E950 Barcode Scanner User Manual

Release v1.1.1

2026-09-02

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1 System Settings

1.1 Read Firmware Version

Read Firmware Version

1.2 Restore Factory Defaults

> **Note**
>
> If Write Custom Defaults has been performed, Restore Defaults restores those custom defaults; otherwise it restores factory defaults.

> **Important**
>
> Set Factory Defaults clears all custom defaults and restores factory defaults.

Restore custom defaults

Write custom default values

Set factory defaults

1.3 Work Mode

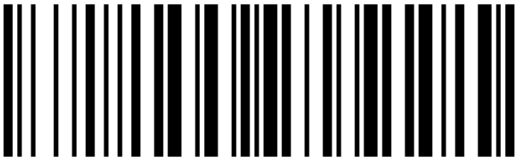
> **Note**
>
> During the data upload process, if you scan the “data upload” command again, the current upload will be canceled or stopped.

Note

In wireless transmission mode, if automatic storage is turned on, barcodes that fail to be transmitted will be automatically saved, and the stored data can be read through “data upload”.

* Normal mode

storage mode



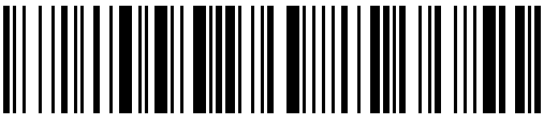
Upload storage data

Read the total number of stored barcodes

Clear storage data after uploading

Read storage space usage

Clear stored barcode

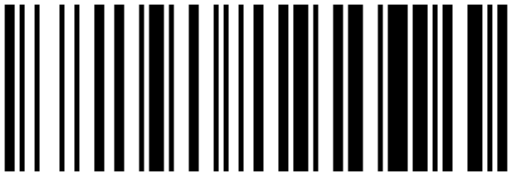


* Autosave mode off

Automatic storage mode is on

2 Power management

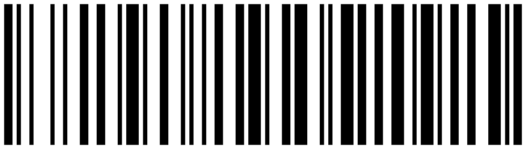
2.1 Read sleep time



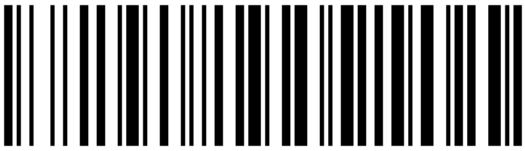
Read sleep time

2.2 Set sleep time

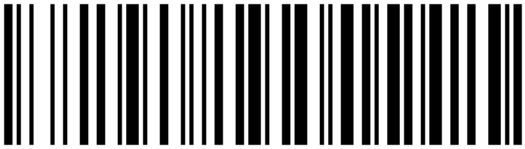
Hibernate now



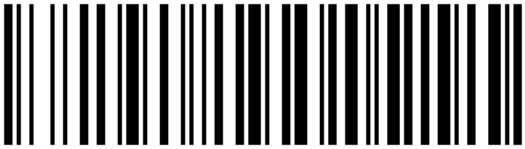
Sleep after 1 minute



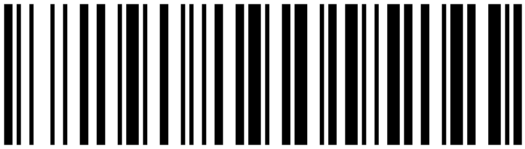
Sleep after 3 minutes (default)



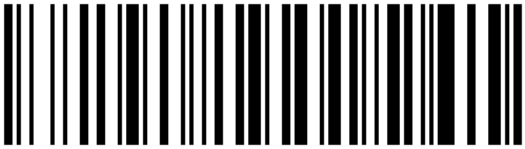
Sleep after 5 minutes



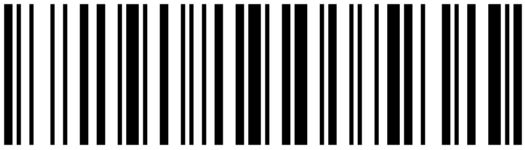
Sleep after 10 minutes



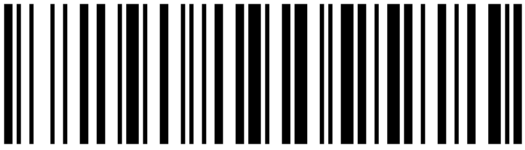
Sleep after 30 minutes



Sleep after 1 hour

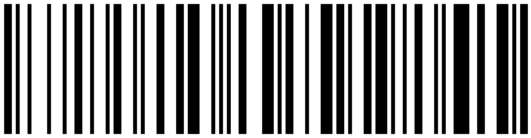


Sleep after 2 hours



never sleep

2.3 Get Barcode Reader battery level



Get battery level

3 Feedback Indicators

3.1 Buzzer control

Mute

* high volume

medium volume

low volume

* high pitch

low pitch

* SDK voice response off

SDK voice response enabled

Base connection buzzer prompt switch

3.2 Vibration motor control

> **Note**
>
> The vibration motor works with a beep prompt, not all models support this feature.

Disable

Enable

3.3 Buzzer sound definition

Type	Sound	Description	Preview
Beep	Single tone (2 pitches)	Storage mode decode; power-off prompt.	**Storage-mode scan** `storage-mode.m4a`**Power off** `shutdown.m4a`
Beep	Single tone (3 pitches)	Power-on prompt; setting saved; upload complete.	**Power on** `startup.m4a`**Setting successful** `wireless-setting.m4a`
Beep	Short single tone	Successful decode.	**Barcode decoded successfully** `one-beeps.m4a`
Beep	30-second continuous short tone	2.4G pairing waits for the receiver; stops after pairing.	**2.4G pairing** `pair2.4G.m4a`
Alarm sound	Two tones (same pitch)	Low-battery alarm during decoding.	**Low battery** `two-beeps.m4a`
Alarm sound	Three tones (same pitch)	Inventory storage error or capacity exceeded.	**Storage error or capacity alarm** `three-beeps.m4a`
Alarm sound	Transmission Failure Beep	Alarm when barcode transmission fails.	No audio available
Alarm sound	Five tones (same pitch)	Boot failure caused by low battery.	**Low-battery power-on failure** `five-beeps.m4a`

3.4 Indicator definition

Indicator	Status
red light / green light	When charging, the red light is on and the green light is off; when fully charged, the red light is off and the green light is on.
blue light	Following the buzzer action, the buzzer lights up when it sounds and goes out when it does not sound; models that support Bluetooth mode are also used to indicate the Bluetooth connection status.

4 wired mode

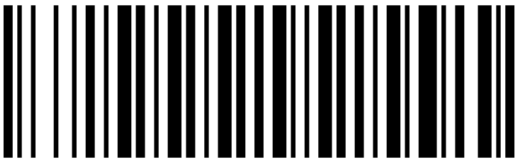
> **Note**
>
> Only applicable to Barcode Readers that support wired transmission.

4.1 USB transfer method

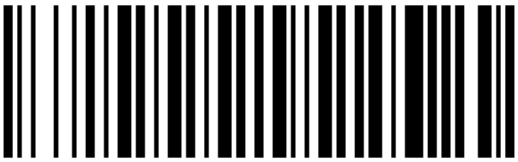
* USB keyboard mode

USB Virtual COM Port mode

> **Note**
>
> After the automatic interface selection is turned on, the device will automatically switch between wired and wireless; when plugging in the USB cable, the wired mode will be used first. When the USB cable is not plugged in or USB is unavailable, the Barcode Reader works in 2.4G mode. Some models may not support this feature.



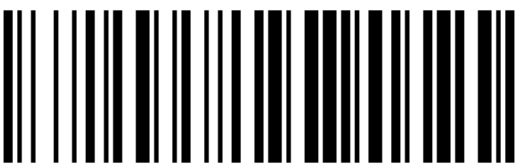
* Wired/wireless automatic selection turns on



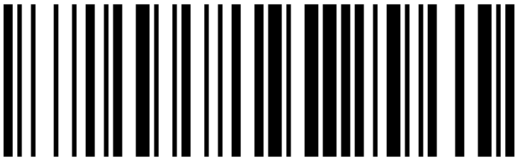
Wired/wireless automatic selection off

4.2 USB keyboard transfer speed

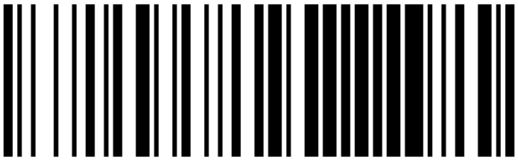
> **Note**
>
> This setting also affects the speed of RF and Bluetooth transmission of very long barcodes and stored data uploads.



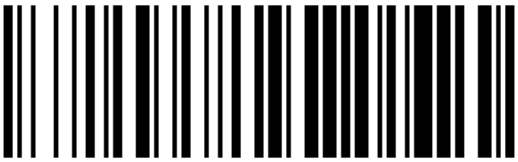
* top speed



top speed



Medium speed



Medium speed

Read keyboard speed

Read keyboard speed

4.3 USB HID multi-key send settings

> **Note**
>
> The settings in this section are only applicable to Windows systems.

USB HID multi-key sending enabled

* USB HID multi-key sending off

5 wireless mode

> **Note**
>
> Only suitable for Barcode Readers that support 2.4G transmission.

5.1 Read Interface Settings

Current Interface Settings

5.2 Wireless transmission method

> **Note**
>
> The blue light is always on or flashing to indicate that it is currently in Bluetooth mode; the blue light is off to indicate that it is currently in 2.4G mode or USB wired mode.

2.4G transmission mode

5.3 2.4G pairing

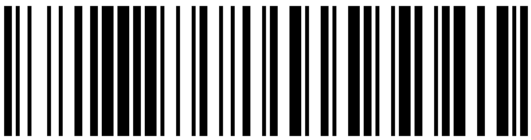
> **Important**
>
> Only valid in wireless 2.4G mode.

one-to-one pairing

One-to-many pairing

5.4 Receiver working mode

> **Note**
>
> Composite device mode is only available on receivers running FWVerL or later. You can also use `ReceiverAddress.exe` to generate a pairing barcode and complete pairing by scanning it.



Receiver as composite device

Receiver as virtual serial port

> **Note**
>
> This mode requires the virtual serial port driver to be installed.

receiver as keyboard

Receiver keyboard transmission speed

Note

The instructions in this section are only applicable to receivers of FWVerL and above. The transmission speeds of the Barcode Reader and receiver must match, otherwise errors may occur when transmitting long barcodes.

Important

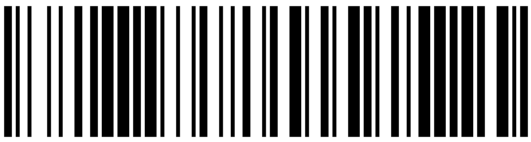
This command is only valid in wireless 2.4G mode and the receiver is connected normally.

Read keyboard speed

Example

`KB SP=2,4` represents a USB keyboard speed of 2ms and a receiver keyboard speed of 4ms.

receiver keyboard high speed



Receiver Keyboard Medium Speed

Receiver Keyboard Low Speed

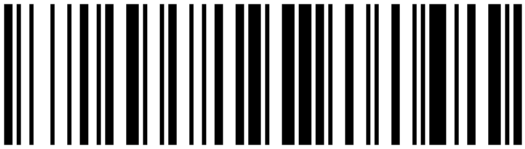
Note

It is only valid in wireless 2.4G mode and the receiving end receives normally.

