same Symbol Timeout has elapsed.

After scanning this Parameter Barcode, scan two Numeric Barcodes to enter the time coefficient. If the value has fewer than two digits, pad it with a leading 0.

#### default

500 ms

**Unit**

100 ms

**Range**

0–9900 ms



Same Symbol Timeout

**i Example**

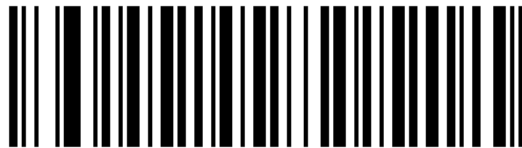
To set 200 ms, scan this Parameter Barcode, then scan Numeric Barcodes 0 and 2 in sequence.

To set 1500 ms, scan this Parameter Barcode, then scan Numeric Barcodes 1 and 5 in sequence.

To change the selection or cancel an incorrect setting, scan *Cancel Barcode*.

**Same Symbol Timeout Quick Settings**

To select a commonly used same symbol timeout directly, scan one of the quick Parameter Barcodes below. Six preset levels are available: 0 s, 1 s, 3 s, 5 s, 7 s, and unlimited delay.



No Delay



1 s Delay



3 s Delay



5 s Delay



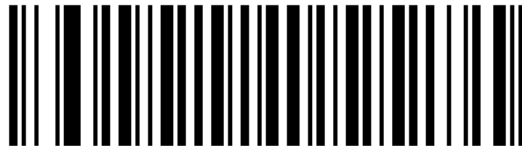
7 s Delay



Unlimited Delay (Disable Same-Code Reads)

### Continuous Decode Interval

This feature applies to trigger hold (level), one-shot trigger (pulse), and host mode. In Continue Scanning mode, the continuous decode interval and Same Symbol Timeout still remain effective.



\* Disable



Enable

### Do Not Output Duplicate Barcodes Within One Decode Cycle

When enabled, the same barcode is output only once within a single decode cycle, and up to 20 different decode results can be cached. This feature applies to modes such as continuous trigger and Continue Scanning.



\* Disable



Enable

Disable Passive Trigger Scanning

When enabled, trigger-button scanning and host-triggered scanning are disabled. Disabled by default.



\* Disable



Enable

Sensitivity Level

Parameter number

0xF2 0x04

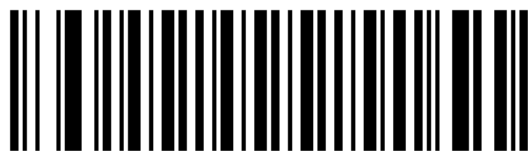
default

High Sensitivity

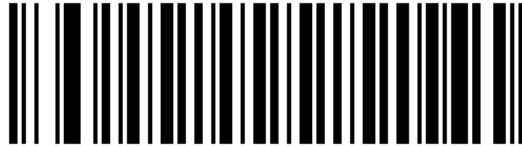
| Level                 | Parameter Value |
|-----------------------|-----------------|
| Very High Sensitivity | 0               |
| High Sensitivity      | 1               |
| Medium Sensitivity    | 8               |
| Low Sensitivity       | 15              |



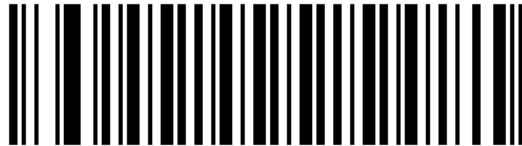
Very High Sensitivity



\* High Sensitivity



Medium Sensitivity



Low Sensitivity

### Custom Sensitivity

Set the sensitivity value for auto-sensing trigger. The smaller the value, the higher the sensitivity.

**default**

01

**Range**

00–15



Custom Sensitivity

#### Example

To set the sensitivity to 2: scan this Parameter Barcode, then scan the Numeric Barcodes 0 and 2 in order.

### Stable Detection Time

Set how long the environment must remain stable before auto-sensing mode enters detection. After scanning the Parameter Barcode, scan a 2-digit Numeric Barcode to enter the time factor; pad with leading 0 if fewer than 2 digits are entered.

**default**

500 ms

**Unit**

100 ms

**Range**

0–9900 ms



Stable Detection Time

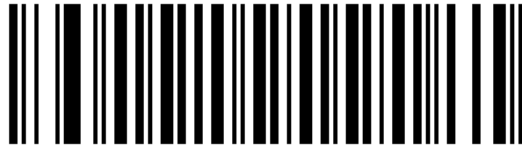
#### **Example**

To set 200 ms, scan this Parameter Barcode, then scan Numeric Barcodes 0 and 2 in sequence.

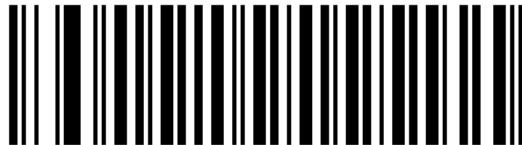
To set 1500 ms, scan this Parameter Barcode, then scan Numeric Barcodes 1 and 5 in sequence.

## **3.2 Send “No Read” Message**

Before the Trigger Button is released, if the barcode cannot be decoded within the timeout period, a “No Read” message can be sent (the scan engine sends the characters NR). Any available prefix or suffix can be appended to this message.



Enable “No Read”



Disable “No Read” Message

## **4 Interface Settings**

### **4.1 Communication Mode**

1D modules do not currently support USB KBW or USB Serial.

#### **Single Output Mode**



\* Serial, UART, TTL, RS232



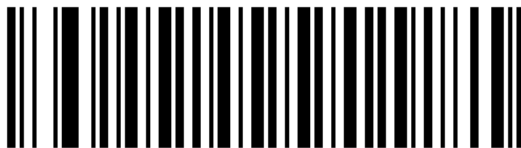
USB KBW



USB Serial



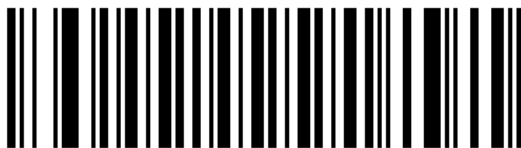
Wiegand



RS485



PS2



TTDATA



HID POS

## Combined USB and Serial Output

| model   | Output Description                                                             |
|---------|--------------------------------------------------------------------------------|
| AUTO_UK | AUTO_UK mode: USB and serial output at the same time, and USB uses KBW.        |
| AUTO_UV | AUTO_UV mode: USB and serial output at the same time, and USB uses USB Serial. |
| AUTO UK | USB and serial output at the same time, and USB uses KBW.                      |
| AUTO UV | USB and serial output at the same time, and USB uses USB Serial.               |
| AUTO UT | USB and serial output at the same time, and USB uses TTDATA.                   |
| AUTO HU | USB and serial output at the same time, and USB uses HID POS.                  |



AUTO UK



AUTO UV



TTDATA + Serial



AUTO HU (HID POS + Serial)

## Combined USB and Wiegand/RS485 Output

| model   | Output Description                                                |
|---------|-------------------------------------------------------------------|
| AUTO UW | USB and Wiegand output at the same time, and USB uses USB Serial. |
| AUTO UR | USB and RS485 output at the same time, and USB uses USB Serial.   |
| AUTO TW | USB and Wiegand output at the same time, and USB uses TTDATA.     |
| AUTO TR | USB and RS485 output at the same time, and USB uses TTDATA.       |
| AUTO KW | USB and Wiegand output at the same time, and USB uses KBW.        |
| AUTO KR | USB and RS485 output at the same time, and USB uses KBW.          |
| AUTO HW | USB and Wiegand output at the same time, and USB uses HID POS.    |
| AUTO HR | USB and RS485 output at the same time, and USB uses HID POS.      |



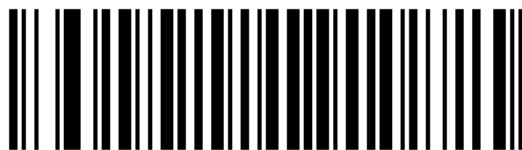
AUTO UW



AUTO UR



AUTO KW (KBW + Wiegand)



AUTO KR (KBW + RS485)



AUTO HW (HID POS + Wiegand)



AUTO HR (HID POS + RS485)

## 4.2 Serial Parameters

### Baud Rate

Baud rate is the number of bits transmitted per second. The baud rate setting of the scan engine should match the data rate setting of the host device. If they do not match, the host may not receive the data or the data may be garbled.



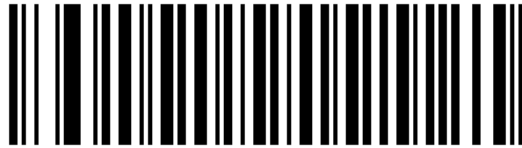
Baud Rate 1200



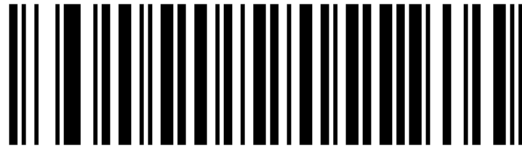
Baud Rate 2400



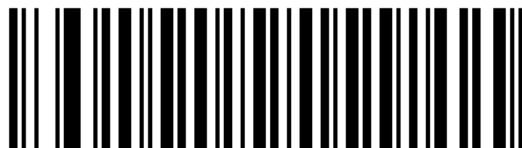
Baud Rate 4800



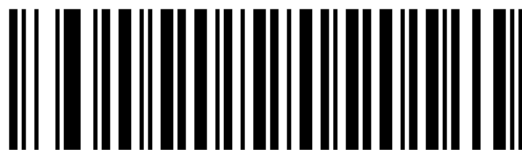
\* Baud Rate 9600



Baud Rate 19,200



Baud Rate 38,400



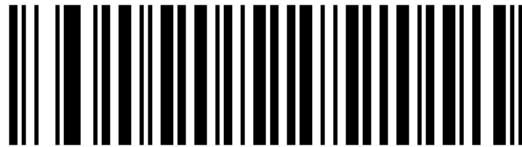
Baud Rate 57600



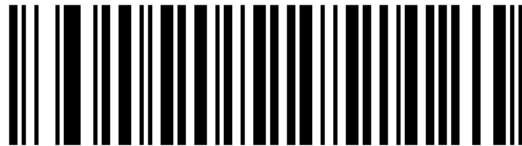
Baud Rate 115200

## Data Bits

Data bits: this parameter defines the number of actual data bits used in communication.



7 Data Bits



\* 8 Data Bits

## Parity Bit

A parity bit is the most significant bit of each ASCII code character. Select the parity type according to host requirements. If odd parity is selected, the parity bit is set to 0 or 1 according to the data to ensure an odd number of 1 bits in the character.

If even parity is selected, the parity bit is set to 0 or 1 according to the data to ensure an even number of 1 bits in the character.



Odd



Even

Select MARK parity, where the parity bit is always 1.



Mark

Select SPACE parity, where the parity bit is always 0.



Space

If parity is not required, select None.



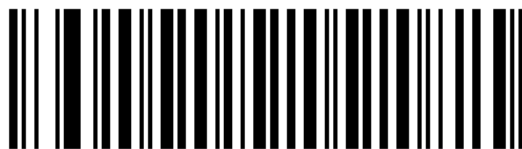
\* None

## Stop Bit Selection

At the end of each transmitted character, the stop bit (S) marks the end of that character and prepares the receiving device for the next character in the serial data stream. Set the number of stop bits (one or two) to match the host device requirements.



\* One Stop Bit



Two Stop Bits

## Software Handshaking

This parameter provides data-transmission control in addition to hardware handshaking. Hardware handshaking is always enabled and cannot be disabled by the user.

| Option                      | Description                                                                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Disable ACK/NAK Handshaking | The scan engine neither generates nor requires ACK/NAK handshaking packets.                                                                      |
| Enable ACK/NAK Handshaking  | After sending data, the scan engine expects an ACK or NAK response from the host; the scan engine can also send ACK or NAK messages to the host. |

When enabled, the scan engine waits for the host serial response until the configured timeout expires. If no ACK or NAK is received within that time, the scan engine retransmits the data up to two times before discarding it and reporting a transmission error.



Disable ACK/NAK Handshaking



\* Enable ACK/NAK

## Host Serial Response Timeout

This parameter specifies how long the scan engine waits for an ACK or NAK response from the host before retransmitting the previous message. If the scan engine needs to send data but the host has not yet allowed transmission, it also waits for this timeout period.

### default

2000 ms

### Unit

100 ms

### Range

100–9900 ms



Host Serial Response Timeout

### Example

To set 3000 ms: scan this Parameter Barcode, then scan the Numeric Barcodes 0 and 3 in order.

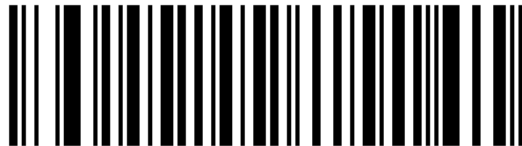
To set 9900 ms: scan this Parameter Barcode, then scan the Numeric Barcodes 9 and 9 in order.

## 4.3 Wiegand

### Wiegand Protocol Type



\\* AUTO



WG26



WG34



WG66



Custom Wiegand Transmission 1



Custom Wiegand Transmission 2



WG64

## Wiegand 26 Output Mode



Wiegand 26 Output Mode



\\* 3+5

Raw Data

## Wiegand Output Interval Setup

Scan a 2-digit Numeric Barcode according to the desired time to enter the time factor; pad with leading 0 if fewer than 2 digits are entered.

### default

800 us

### Unit

100 us

### Range

100-1000 us



Wiegand Output Interval

### Example

To set 100 us: the factor is 01; scan the Numeric Barcodes 0 and 1.

To set 1000 us: the factor is 10; scan the Numeric Barcodes 1 and 0.

## 4.4 RS485 Network Function



\* Disable

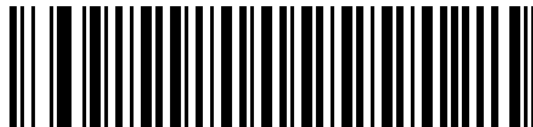


Enable

### Change RS485 Device Slave Address

Used for quickly setting the RS485 slave address to 0001.

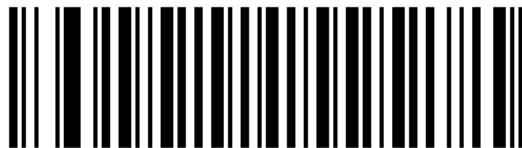
For other addresses, generate a Parameter Barcode using  $^380811xxxx$ , where  $xxxx$  represents the 4-digit slave address value.



Slave Address 0001

### RS485 Network Decoded Data Format

When disabled, decoded data is sent directly in the format `add + data`. When enabled, the RS485 network packet format is used. When this function is disabled, the packet format must remain Raw Data.



\* Disable



Enable

### RS485 Network Heartbeat Toggle



Disable



\* Enable

#### Save RS485 Network Decoded Data to Buffer



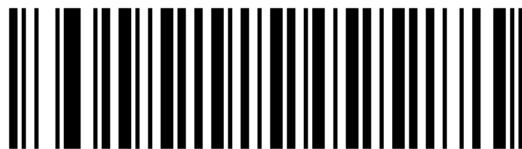
\* Disable



Enable

### 4.5 Modbus RTU Network Function

#### Modbus RTU Function Toggle



\* Disable



Enable

#### Barcode Buffer Toggle



\* Direct Output (Modbus RTU Format)



Buffer

## Slave Address Setup

### Important

The factory-default slave address is 0x00. It must be configured to another address (1–255) before use.

After scanning the “Set Slave Address” Parameter Barcode, scan a 3-digit Numeric Barcode to enter the decimal slave address.

#### default

0x00

#### Range

1–255



Set Slave Address

### Example

To set the slave address to 0x0A (decimal 10): scan this Parameter Barcode, then scan the Numeric Barcodes 0, 1, and 0 in order.

## Quick Slave Address Setup



\* Address 0x00



Address 0x01



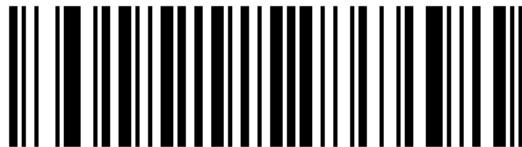
Address 0x02



Address 0x03



Address 0xAA



Address 0xBB

**Note**

The factory-default slave address is 0x00 and must be configured to 1–255 before use.

## 4.6 USB type

For USB type, 0 indicates USB 1.1 (full speed) and 1 indicates USB 2.0 (high speed). The default is USB 1.1.



\* USB 1.1 (Full Speed)

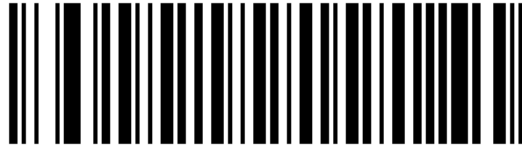


USB 2.0 (High Speed)

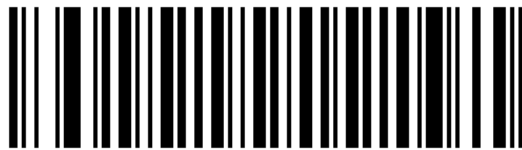
## 5 Keyboard Settings

### 5.1 Keyboard

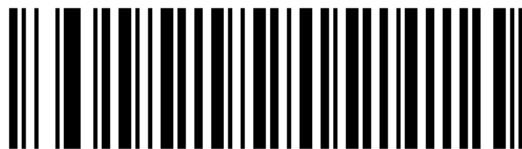
#### Country/Language Keyboard Layout Selection



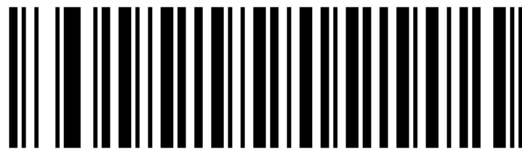
\* US Keyboard



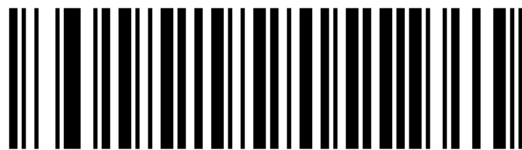
Belgium



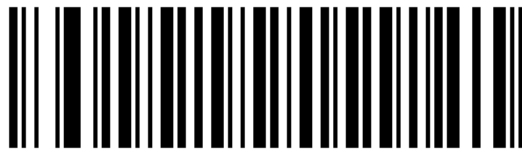
Brazil (ABNT2)



Denmark



Finland



France



Austria / Germany



Greece



Hungary



Italy



Netherlands



Norway



Poland (214)



Portugal



Romania (Standard)



Russia



Slovakia



Sweden



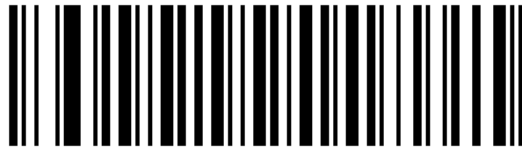
Turkey\_F



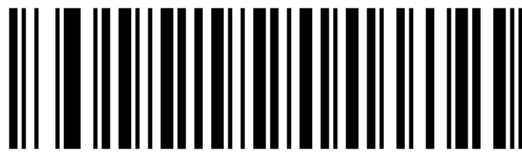
Turkey\_Q



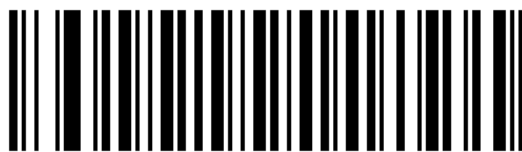
United Kingdom



Japan

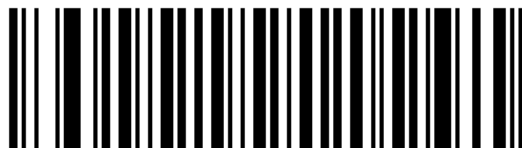


Thai Keyboard Kedmanee

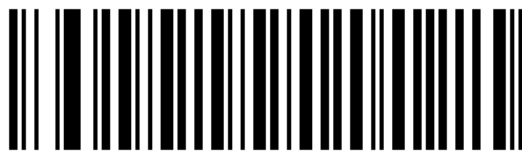


Ukraine

This keyboard layout (Arabic\_101) supports: Saudi Arabia, United Arab Emirates, Oman, Egypt, Bahrain, Qatar, Kuwait, Lebanon, Libya, Syria, Yemen, Iraq, and Jordan.



Arabic\_101



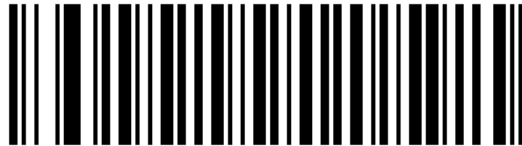
Croatia



Korea



Bulgaria



Czech Republic

**Note**

Some keyboard layouts require the WIN plug-in to be installed.

**Note**

In principle, “Multilingual” requires the output character set to be set to UTF-8. The Parameter Barcode below is used for the multilingual / Vietnamese keyboard layout.



Multilingual / Vietnamese

## Keyboard Output Character Interval

Set the interval between keyboard output characters. After scanning the Parameter Barcode, scan the 3-digit Numeric Barcode to enter the time factor.

**default**

5 ms

**Unit**

5 ms

**Range**

0-1000 ms



Keyboard Output Character Interval

### Example

To set the output interval to 100 ms: scan this Parameter Barcode, then scan the Numeric Barcodes 0, 2, and 0 in order.

## Keyboard Output Interval Quick Setting



0 ms



5 ms



10 ms



50 ms

## Forced Letter Case Conversion for Keyboard Output



\* Normal Letter Case



Convert All Letters to Uppercase



Convert All Letters to Lowercase

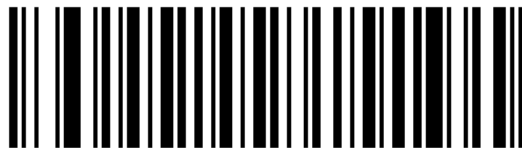


Invert Letter Case

## Keyboard Type



\* Standard Keyboard



Virtual Keyboard



Disable



\* Enable

## ASCII Control Character Output Method Selection

Select the output method for control characters in the ASCII range (0x00-0x20).

(0) Output function keys: control characters are used as custom function keys. See *Character Reference Table* for details.

(1) Output Ctrl key combinations: control characters are output as Ctrl key combinations. See [Character Reference Table](#) for details.

(2) Output control characters by ALT method: in Chinese environments, full control character output is supported. Refer to the standard ASCII table for details.

(3) Output Enter and DownArrow: other control characters are masked, and only the following are output: 0x07 outputs Enter, 0x0A outputs DownArrow, and 0x0D

outputs Enter.

(4) Output Ctrl key combinations, but exclude keys already present on the keyboard: Enter.



Output Function Keys



Output Ctrl Key Combinations



Output Control Characters by ALT Method



Output Enter and DownArrow



Output CTRL+ key combinations, excluding keys already present on the keyboard

## 6 Data Editing

### 6.1 Decoded Data Packet Format

This parameter selects whether decoded data is transmitted in raw (unwrapped) format or in the packet format defined by the serial protocol. If raw format is selected, ACK/NAK handshaking cannot be used for decoded data.



\* Send Raw Decoded Data



Send Packetized Decoded Data

### 6.2 Transport code ID characters

#### Parameter number

0x2D

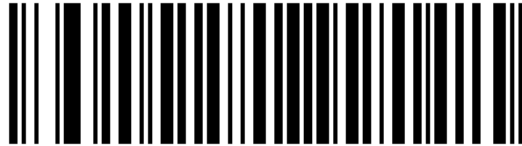
#### default

None

Code ID characters identify the barcode type. When the device may decode multiple barcode types, Code ID or AIM ID can be inserted between the prefix characters and the decoded data. See [Code ID](#) for Code ID characters and [AIM code identifier](#) for AIM ID characters.



Code ID



AIM ID



\* None

### 6.3 Terminator Settings

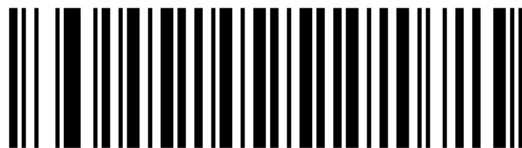
A Terminator is a control character appended to the Output Data. The output format is: Output Data + Terminator.