5.5 2.4G transmission cache

> **Note**
>
> This command is only available on some Barcode Readers that support this feature. After scanning the Parameter Barcode, two short beeps indicate disabled, and one three-tone beep indicates enabled.

When scanning ordinary barcodes, if the amount of barcode data is large and the scanning interval is short, and the data is not uploaded in time, you can use this Parameter Barcode to turn on or off data caching.



SRAM cache switch

In normal mode, after data caching is turned on, if the device briefly leaves the communication distance and enters offline state, you can use this setting to choose to wait for connection before uploading the cached data, or to clear the cached data.

Offline caching switch

6 Bluetooth Mode

> **Note**
>
> Only suitable for RF+BT Barcode Readers with Bluetooth function.

6.1 Read Interface Settings

Current Interface Settings

6.2 Bluetooth Transmission Mode

Note

The blue light is always on or flashing to indicate that it is currently in Bluetooth mode; the blue light is off to indicate that it is currently in 2.4G mode or USB wired mode.

Bluetooth Transmission

6.3 Bluetooth Operating Mode

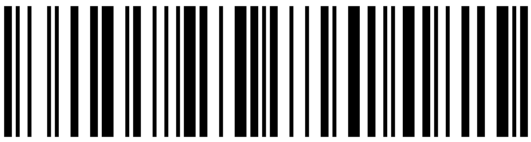
Note

Valid only in Bluetooth mode.

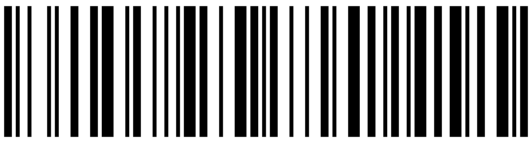
Note

Before switching the Bluetooth working mode, you need to clear the pairing information between the host device and the Barcode Reader.

Bluetooth HID Keyboard (Default)



Bluetooth SPP Serial Port



Bluetooth BLE Serial Port

Bluetooth cradle transmission mode

Note

It is suitable for pairing with a Bluetooth cradle that has already been paired. When the barcode on the base is damaged, you can also use the gadget BluetoothAddress.exe to generate a pairing barcode.

6.4 Change Bluetooth Name

After entering the new Bluetooth name, scan the generated QR code to complete the setup. If the host has saved old pairing records after modification, please delete the old pairing first and search for connection again.

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
AT+NAME=<bluetooth-name>
```

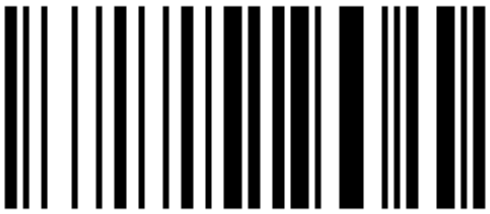
6.5 Clear Bluetooth HID Pairing

After scanning “Clear Pairing” in Bluetooth transmission mode, the Barcode Reader will disconnect the currently paired device and clear the pairing list, then wait for new devices to be paired. Historically paired devices need to be deleted and paired again.

Clear Bluetooth Pairing

6.6 System Keyboard Functions

iOS system pop-up keyboard function



iOS pop up/hide keyboard

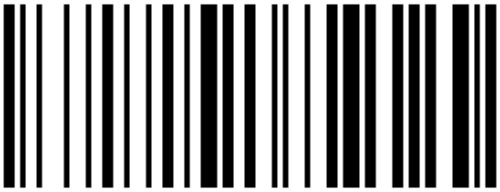
Press and hold the Trigger Button for 4 seconds to toggle the iOS on-screen keyboard

Double-press the Trigger Button to toggle the iOS on-screen keyboard

Pop up iOS keyboard switch after sending

Windows Caps Lock detection

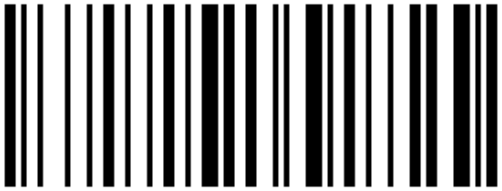
> **Note**
>
> This command is only available on some Bluetooth Barcode Readers. After scanning the Parameter Barcode, two short beeps indicate disabled, and one three-tone beep indicates enabled.



Windows Caps Lock detection switch

6.7 Switch between Bluetooth and 2.4G by pressing and holding for 8 seconds

> **Note**
>
> This command is only available on some RF+BT Barcode Readers (DS, C, RT). When enabled, press and hold the Trigger Button for more than 8 seconds and release it to switch between RF and BT. If you hold it for more than 16 seconds, the Barcode Reader powers off and the mode does not switch. After scanning the Parameter Barcode, two short beeps indicate disabled, and one three-tone beep indicates enabled.

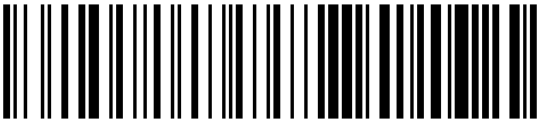


Press and hold the Trigger Button for 8 seconds to toggle RF/BT switching

6.8 Bluetooth keyboard transmission speed

> **Note**
>
> Valid only in Bluetooth mode.

Read Bluetooth HID delay



High speed (2 ms)

High speed (6 ms)

* Medium speed (10 ms)

Medium speed (18 ms)

Low speed (25 ms)

Low speed (30 ms)

6.9 Bluetooth connection status non-sleep setting

> **Note**
>
> After scanning the Parameter Barcode, two short beeps indicate disabled, and one three-tone beep indicates enabled.

Bluetooth connection status non-sleep switch

7 Keyboard Settings

7.1 HID Keyboard General Setting

General HID Settings

> **Note**
>
> The general HID settings in this section apply to USB Keyboard, RF 2.4G Keyboard, and Bluetooth HID Keyboard modes.

Ctrl key combination settings

* Combine-Key Off

Ctrl+ Key Config1

Alt+ Key Config2

Normal-Key Config3

Ctrl+ Key Config4

Alt+ Key Config5

Note

only for ASCII <0x20 chars, Alt+ key only for Windows system.

Case settings

normal

Swap case

all caps

all lowercase

Case conversion does not apply when the keyboard layout is set to ALT or TH.

Num Lock Settings

Disable Num Lock

Num Lock on

*When the receiving device is a mobile phone, you need to keep the Num Lock off setting, otherwise the numbers will not be displayed.

Enter character set settings

> **Note**
>
> Applicable only to certain mod’s of 2D Barcode Readers, this setting matches the 2D module’s output character set.

Read the current character set settings

Auto

GBK / BIG5 / HANGUL / SJIS

ISO/IEC 8859

UTF8（Word）

UTF8（Txt）

Normal mode

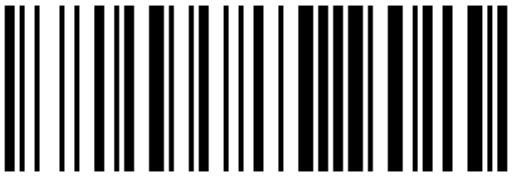
Note:

model	Applicable scenarios	Scan Engine Output Character Set	limit
Auto	Automatically select the input character set as UTF8 or ISO/IEC 8859; Word or Txt output is based on the last UTF8 setting.	primitive type	none
GBK	Windows Notepad, Excel Chinese input.	GBK (GB2312) or original type	Applies to Windows systems only.
UTF8 (Word)	Word, QQ Chinese input.	UTF8 or primitive type	Applies to Windows systems only.
ISO/IEC 8859	European single-byte special characters (`>= C0H`), applicable to FR, GE, TR, PT, ES, CS, IT, UK, HU, SK.	primitive type	Languages not listed need to be added by customization.
UTF8 (Txt)	To input special characters in Windows Notepad, you need to install the Unicode plug-in.	UTF8 or primitive type	Applies to Windows systems only.
Normal	Multi-language special characters, suitable for characters on FR, GE, TR, PT, ES, CS, IT, UK, HU, SK keyboards.	UTF8 or primitive type	Languages not listed need to be added by customization.

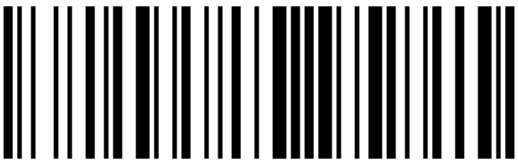
Receiving device selection

Note

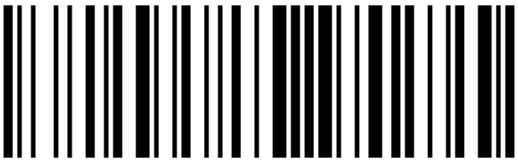
This section configures how different host devices enter ASCII characters (`0x20` to `0x7F`). Use it together with *Keyboard Layout Settings*.



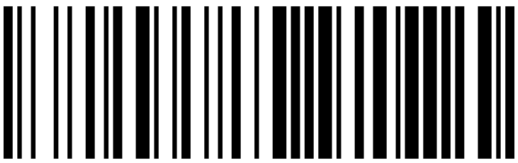
Read the current receiving device settings



Windows device



iPhone/iPad/Mac devices



Android device

*IOS/MAC devices are currently valid: FR, DE, TR, PT, ES, CS, IT, UK, HU, SK. Please refer to the document “MAC iphone ipad keyboard layout for barcode scanner.docx”

*It is recommended to install Google Gboard input method uniformly on Android devices. Please refer to the document “Android device keyboard layout for barcode scanner.docx”

7.2 Keyboard language settings

See also

Keyboard language settings have been split into a separate page: *Keyboard Language Settings*.

8 Keyboard Language

8.1 Read the current keyboard layout

Read the current keyboard layout

L1 *ENUSA EN key

* US English keyboard

L2 FR France French key

French French keyboard

L3 DE Germany key

german german keyboard

L4 IT Italy Italy key

Italian keyboard

L5 PT Portugal Portugal key

Portuguese keyboard

L6 ES Spain Spain key

spanish keyboard

L7 TR Turkey Turkey key

Turkish Q keyboard

Turkish F keyboard

L8 ENUK UK key

British English keyboard

L9 CS Czech Czech key

Czech keyboard

Czech standard keyboard

L10 HU Hungary Hungary key

Hungarian keyboard

L11 FR Belgium (French) Belgium FR Key

Belgian French keyboard

L12 PT Brazil (Portuguese) Brazil PT Key

Brazilian Portuguese keyboard

L13 FR Canadian French (Traditional) Canadian FR Key

Canadian French (traditional) keyboard

L14 HRCroatia Key

Croatian keyboard

L15 SK Slovak Key

Slovak QWERTY keyboard

Slovak keyboard

L16 DA Denmark Denmark Key

Danish keyboard

L17 FIFinland Key

Finnish keyboard

L18 ES Latin America (Spanish) Latin-America ES Key

Latin American Spanish keyboard

L19 NL Netherlands Netherlands Key

Dutch keyboard

L20 NONorway Norway Key

Norwegian keyboard

L21 PL Poland Poland Key

Polish keyboard

L22 SR Serbia (Latin) Serbia Key

Serbian Latin keyboard

L23 SL Slovenia Key

Slovenian keyboard

L24 SV Sweden Sweden Key

Swedish keyboard

L25 DE Switzerland (German) Swiss DE Key

Swiss German keyboard

L26 JP Japanese Japanese Key

Japanese keyboard

L27 TH Thai Thailand Key

> **Note**
>
> When using a Thai keyboard, set the Scan Engine output to TH as well.

Thai keyboard

> **See also**
>
> Reference file: `RF2.4G, Bluetooth Settings_Chinese, Thai, Korean.docx`.

L28 ALT International Keyboard ALT Global Key

> **Note**
>
> The ALT international keyboard layout is only available on Windows systems. It is not affected by the host keyboard layout, but it reduces transmission speed.

ALT international keyboard

L29 ALT Single Byte Special Keyboard ALT Single Byte Special Key

ALT single-byte special character keyboard

> **Note**
>
> Languages not listed in this section need to be customized to be supported.

9 Data Editing

9.1 Standard Data Editing Settings

This section describes how to configure common output rules such as prefixes, suffixes, and hidden characters by scanning Parameter Barcodes.

Prefix/Suffix and Hidden Character Settings

You can add up to 10 prefixes and/or 10 suffixes to the output data. To configure them, scan the two-digit hexadecimal Numeric Barcodes that correspond to the required ASCII value (that is, two barcodes per character).

> **See also**
>
> For character values, please refer to *ASCII Function Key Character Reference Table* and *ASCII Character Reference Table*; for parameters that require input of numerical values, please scan *Numeric Barcode*; for specific procedures, see *Add a Prefix or Suffix*.

Can be set to hide the first, middle or last characters of the barcode. After scanning the corresponding hidden Parameter Barcode, scan the two-digit hexadecimal Numeric Barcode corresponding to the length of the characters to be hidden (00~FF, for example, scan `0` and `4` in sequence when hiding 4 characters).

> **See also**
>
> See *Steps to Hide the First/Middle/Tail Characters of a Barcode* for the hidden character process.

Operation Code

Add Prefix

Add Suffix

Clear all prefixes

Clear all suffixes

Hide Leading Characters

Hide Barcode Middle Start Position

Hide Middle Section Length

Hide Trailing Characters

Numeric Barcode

For parameters that require a numeric value, scan the corresponding Numeric Barcodes.

Numeric Barcode 0

Numeric Barcode 1

Numeric Barcode 2

Numeric Barcode 3

Numeric Barcode 4

Numeric Barcode 5

Numeric Barcode 6

Numeric Barcode 7

Numeric Barcode 8

Numeric Barcode 9

Numeric Barcode A

Numeric Barcode B

Numeric Barcode C

Numeric Barcode D

Numeric Barcode E

Numeric Barcode F

Output Format Settings

To change the output data format, scan the corresponding Parameter Barcode below.

Default Output Format

Allow Suffix Output

Allow Prefix Output

Allow Hiding Leading Data

Allow Hiding Middle Data

Allow Hiding Trailing Data

Procedure Examples

Add a Prefix or Suffix

1. If prefix and suffix output has not been enabled, please scan the corresponding Output Format Parameter Barcode first.
2. New characters are appended to the existing Prefix/Suffix. To replace the current Prefix/Suffix, first scan “Clear All Prefixes/Suffixes”, then configure the new values.
3. Scan the “Add Prefix” or “Add Suffix” Parameter Barcode.
4. Determines the hexadecimal value of the prefix or suffix to be entered based on *ASCII Function Key Character Reference Table* or *ASCII Character Reference Table*.
5. Scan the corresponding two-digit hexadecimal Numeric Barcode.
6. To continue adding characters, repeat steps 4 and 5.

Example

If you need to add `Ctrl+A` as a prefix, scan “Add Prefix” “9” “7” “4” “1” in sequence.

Example

If you need to add `Ctrl+Alt+A` as a suffix, scan “Add suffix” “9” “7” “9” “9” “4” “1” in sequence.

Steps to Hide the First/Middle/Tail Characters of a Barcode

1. Scan the Parameter Barcode for the barcode header, middle start position, middle length, or trailing characters.
2. Determine the hexadecimal value corresponding to the character length to be hidden (for example, hide 4 characters scan `0`, `4`; hide 12 characters scan `0`, `C`).
3. Scan the corresponding two-digit hexadecimal Numeric Barcode.
4. Enable or disable the hidden character function through the Output Format Parameter Barcode.

9.2 Extended Data Editing Settings

This section lets you generate data editing Parameter Barcodes from complete commands in one step. It is intended for batch configuration, remote serial-command delivery, or character replacement.

Online One-Code Setup Generator

Note

The online generator is shown only in the HTML manual. After generating a Parameter Barcode, scan the generated barcode to complete the setting, or send the command by serial command using the format below.

Add Prefix

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#20<length-hex><content>#
```