\* Disable



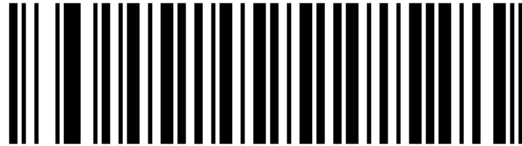
Carriage return and line feed CR LF



Carriage Return CR



TAB



Enter Enter Enter CR CR



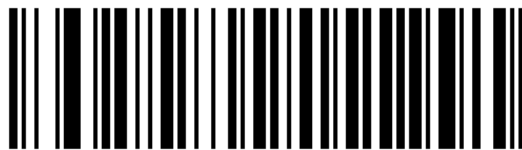
Carriage return and line feed Carriage return and line feed CR LF CR LF

## 6.4 Prefix/Suffix

### Prefix/Suffix Values

Prefixes and suffixes can be appended to Output Data. To set a character value, look up the ASCII value in *Character Reference Table* and scan the corresponding 4-digit Numeric Barcode. Numeric Barcodes are listed in *Numeric Barcode*.

To change the selection or cancel an incorrect entry, scan *Cancel Barcode*. When setting prefix/suffix values through serial commands, refer to the corresponding serial command description.



Prefix



Suffix 1



Suffix 2



Clear Data Format

**Note**

To make prefix/suffix values take effect, the corresponding data transmission format must be set.

### Continuous Multiple Prefix/Suffix Setup Mode

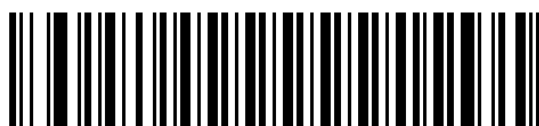
Continuous setup mode is used to configure multiple prefixes or suffixes at one time. Set the prefix/suffix values first, then set the data transmission format.

### Continuous Multiple Prefix Setup

By default, 1 prefix is supported, with a maximum of 10 prefixes. After scanning the corresponding Parameter Barcode to enter continuous setup mode, scan the 4-digit Numeric Barcode for each prefix character according to the character table. The process ends automatically after 10 prefixes, or you can scan “Finish Continuous Prefix/Suffix Setup” to complete it earlier.

**Note**

Multiple prefixes take effect only with the “Multiple Prefixes + Data” or “Multiple Prefixes + Data + Multiple Suffixes” data transmission format.



Continuous Multiple Prefix Setup



Quick multiple-prefix example: AB (ASCII values: 0x41 and 0x42)

### Continuous Multiple Suffix Setup

By default, 2 suffixes are supported, with a maximum of 10 suffixes. After scanning the corresponding Parameter Barcode to enter continuous setup mode, scan the 4-digit Numeric Barcode for each suffix character according to the character table. The process ends automatically after 10 suffixes, or you can scan “Finish Continuous Prefix/Suffix Setup” to complete it earlier.

**Note**

Multiple suffixes take effect only with the “Data + Multiple Suffixes” or “Multiple Prefixes + Data + Multiple Suffixes” data transmission format.



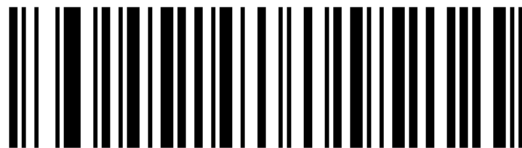
Continuous Multiple Suffix Setup



Quick multiple-suffix example: AB (ASCII values: 0x41 and 0x42)

## Finish or Exit Setup

Scan “Finish Continuous Multiple Prefix/Suffix Setup” or “Exit Prefix/Suffix Setup” to save the currently configured prefixes or suffixes and exit continuous setup mode.



Finish Continuous Multiple Prefix/Suffix Setup



Exit Prefix/Suffix Setup

## Data Transmission Format

Scan the corresponding barcodes below to set the desired data transmission format. Each time a prefix or suffix is configured, scan the corresponding data transmission format again to make that prefix or suffix take effect. For example, if the original format is “Data + Suffix 1”, after setting a prefix you must scan “Prefix + Data” or “Prefix + Data + Suffix” to enable the prefix.



\* Raw Data



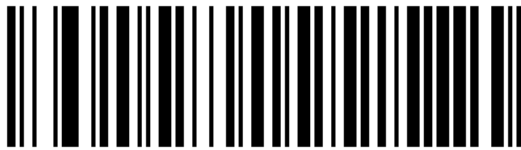
Data + Suffix 1



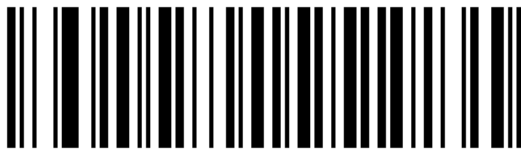
Data + Suffix 2



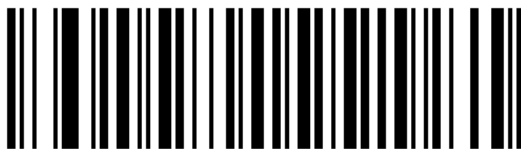
Data + Suffix 1 + Suffix 2



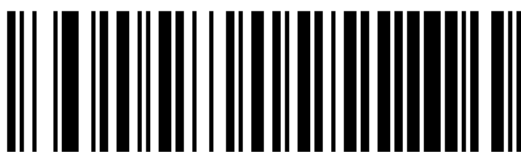
Prefix + Data



Prefix + Data + Suffix 1



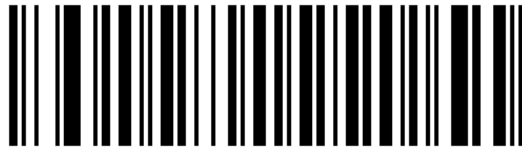
Prefix + Data + Suffix 2



Prefix + Data + Suffix 1 + Suffix 2



Data + Multiple Suffixes



Multiple Prefixes + Data

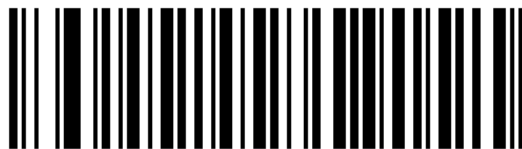


Multiple Prefixes + Data + Multiple Suffixes

## STX and ETX Settings



\* Disable



STX (Prefix)



ETX (Suffix 1)



STX (Prefix) + ETX (Suffix 1)

## Suffix Modifier-Key Function

This feature applies when the communication mode is USB KBW. You can set one or more modifier-key functions. For example, to use Ctrl+Shift, enable both the Suffix Ctrl modifier-key function and the Suffix Shift modifier-key function.

### Suffix Alt Modifier-Key Function

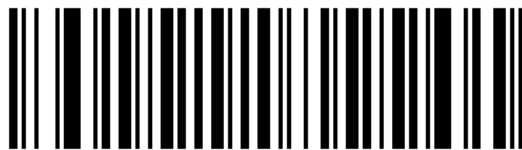


\* Disable

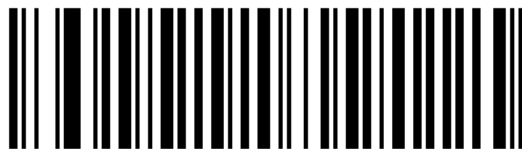


Enable

### Suffix Ctrl Modifier-Key Function



\* Disable



Enable

### Suffix Shift Modifier-Key Function



\* Disable



Enable

Suffixes and terminators are not affected by the ASCII control-character output mode.



\* Disable



Enable

## 6.5 Set Prefix/Suffix by Barcode Type

Prefixes and suffixes can be set or cleared separately for a specified barcode type. To configure them, first scan the Function Parameter Barcode, then enter the barcode type index and the character values to be set.

### Set Prefix

1. Scan the “Set Prefix by Barcode Type” Parameter Barcode.
2. According to the barcode type index and *Character Reference Table*, scan the corresponding Numeric Barcodes. For example, for the QR Code type index 0xF1, scan 1, 2, 4, and 1.
3. Scan the prefix character to be set. For example, if the prefix is the digit 1, scan 1049 (0x31).
4. Scan “Exit Prefix/Suffix Setup” to finish the configuration.



Set Prefix by Barcode Type

### Set Suffix

The steps for setting a suffix are the same as for setting a prefix: scan the following Parameter Barcode first, then enter the barcode type index and suffix character values.



Set Suffix by Barcode Type

## Clear Prefix/Suffix

To clear the prefix or suffix for a specified barcode type, first scan the corresponding clear Parameter Barcode, then enter the barcode type index. For QR Code, for example, after entering the Numeric Barcodes corresponding to 0xF1, the QR Code prefix information is cleared.

### Note

To clear prefixes for all barcode types, scan 1, 2, 5, and 5 (0xFF).



Clear Prefix by Barcode Type



Clear Suffix by Barcode Type

## Prefix/Suffix Toggle

Scan the barcodes below to set the desired data transmission format.



\* No Prefix or Suffix (Raw Data)



Add Prefix (Prefix + Data)



Add Suffix (Data + Suffix)

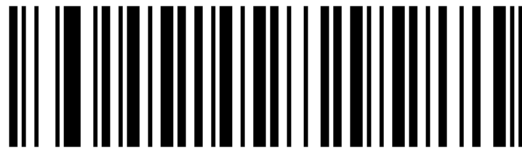


Add Prefix and Suffix (Prefix + Data + Suffix)

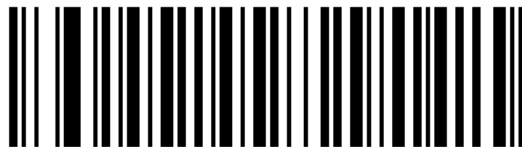
## 6.6 Custom Barcode Data Hiding

### Hide Leading Data

Hide a specified number of leading characters from the decoded output. If the configured length exceeds the barcode data length, the entire barcode content is hidden.



\* Disable



Enable

### Set Leading Hidden Data Length

After scanning the following Parameter Barcode, scan a 3-digit Numeric Barcode to enter the hidden length; pad with leading 0 if fewer than 3 digits are entered.

#### Range

1-255

#### Example

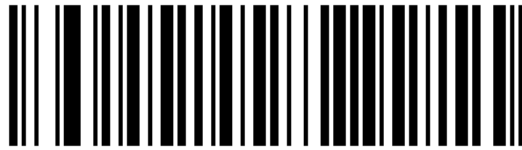
To hide 16 leading characters, scan this Parameter Barcode and then scan the Numeric Barcodes 0, 1, and 6 in order.



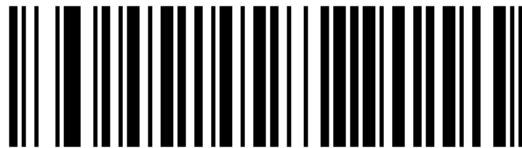
Set Leading Hidden Data Length

## Hide Middle Data

Hide a specified number of characters in the middle of the decoded output. If the start position exceeds the barcode data length, no data is hidden. If the configured length exceeds the remaining barcode data length, all data after the start position is hidden.



\* Disable



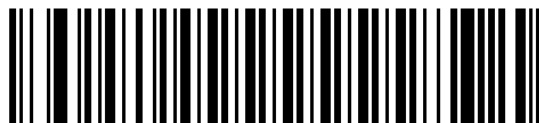
Enable

## Set Middle Hidden Data Start Position

After scanning the following Parameter Barcode, scan a 3-digit Numeric Barcode to enter the start position; pad with leading 0 if fewer than 3 digits are entered.

### Range

1-255



Set Middle Hidden Data Start Position

## Set Middle Hidden Data Length

After scanning the following Parameter Barcode, scan a 3-digit Numeric Barcode to enter the hidden length; pad with leading 0 if fewer than 3 digits are entered.

### Range

1-255

### Example

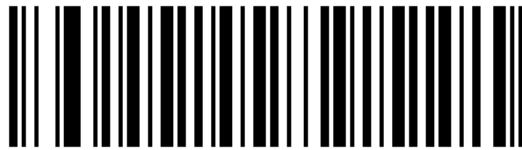
To hide 16 middle characters, scan this Parameter Barcode and then scan the Numeric Barcodes 0, 1, and 6 in order.



Set Middle Hidden Data Length

## Hide Trailing Data

Hide a specified number of trailing characters from the decoded output. If the configured length exceeds the barcode data length, the entire barcode content is hidden.



\* Disable



Enable

## Set Trailing Hidden Data Length

After scanning the following Parameter Barcode, scan a 3-digit Numeric Barcode to enter the hidden length; pad with leading 0 if fewer than 3 digits are entered.

### Range

1-255

### Example

To hide 16 trailing characters, scan this Parameter Barcode and then scan the Numeric Barcodes 0, 1, and 6 in order.



Set Trailing Hidden Data Length

## 6.7 Custom Barcode Data Retention

### Retain Leading Data

Retain only a specified number of leading characters from the decoded output. If the configured length exceeds the barcode data length, the entire barcode content is retained.



\* Disable



Enable

### Set Leading Retained Data Length

After scanning the following Parameter Barcode, scan Numeric Barcodes to enter the retained length.

#### Range

1-65535



Set Leading Retained Data Length

### Quick Setup for Leading Retained Data Length



Retain 1 Leading Byte



Retain 9999 Leading Bytes



Retain 65535 Leading Bytes

## Retain Middle Data

Retain only a specified number of characters in the middle of the decoded output. If the start position exceeds the barcode data length, no data is retained (no output). If the configured length exceeds the remaining barcode data length, all data after the start position is retained.

### Example

If the barcode data is 12345ABC, when the start position is 5 and the length is 2, the output is AB.

If the barcode data is 12345ABC, when the start position is 5 and the length is 5, the output is ABC.



\* Disable



Enable

## Set Middle Retained Data Start Position

After scanning the following Parameter Barcode, scan Numeric Barcodes to enter the start position.

### Range

1-65535



Set Middle Retained Data Start Position

## Quick Setup for Middle Retained Data Start Position

You can use the barcode generation tool to create a custom start-position Parameter Barcode.

### Range

1-65535 (0x0001-0xFFFF)

### Format

80829XXXX, where XXXX is a 4-digit uppercase hexadecimal value.

### Example

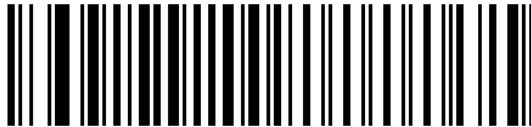
To begin retaining data after byte 15, the Parameter Barcode value is 80829000F.



Retain Data After Byte 1



Retain Data After Byte 9999



Retain Data After Byte 65535

### Set Middle Retained Data Length

After scanning the following Parameter Barcode, scan Numeric Barcodes to enter the retained length.

#### Range

1-65535



Set Middle Retained Data Length

### Quick Setup for Middle Retained Data Length

You can use the barcode generation tool to create a custom retained-length Parameter Barcode.

#### Range

1-65535 (0x0001-0xFFFF)

#### Format

8082AXXXX, where XXXX is a 4-digit uppercase hexadecimal value.

#### Example

To retain 15 bytes after the start position, the Parameter Barcode value is 8082A000F.



Retain 1 Byte After the Start Position



Retain 9999 Bytes After the Start Position



Retain 65535 Bytes After the Start Position

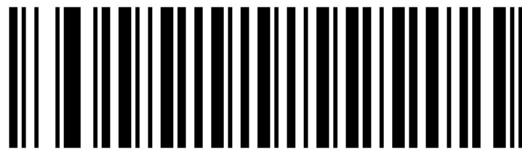
## Retain Trailing Data

Retain only a specified number of trailing characters from the decoded output. If the configured length exceeds the barcode data length, the entire barcode content is retained.

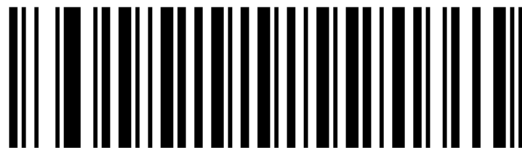
### Example

If the barcode data is 12345ABC, retaining the last 3 bytes outputs ABC.

If the barcode data is 12345ABC, retaining the last 5 bytes outputs 45ABC.



\* Disable



Enable

## Set Trailing Retained Data Length

After scanning the following Parameter Barcode, scan Numeric Barcodes to enter the retained length.

### Range

1-65535



Set Trailing Retained Data Length

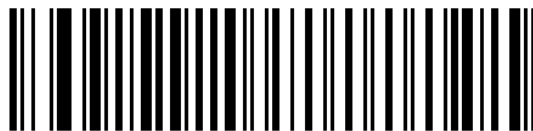
## Quick Setup for Trailing Retained Data Length



Retain 1 Trailing Byte



Retain 9999 Trailing Bytes



Retain 65535 Trailing Bytes

## 6.8 Hide Custom Data Strings in Barcodes

### Toggle

You can configure 1 to 32 bytes of custom hidden data. All matching data strings in the barcode are hidden before output.



\* Disable



Enable

### Set Hidden Data String

After scanning “Set Hidden Data”, scan Numeric Barcodes in groups of 4 digits. For character values, refer to *Character Reference Table*. For example, to hide carriage return  $0\times0D$ , scan 1013; to hide carriage return + line feed  $0\times0D\ 0\times0A$ , scan 1013 and 1010 in order.

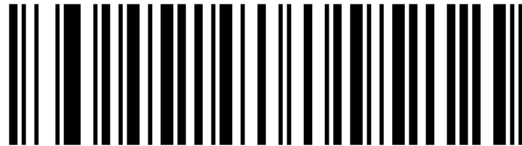
Whether the operation succeeds or fails, after scanning this barcode you must scan “Finish Setup” to exit the continuous data-setup state.



Set Hidden Data

## Finish Setup

After hidden-data configuration is complete, scan this barcode to save the setting. Up to 32 bytes are supported. The process exits automatically and saves the configured content when 32 bytes are reached.



Finish Setup

## Read Back and Clear

Incorrect entries may occur during setup. Use the read-back function to confirm the currently configured data. Read-back does not interrupt the current setup session, and you can continue setting the next character afterward.



Read Back Configured Content



Clear Configured Content

## 6.9 Insert Custom Data

Custom data can be inserted at any position in the barcode, with up to 10 bytes supported.

### Enable/Disable Insert Custom Data



\* Disable Insert Custom Data



Enable Insert Custom Data

### Set Insert-Data Position

After scanning the “Set Insert-Data Position” Parameter Barcode, scan a 4-digit Numeric Barcode. If fewer than 4 digits are entered, pad with leading 0. For example, to insert after the 3rd character, scan 0, 0, 0, and 3.

When the position is 0, the data is inserted at the beginning of the Output Data. When the position is greater than the Output Data length, the data is inserted at the end. Supported positions range from 0 to 5000.



Set Insert-Data Position

### Set Data to Insert

After scanning “Set Data to Insert” , scan the 4-digit Numeric Barcode for each character continuously according to *Character Reference Table*. For example, to insert QR, scan 1081 and 1082 in order. Up to 10 bytes are supported, and the process exits automatically after 10 bytes.



Set Data to Insert

### Exit Custom Data Setup

To finish early, scan the following Parameter Barcode to exit and save the currently configured data.



Exit Custom Data Setup

## 6.10 Replace-Data Setup Instructions

The replace function is completed in three steps: first set the target to be replaced, then set the replacement data, and finally enable replacement. Both the target and the replacement data support up to 32 bytes.

## Set Replacement Target and Replacement Data



Set Replacement Target



Set Replacement Data

If fewer than 32 bytes are entered, scan “Finish Setup” to save. When 32 bytes are reached, the process exits automatically and saves the configuration.

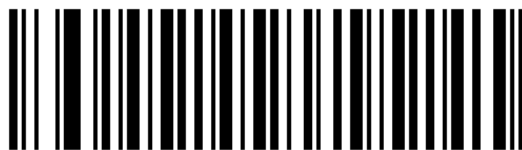


Finish Setup

## Enable/Disable Replacement



Enable Replacement



Disable Replacement

## Read Back and Clear Replacement Data



Read Back “Replacement Target”



Read Back “Replacement Data”



Clear “Replacement Target”



Clear “Replacement Data”

### Example: Replace **xy** with **ab**

In the following example, the scan values for **x**, **y**, **A**, and **B** are entered according to the character table. **x** is 1088, **y** is 1089, **A** is 1065, and **B** is 1066.

#### 1. Set the replacement target to **xy**



Scan “Set Replacement Target”



Numeric Barcode 1



Numeric Barcode 0



Numeric Barcode 8



Numeric Barcode 8



Numeric Barcode 1



Numeric Barcode 0



Numeric Barcode 8



Numeric Barcode 9



Finish Setup

## 2. Set the replacement data to **AB**



Scan “Set Replacement Data”



Numeric Barcode 1



Numeric Barcode 0



Numeric Barcode 6



Numeric Barcode 5



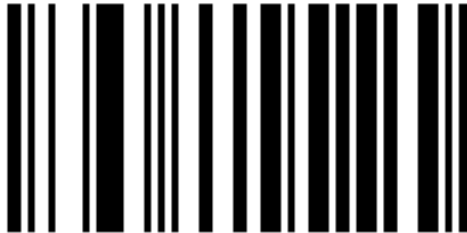
Numeric Barcode 1



Numeric Barcode 0



Numeric Barcode 6



Numeric Barcode 6



Finish Setup

### 3. Enable replacement and verify the result



Enable Replacement



Disable Replacement

If the example barcode content is 0123XY45YX6YXY89, replacing XY with AB outputs 0123AB45YX6YAB89.



Example Result: Before Replacement



Example Result: After Replacement

### Serial Command Setup

Set the replacement target data: `0xF3 0x25 + target byte 1 + target byte 2 + ... + target byte n`. Up to 32 bytes are supported. For character values, refer to [Character Reference Table](#).

Set the replacement data: `0xF3 0x26 + replacement byte 1 + replacement byte 2 + ... + replacement byte n`. Up to 32 bytes are supported. For character values, refer to [Character Reference Table](#).

| Operation                    | Command        |
|------------------------------|----------------|
| Finish Setup                 | 0xF2 0xF6 0x00 |
| Disable Replacement          | 0xF2 0xE6 0x00 |
| Enable Replacement           | 0xF2 0xE6 0x01 |
| Read Back Replacement Target | 0xF2 0xE7 0x00 |
| Read Back Replacement Data   | 0xF2 0xE7 0x01 |

Example Commands:

| Target                               | Command                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------|
| Set Replacement Target to XY         | 0E C6 04 08 00 F3 25 58 F3 25 59 F2 F6 00 FA 57                                     |
| Set Replacement Data to AB           | 0E C6 04 08 00 F3 26 41 F3 26 42 F2 F6 00 FA 83                                     |
| Enable Replacement                   | 08 C6 04 08 00 F2 E6 01 FD 4D                                                       |
| Replace XY with AB Using One Command | 1A C6 04 08 00 F3 25 58 F3 25 59 F2 F6 00 F3 26 41 F3 26 42 F2 F6 00 F2 E6 01 F3 D5 |

6.11 Support for GS1 rules using brackets to include AI fields

Currently supporting GS1 rules, the supported AI segments are: (00) Transport container serial number, (01) Commodity transaction item, (02) Commodity transaction item, (10) Batch number, (11) Production date, (13) Packaging date, (15) Best date, (17) Expiration date, (21) Serial number, (30) Quantity, (240) Internal code, (712) National medical insurance reimbursement number - Spain CN, (8012) software version, (90) consistent information between trading partners