Add Suffix

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#10<length-hex><content>#
```

Hide Leading Barcode Characters

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#50<length-hex>#
```

Hide Middle Barcode Characters

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#40<position-hex><length-hex>#
```

Hide Trailing Barcode Characters

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#30<length-hex>#
```

Character Replacement

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

```
$DATA#70<source-length-hex><source><target-length-hex><target>#
```

One-Code Setup Command Format

Edit format:

```
$DATA#ncllxx#
```

n

`1` suffix; `2` prefix; `3` hides the tail content of the barcode; `4` hides the middle content of the barcode; `5` hides the first content of the barcode; `7` replaces characters.

c

Code ID currently supports only `0`, which indicates all symbologies.

ll

Length as a hexadecimal value: Prefix/Suffix `01~0A`, hidden characters `01~FF`, replacement data `01~05`.

xx

ASCII value. Hexadecimal can be represented by `\x` plus two characters, and the character range is `0~9`, `A~F`.

Table 1: One-Code Setup Examples

Command	Description
`$DATA#1005abcd\x03#`	Add `0x05` suffixes: `abcd` + `0x03`.
`$DATA#200ANETUM12345#`	Add `0x0A` prefix `NETUM12345`.
`$DATA#3008#`	Hide the last `0x08` characters of the barcode.
`$DATA#40050A#`	Hides the `0x0A` characters after the `0x05` character in the barcode.
`$DATA#5011#`	Hide barcode header `0x11` bytes.
`$DATA#7001\x1D02GS#`	Replace GS (`0x1D`) characters with `GS`.
`$DATA#7002NT01Z#`	Replace `NT` with `Z`.

Character replacement operation

Format: `$DATA#70 + replaced character length + replaced characters + replacement data length + replacement data #`

The sum of the lengths of the replaced characters and the replacement characters is <= 6, supporting 1~6 characters being replaced by 5~0 characters.

Read replacement settings

Clear replacement settings

Example

`$DATA#7001\x1D02GS#` means replacing the non-displayable character GS (`0x1D`) with `GS` for display.

Character replacement operation: GS to text GS

Example

`$DATA#7001\x0A01\x0D#` means replacing LF (`0x0A`) with CR (`0x0D`).

Character replacement operation: LF to CR

Example

`$DATA#7006ABCDEF00#` means replacing the string `ABCDEF` with an empty string, that is, not displaying it.

9.3 Terminator Settings

Note

This terminator is independent of the scan engine suffix and wireless Prefix/Suffix, which facilitates quick setting when the scan engine has no suffix.

None (Default)

Carriage Return CR

Tab TAB

Carriage Return + Line Feed CRLF

Line Feed LF

9.4 GS1 AI field bracket settings

> **Note**
>
> Only some AI fields are applicable and require special version support.

Raw Format (Default)

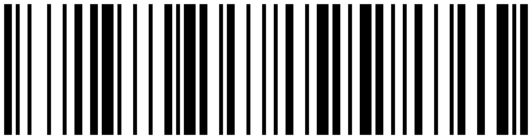
Add Parentheses

Add brackets and separate with CR

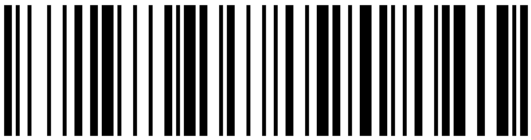
Add brackets and separate them with TAB

10 Scan Mode

10.1 Barcode Decode Mode



Key scan mode (default)



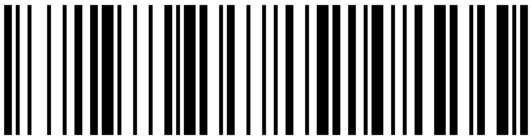
Continuous scan mode

> **Note**
>
> Continuous Scan Mode is suitable for high-volume scanning workflows. Press the Trigger button once to start or stop scanning.

Key pulse scan mode

Note

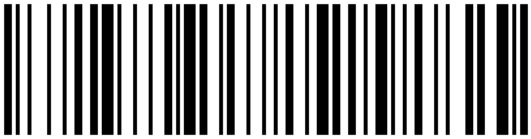
Scanning starts when a key-level change is detected and maintained for about 30 ms. Scanning stops when another key-level change is detected, or when a decode succeeds or times out.



Host trigger mode (only applicable to some customized models)

Note

Host trigger mode is only applicable to some customized models.

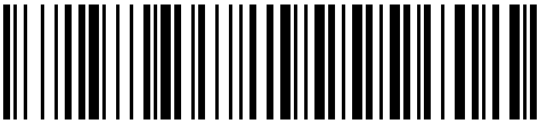


Batch scanning mode (only applicable to some customized models)

Decode Timeout

This parameter sets the maximum time allowed for decoding during a scan attempt. Enter a four-digit value in milliseconds. Default: 3000 ms; range: 0500-9999 ms.

3 seconds (default)

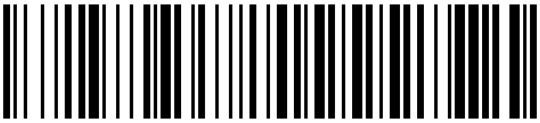


6 seconds

Scan Interval

This parameter sets the interval between reads in Continuous Mode. Enter a four-digit value in milliseconds. Default: 0500 ms; range: 0100-9999 ms.

0.5 seconds (default)



1 second

11 RTC clock settings

> **Note**
>
> Only available for some Barcode Readers that support RTC.

11.1 Output format

> **Note**
>
> The timestamp can be corrected by scanning the Parameter Barcode. The RTC correction function of the electronic manual already includes the time zone, and the query is the local time; the time can also be synchronized through the Bluetooth SDK.

> **Example**
>
> Timestamp correction command format example: `%RTCTIME#21/12/24,01:58:06+32`.

If the interactive HTML tool is unavailable, replace the placeholders as described in this section and verify the command.

`%RTCTIME#YY/MM/DD,hh:mm:ss<quarter-hour-timezone>#`

Disable Timestamp

Turn on timestamp (suffix)

Turn on timestamp (prefix)

11.2 delimiter

The barcode and time are separated by Tab by default. If you need to modify it, you can edit the following command to generate the Parameter Barcode:

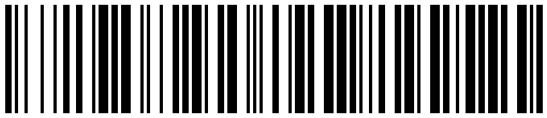
```
%RTCSTAMP#Sx
```

x

ASCII value. Hexadecimal can be represented by `\x` plus two characters, and the character range is `0~9`, `A~F`.

Tab separated (default)

RS separated



semicolon separated

12 Module Settings

12.1 Engine Code ID

Decode data format

Decoded Data Packet Format

The device supports the following `SSI / SNAPI` data pass-through format.