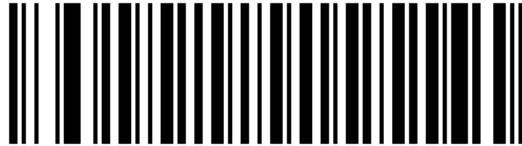
\* Disable



Enable

6.12 Convert to Hex

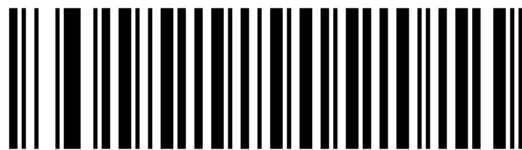
Hex Output



\* Disable

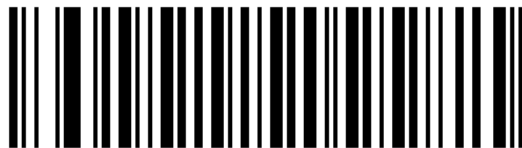


Uppercase Hex



Lowercase Hex

## Hex Output Separator



\* Disable Separator



Space

## 6.13 Code ID

| Barcode Types        | Code ID |
|----------------------|---------|
| Code 128             | D       |
| GS1-128(UCC/EAN-128) | K       |
| AIM 128              | D       |
| ISBT-128             | D       |
| EAN-8                | A       |
| EAN-13               | A       |
| ISSN                 | L       |
| ISBN/Bookland EAN    | L       |

continues on next page

Table 1 – continued from previous page

| Barcode Types                           | Code ID |
|-----------------------------------------|---------|
| UPC-E                                   | A       |
| UPC-A                                   | A       |
| Interleaved 2 of 5/ITF                  | F       |
| ITF-14                                  | F       |
| Deutsche Post 14                        | w       |
| Deutsche Post 12                        | l       |
| NEC-25(COOP 2 of 5)                     | o       |
| Matrix 2 of 5                           | V       |
| Industrial 2 of 5/Discrete 2 of 5/IND25 | G       |
| Standard 2 of 5 (IATA 25)               | G       |
| Code 39                                 | B       |
| Code 93                                 | E       |
| Codabar                                 | C       |
| Code 11                                 | H       |
| Plessey                                 | J       |
| MSI-Plessey                             | J       |
| GS1-DataBar (RSS)                       | R       |
| PDF417                                  | r       |
| QR                                      | q       |
| AZTEC(Aztec Code)                       | a       |
| Data Matrix (DM)                        | u       |
| MaxiCode                                | x       |
| Han Xin Code/Han Xin Code               | c       |
| Code 32                                 | B       |
| Trioptic Code 39                        | M       |
| Coupon Code                             | N       |
| GS1 DataBar-14                          | R       |
| GS1 DataBar Limited                     | R       |
| GS1 DataBar Expanded                    | R       |
| SETUP128                                | S       |
| Veri Code                               | v       |

## 6.14 AIM code identifier

| Barcode Types        | AIM ID       | Description                                |
|----------------------|--------------|--------------------------------------------|
| Code 128             | JC0          | Normal data                                |
| GS1-128(UCC/EAN-128) | JC1          | FNC1 is at the 1st code word position.     |
| AIM 128              | JC2          | FNC1 is at the 2nd code word position.     |
| ISBT-128             | JC0          |                                            |
| EAN-8                | JE4          | Normal data                                |
|                      | JE4···JE1··· | EAN-8 data plus a 2-digit additional code. |
|                      | JE4···JE2··· | EAN-8 data plus a 5-digit additional code. |

continues on next page

Table 2 – continued from previous page

| Barcode Types                            | AIM ID | Description                                                             |
|------------------------------------------|--------|-------------------------------------------------------------------------|
| EAN-13                                   | JE0    | Normal data                                                             |
|                                          | JE3    | EAN-13 data plus 2/5 digit additional code.                             |
| ISSN                                     | JX0    | Normal data                                                             |
| ISBN/Bookland EAN                        | JX0    | Normal data                                                             |
| UPC-E                                    | JE0    | Normal data                                                             |
|                                          | JE3    | UPC-E data plus a 2/5-digit add-on code.                                |
| UPC-A                                    | JE0    | Ordinary data.                                                          |
|                                          | JE3    | UPC-A data plus a 2/5-digit add-on code.                                |
| Interleaved 2 of 5/ITF                   | JI0    | Normal data                                                             |
|                                          | JI1    | Verify and output check characters.                                     |
|                                          | JI3    | Verify but do not output the check character.                           |
| ITF-14                                   | JI1    | Output check characters.                                                |
|                                          | JI3    | Check characters are not output.                                        |
| Deutsche Post 14                         | JX0    | Normal data                                                             |
| Deutsche Post 12                         | JX0    | Normal data                                                             |
| NEC-25(COOP 2 of 5)                      | JX0    | Normal data                                                             |
| Matrix 2 of 5                            | JX0    | Normal data                                                             |
| Industrial 2 of 5/ Discrete 2 of 5/IND25 | JS0    | Normal data                                                             |
| Standard 2 of 5 (IATA 25)                | JR0    | Normal data                                                             |
| Code 39                                  | JA0    | No parity, no Full ASCII extension, data output as it is.               |
|                                          | JA1    | MOD43 check and output check characters.                                |
|                                          | JA3    | MOD43 checks, but does not output check characters.                     |
|                                          | JA4    | Full ASCII extension, but no parity.                                    |
|                                          | JA5    | Full ASCII expansion is performed, and check characters are output.     |
|                                          | JA7    | Full ASCII expansion is performed, but check characters are not output. |
| Code 93                                  | JG0    | Normal data                                                             |
| Codabar                                  | JO0    | Normal data                                                             |
|                                          | JO2    | Verification, and output verification characters.                       |
|                                          | JO4    | Verification, but does not output the verification character.           |
| Code 11                                  | JH3    | Normal data                                                             |

continues on next page

Table 2 – continued from previous page

| Barcode Types     | AIM ID | Description                                                                          |
|-------------------|--------|--------------------------------------------------------------------------------------|
|                   | JH0    | MOD11 single character verification and output verification characters.              |
|                   | JH3    | MOD11 single character verification, but does not output the verification character. |
| Plessey           | JP0    | Normal data                                                                          |
| MSI-Plessey       | JM0    | Normal data                                                                          |
|                   | JM0    | MOD10 verification, and output verification characters                               |
|                   | JM1    | MOD10 verification, but does not output verification characters                      |
| GS1-DataBar (RSS) | Je0    | Standard data package                                                                |
| PDF417            | JL0    | No options specified at this time, always transmit 3                                 |
| QR                | JQ0    | QR Code Mode 1 (Complies with AIM ISS 97-001)                                        |
|                   | JQ1    | QR Code mode 2 (2005 symbol), not using ECI protocol                                 |
|                   | JQ2    | QR Code mode 2 (2005 symbol), using the ECI protocol                                 |
|                   | JQ3    | QR Code mode 2 (2005 symbol), ECI protocol not used, FNC1 in position 1              |
|                   | JQ4    | QR Code mode 2 (2005 symbol), using ECI protocol, FNC1 is in position 1              |
|                   | JQ5    | QR Code mode 2 (2005 symbol), ECI protocol not used, FNC1 in position 2              |
|                   | JQ6    | QR Code mode 2 (2005 symbol), using ECI protocol, FNC1 is in position 2              |
| AZTEC(Aztec Code) | jz0    | No options specified at this time, always transmit 3                                 |
| Data Matrix (DM)  | jd0    | ECC 000 - 140                                                                        |
|                   | jd1    | ECC 200                                                                              |
|                   | jd2    | ECC 200, FNC1 in position 1 or 5                                                     |
|                   | jd3    | ECC 200, FNC1 in position 2 or 6                                                     |
|                   | jd4    | ECC 200 supports ECI protocol                                                        |
|                   | jd5    | ECC 200, FNC1 in position 1 or 5 and supports ECI protocol                           |
|                   | jd6    | ECC 200, FNC1 in position 2 or 6 and supports ECI protocol                           |
| MaxiCode          | JU1    | No options specified at this time, always transmit 3                                 |

continues on next page

Table 2 – continued from previous page

| Barcode Types             | AIM ID | Description                                          |
|---------------------------|--------|------------------------------------------------------|
| Han Xin Code/Han Xin Code | JX0    | No options specified at this time, always transmit 3 |

## 7 Character Settings

### 7.1 Output Character Set Type

The output character set type specifies which character set the scan engine uses to output decoded data.

| Setting Value | Character Set  |
|---------------|----------------|
| 0             | primitive type |
| 1             | GBK (GB2312)   |
| 2             | UTF-8          |

#### default

0 (Raw Type)



\* Raw Type



GBK (GB2312)



UTF-8



EUC-KR Korean (special versions only)



DEC MCS



BIG5

## 7.2 Input Character Set Type



\\* AUTO



GBK (GB2312)



UTF-8



ASCII



Japanese



Korean (special versions only)



DEC Multinational Character Set (MCS)



ISO8859-1 Character Set



Japanese Single-byte (special versions only)



Cyrillic Character Set (Windows 1251)



KOI8-R Character Set



BIG5 Character Set



ISO8859-2 Character Set

## 8 Barcode Settings

### 8.1 Common Symbology Entries

| Symbology          | Entry                                          |
|--------------------|------------------------------------------------|
| UPC-A              | <i>UPC-A</i>                                   |
| UPC-E              | <i>UPC-E</i>                                   |
| EAN-8              | <i>EAN-8</i>                                   |
| EAN-13             | <i>EAN-13</i>                                  |
| Bookland EAN       | <i>Enable/disable Bookland EAN (ISBN)</i>      |
| Code 128           | <i>Code 128</i>                                |
| GS1-128            | <i>GS1-128 (formerly UCC/EAN-128)</i>          |
| Code 39            | <i>Code 39</i>                                 |
| Code 93            | <i>Code 93</i>                                 |
| Code 11            | <i>Code 11</i>                                 |
| Interleaved 2 of 5 | <i>Interleaved 2 of 5/ITF/Crossed 25 yards</i> |
| Codabar            | <i>Codabar</i>                                 |
| MSI                | <i>MSI/MSI PLESSEY</i>                         |
| PDF417             | <i>PDF417</i>                                  |
| QR Code            | <i>QR Code</i>                                 |
| Data Matrix        | <i>Data Matrix (DM)</i>                        |
| Maxi Code          | <i>Maxi Code</i>                               |
| Aztec Code         | <i>Aztec Code</i>                              |
| Han Xin Code       | <i>Han Xin Code</i>                            |

### 8.2 1D Barcode Inverse Reading



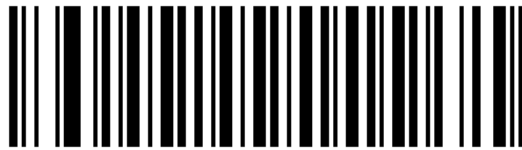
\* Disable



Enable

## 8.3 Barcode global switch

### 1D Barcode Switch



Disable



Enable

### 2D Barcode Switch



Disable



Enable

### All barcode switches



Disable all barcodes



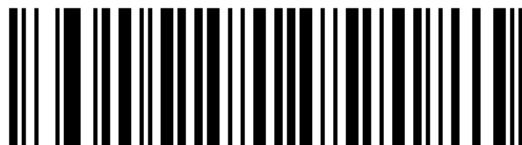
Enable all barcodes

## 8.4 Linear Symbology Security Level

The scan engine provides four security levels for decoding linear symbologies. As the security level increases, tolerance for poor-quality barcodes decreases. Select a level appropriate for the barcode quality.

### Linear safety level 1

All code types must be successfully read 1 time before being decoded



\* Linear safety level 1

### Linear safety level 2

All code types must be read successfully 2 times before being decoded.



Linear safety level 2

### Linear safety level 3

All code types must be successfully read 3 times before being decoded.



Linear safety level 3

### Linear safety level 4

All code types must be successfully read 4 times before being decoded



Linear safety level 4

## 8.5 UPC-A

### Enable/disable UPC-A

Scan the corresponding barcode below to enable or disable UPC-A.



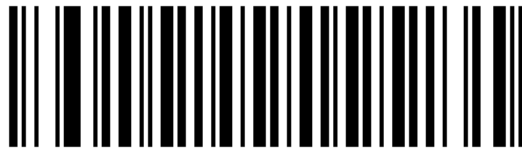
\* Enable UPC-A



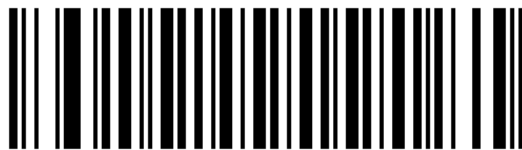
Disable UPC-A

### UPC-A preamble

Preamble characters (country code and system characters) may be transmitted as part of the UPC-A code system. Select one of the following options to set and transmit the UPC-A preamble to the host: transmit system characters only, transmit system characters and country code ( “0” for United States), or transmit no preamble.



No preamble (<DATA>)



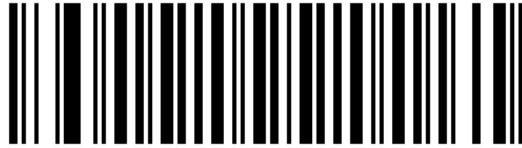
\* System characters (<SYSTEM CHARACTER> <DATA>)



System characters & country code (<COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)

### Transmit UPC-A check digit

Scan the corresponding barcode below to set whether to transmit the UPC-A check digit.



\* Transmit UPC-A check digit



Do not transmit UPC-A check digit

### UPC-A 2-digit add-on code



Enable

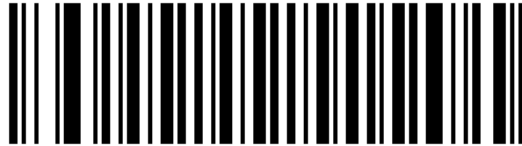


\* Disable

### UPC-A 5-digit add-on code



Enable

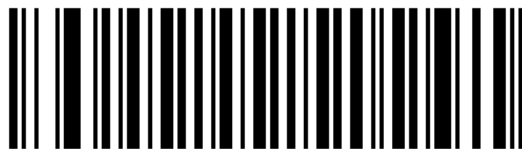


\* Disable

## Require UPC-A Supplemental



Enable UPC-A Supplemental Requirement



Disable UPC-A Supplemental Requirement

## 8.6 UPC-E

### Enable/disable UPC-E

Scan the corresponding barcode below to enable or disable UPC-E.



\* Enable UPC-E



Disable UPC-E

### UPC-E preamble



No preamble (<DATA>)



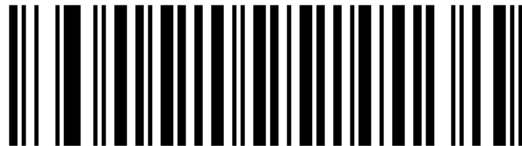
\* System characters (<SYSTEM CHARACTER> <DATA>)



System characters & country code (<COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)

### Transmit UPC-E check digit

Scan the corresponding barcode below to set whether to transmit the UPC-E check digit.



\* Transmit UPC-E check digit

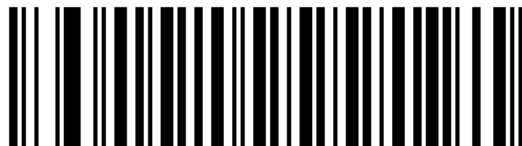


Do not transmit UPC-E check digit

### Convert UPC-E to UPC-A

This parameter allows this parameter to be converted from UPC-E (zero suppression) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is protected by UPC-A

Impact of programming choices (eg: preamble, checksum).



Convert UPC-E to UPC-A



\* Does not convert UPC-E to UPC-A

### UPC-E 2-digit add-on code



Enable



\* Disable

### UPC-E 5-digit add-on code

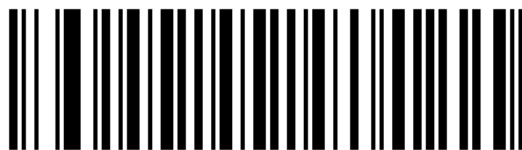


Enable



\* Disable

### Require UPC-E Supplemental

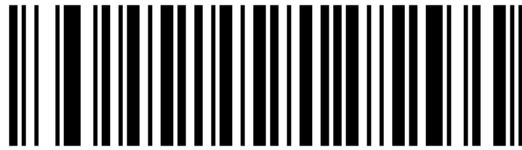


Enable

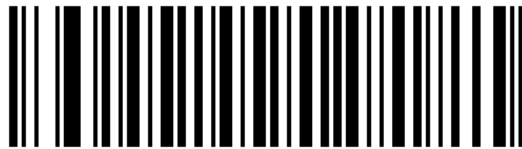


\* Disable

## UPC-E1 switch



\* Disable UPC-E1



Enable UPC-E1

## 8.7 EAN-8

### Enable/disable EAN-8

Scan the corresponding barcode below to enable or disable EAN-8.



\* Enable EAN-8



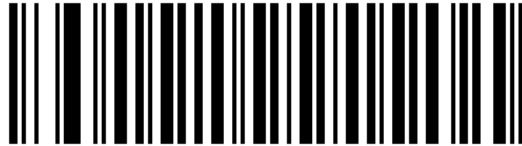
Disable EAN-8

### EAN-8 zero extension

When enabled, this parameter prepends five 0 characters to the decoded EAN-8 data to make it compatible with the EAN-13 format. When disabled, the original EAN-8 data is transmitted.



Enable EAN-8 zero extension



\* Disable EAN-8 zero extension

#### **EAN-8 2-digit additional code**



Enable

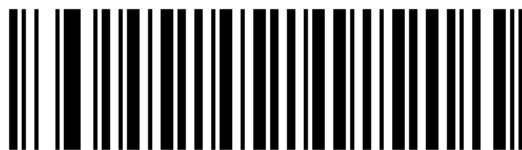


\* Disable

#### **EAN-8 5-digit add-on code**



Enable



\* Disable

#### **Require EAN-8 Supplemental**



Enable

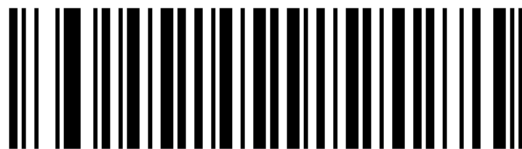


\* Disable

#### **EAN-8 sends check digit**



Disable



\* Enable

### **8.8 EAN-13**

#### **Enable/disable EAN-13**

Scan the corresponding barcode below to enable or disable EAN-13.



\* Enable EAN-13



Disable EAN-13

#### **EAN-13 2-digit additional code**



Enable



\* Disable

#### **EAN-13 5-digit add-on code**



Enable



\* Disable

#### **Require EAN-13 Supplemental**



Enable



\* Disable

#### **EAN-13 send check character**



Disable EAN-13 sending check characters



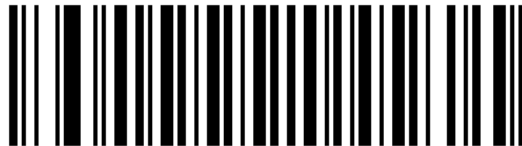
Enable EAN-13 to send check characters

## 8.9 Enable/disable Bookland EAN (ISBN)

Scan the corresponding barcode below to enable or disable Bookland EAN (ISBN).



Enable Bookland EAN



\* Disable Bookland EAN

## 8.10 Code 128

### Note

The enable/disable control of Code 128 also applies to AIM128; the output type identification of AIM128 is different from that of ordinary Code 128.

### Enable/disable Code 128

Scan the corresponding barcode below to enable or disable Code 128.



\* Enable Code 128



Disable Code 128

## Code 128 Send check character



Enable



\* Disable

## Code 128 length setting

Allows reading of Code 128 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Code 128 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

### default

0-99

### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### Example

Only 4-8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Code 128 any length



Code 128 specifies the length

## 8.11 GS1-128 (formerly UCC/EAN-128)

Scan the appropriate Parameter Barcode below to enable or disable GS1-128.



\* Enable GS1-128



Disable GS1-128

## UCC/EAN-128 sending check characters



Enable



\* Disable

## UCC/EAN-128 length setting

Allows reading of UCC/EAN-128 codes of specific lengths. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “UCC/EAN-128 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

### default

0-99

### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| $L1 < L2$ | L1 is the minimum length, L2 is the maximum length |
| $L1 > L2$ | L1 is the maximum length, L2 is the minimum length |
| $L1 = L2$ | Only read fixed length                             |

#### **Example**

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



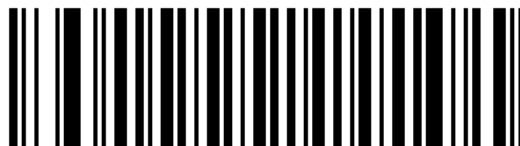
UCC/EAN-128 any length



UCC/EAN-128 specified length

## 8.12 ISBT 128

Scan the appropriate barcode below to enable or disable ISBT 128.



\* Enable ISBT 128



Disable ISBT 128

## 8.13 Code 39

### Enable/disable Code 39

Scan the corresponding barcode below to enable or disable Code 39.



\* Enable Code 39



Disable Code 39

### Code 39 length setting

Allows reading of Code 39 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Code 39 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

0-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

#### Example

Only 4-8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Code 39 any length



Code 39 specifies the length

### Code 39 check digit verification

When enabled, the Scan Engine verifies that Code 39 data conforms to the specified check-digit algorithm. Only Code 39 barcodes containing one modulo 43 check digit can be decoded.



Verify Code 39 check digit



\* Do not verify Code 39 check digit

Transmit Code 39 Check Digit Scan this barcode to transmit the data check digit.



Transmit Code 39 check digit

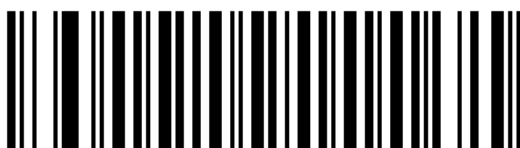


\* Do not transmit Code 39 check digit

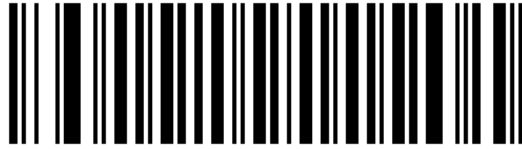
## Enable/disable Code 39 Full ASCII

Code 39 Full ASCII is evolved from Code 39 and can encode double characters into Full ASCII characters. Scan the corresponding barcode below to enable or disable Code 39 Full ASCII.

See the mapping between Code 39 characters and ASCII values in *Character Reference Table*.



Enable Code 39 Full ASCII



\* Disable Code 39 Full ASCII

### Transmit Code 39 start and stop characters



\* Disable



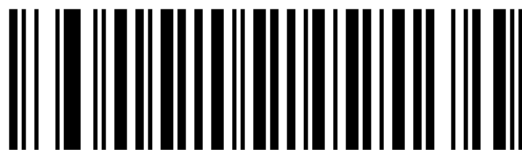
Enable

### Convert Code 39 to Code 32 (Italian Medical Code)

Code 32 is a Code 39 variant used in the Italian pharmaceutical industry. Scan the corresponding barcode below to enable or disable conversion from Code 39 to Code 32.



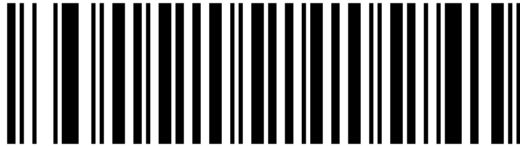
\* Disable



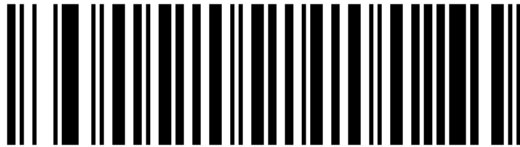
Enable

### Code 32 prefix

Enabling this parameter adds the prefix character “A” to all Code 32. Code 39 must be converted to Code 32 (Italian pharmaceutical code) before enabling this parameter.

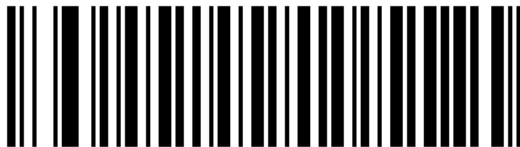


\* Disable

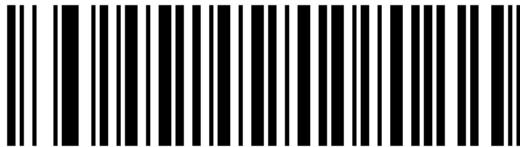


Enable

### Code 32 Check Digit Verification



\* Disable



Enable

### Transmit Code 32 check digit



\* Transmit check digit 0x00



Enable transmission of Code 32 check digits

## 8.14 Code 93

Transmit start character, stop character, and check digit

0x01

---

## Enable/disable Code 93

Scan the corresponding barcode below to enable or disable Code 93.



Enable Code 93



\* Disable Code 93

## Set Code 93 length

Allows reading of Code 93 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Code 93 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

### default

0–99

### Set range

01–99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### Example

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Code 93 any length



Code 93 specifies the length

## 8.15 Code 11

### Enable/disable Code 11

Scan the corresponding barcode below to enable or disable Code 11.



Enable Code 11



\* Disable Code 11

### Code 11 length setting

Allows reading of Code 11 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Code 11 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

4-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

#### Example

Only 4-8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Code 11 any length



Code 11 specifies the length

## Check Digit Verification

This feature allows the Scan Engine to verify that Code 11 data conforms to the specified check-digit algorithm. Select one check digit, two check digits, or disable check-digit verification.

To enable this feature, scan the Code 11 barcode below that matches the required number of check digits.