The device can transparently transmit user-defined parameter barcodes to the host as ordinary decoding data:

- User-defined parameter barcode format:

```
<FNC3><L><data>
或
<FNC3><B><12 bytes of data>
```

- Decoded data format:

```
<0xf3><L><data>
或
<0xf3><B><12 bytes of data>
```

The `B` type only supports `12` byte data. After successfully reading the user-defined parameter barcode, the device will issue a normal decoding beep.

AIM Code identifier

Used to control whether the output data contains `AIM Code ID` or `Extended Code ID`.

Options:

- `None`, default value
- `AIM Code ID Character`
- `Extended Code ID Character`

* Do not output Code ID

Output AIM Code ID

Output Extended Code ID

If this option is enabled, `Code ID` will be inserted between “prefix” and “decoded data”.

> **Note**
>
> If `Transmit "No Read" Message` is enabled at the same time, and `AIM Code ID Character` or `Extended Code ID Character` is enabled, the device will append the code identifier of `Code 39` after the `NR` message.

Unable to read message

Used to control whether `NR` is sent to the host when decoding is unsuccessful.

- `Enable No Read`
- `Disable No Read`, default value

Enable No Read messages

* Disable No Read messages

AIM Code ID and FN1

AIM Code ID characters

> **See also**
>
> This section mainly undertakes the control logic of “whether to output AIM Code ID”; see *Engine character table* for the terminal-specific `Code ID` comparison table.

FN1 replacement

Applies to `USB HID keyboard host` only. When enabled, `FN1 (0x1b)` in the `EAN-128` barcode can be replaced with the user-set value.

The default replacement value is `7013`, which is the `Enter` key.

When setting via host command:

The documentation requires setting `Key Category` to `1` first, and then setting the 3-digit key value.

FN1 replacement value table

Used to set the `FN1` replacement target value.

Barcode menu setting steps:

1. Scan `Set FN1 Substitution Value`
2. Find the target key in the ASCII character table corresponding to the current host interface
3. Scan a four-digit ASCII value

Set FN1 replacement value

If you make a mistake, you can scan `Cancel` and re-enter.

12.2 Engine Output Format

Terminator Settings

PL5 does not have a dedicated "Suffix Settings" chapter. In the wireless customized version, keep the minimum suffix workflow: first set `Scan Suffix 1` or `Scan Suffix 2`, then write `Prefix/Suffix Values`, and finally select a `Scan Data Transmission Format` that includes the suffix.

Common terminator values:

- `1013`: `CR` / Enter.
- `7013`: `Enter`, commonly used in terminal or `FN1` substitution value scenarios.

Recommended procedure:

1. Scan `Scan Suffix 1` or `Scan Suffix 2`.
2. Use Numeric Barcodes to enter `1013` or `7013`.
3. Scan for `<DATA> <SUFFIX 1>`, `<DATA> <SUFFIX 2>` or `<DATA> <SUFFIX 1> <SUFFIX 2>`.
4. To cancel suffix output, scan `Data As Is`.

Scan suffix 1

Scan suffix 2

* Data As Is

<DATA> <SUFFIX 1>

<DATA> <SUFFIX 2>

<DATA> <SUFFIX 1> <SUFFIX 2>

<PREFIX> <DATA> <SUFFIX 1>

<PREFIX> <DATA> <SUFFIX 2>

<PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>

12.3 Trigger Settings

Trigger Mode

Trigger mode selection/Trigger Mode

Selects how the device starts decoding. Available options are:

- `Level` Enters the decoding process after the trigger event starts, until the trigger ends, decoding is successful, or the “decoding session timeout” is reached.
- `Presentation Mode` is automatically triggered when the device detects a target within the field of view and attempts to decode it. This mode is only available in decoding mode, and the target detection range is fixed under normal lighting conditions; the device will not enter low-power mode in this mode.
- `Host` triggers the trigger signal by the host command; the actual physical trigger is still interpreted in the `Level` way.

- `Auto Aim` Turns on the aiming pattern when motion is detected, and starts decoding after pulling the trigger; if there is no activity for 2 seconds, the aiming pattern automatically turns off.
- `Auto Aim with Illumination` turns on the aiming pattern and internal lighting LED at the same time when motion is detected, and starts decoding after pulling the trigger; if there is no activity for 2 seconds, the aiming pattern and lighting LED automatically turn off.

Level

Presentation Mode

Host

Auto Aim

Auto Aim with Illumination

Continuous code reading and timeout

Continuous code reading

Used to control whether the device continues to try to read barcodes after a trigger.

- `Disable`, default value
- `Enable`

* Disable continuous code reading

Enable continuous code reading

Unique barcode reporting

Used to control the reporting strategy of repeated content during continuous code reading.

- `Disable`, default value
- `Enable`

* Disable unique barcode reporting

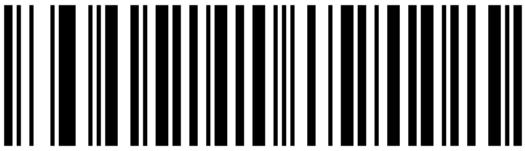
Enable unique barcode reporting

Low light motion detection

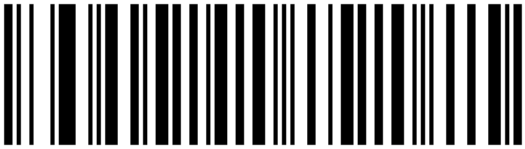
Used to adjust motion detection strategies in low-light environments.

- `No Low Light Motion Detection`, default value
- `Low Light Motion Detection 1`
- `Low Light Motion Detection 2`

* Disable low-light motion detection



Low light motion detection level 1

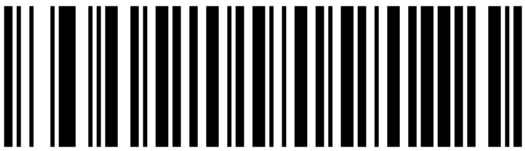


Low light motion detection level 2

Demo mode view

Sets the barcode search area in Presentation Mode. Available options are:

Small Field of View



* Medium Field of View

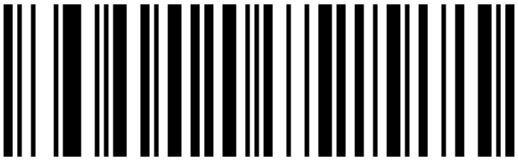
Full Field of View

PDF priority timeout

Used to set the waiting time for the device to first try to read `PDF417` before reporting the one-dimensional code in the field of view after `PDF Prioritization` is enabled.

- Value range: `0` to `5000 ms`
- Default value: `200 ms`
- Setting method: first scan the Parameter Barcode below, then scan the 4-digit barcode and enter the millisecond value

For example, when set to `400 ms`, you need to scan the Parameter Barcode and then enter `0400`.



Set PDF priority timeout

Same code repetition decoding interval

Prevents the same barcode from being output repeatedly within a short period. The default interval is `0.6` seconds. Scan the Parameter Barcode, then scan the Numeric Barcodes to enter the required interval.

Set the same code repeated decoding interval

Different code repetition decoding interval

Used to limit the minimum interval when reading different barcodes continuously. According to the default parameter table, the default value is `0.2` seconds.

- Value range: `0.1` to `9.9` seconds
- Input method: After scanning the Parameter Barcode below, scan the 2-digit barcode

Set the different code repetition decoding interval

Low power consumption and stop conditions

Low power delay

This parameter is used to set how long the device remains active after decoding is complete. After a scanning session ends, the device waits for a set time before entering low-power mode.

> **Note**
>
> Original description: This parameter only takes effect when `Power Mode` is set to low power mode.

Low power consumption delay value table

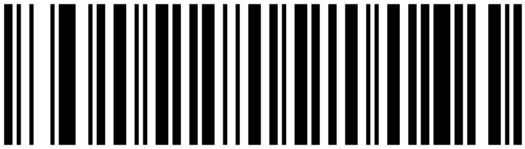
Available values are:

- `1 Second`
- `5 Seconds`

- 1 Minute
- 5 Minutes
- 15 Minutes
- 1 Hour

1 second

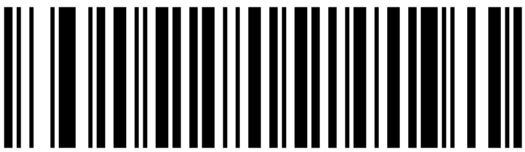
5 seconds



1 minute

5 minutes

15 minutes



1 hour

If you need to set it to a value other than the above, the original text requires programming through the “Using Time Delay to Low Power Mode with SSI” method in the SSI interface.

Low power mode switch

Source page: Page 102 Power Mode (Serial Hosts Only)

- Continuous On Does not enter low power state after decoding attempt.
- Low Power Mode Press the “low power delay” parameter to enter low power mode after decoding attempt.

Continuous On

Low Power Mode

Picklist mode

Used to limit the device to decoding only bar codes located below the center area of the targeting pattern.

- Disabled Always, default value
- Enabled Always

* Always disable Picklist

Always enable Picklist

Decoding session timeout

Used to set the maximum duration of a single decoding attempt, ranging from 0.5 to 9.9 seconds in 0.1 seconds.

Set decoding session timeout

Host Serial Response Timeout

> **See also**
>
> This parameter belongs to the serial port and SSI communication parameters; when using the serial port host mode directly, the complete value and communication instructions should be checked in the complete PL5 module manual.

Host Character Timeout

> **See also**
>
> This parameter belongs to the serial port and SSI communication parameters; when using the serial port host mode directly, the complete value and communication instructions should be checked in the complete PL5 module manual.

12.4 Imager Settings

Images and Video

Imager Preferences

This section serves as the general entry point for imager parameters related to decoding, image capture, video viewfinder, and image quality.

Work Mode

Used for parameters related to the imager work mode, capture mode, or image output mode.

Mobile screen display mode

Used to improve decode compatibility when reading from display media such as mobile phone screens and electronic displays.

- `Disable`, default value
- `Enable`

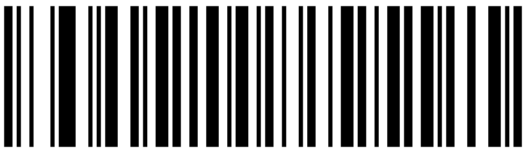
* Disable Mobile Screen Mode

Enable Mobile Screen Mode

Video Resolution

Used to reduce the resolution before video transmission, in exchange for smaller video data size by deleting rows and columns.

Option	Value	Video size
`Full Resolution`	`00h`	`752 x 480`
`1/2 Resolution`	`01h`	`376 x 240`
`1/4 Resolution`	`03h`	`188 x 120`, default value



full resolution

1/2 resolution

* 1/4 resolution

Frame rate

Used to control the frame rate during image acquisition and video transmission. Lower frame rates often help brighten images.

Available options are:

- `Auto`, default value
- `60 fps`
- `55 fps`
- `50 fps`

- 45 fps
- 40 fps
- 30 fps
- 20 fps
- 15 fps
- 10 fps

*Auto frame rate

60 fps

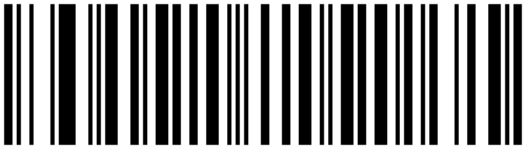
55 fps

50 fps

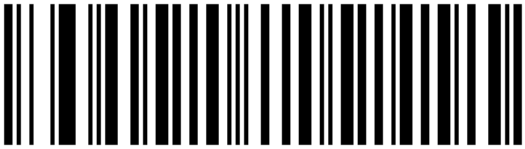
45 fps

40 fps

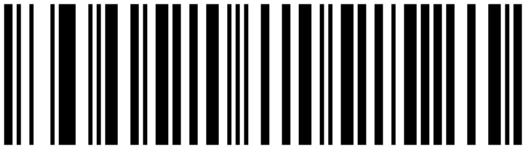
30 fps



20 fps



15 fps



10 fps

Note

When the frame rate is lower than or equal to `30 fps`, the aiming pattern may appear to flicker.

Image File Size Selector

Used with `JPEG Size Selector` to set the maximum JPEG file size by entering a 3-digit value.

BMP file format

*JPEG file format

TIFF file format

Image file metadata

Controls whether `JPEG` images are accompanied by `EXIF 2.2` metadata.

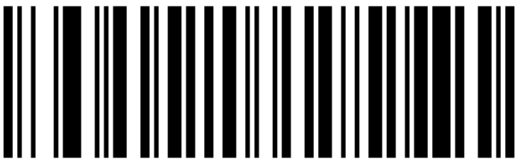
- `Enable Image File Meta Data`
- `Disable Image File Meta Data`, default value

When enabled, the following fields can be written to:

- Time after power on
- Sensor type
- Device name
- manufacturer
- Frame rate
- Host type
- Image number after power on
- Image enhancement parameters
- Image sharpening parameters
- Image contrast enhancement parameters

This setting has no effect on the `TIFF` and `BMP` formats.

Enable image file metadata



* Disable image file metadata

video viewfinder

Used to control whether the live video viewfinder is displayed in image mode.

- `Disable Video View Finder`, default value
- `Enable Video View Finder`

* Disable video viewfinder

Enable video viewfinder

Video viewfinder image size

Used to set the video viewfinder image size, the input unit is `100-byte block`.

- Value range: `800` to `12,000` bytes
- Default: `1700` bytes

The smaller the value, the higher the frame rate; the larger the value, the higher the image quality.

Set video viewfinder image size

Target video frame size

Used to set the video data block size transmitted per second, the input unit is `100-byte block`.

- Value range: `800` to `20,000` bytes
- Default: `2200` bytes

The smaller the value, the higher the frame rate; the larger the value, the higher the image quality.

Set target video frame size

Lighting and aiming

Illumination

This section explains the lighting control items in decoding and capture scenarios.

LED lighting

Sets whether and how the LED illumination operates.

Image acquisition lighting

Used to control whether lighting is enabled when taking a snapshot.

- `Enable Image Capture Illumination`, default value
- `Disable Image Capture Illumination`

* Enable image acquisition lighting

Disable image acquisition lighting

Enabling lighting usually results in a better image, but the further away the target is, the less effective the fill light will be.

Lighting brightness

Used to set lighting brightness by adjusting LED power.

- Value range: `1` to `10`
- Default value: `10`
- Setting method: first scan the Parameter Barcode below, then scan the 2-digit barcode to enter the brightness value

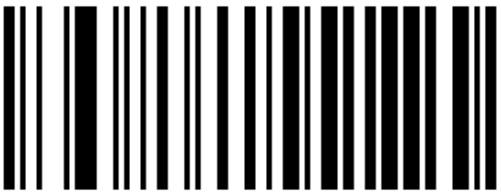
For example, when setting the brightness to `6`, you need to scan the “Lighting Brightness” Parameter Barcode first, and then enter `0` and `6`.

Set lighting brightness

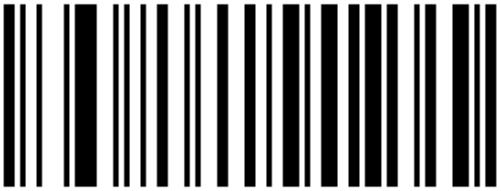
Aim for brightness

Used to set the aiming pattern brightness. The default value is `0`, which means the aiming pattern continues to light up between two exposures; when the value is greater than `0`time, every increase`1`, aiming duration increased`0.5 ms`.

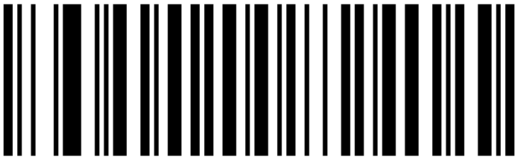
- Value range: `0` to `255`
- Recommended range: When the frame rate is `60 fps`, it is recommended to use `0` to `30`
- Setting method: first scan the corresponding Parameter Barcode, then enter the 3-digit barcode



snapshot mode



video mode



Set aiming brightness

Decode aiming pattern

Used to control whether to project the aiming pattern during decoding.

- `Enable Decode Aiming Pattern`, default value
- `Disable Decode Aiming Pattern`

Disable decoding aiming patterns

* Enable decoding aiming patterns

> **Note**
>
> If Picklist mode is enabled, the aiming pattern will still flash even if Decode Aiming Pattern is turned off.

snapshot aiming pattern

Used to control whether to display the aiming pattern in snapshot mode.

- `Enable Snapshot Aiming Pattern`, default value
- `Disable Snapshot Aiming Pattern`

* Enable snapshot aiming pattern

Disable snapshot aiming pattern

Snapshot mode timeout

Used to set the time the device stays in snapshot mode. After a timeout or triggering event, the device exits snapshot mode.

- The default value `0` means `30` seconds
- For each subsequent increase of `1`, the time increases by `30` seconds.

Set snapshot mode timeout

exposure and brightness

automatic exposure

Used to control whether automatic exposure and automatic gain are enabled in decoding mode.

- `Enable Decoding Autoexposure`, default value
- `Disable Decoding Autoexposure`

* Enable decoding auto-exposure

Disable decoding auto-exposure

When turned off, gain and exposure time need to be set manually. Officially only recommended for use by advanced users in complex reading scenarios.

> **Note**
>
> Switching this parameter under `Presentation Mode` is not recommended.

Image acquisition automatic exposure

Used to control whether automatic exposure and automatic gain are enabled in snapshot capture mode.

- `Enable Image Capture Autoexposure`, default value
- `Disable Image Capture Autoexposure`

* Enable automatic exposure for image acquisition

Disable automatic exposure for image acquisition

fixed gain

Used to manually enlarge the original image data after decoding or image acquisition auto-exposure is turned off. Increasing gain increases brightness and contrast and may also increase image noise.

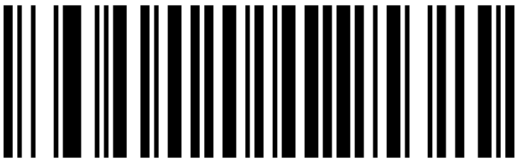
- Default value: `50`
- Value range: `1` to `100`
- Input method: After scanning the Parameter Barcode below, scan the 3-digit barcode

Set fixed gain

Exposure time

Used to manually specify the exposure duration after turning off automatic exposure. The default value is `100`, which is `10 ms`. This parameter is more suitable for use with automatic exposure off scenes.

- Each integer value represents `100 us`
- Default value: `100`
- Value range: `1` to `1000`
- Input method: After scanning the Parameter Barcode below, scan the 4-digit barcode



Set exposure time

Image brightness target white value

Used to set the target white value used by the automatic exposure algorithm in snapshot and video modes.

- Default value: `180`
- Input method: scan `Image Brightness` and then enter 3 digits

The document defines white as decimal `240` and black as decimal `1`; the default value `180` sets the target white value to approximately `180`.

bit depth

Used to set the number of effective bits per pixel when capturing images.

- `1 BPP`
- `4 BPP`

- `8 BPP`, default value

1 BPP

4 BPP

* 8 BPP

> **Note**
>
> `JPEG` images always use `8 BPP` and are not affected by this parameter.

Image resolution

Used to reduce the capture resolution before image compression, in exchange for a smaller image data size by deleting rows and columns.

Option	Value	Uncropped image size
`Full Resolution`	`00h`	`752 x 480`
`1/2 Resolution`	`01h`	`376 x 240`
`1/4 Resolution`	`03h`	`188 x 120`

* Full resolution

1/2 resolution

1/4 resolution

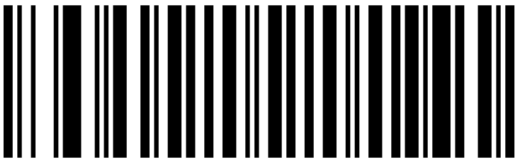
Image enhancement and cropping

Fuzzy one-dimensional processing

Used to enhance the reading ability of one-dimensional barcodes that are slightly blurred or have unclear edges.

- `Disable`
- `Enable`, default value

Disable blur 1D processing

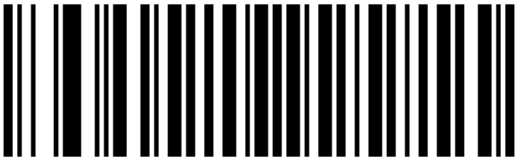


* Enable blurred 1D processing

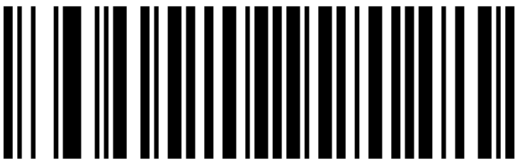
mirror image

Used to control whether the output image is mirrored.

- `Disable`, default value
- `Enable`



* Disable image mirroring



Enable image mirroring

image enhancement

Used to improve the look and feel of images through edge sharpening and contrast enhancement.

- `Off (0)`
- `Low (1)`, default value
- `Medium (2)`
- `High (3)`
- `User (4)`

Image enhancement disabled (0)

*Image enhancement low(1)

Image enhancement (2)

Image Enhancement High (3)

Image enhancement user customization (4)

After selecting `User`, you also need to set “Image Edge Sharpening” and “Image Contrast Enhancement” separately.

Image contrast enhancement

Only takes effect when Image Enhancement is set to `User`.

- `Disable`
- `Enable`, default value

Disable image contrast enhancement

* Enable image contrast enhancement

image rotation

Used to control the rotation angle of the output image.

- `Rotate 0°`, default value
- `Rotate 90°`
- `Rotate 180°`
- `Rotate 270°`

* Rotate 0°

Rotate 90°

Rotate 180°

Rotate 270°

Image edge sharpening

Only takes effect when “Image Enhancement” is set to `User`, you can enter the 3-digit number manually, or use the recommended value directly.

- `Off (0)`
- `Low (30)`, default value
- `Medium (75)`
- `High (100)`

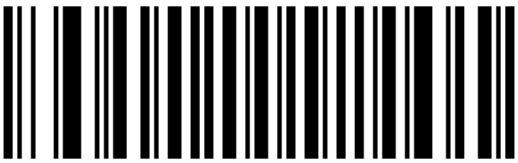


Image edge sharpening Parameter Barcode

Sharpening disabled (0)

* Sharpen Low (30)

Sharpening(75)

Sharpen High (100)

Image cropping

Used to control whether to crop the screenshot.

- `Enable Image Cropping`
- `Disable Image Cropping`, default, uses full `742 x 480` image

> **Note**
>
> The device’ s crop resolution is 4 pixels. If the crop size is set to less than 3 pixels, the entire image will actually be transferred.