\* Disable Check Digit Verification



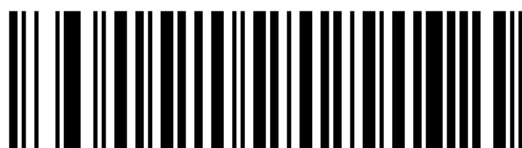
a check digit



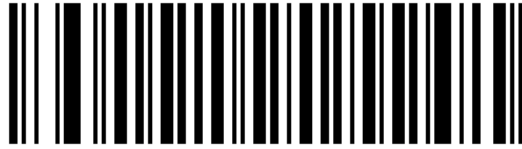
two check digits

## Transmit Code 11 check digit

Scan the barcode below to choose whether to transmit the Code 11 check digit.



Transmit Code 11 check digit



\* Code 11 check digit is not transmitted

**Note**

To use this parameter, enable Code 11 check digit verification.

## 8.16 Interleaved 2 of 5/ITF/Crossed 25 yards

### Enable/Disable Interleaved 2 of 5

Scan the corresponding barcode below to enable or disable Interleaved 2 of 5.



\* Enable Interleaved 2 of 5



Disable Interleaved 2 of 5

### Interleaved 2 of 5 Length Settings

Allows reading of Interleaved 2 of 5 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Interleaved 2 of 5 arbitrary length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

4-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### Example

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Interleaved 2 of 5 any length



Interleaved 2 of 5 specified length

## Interleaved 2 of 5 Check Digit Verification

When enabled, this parameter checks the integrity of the I 2 of 5 symbology to ensure compliance with specified algorithms, including USS (Uniform Symbol Specification) or OPCC (Optical Product Code Council)



\* Disable



Enable

## Transmit I 2 of 5 check digits

Scanning this barcode transmits a checksum of the data.



Transmit I 2 of 5 check digits

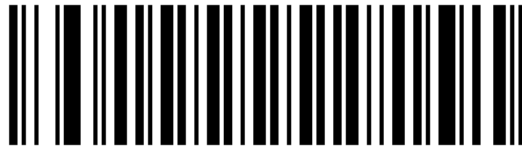


\* Do not transmit I 2 of 5 check digits

## 8.17 Discrete 2 of 5/Industrial 2 of 5/IND25/Industrial 25 yards

### Enable/disable Discrete 2 of 5

Scan the corresponding barcode below to enable or disable Discrete 2 of 5.



Enable Discrete 2 of 5



\* Disable Discrete 2 of 5

### Discrete 2 of 5 Length Settings

Allows reading of Discrete 2 of 5 codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Discrete 2 of 5 arbitrary length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

4-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### Example

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.

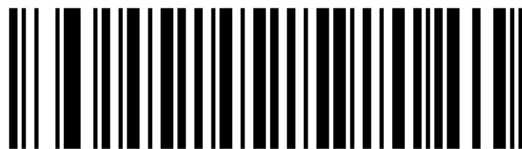


Discrete 2 of 5 any length



Discrete 2 of 5 specified length

## Discrete 2 of 5 Verification



Enable



\* Disable

## Discrete 2 of 5 Send check character



Enable Discrete 2 of 5 to send check characters



Disable Discrete 2 of 5 Send check characters

## 8.18 Matrix 25(Matrix 25)

### Enable/disable Matrix 25



Enable Matrix 25



\* Disable Matrix 25

### Matrix 25 check digit verification



Enable Matrix 25 checksum confirmation



\* Disable Matrix 25 checksum confirmation

### Transmitting Matrix 25 check characters



Enable Matrix 25 transmission check characters



\* Disable Matrix 25 transmission check characters

## Matrix 25 length setting

Allows reading of Matrix 25 codes of specific lengths. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Matrix 25 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

### default

4-99

### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### Example

Only 4-8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Matrix 25 any length



Matrix 25 specifies the length

## 8.19 Standard 25/IATA 25(Standard 25)

### Enable/disable Standard 25

Scan the corresponding barcode below to enable or disable Standard 25.



\* Disable



Enable

### Standard 25 check digit verification



\* Disable Standard 25 checksum confirmation



Enable Standard 25 checksum confirmation

### Transmission check character



\* Disable Standard 25 transmission check characters



Enable Standard 25 transmission check characters

### Standard 25 length setting

Allows reading of Standard 25 codes of specific lengths. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Standard 25 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

4-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

### **Example**

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Standard 25 any length



Standard 25 specified length

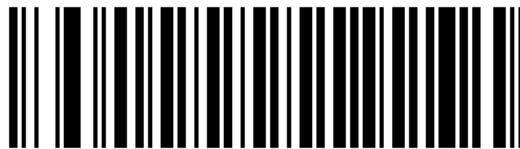
## **8.20 Codabar**

### **Enable/disable Codabar**

Scan the corresponding barcode below to enable or disable Codabar.



Enable Codabar



\* Disable Codabar

### **Codabar length setting**

Allows reading of Codabar codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “Codabar Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

### default

2–99

### Set range

01–99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

#### Example

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



Codabar any length



Codabar specifies the length

### Codabar verification

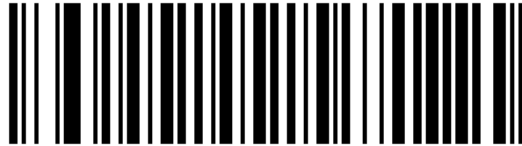


Enable



\* Disable

### Codabar sends check characters

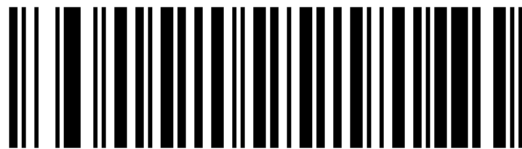


Enable

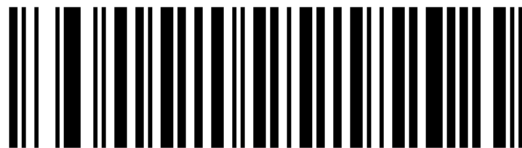


\* Disable

## NOTICE Edit



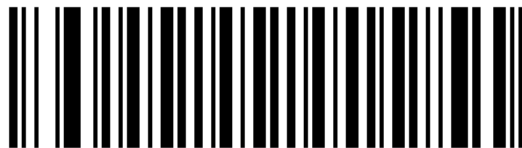
Enable NOTIS editing



\* Disable NOTIS editing

## Start and stop character format

The start and stop characters can each be one of A, B, C, or D. The stop character can also be one of T, N, \*, or E.



\\* ABCD/ABCD



ABCD/TN\*E

## Start and stop character letter case



\* uppercase letter

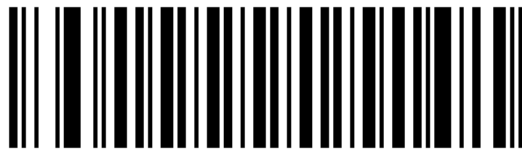


lowercase letters

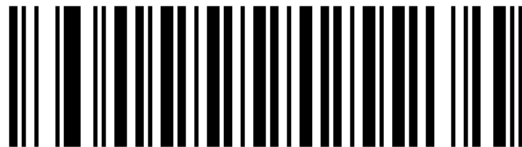
## 8.21 MSI/MSI PLESSEY

### Enable/disable MSI

Scan the corresponding barcode below to enable or disable MSI.



Enable MSI



\* Disable MSI

### MSI length settings

Allows reading MSI codes of a specific length. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “MSI Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

2-99

#### Set range

01-99

| condition | Description                                        |
|-----------|----------------------------------------------------|
| $L1 < L2$ | L1 is the minimum length, L2 is the maximum length |
| $L1 > L2$ | L1 is the maximum length, L2 is the minimum length |
| $L1 = L2$ | Only read fixed length                             |

**Example**

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



MSI arbitrary length



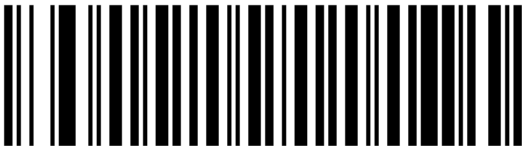
MSI specified length

**MSI check digit**

These check digits at the end of the barcode verify data integrity. At least one check digit is always required, and check digits are not transmitted with the data automatically. If you select two check digits, you must also set the MSI check digit algorithm.



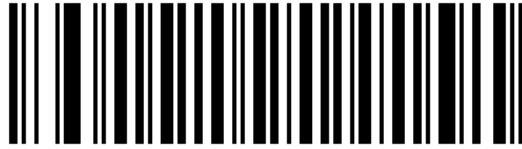
\* An MSI check digit



Two MSI check digits

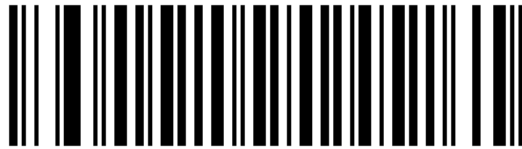
**Transmit MSI Check Digit**

Scan this barcode to be set to transmit a checksum with data.



Transmit MSI Check Digit

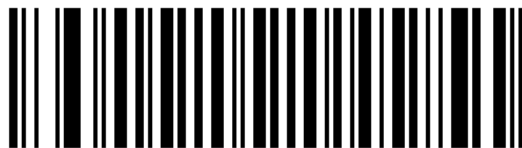
Scan this barcode to set up data transmission without a checksum.



\* Do Not Transmit MSI Check Digit

### MSI Check Digit Algorithm

When selecting two MSI check digits, one of the following algorithms needs to be selected.



MOD 10 / MOD 11

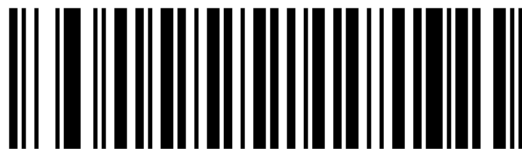


\\* MOD 10 / MOD 10

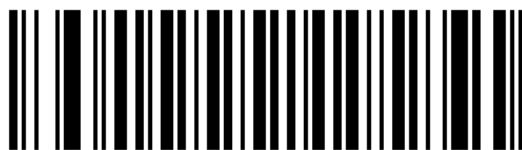
## 8.22 GS1 DataBar/RSS

### Enable/disable GS1 DataBar/RSS

Scan the corresponding barcode below to enable or disable GS1 DataBar/RSS.



Enable GS1 DataBar/RSS

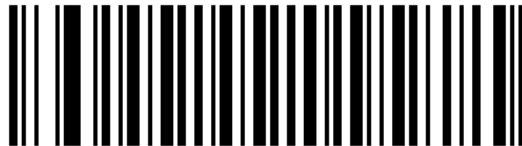


\* Disable GS1 DataBar/RSS

## RSS AI characters



\* Enable

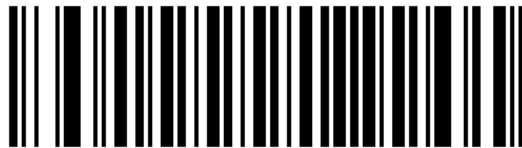


Disable

## 8.23 PDF417

### Enable/disable PDF417

Scan the corresponding barcode below to enable or disable PDF417.



Disable PDF417



\* Enable PDF417

### PDF417 Inverse Reading



\* read only positive



Read only invert



Read Normal and Inverse Barcodes

## 8.24 QR Code

### Enable/disable QR Code

Scan the corresponding barcode below to enable or disable QR Code.



Disable QR Code



\* Enable QR Code

### ECI control



\* ECI does not output



ECI output

### QR Code Inverse Reading



\* read only positive



Read only invert



Read Normal and Inverse Barcodes

### Remove UTF-8 BOM encoding format of QR Code

When enabled, UTF-8 BOM encoding format is removed when outputting QR Code data.



\* Disable



Enable

## 8.25 Data Matrix (DM)

Both normal images and mirror images can be read.

### Enable/disable Data Matrix (DM)

Scan the corresponding barcode below to enable or disable the Data Matrix (DM).



Disable Data Matrix



\* Enable Data Matrix

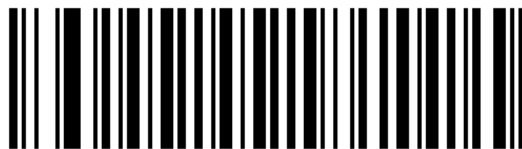
## Inverse Reading



\* read only positive

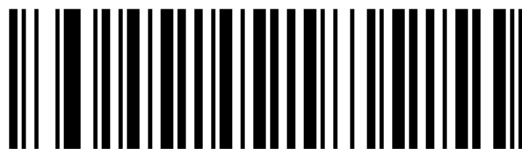


Read only invert



Read Normal and Inverse Barcodes

## ECI control



\* ECI does not output



ECI output

## 8.26 Maxi Code

### Enable/disable Maxi Code

Scan the corresponding barcode below to enable or disable Maxi Code.