Enable image cropping

* Disable image cropping

Crop by pixel address

When image cropping is enabled, the cropping area can be set by pixel coordinates:

- Column coordinate range: `0` to `751`
- Row coordinate range: `0` to `479`

For example, the `4 x 8` area in the lower right corner can be set to:

- `Top = 476`
- `Bottom = 479`
- `Left = 744`
- `Right = 751`

> **Note**
>
> The minimum cropping granularity is 4 pixels, and non-multiples of 4 are rounded up.

JPEG image options

Lets you choose between Optimize for Quality or Optimize for Size in the `JPEG` image.

- `JPEG Quality Selector`, default value
- `JPEG Size Selector`

JPEG quality and size

Used to enter a JPEG quality value or target size value:

- `JPEG Quality Value` Default value `065`, range `5` to `100`
- `JPEG Size Value` Default value `160`, range `5` to `350`

where `JPEG Size Value` is in `1024` bytes, for example `008` represents a maximum of approximately `8192` bytes.

Image file format

Used to select the snapshot saving format.

- `BMP File Format`
- `JPEG File Format`, default value
- `TIFF File Format`

12.5 Barcode Settings

General instructions

- Most barcode parameters will take effect by scanning a Parameter Barcode.
- Numeric parameters such as length, redundancy, timeout, etc. usually need to scan the entry Parameter Barcode first, and then scan *Numeric barcodes*.
- If an error occurs during the input process, scan `Cancel` to cancel the current input sequence.

Disable All Code Types

All symbologies disabled

Disable All Code Types

UPC/EAN

UPC-A Switch

* Enable UPC-A

Disable UPC-A

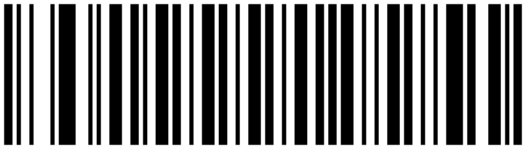
UPC-E Switch

* Enable UPC-E

Disable UPC-E

UPC-E1 switch

Enable UPC-E1



* Disable UPC-E1

EAN-8/JAN-8 switch

* Enable EAN-8/JAN-8

Disable EAN-8/JAN-8

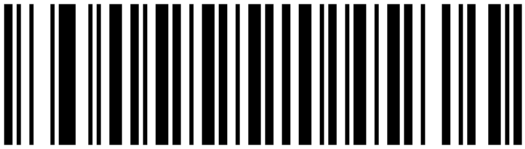
EAN-13/JAN-13 switch

* Enable EAN-13/JAN-13

Disable EAN-13/JAN-13

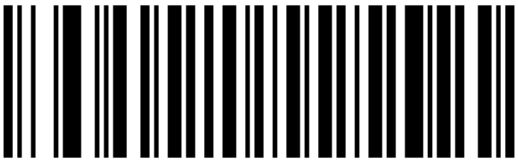
Bookland EAN switch

* Enable Bookland EAN



Disable Bookland EAN

Bookland ISBN format



* Bookland ISBN-10

Bookland ISBN-13

UPC/EAN/JAN Supplemental Decode Mode

Decode UPC/EAN/JAN Only With Supplementals

* Ignore Supplementals

Autodiscriminate UPC/EAN/JAN Supplementals

Enable 378/379 Supplemental Mode

Enable 978/979 Supplemental Mode

Enable 977 Supplemental Mode

Enable 414/419/434/439 Supplemental Mode

Enable 491 Supplemental Mode

Enable Smart Supplemental Mode

Custom add-on code pattern

Supplemental User-Programmable Type 1

Supplemental User-Programmable Type 1 and 2

Smart Supplemental Plus User-Programmable 1

Smart Supplemental Plus User-Programmable 1 and 2

Custom Supplemental Type

User-Programmable Supplemental 1

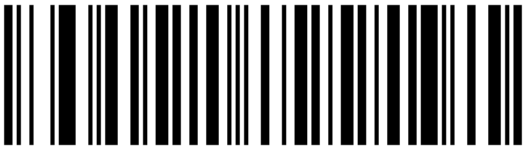
User-Programmable Supplemental 2

Additional code redundancy

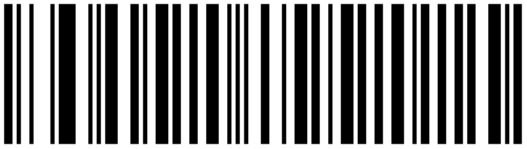
UPC/EAN/JAN Supplemental Redundancy

Additional code transmission format

Separate



* Combined



Separate Transmissions

UPC-A Check Digit Transmission

* Transmit UPC-A Check Digit

Do Not Transmit UPC-A Check Digit

UPC-E Check Digit Transmission

* Transmit UPC-E Check Digit

Do Not Transmit UPC-E Check Digit

UPC-E1 check digit transmission

* Transmit UPC-E1 Check Digit

Do Not Transmit UPC-E1 Check Digit

UPC-A preamble

No Preamble ()

* System Character ( )

System Character & Country Code (< COUNTRY CODE>)

UPC-E preamble

No Preamble ()

* System Character ( )

System Character & Country Code (< COUNTRY CODE>)

UPC-E1 preamble

No Preamble ()

* System Character ( )

System Character & Country Code (< COUNTRY CODE>)

UPC-E to UPC-A conversion

Convert UPC-E to UPC-A (Enable)

* Do Not Convert UPC-E to UPC-A (Disable)

Convert UPC-E1 to UPC-A

Convert UPC-E1 to UPC-A (Enable)

* Do Not Convert UPC-E1 to UPC-A (Disable)

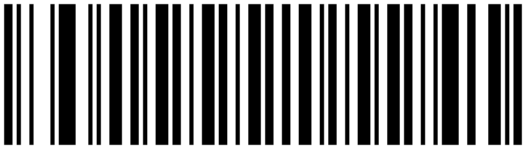
EAN/JAN zero extension

Enable EAN/JAN Zero Extend

* Disable EAN/JAN Zero Extend

UCC Coupon extension code

Enable UCC Coupon Extended Code



* Disable UCC Coupon Extended Code

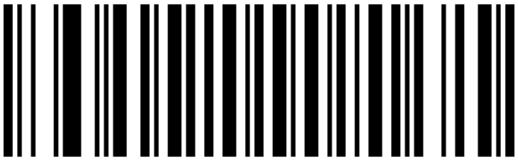
Coupon code format

Old Coupon Symbols

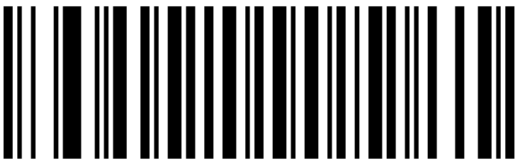
* New Coupon Symbols

Both Coupon Formats

ISSN EAN switch



Enable ISSN EAN



* Disable ISSN EAN

Code 128

Code 128 Switch

* Enable Code 128

Disable Code 128

Code 128 length setting

Code 128 - One Fixed Length

Code 128 - Two Fixed Lengths

Code 128 - Length Within Range

* Code 128 - Any Length

GS1-128 switch

* Enable GS1-128

Disable GS1-128

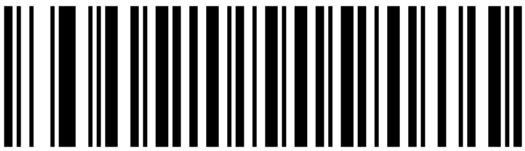
ISBT 128 switch

* Enable ISBT 128

Disable ISBT 128

ISBT connection mode

* Disable ISBT Concatenation

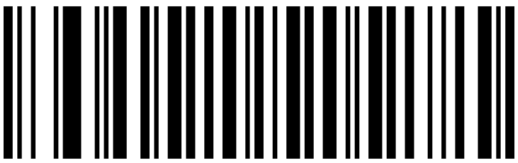


Enable ISBT Concatenation

Autodiscriminate ISBT Concatenation

ISBT table verification

* Enable Check ISBT Table



Disable Check ISBT Table

ISBT Concatenation Redundancy

ISBT Concatenation Redundancy

Code 39

Code 39 Switch

* Enable Code 39

Disable Code 39

Trioptic Code 39 switch

Enable Trioptic Code 39

* Disable Trioptic Code 39

Code 39 to Code 32

Enable Convert Code 39 to Code 32

* Disable Convert Code 39 to Code 32

Code 32 prefix

Enable Code 32 Prefix

* Disable Code 32 Prefix

Code 39 length setting

Code 39 - One Fixed Length

Code 39 - Two Fixed Lengths

* Code 39 - Length Within Range

Code 39 - Any Length

Code 39 Check Digit

Enable Code 39 Check Digit

* Disable Code 39 Check Digit

Code 39 Check Digit Transmission

Transmit Code 39 Check Digit (Enable)

* Do Not Transmit Code 39 Check Digit (Disable)

Code 39 Full ASCII

Enable Code 39 Full ASCII

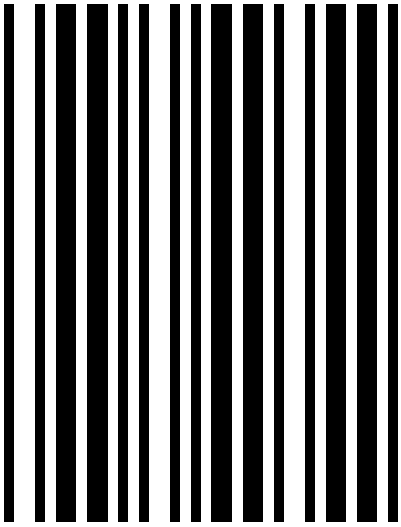
* Disable Code 39 Full ASCII

Code 39 buffer mode

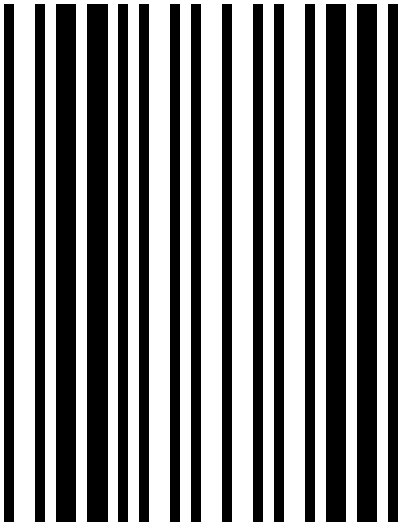
Buffer Code 39 (Enable)

* Do Not Buffer Code 39 (Disable)

Code 39 Buffer Control



Clear Buffer



Transmit Buffer

Code 93

Code 93 Switch

Enable Code 93

* Disable Code 93

Code 93 length setting

Code 93 - One Fixed Length

Code 93 - Two Fixed Lengths

* Code 93 - Length Within Range

Code 93 - Any Length

Code 11

Code 11 Switch

Enable Code 11

* Disable Code 11

Code 11 length setting

Code 11 - One Fixed Length

Code 11 - Two Fixed Lengths

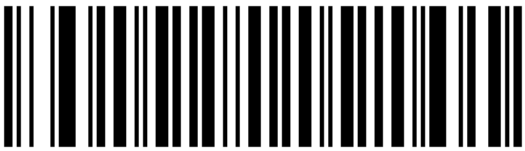
* Code 11 - Length Within Range

Code 11 - Any Length

Code 11 check digit number

* Disable

a check digit



two check digits

Code 11 Check Digit Transmission

Transmit Code 11 Check Digit(s) (Enable)

* Do Not Transmit Code 11 Check Digit(s) (Disable)

Interleaved 2 of 5 (ITF)

Interleaved 2 of 5 Switch

Enable Interleaved 2 of 5

* Disable Interleaved 2 of 5

Interleaved 2 of 5 Length Settings

* I 2 of 5 - One Fixed Length

I 2 of 5 - Two Fixed Lengths

I 2 of 5 - Length Within Range

I 2 of 5 - Any Length

Interleaved 2 of 5 verification method

* Disable

USS Check Digit

OPCC Check Digit

Interleaved 2 of 5 check digit transmission

Transmit I 2 of 5 Check Digit (Enable)

* Do Not Transmit I 2 of 5 Check Digit (Disable)

Interleaved 2 of 5 to EAN-13

Convert I 2 of 5 to EAN-13 (Enable)

* Do Not Convert I 2 of 5 to EAN-13 (Disable)

Discrete 2 of 5 (DTF)

Discrete 2 of 5 Switch

Enable Discrete 2 of 5

* Disable Discrete 2 of 5

Discrete 2 of 5 Length Settings

* D 2 of 5 - One Fixed Length

D 2 of 5 - Two Fixed Lengths

D 2 of 5 - Length Within Range

D 2 of 5 - Any Length

Codabar (NW-7)

Codabar Switch

Enable Codabar

* Disable Codabar

Codabar length setting

Codabar - One Fixed Length

Codabar - Two Fixed Lengths

* Codabar - Length Within Range

Codabar - Any Length

CLSI Editor

Enable CLSI Editing

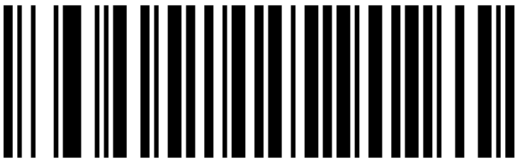
* Disable CLSI Editing

NOTICE Edit

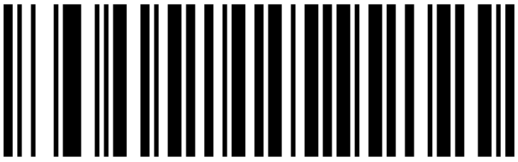
Enable NOTIS Editing

* Disable NOTIS Editing

Start/terminator case



Lower Case



*uppercase

MSI

MSI switch

Enable MSI

* Disable MSI

MSI length settings

MSI - One Fixed Length

MSI - Two Fixed Lengths

* MSI - Length Within Range

MSI - Any Length

MSI check digit number

* One MSI Check Digit

Two MSI check digits

MSI check digit transmission

Transmit MSI Check Digit(s) (Enable)

* Do Not Transmit MSI Check Digit(s) (Disable)