\* Disable Maxi Code



Enable Maxi Code

## 8.27 Aztec Code

### Enable/disable Aztec Code

Scan the corresponding barcode below to enable or disable Aztec Code.



\* Disable Aztec Code



Enable Aztec Code

## 8.28 Han Xin Code

### Enable/disable Han Xin Code

Scan the corresponding barcode below to enable or disable Han Xin Code.

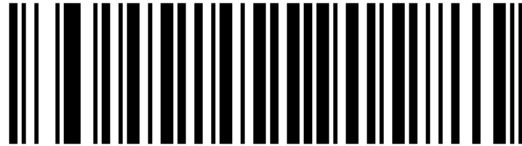


\* Disable Han Xin Code

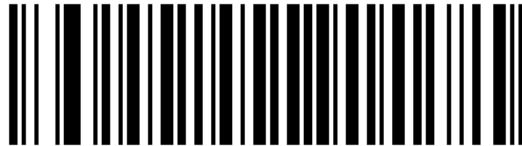


Enable Han Xin Code

## Inverse Reading



\* read only positive



Read only invert



Read Normal and Inverse Barcodes

## 8.29 ISSN

Converts to EAN-13 when disabled.



\* Disable



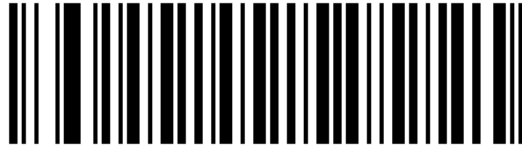
Enable

## 8.30 NEC-25(COOP25)

NEC-25(COOP25) switch

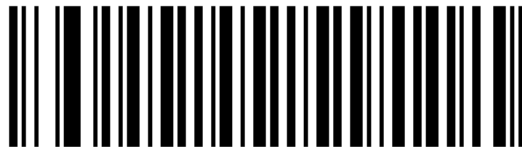


Enable

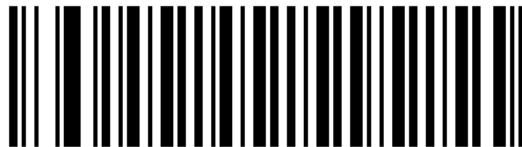


\* Disable

### NEC-25(COOP25) Verification

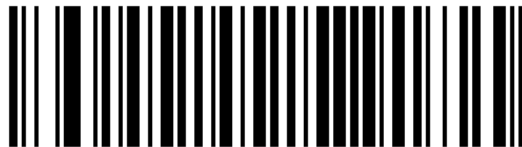


Enable



\* Disable

### NEC-25(COOP25) Send check character



Enable



\* Disable

### NEC-25 (COOP 25) length setting

Allows reading of NEC-25 codes of specific lengths. After scanning the length Parameter Barcode, scan the 4-digit Numeric Barcode to set L1 and L2; L1 and L2 each occupy 2 digits. If there are less than 2 digits, add 0 in front.

When scanning the “NEC-25 Any Length” Parameter Barcode, any length can be read, and there is no need to scan the Numeric Barcode.

#### default

4-99

#### Set range

01-99

---

| condition | Description                                        |
|-----------|----------------------------------------------------|
| L1 < L2   | L1 is the minimum length, L2 is the maximum length |
| L1 > L2   | L1 is the maximum length, L2 is the minimum length |
| L1 = L2   | Only read fixed length                             |

**Example**

Only 4–8 characters are allowed to be read: scan the Numeric Barcode 0, 4, 0, 8, or 0, 8, 0, 4.

Fixed reading of 12 characters: Scan the Numeric Barcodes 1, 2, 1, 2.



NEC-25 any length



NEC-25 specified length

**8.31 COMPOSITE**

Enable/disable COMPOSITE



\* Disable



Enable

**9 Appendix**

The appendix combines Numeric Barcodes and the character reference table for reuse and referencing in single-model manuals.

## 9.1 Numeric Barcode

For parameters requiring an exact numerical value, scan the appropriate Numeric Barcode.



0



1



2



3



4



5



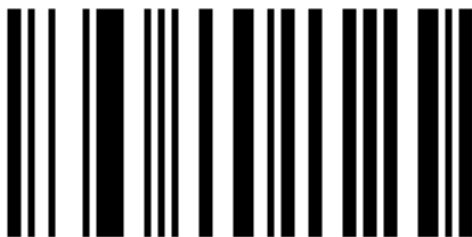
6



7



8



9

## Cancel Barcode

To change a selection or cancel an incorrect entry, scan the barcode below.



Parameter Barcode: Cancel

## 9.2 Character Reference Table

When appending prefixes and suffixes to decoded data, follow these steps to select character values:

1. Set Output Data Transmission Format (parameter 0xE2) to the required option.
2. Query the ASCII code value to be set according to the table, and enter it into prefix (0x69), suffix 1 (0x68) or suffix 2 (0x6A) in hexadecimal form.

### Character Reference Table (Control Characters)

| Scan Value | Hex Value | Character | Keyboard Function Key Operations | Keyboard Ctrl Key Combination |
|------------|-----------|-----------|----------------------------------|-------------------------------|
| 1000       | 00h       | NUL       | Null                             | CTRL 2                        |
| 1001       | 01h       | SOH       | Keypad Enter                     | CTRL A                        |
| 1002       | 02h       | STX       | Caps lock                        | CTRL B                        |
| 1003       | 03h       | ETX       | Right Arrow                      | CTRL C                        |
| 1004       | 04h       | EOT       | Up Arrow                         | CTRL D                        |
| 1005       | 05h       | ENQ       | Null                             | CTRL E                        |
| 1006       | 06h       | ACK       | Null                             | CTRL F                        |
| 1007       | 07h       | BEL       | Enter                            | CTRL G                        |
| 1008       | 08h       | BS        | Left Arrow                       | CTRL H                        |
| 1009       | 09h       | HT        | Horizontal Tab                   | CTRL I                        |
| 1010       | 0Ah       | LF        | Down Arrow                       | CTRL J                        |
| 1011       | 0Bh       | VT        | Vertical Tab                     | CTRL K                        |
| 1012       | 0Ch       | FF        | Delete                           | CTRL L                        |
| 1013       | 0Dh       | CR        | Enter                            | CTRL M                        |
| 1014       | 0Eh       | SO        | Insert                           | CTRL N                        |
| 1015       | 0Fh       | SI        | Esc                              | CTRL O                        |
| 1016       | 10h       | DLE       | F11                              | CTRL P                        |
| 1017       | 11h       | DC1       | Home                             | CTRL Q                        |
| 1018       | 12h       | DC2       | Print Screen                     | CTRL R                        |
| 1019       | 13h       | DC3       | Backspace                        | CTRL S                        |
| 1020       | 14h       | DC4       | tab+shift                        | CTRL T                        |
| 1021       | 15h       | NAK       | F12                              | CTRL U                        |
| 1022       | 16h       | SYN       | F1                               | CTRL V                        |
| 1023       | 17h       | ETB       | F2                               | CTRL W                        |

| Scan Value | Hex Value | Character | Keyboard Function Key Operations | Keyboard Ctrl Key Combination |
|------------|-----------|-----------|----------------------------------|-------------------------------|
| 1024       | 18h       | CAN       | F3                               | CTRL X                        |
| 1025       | 19h       | EM        | F4                               | CTRL Y                        |
| 1026       | 1Ah       | SUB       | F5                               | CTRL Z                        |
| 1027       | 1Bh       | ESC       | F6                               | CTRL [                        |
| 1028       | 1Ch       | FS        | F7                               | CTRL \                        |
| 1029       | 1Dh       | GS        | F8                               | CTRL ]                        |
| 1030       | 1Eh       | RS        | F9                               | CTRL 6                        |
| 1031       | 1Fh       | US        | F10                              | CTRL -                        |
| 1032       | 20h       | (space)   | Space                            | Space                         |

**Character comparison table (visible characters) (continued table)**

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1033       | 21h       | !                                |
| 1034       | 22h       | '                                |
| 1035       | 23h       | #                                |
| 1036       | 24h       | \$                               |
| 1037       | 25h       | %                                |
| 1038       | 26h       | &                                |
| 1039       | 27h       | '                                |
| 1040       | 28h       | (                                |
| 1041       | 29h       | )                                |
| 1042       | 2Ah       | *                                |
| 1043       | 2Bh       | +                                |
| 1044       | 2Ch       | ,                                |
| 1045       | 2Dh       | -                                |
| 1046       | 2Eh       | .                                |
| 1047       | 2Fh       | /                                |
| 1048       | 30h       | 0                                |
| 1049       | 31h       | 1                                |
| 1050       | 32h       | 2                                |
| 1051       | 33h       | 3                                |
| 1052       | 34h       | 4                                |
| 1053       | 35h       | 5                                |
| 1054       | 36h       | 6                                |
| 1055       | 37h       | 7                                |

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1056       | 38h       | 8                                |
| 1057       | 39h       | 9                                |
| 1058       | 3Ah       | :                                |
| 1059       | 3Bh       | ;                                |

continues on next page

Table 3 – continued from previous page

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1060       | 3Ch       | <                                |
| 1061       | 3Dh       | =                                |
| 1062       | 3Eh       | >                                |
| 1063       | 3Fh       | ?                                |
| 1064       | 40h       | @                                |
| 1065       | 41h       | A                                |
| 1066       | 42h       | B                                |
| 1067       | 43h       | C                                |
| 1068       | 44h       | D                                |
| 1069       | 45h       | E                                |
| 1070       | 46h       | F                                |
| 1071       | 47h       | G                                |
| 1072       | 48h       | H                                |
| 1073       | 49h       | I                                |
| 1074       | 4Ah       | J                                |
| 1075       | 4Bh       | K                                |
| 1076       | 4Ch       | L                                |
| 1077       | 4Dh       | M                                |
| 1078       | 4Eh       | N                                |
| 1079       | 4Fh       | O                                |
| 1080       | 50h       | P                                |
| 1081       | 51h       | Q                                |
| 1082       | 52h       | R                                |
| 1083       | 53h       | S                                |
| 1084       | 54h       | T                                |
| 1085       | 55h       | U                                |
| 1086       | 56h       | V                                |

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1087       | 57h       | W                                |
| 1088       | 58h       | X                                |
| 1089       | 59h       | Y                                |
| 1090       | 5Ah       | Z                                |
| 1091       | 5Bh       | [                                |
| 1092       | 5Ch       | \                                |
| 1093       | 5Dh       | ]                                |
| 1094       | 5Eh       | ^                                |
| 1095       | 5Fh       | – ‘                              |
| 1096       | 60h       |                                  |
| 1097       | 61h       | a                                |
| 1098       | 62h       | b                                |
| 1099       | 63h       | c                                |
| 1100       | 64h       | d                                |
| 1101       | 65h       | e                                |

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Table 4 – continued from previous page

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1102       | 66h       | f                                |
| 1103       | 67h       | g                                |
| 1104       | 68h       | h                                |
| 1105       | 69h       | i                                |
| 1106       | 6Ah       | j                                |
| 1107       | 6Bh       | k                                |
| 1108       | 6Ch       | l                                |
| 1109       | 6Dh       | m                                |
| 1110       | 6Eh       | n                                |
| 1111       | 6Fh       | o                                |
| 1112       | 70h       | p                                |
| 1113       | 71h       | q                                |
| 1114       | 72h       | r                                |
| 1115       | 73h       | s                                |
| 1116       | 74h       | t                                |
| 1117       | 75h       | u                                |

| Scan Value | Hex Value | Keyboard Function Key Operations |
|------------|-----------|----------------------------------|
| 1118       | 76h       | v                                |
| 1119       | 77h       | w                                |
| 1120       | 78h       | x                                |
| 1121       | 79h       | y                                |
| 1122       | 7Ah       | z                                |
| 1123       | 7Bh       | {                                |
| 1124       | 7Ch       |                                  |
| 1125       | 7Dh       | }                                |
| 1126       | 7Eh       | ~                                |
| 1127       | 7Fh       | Undefined                        |

Values from 1128 to 1255 can also be set; hexadecimal values 80h to FFh are used for SSI.