Chinese 2 of 5

Chinese 2 of 5 Check Algorithm

MOD 10/MOD 11

* MOD 10/MOD 10

Chinese 2 of 5 switch

Enable Chinese 2 of 5

* Disable Chinese 2 of 5

Matrix 2 of 5

Matrix 2 of 5 Switch

Enable Matrix 2 of 5

* Disable Matrix 2 of 5

Matrix 2 of 5 length setting

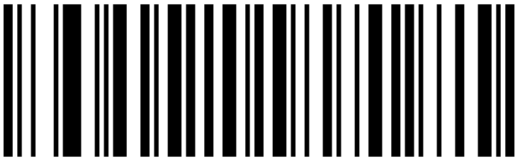
* Matrix 2 of 5 - One Fixed Length

Matrix 2 of 5 - Two Fixed Lengths

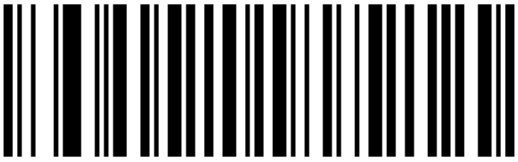
Matrix 2 of 5 - Length Within Range

Matrix 2 of 5 - Any Length

Matrix 2 of 5 check digit

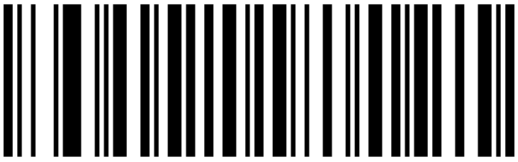


Enable Matrix 2 of 5 Check Digit

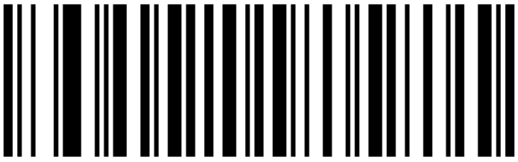


* Disable Matrix 2 of 5 Check Digit

Matrix 2 of 5 check digit transmission



Transmit Matrix 2 of 5 Check Digit



* Do Not Transmit Matrix 2 of 5 Check Digit

Korean 3 of 5

Korean 3 of 5 Switch

Enable Korean 3 of 5

* Disable Korean 3 of 5

Inverse 1D Barcodes

inverse reading mode

* Regular

Inverse Only

Inverse Autodetect

Postal Code

US Postnet switch

Enable US Postnet

* Disable US Postnet

US Planet switch

Enable US Planet

* Disable US Planet

US Postal Check Digit Transmission

Do Not Transmit US Postal Check Digit

UK Postal switch

Enable UK Postal

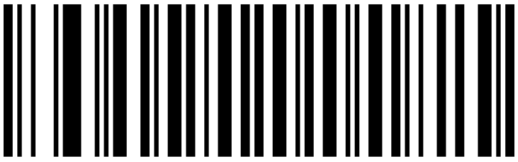
* Disable UK Postal

UK Postal Check Digit Transmission

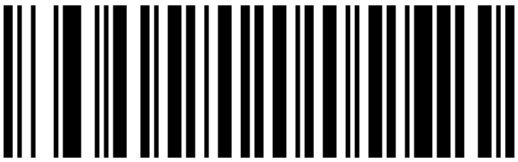
* Transmit UK Postal Check Digit

Do Not Transmit UK Postal Check Digit

Japan Postal switch



Enable Japan Postal



* Disable Japan Postal

Australia Post switch

Enable Australia Post

* Disable Australia Post

Australia Post format

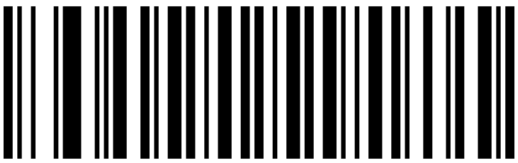
* Autodiscriminate

Raw Format

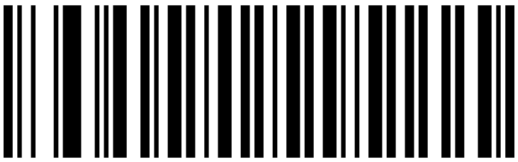
Alphanumeric Encoding

Numeric Encoding

Netherlands KIX Code Switch

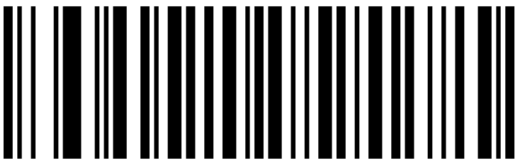


Enable Netherlands KIX Code

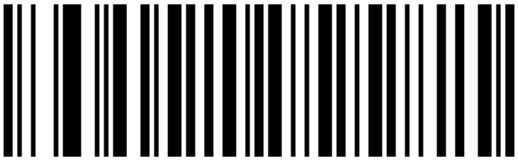


* Disable Netherlands KIX Code

USPS 4CB/One Code/Intelligent Mail switch



Enable USPS 4CB/One Code/Intelligent Mail



* Disable USPS 4CB/One Code/Intelligent Mail

UPU FICS Postal Switch

Enable UPU FICS Postal

* Disable UPU FICS Postal

GS1 DataBar

GS1 DataBar switch

* Enable GS1 DataBar

Disable GS1 DataBar

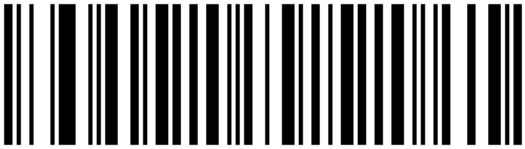
GS1 DataBar Limited switch

Enable GS1 DataBar Limited

* Disable GS1 DataBar Limited

GS1 DataBar Limited Security Level

Security Level 1



Security Level 2

* Security Level 3

Security Level 4

GS1 DataBar Expanded switch

* Enable GS1 DataBar Expanded

Disable GS1 DataBar Expanded

GS1 DataBar to UPC/EAN

Enable Convert GS1 DataBar to UPC/EAN

* Disable Convert GS1 DataBar to UPC/EAN

Composite compound code

CC-C switch

* Disable CC-C

CC-A/B switch

* Disable CC-A/B

TLC39 switch

Enable TLC39

* Disable TLC39

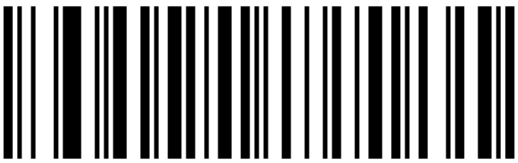
Composite code beep prompt

Single Beep After Both are Decoded

* Beep as Each Code Type is Decoded

Double Beep After Both are Decoded

UCC/EAN composite code GS1-128 simulation



Enable GS1-128 Emulation Mode for UCC/EAN Composite Codes

* Disable GS1-128 Emulation Mode for UCC/EAN Composite Codes

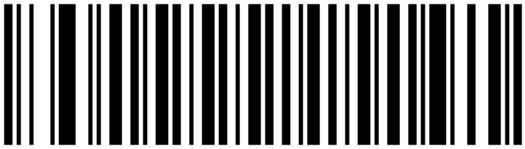
2D barcode

PDF417 Switch

* Enable PDF417

Disable PDF417

MicroPDF417 switch



Enable MicroPDF417

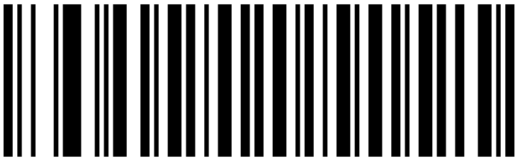
* Disable MicroPDF417

MicroPDF417 Code 128 Simulation

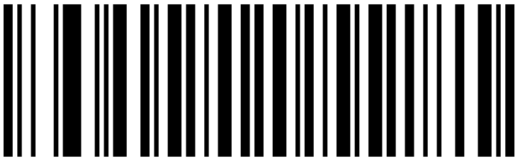
Enable Code 128 Emulation

* Disable Code 128 Emulation

Data Matrix Switch



* Enable Data Matrix



Disable Data Matrix

Data Matrix inverse reading

* Regular

Inverse Only

Inverse Autodetect

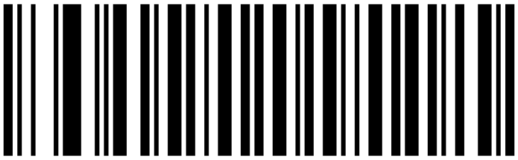
Data Matrix Image Reading

Never

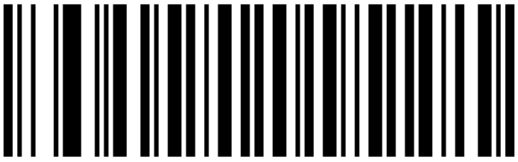
Always

* Automatic

Maxicode switch



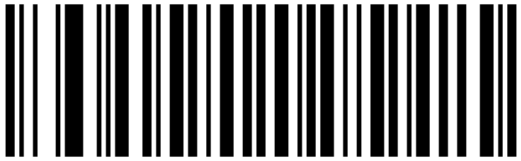
Enable Maxicode



* Disable Maxicode

QR Code switch

* Enable QR Code



Disable QR Code

QR Code inverse reading

* Regular

Inverse Only

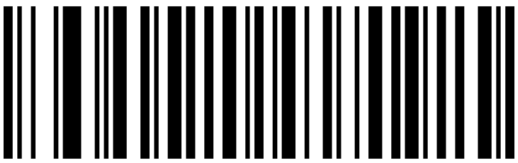
Inverse Autodetect

MicroQR switch

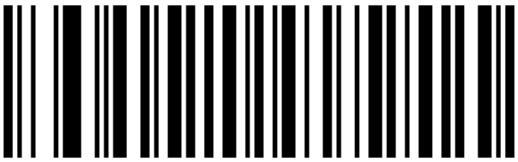
* Enable MicroQR

Disable MicroQR

Aztec switch



* Enable Aztec



Disable Aztec

Aztec inverse reading

Regular

Inverse Only

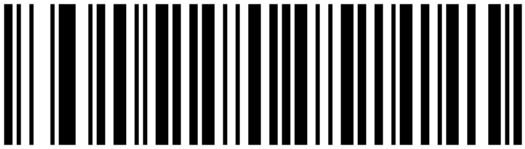
* Inverse Autodetect

Redundancy Level

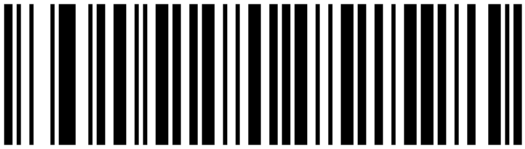
Redundancy Level

* Redundancy Level 1

Redundancy Level 2



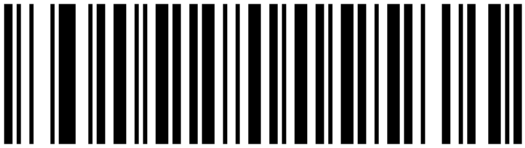
Redundancy Level 3



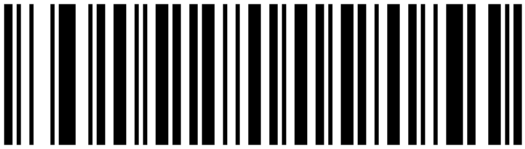
Redundancy Level 4

Security Level

Security Level



Security Level 0



* Security Level 1

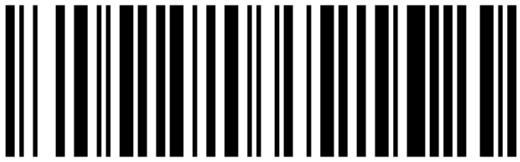
Security Level 2

Security Level 3

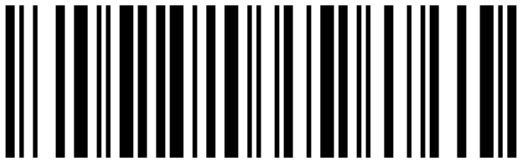
Intercharacter Gap Size

Intercharacter Gap Size

Used to adjust the character gap tolerance for `Code 39` and `Codabar` symbologies. If barcode printing causes the character gap to exceed the standard range, a larger character gap can be selected to improve error tolerance.



* Normal Intercharacter Gaps



Large Intercharacter Gaps

Macro PDF features

Macro PDF transfer/decoding mode

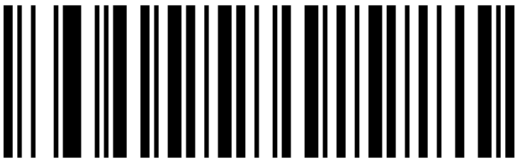
Buffer All Symbols / Transmit Macro PDF When Complete

Transmit Any Symbol in Set / No Particular Order

* Passthrough All Symbols

Macro PDF control header and escape characters

Enable Macro PDF Control Header Transmit



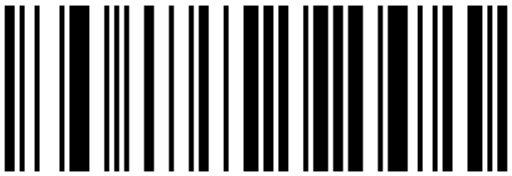
* Disable Macro PDF Control Header Transmit

GLI Protocol

* None

Macro PDF buffer control

Flush Macro PDF Buffer



Abort Macro PDF Entry

12.6 Engine Character Table

Prefix/Suffix and Character Value Table

Prefix/suffix value table

Key points:

- `Prefix/Suffix Values` is set via 4 digits
- Number 1 is the button category
- The last 3 digits are decimal character values
- Detailed value table is located at `Table E-1`

Among some terminal default parameters, typical default values for prefixes and suffixes include:

- `STX (1002)`
- `CR (1013)`
- `ETX (1003)`

FN1 replacement value table

Used to set the replacement value for `FN1` in `EAN-128`.

Rules:

- Default value: `7013`, which is `Enter`

Setup steps:

1. Scan `Set FN1 Substitution Value`
2. Find the target key value in the ASCII character table of the current host interface
3. Enter the corresponding 4-digit value

When setting via host command, first set `Key Category` to `1`, and then set the 3-digit key value.

12.7 Engine Parameter Barcodes

Reference Parameter Barcode

Numeric Barcode

Used to enter numerical parameters such as length, timeout, brightness, address, etc. This section gives the Numeric Barcodes from `0` to `9`.

number 0

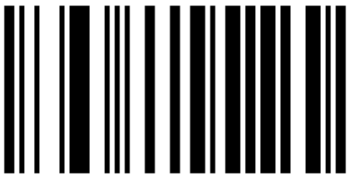
Number 1

Number 2

Number 3

number 4

number 5



Number 6

number 7

number 8

number 9

Cancel input

Used to undo the current input and start over when setting a value.

Cancel input

13 Appendix

13.1 Character Reference Table

ASCII Function Key Character Reference Table

00H-0FH

HEX	CODE	*Config0	Config3	Con-fig1	Con-fig4	Config2 Win-dows	Config5 Win-dows
00H	NUL	NUL	NUL	Ctrl+@	Ctrl+@	ALT+000	ALT+000
01H	SOH	NUL	NUL	Ctrl+A	Ctrl+A	ALT+001	ALT+001
02H	STX	NUL	NUL	Ctrl+B	Ctrl+B	ALT+002	ALT+002
03H	ETX	NUL	NUL	Ctrl+C	Ctrl+C	ALT+003	ALT+003
04H	EOT	NUL	NUL	Ctrl+D	Ctrl+D	ALT+004	ALT+004
05H	ENQ	NUL	NUL	Ctrl+E	Ctrl+E	ALT+005	ALT+005
06H	ACK	NUL	NUL	Ctrl+F	Ctrl+F	ALT+006	ALT+006
07H	BEL	NUL	NUL	Ctrl+G	Ctrl+G	ALT+007	ALT+007
08H	BS	Backspace	Backspace	Ctrl+H	Ctrl+H	ALT+008	ALT+008
09H	HT	TAB	TAB	TAB	Ctrl+I	ALT+009	ALT+009
0AH	LF	NUL	Enter	Ctrl+J	Ctrl+J	ALT+010	ALT+010
0BH	VT	TAB	TAB	Ctrl+K	Ctrl+K	ALT+011	ALT+011
0CH	FF	NUL	NUL	Ctrl+L	Ctrl+L	ALT+012	ALT+012
0DH	CR	Enter	Enter	Enter	Ctrl+M	Enter	ALT+013
0EH	SO	NUL	NUL	Ctrl+N	Ctrl+N	ALT+014	ALT+014
0FH	SI	NUL	NUL	Ctrl+O	Ctrl+O	ALT+015	ALT+015

10H-1FH

HEX	CODE	*Config0/3	Config1/4	Config2/5 Windows
10H	DLE	NUL	Ctrl+P	ALT+016
11H	DC1	NUL	Ctrl+Q	ALT+017
12H	DC2	NUL	Ctrl+R	ALT+018
13H	DC3	NUL	Ctrl+S	ALT+019
14H	DC4	NUL	Ctrl+T	ALT+020
15H	NAK	NUL	Ctrl+U	ALT+021
16H	SYN	NUL	Ctrl+V	ALT+022
17H	ETB	NUL	Ctrl+W	ALT+023
18H	CAN	NUL	Ctrl+X	ALT+024
19H	EM	NUL	Ctrl+Y	ALT+025
1AH	SUB	NUL	Ctrl+Z	ALT+026
1BH	ESC	ESC	Ctrl+[	ALT+027
1CH	FS	NUL	Ctrl+\	ALT+028
1DH	GS	NUL	Ctrl+]	ALT+029
1EH	RS	NUL	Ctrl+^	ALT+030
1FH	US	NUL	Ctrl+-	ALT+031

> **Note**
>
> On Mac systems, the Ctrl key corresponds to the Command key.

ASCII Character Reference Table

20H-5FH

HEX	ASCII	HEX	ASCII	HEX	ASCII	HEX	ASCII
20H	Space	30H	0	40H	@	50H	P
21H	!	31H	1	41H	A	51H	Q
22H	“	32H	2	42H	B	52H	R
23H	#	33H	3	43H	C	53H	S
24H	$	34H	4	44H	D	54H	T
25H	%	35H	5	45H	E	55H	U
26H	&	36H	6	46H	F	56H	V
27H	‘	37H	7	47H	G	57H	W
28H	(	38H	8	48H	H	58H	X
29H	)	39H	9	49H	I	59H	Y
2AH	*	3AH	:	4AH	J	5AH	Z
2BH	+	3BH	;	4BH	K	5BH	[
2CH	,	3CH	<	4CH	L	5CH	\
2DH	-	3DH	=	4DH	M	5DH	]
2EH	.	3EH	>	4EH	N	5EH	^
2FH	/	3FH	?	4FH	O	5FH	_

60H-9DH

HEX	ASCII	HEX	ASCII	HEX	Fun Key	HEX	Fun Key
60H	`	70H	p	80H	F1	90H	End
61H	a	71H	q	81H	F2	91H	Page Down
62H	b	72H	r	82H	F3	92H	Right Arrow
63H	c	73H	s	83H	F4	93H	Left Arrow
64H	d	74H	t	84H	F5	94H	Down Arrow
65H	e	75H	u	85H	F6	95H	Up Arrow
66H	f	76H	v	86H	F7	96H	Print Screen
67H	g	77H	w	87H	F8	97H	*Ctrl
68H	h	78H	x	88H	F9	98H	*Shift
69H	i	79H	y	89H	F10	99H	*Left Alt
6AH	j	7AH	z	8AH	F11	9AH	*Right Alt
6BH	k	7BH	{	8BH	F12	9BH	1s Delay
6CH	l	7CH	|	8CH	Insert	9CH	*Win-GUI
6DH	m	7DH	}	8DH	Home	9DH	*Keystroke
6EH	n	7EH	~	8EH	Page Up		
6FH	o	7FH	DEL	8FH	Delete		

Note

When Ctrl, Shift, Alt, GUI are set as prefix or suffix, they will be output in combination with the next character (not supported when set to ALT, TH keyboard). The character after Keystroke is directly output as the key value.